



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

EDUCATION, RESEARCH, AND SERVICE COMMITTEE	
8:00 a.m. CST/9:00 a.m. EST	Boling University Center, Duncan Ballroom
Friday	11 Wayne Fisher Drive
March 1, 2019	Martin, Tennessee

## AGENDA

- I. Call to Order and Opening Remarks
- II. Roll Call
- III. Requests to Address the Board (if appropriate for this Committee)
- IV. [Consent Agenda – Action](#) ..... Tab 1
  - A. [Minutes of the Last Meeting](#)..... Tab 1.1
  - B. [2019 Institutional Mission Profile Statements](#) ..... Tab 1.2
  - C. [Academic Program Modification – B.S. in Neuroscience at UTK](#) ..... Tab 1.3
  - D. [Revisions to the UTHSC and UTM Student Codes of Conduct to be Consistent with Board-approved Standards of Conduct and Definitions in the UTK Student Code of Conduct](#) ..... Tab 1.4
  - E. [Authorization for Conferral of Degrees, 2019 Spring Semester](#)..... Tab 1.5
- V. [Tenure upon Initial Appointment at UTIA](#)..... Tab 2
  - A. [Grant of Tenure to Professor Tong Wang – Action](#) ..... Tab 3
  - B. [Grant of Tenure to Professor Hongwei Xin – Action](#) ..... Tab 4
- VI. [UTIA/UTK Policies and Procedures Governing Application for Tenure before the Sixth Year of the Probationary Period – Action](#)..... Tab 5
- VII. [UTIA/UTK Procedures for Enhanced Tenure-Track Review – Action](#)..... Tab 6
- VIII. [Revisions to the UTHSC Faculty Handbook on Peer Review of Teaching – Action](#) ..... Tab 7
- IX. [Revisions to the UTHSC Faculty Handbook on Relationships with Students – Action](#)..... Tab 8
- X. [New Academic Program – M.S. in Data Analytics at UTC – Action](#)..... Tab 9



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- XI. [New Academic Program – B.S. in Information Sciences at UTK – Action](#) ..... Tab 10
- XII. [Proposed UTC Student Code of Conduct – Action](#) ..... Tab 11
- XIII. [Proposed UTC Honor Code – Action](#) ..... Tab 12
- XIV. [Update on Student Success Initiatives – Information](#) ..... Tab 13
- XV. Committee Discussion of Agenda Items for Future Meetings
- XVI. Other Business [*Note: Under the Bylaws of the Board, items not appearing on the agenda may be considered only upon an affirmative vote representing a majority of the total voting membership of the committee. Other business necessary to come before the committee at this meeting should be brought to the committee chair’s attention before the meeting.*]
- XVII. Adjournment



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **Consent Agenda**

Type: Action

Presenter: Donald J. Smith, Committee Chair

Certain action items have been placed on the Committee Consent Agenda. These items will not be presented or discussed in the Committee unless a Committee member requests removal of an item from the Consent Agenda. In accordance with the Bylaws, before calling for a motion to approve the Consent Agenda, the Committee Chair will ask if any member of the Committee requests that an item be removed from the Consent Agenda. The Bylaws provide that an item will not be removed from the Consent Agenda solely for the purpose of asking questions for clarification. Those questions should be presented to the Secretary before the meeting.

### Committee Action

If there are no requests to remove an item from the Consent Agenda, the Committee Chair will call for the prepared motion below, a second, and a voice vote. If the motion passes, the items requiring Board approval will go forward to the Consent Agenda of the full Board meeting.

### **Motion: I move that**

- 1. Minutes of the November 2, 2018 meeting of the Committee be approved as presented in the meeting materials, provided that the Secretary be authorized to make any necessary edits to correct spelling errors, grammatical errors, format errors, or other technical errors subsequently identified; and**
- 2. Resolutions presented in the meeting materials for the action items on the Consent Agenda of the Committee be recommended for adoption by the Board of Trustees.**



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **Minutes of the Last Meeting**

Type: Action

Minutes of the November 2, 2018 meeting of the Education, Research, and Service Committee are included in the meeting materials. If no corrections to the minutes are needed, the Committee will approve the minutes by unanimous consent upon approval of the consent agenda for the Committee.





THE UNIVERSITY OF TENNESSEE  
BOARD OF TRUSTEES

MINUTES OF THE EDUCATION, RESEARCH AND SERVICE COMMITTEE  
November 2, 2018  
Knoxville, Tennessee

**I. Call to Order**

Committee Chair Donnie Smith called the meeting to order.

**II. Roll Call**

Dr. Stacey Patterson, Vice President for Research, Outreach, and Economic Development, called the roll, and the following members were present:

Donnie Smith, Chair  
John Compton  
Joe DiPietro  
Kara Lawson  
Bonnie Ownley  
Kenneth Packer  
Jai Templeton

Dr. Patterson announced the presence of a quorum. Other Trustees, administrative staff, faculty members, students, members of the general public, and representatives of the media were also present.

**III. Requests to Address the Board**

The Chair recognized Dr. Jon Shefner to speak on "Faculty Perspectives on Governance, Participation in Policy, and System/Campus/Legislature Relations." Dr. Shefner is Professor and Head of the UTK Sociology Department and member of the Faculty Senate, AAUP, and United Campus Workers. Dr. Shefner described the mission of the modern land grant university as to lift up the communities and states where they are located and said the faculty takes this responsibility very seriously and asked the Board to do so. He asked the Trustees to remember two crucial things: first, faculty members are excellent stewards of state resources and safe keepers of its children; and second, the faculty provides expertise to assist the Board in its work. He urged the Trustees to reach out to the faculty to obtain the best available knowledge and counsel about UTK. He also urged



the Trustees to recognize that members of the staff are experts and as much a part of the core mission of the University as the faculty.

The Chair recognized Dr. Anne Langendorfer, a member of the UTK Faculty Senate and United Campus Workers, to speak on "Teaching and Learning Environment at UTK." Dr. Langendorfer said she is a non-tenure-track faculty member and teaches four writing-intensive classes each semester. She said non-tenure-track faculty at UTK are paid less, and are required to teach more. She invited Trustees to shadow her for a day.

The Chair recognized Ezekiel Streetman, a UTK student, to speak on "the Interim President." Mr. Streetman expressed concern that the Board does not take the student body seriously and urged more opportunities for free speech by students. He apologized for his actions and those of others at the meeting where Randy Boyd was appointed interim president, but he urged greater opportunity for students to be heard before decisions are made.

The Chair recognized Kara Gilliam, a UTK student and former Governor of the Tennessee Intercollegiate State Legislature, to speak on the "Effects of Restructuring the Board through the FOCUS Act." She voiced concern about the loss of a voting student trustee and presented a signed petition with 200 student signatures to change the student trustee to be a voting member of the Board.

#### **IV. Education, Research and Service Committee Charter**

The Chair called the committee's attention to the proposed charter for the Education, Research and Service Committee Charter. The Chair asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee approve and recommend the committee charter to the Board of Trustees for approval by adoption of the Resolution presented in the meeting materials.

Ms. Lawson so moved, and Commissioner Templeton seconded. Hearing no questions or discussion about the proposed charter, the Chair called for a voice vote, and the motion passed unanimously.

#### **V. Campus Policies and Procedures Governing Application for Tenure before the Sixth Year of the Probationary Period**

Dr. DiPietro explained that in revisions to the Board tenure policy approved in March 2018, each campus was directed to develop policies and procedures to govern a faculty



member's application for tenure before the sixth year of the probationary period (also referred to as "early tenure"), and consequences associated with a candidate's failure to receive tenure upon early application, and to submit the policies and procedures for approval by the Board no later than the last regular Board meeting in 2018. Upon approval by the Board, the campus policies and procedures are to be published in the faculty handbook.

With the exception of UTK/UTIA, each campus submitted the required policies and procedures for Board approval at this meeting. Dr. DiPietro explained that as a result of miscommunication and misunderstanding within the Provost's office due to leadership transitions, proposed policies and procedures governing early tenure for UTIA/UTK were not submitted to the Faculty Senate for review and therefore have not been submitted for Board approval. He recommended approval of an extension for submission of the required UTIA/UTK policies and procedures until February 15, 2019 for Board consideration at the March 1, 2019 meeting.

Mr. Rhodes asked why there is no uniformity among the campuses on early application for tenure. Dr. DiPietro responded that there are cultural differences between campuses, noting as an example that at the Health Science Center, a faculty member can apply for tenure after only one year, but at the other campuses only after two, three or four years. He also said negotiating early application for tenure in exceptional cases is a key factor in recruiting excellent faculty. Chancellor Schwab added that tenure is essential in running academic programs at a health science center and is more important than compensation packages during recruitment.

Chancellor Angle said campuses need flexibility to recognize previous experience, but he emphasized that the standard for granting tenure is not different because it is granted early.

Chancellor Carver explained that UT Martin is predominantly a teaching institution, and evaluation of teaching is a key factor in the tenure process. He said UT Martin's policies do allow for tenure consideration after one year, but three years is the norm for early tenure applications.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTC policies and procedures governing early tenure and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTC policies and procedures



governing application for tenure before the sixth year of the probationary period by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Ms. Lawson seconded. Hearing no further discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTHSC policies and procedures governing early tenure and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTHSC policies and procedures governing application for tenure before the sixth year of the probationary period by adoption of the Resolution presented in the meeting materials.

Ms. Lawson so moved, and Mr. Packer seconded. Hearing no further discussion, the Chair called for a voice vote, and the motion passed unanimously.

Turning to the President's recommendation that an extension of time be granted for submission of the UTIA/UTK policies and procedures governing early tenure, the Chair asked if a member of the committee would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board approve an extension of time until February 15, 2019 for submission of the UTIA/UTK policies and procedures to govern application for tenure before the sixth year of the probationary period.

Commissioner Templeton so moved, and Mr. Compton seconded. Hearing no further discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTM policies and procedures governing early tenure and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTM policies and procedures governing application for tenure before the sixth year of the probationary period by adoption of the Resolution presented in the meeting materials.

Ms. Lawson so moved, and Mr. Compton seconded. Hearing no further discussion, the Chair called for a voice vote, and the motion passed unanimously.



## VI. Campus Procedures for Enhanced Tenure-Track Review

Dr. DiPietro described a revision to the Board tenure policy, approved in March 2018, requiring an enhanced review of tenure-track faculty members in the third or fourth year of the probationary period. In adopting this policy revision, the Board directed the campuses to develop procedures for the enhanced review – including specification of the required contents of the materials to be reviewed – and submit the procedures to the Board for approval no later than the last regular Board meeting of 2018. Upon approval by the Board, the campus procedures are to be published in the faculty handbook.

With the exception of UTK/UTIA, the campuses have submitted proposed procedures governing enhanced tenure-track review for Board approval at this meeting. Dr. DiPietro explained that as with early tenure policies and procedures, miscommunication and misunderstanding within the Provost's office resulted in a failure to submit enhanced tenure-track review procedures to the Faculty Senate for review therefore have not been submitted for Board approval. He recommended approval of an extension for submission of the required UTIA/UTK procedures until February 15, 2019 for Board consideration at the March 1, 2019 meeting.

Dr. DiPietro explained that an enhanced review around the mid-point of the probationary period gives the faculty member an opportunity to improve in specific areas or provides early notice that the grant of tenure is not a likely outcome, allowing the faculty member to explore other career opportunities.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTC procedures governing enhanced tenure-track review and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTC procedures for enhanced tenure-track review by adoption of the Resolution presented in the meeting materials.

Commissioner Templeton so moved, and Mr. Compton seconded. Hearing no questions or a request for discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTHSC procedures governing enhanced tenure-track review and asked if a committee member would make the following prepared motion:



I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTHSC procedures for enhanced tenure-track review by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Ms. Lawson seconded. Hearing no questions or a request for discussion, the Chair called for a voice vote, and the motion passed unanimously.

Turning to the President's recommendation that an extension of time be granted for submission of the UTIA/UTK procedures governing enhanced tenure-track review, the Chair asked if a member of the committee would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board approve an extension of time until February 15, 2019 for submission of the UTIA/UTK procedures to govern enhanced tenure-track review.

Professor Ownley so moved, and Commissioner Templeton seconded. Hearing no questions or a request for discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTM procedures governing enhanced tenure-track review and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTM procedures for enhanced tenure-track review by adoption of the Resolution presented in the meeting materials.

Ms. Lawson so moved, and Mr. Compton seconded. Hearing no questions or a request for discussion, the Chair called for a voice vote, and the motion passed unanimously.

## **VII. Campus Procedures for Periodic Post-Tenure Review of all Tenured Faculty**

Dr. DiPietro provided background and a description of the March 2018 revision of the Board tenure policy requiring all tenured faculty to receive a comprehensive performance review no less often than every six years (sometimes referred to as "post-tenure review"). In adopting the policy revision, the Board directed the President to recommend for Board approval post-tenure review procedures for each campus no later than the last regular





Board meeting in 2018. Upon approval by the Board, the campus procedures are to be published in the faculty handbook.

Dr. DiPietro explained that the system administration developed a template of procedures including all the minimum requirements stated in the revised tenure policy but allowing each campus the flexibility to tailor its post-tenure review procedures to be consistent with existing structures and campus culture.

*[Ms. Lawson was excused from the meeting at approximately 9:20 a.m. due to a previously scheduled conflict.]*

The Chair recognized the interim Provost for UTC, Dr. George Hynd, to present the proposed UTC post-tenure review procedures. Following the presentation, Mr. Compton asked how faculty at UTC have reacted to the requirement of post-tenure review. Dr. Hynd responded that many are familiar with post-tenure review from their service at other institutions and that for most, it is not an issue. He added, however, that there was concern on the part of some faculty who were tenured some time ago when the emphasis of tenure review was primarily on teaching.

Mr. Rhodes asked Dr. DiPietro to explain the difference between the annual performance review process and post-tenure review. Dr. DiPietro responded that part of the rationale for post-tenure review is a check on the annual review process to ensure it is as rigorous as it needs to be. He said the former Board reviewed annual performance review data showing that very few tenured or tenure-track faculty members receive a rating of "needs improvement" or "unsatisfactory."

Mr. Compton asked what rewards would be available if a faculty member receives an outstanding post-tenure review. Dr. DiPietro said the post-tenure review would provide a basis for department heads and deans to consider a salary increase based on merit similar to the increase awarded at the time of promotion from associate to full professor.

Ms. Miles asked how much weight is given to annual performance ratings in the process of considering a candidate for tenure. Dr. DiPietro responded that annual ratings play a key role. Ms. Miles noted that there is concern about the rigor of those reviews and thus about the process of granting tenure in the first place. Dr. DiPietro responded that he believes department heads do a better job of evaluating tenure-track faculty members during their probationary period; the real concern is with performance reviews after tenure is granted. He added that he supports post-tenure review because he believes it will make the institution better. He emphasized his strong support for tenure and the importance of tenure in recruiting the very best talent.



Ms. White asked whether post-tenure review will solve the problem of less-than-rigorous annual performance reviews or whether the annual review process also needs to be addressed. Dr. DiPietro acknowledged that addressing the annual performance review process is important, noted that training of department heads is critical, and said increased training is being offered.

Professor Ownley said that as a faculty member, she is frustrated by faculty members who are not pulling their weight because that means she has to do more. She noted, however, that some department heads are reluctant to deal with an underperforming faculty member because of the potential for the faculty line to be redistributed to another department. She also said faculty members have a negative perception of a "meets expectation" rating, considering it as a grade of "C." She suggested that the committee needs to delve into the annual review process further to determine what factors are at play.

Dr. DiPietro acknowledged Professor Ownley's valid points but responded that if a department head is concerned about losing a faculty line, the head should engage with the dean and negotiate to keep the line. Professor Ownley added that the student-faculty ratio at UT Knoxville is much higher than at peer institutions and puts pressure on the faculty.

Mr. Rhodes said the very high percentage of faculty who receive a rating of "exceeds expectations" or "far exceeds expectations" is difficult to understand and questioned whether the expectations need to be recalibrated or whether different nomenclature should be used.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTC post-tenure review procedures and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTC procedures for periodic post-tenure review of all tenured faculty by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Commissioner Templeton seconded.

The Chair called for any questions or discussion about the UTC procedures. Mr. Compton asked Chancellor Angle if the post-tenure review procedures will put the campus at any advantage or disadvantage in recruiting. Chancellor Angle responded that they would not, adding that post-tenure review is standard practice at a number of





institutions, including those where he has served previously. He also said the potential to reward outstanding faculty members could have a positive impact.

Ms. Woodson asked the Chancellors to address whether there is any link between post-tenure review and improvement in student success. Chancellor Angle responded that annual student evaluation of faculty teaching is a part of the annual review process. He added that ensuring the course content has the appropriate outcomes is managed separately from the individual faculty performance review. Chancellor Davis concurred that student teaching evaluations are an important part of the annual review process and thus the post-tenure review process. Chancellor Carver said student teaching evaluations help to identify areas where there may be an issue impacting student success.

Hearing no further discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair recognized Dr. Lori Gonzalez, UTHSC Vice Chancellor for Faculty and Student Affairs, to present the UTHSC post-tenure review procedures. Concerning annual performance reviews, Dr. Gonzalez noted that the UTHSC post-tenure review procedures require the review committee to make a formal judgment on the quality of the annual performance reviews, and her office would intervene with the department chair as necessary.

Upon the Chair's call for any questions or discussion about the UTHSC procedures, Mr. Packer noted that the average rating assigned by reviewers will likely differ from one division to another and asked whether ratings are calibrated across divisions. Dr. Gonzalez responded that ratings have not been calibrated but that the review committee's judgment on the quality of annual reviews will provide an opportunity to address that subject.

Mr. Rhodes applauded the fact the post-tenure review process at UTHSC will look at the quality of annual reviews and suggested other campuses should consider doing the same. Vice President Martin explained that the template procedures provided to all the campuses requires looking at the quality of the annual reviews and addressing situations in which the annual reviews are not consistent with the post-tenure review.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTHSC procedures for post-tenure review and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTHSC procedures for periodic

Page 9  
Education, Research, and Service Committee  
Board of Trustees  
November 2, 2018



post-tenure review of all tenured faculty by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Mr. Packer seconded. Hearing no further questions or discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair recognized Chancellor Tim Cross to present the UTIA post-tenure review procedures. Following the presentation, Mr. Compton asked how the UTIA faculty have reacted to the requirement of post-tenure review. Chancellor Cross responded that although some may feel it will take time away from their core mission activities, most feel good about the opportunity to have their cumulative six-year performance reviewed. Mr. Compton followed up by asking whether the UTIA faculty voted on the post-tenure review procedures, and Chancellor Cross explained that the procedures were voted on by the Faculty Senate, which includes representatives of the UTIA faculty.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTIA procedures for post-tenure review and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTIA procedures for periodic post-tenure review of all tenured faculty by adoption of the Resolution presented in the meeting materials.

Commissioner Templeton so moved, and Mr. Compton seconded. Hearing no further questions or discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair recognized Dr. David Manderscheid, UTK Provost, to present the UTK post-tenure review procedures. Following the presentation, Mr. Compton asked whether approximately 100 faculty members would be undergoing post-tenure review every year. Dr. Manderscheid responded that because faculty who are retiring or who have gone through a promotion review will be exempt, his best estimate is that 60-75 post-tenure reviews would occur in a given year. Mr. Compton added that he understood that the Provost would bear the bulk of the administrative burden, and Dr. Manderscheid agreed but added that he would be working closely with Vice Provost John Zomchick on the reviews. He said that although the numbers are a little daunting, he is prepared to take it on and believes centralizing the responsibility in the Provost's office is important to achieving uniformity and being able to make comparisons across colleges.

Chancellor Cross explained that UTIA and UTK shared their respective procedures to ensure they were as similar as possible and noted that there are far more similarities than

Page 10

Education, Research, and Service Committee

Board of Trustees

November 2, 2018



differences in the two sets of procedures. Dr. Manderscheid added that the input of the Faculty Senate significantly improved the procedures, making this an example of how shared governance should work.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTK procedures for post-tenure review and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTK procedures for periodic post-tenure review of all tenured faculty by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Commissioner Templeton seconded. Hearing no further questions or discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair recognized Dr. Philip Cavalier, UTM Provost, to present the UTM post-tenure review procedures. Following the presentation, Mr. Compton ask why, given the much smaller number of faculty at UTM, responsibility for the post-tenure review response lies with the dean and why the dean appoints the review committee. Dr. Cavalier responded that the dean is responsible for managing the logistics of the review but the results will roll up to the Provost. When Mr. Rhodes asked whether the Provost can overrule the dean, Dr. Cavalier said the Provost can go to the department head and dean and say he disagrees with their conclusion but that he must have very clear reasons for doing so. Mr. Rhodes asked whether an appeal of the Provost's conclusion at UTK would be to the Chancellor, and if so, whether that would work at UTM. Dr. Chancellor Carver said ultimately an appeal to the Chancellor is available at UTM. Mr. Rhodes reiterated that he is not clear on why responsibility for post-tenure review would not be with the Provost at UTM, like at UTK. Dr. Cavalier responded that the Chancellor and the Faculty Senate thought this was the best way to proceed at UTM. He added that he feels the chief academic officer should be the last stop on this matter of academic judgment but that issues of process could be appealed to the Chancellor. Vice President Martin clarified, however, that the template procedures the President provided to the campuses require the Chancellor to indicate concurrence or non-concurrence with the post-tenure review determination, whether it is made by the dean or by the chief academic officer.

Mr. Compton asked whether changing the UTM procedures to place responsibility for post-tenure review with the Provost would require a re-vote by the Faculty Senate, and Dr. Cavalier said it would. Vice President Martin explained that the option of placing responsibility for the post-tenure review process with the deans was included in the



template the President provided to the campuses. Dr. DiPietro added that the UTC procedures also place responsibility for post-tenure review with the dean.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the proposed UTM procedures for post-tenure review and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend that the Board of Trustees approve the UTM procedures for periodic post-tenure review of all tenured faculty by adoption of the Resolution presented in the meeting materials.

Commissioner Templeton so moved, and Professor Ownley seconded. Hearing no further discussion, the Chair called for a voice vote, and the motion passed unanimously.

Dr. DiPietro recommended that at some point in the future – perhaps after three or four years – the committee should request a report from the campuses on how the post-tenure review process is working and how it might be improved. He added that the committee eventually needs to tackle the faculty workload report and the University's business intelligence capability to provide data necessary to assess faculty productivity.

The Chair responded that he agrees wholeheartedly with the need to review the post-tenure review process at some point in the future and hopes the result will be a conclusion that the annual review process has improved sufficiently that post-tenure review is no longer needed. He also concurred in the need to have adequate and accurate data to assess faculty productivity.

#### **VIII. Tenure upon Initial Appointment for Three UTHSC Faculty Members**

Dr. DiPietro presented his recommendation that the Board grant tenure to three UT Health Science Center faculty members upon initial appointment. Under the tenure policy revisions adopted by the Board in March 2018, only the Board can grant tenure to a faculty member upon initial appointment without serving a probationary period at a University campus. The tenure policy includes the following additional requirements for granting tenure upon initial appointment: (1) the candidate must have been tenured at the institution from which he or she was recruited; or other exceptional circumstances warrant the grant of tenure upon initial appointment; (2) documentation that the candidate could not have been successfully recruited to UT without being considered for tenure upon initial appointment; and (3) documentation of compliance with the minimum tenure review and recommendation procedures required by the Board tenure policy and any further requirements established by the campus. Chancellor Schwab



recommended to the President that tenure upon initial appointment be granted to the following faculty members:

A. Paul Hauptman, M.D.

On October 1, 2018, Paul Hauptman, M.D., began employment with the UT Health Science Center as Dean of the Graduate School of Medicine at the UT Medical Center in Knoxville, with a concurrent faculty appointment in the Department of Medicine (within the College of Medicine). Dr. Hauptman was recruited from the Saint Louis University School of Medicine, where he was a tenured Professor in the Department of Internal Medicine and Assistant Dean for Clinical and Translational Research.

The President confirmed that Dr. Hauptman satisfies all requirements for tenure upon initial appointment, including (1) that he could not have been successfully recruited from his faculty appointment, with tenure, as Professor of Internal Medicine in the Saint Louis University School of Medicine without being considered for tenure upon initial appointment at UTHSC; and (2) that all required tenure review and recommendation procedures were followed by the campus.

B. John Lynn Jefferies, M.D.

John Lynn Jefferies, M.D., was named Co-Director of the newly formed UT Methodist Institute for Cardiovascular Science and Chief of the Division of Cardiovascular Diseases, effective July 1, 2018, with a concurrent faculty appointment as Professor in the Department of Medicine, within the College of Medicine. Dr. Jefferies was recruited from the University of Cincinnati, where he was Professor of Adult Cardiovascular Disease and Pediatric Cardiology, an untenured appointment, and also Director of the Advanced Heart Failure and Cardiomyopathy Services in the Heart Institute at Cincinnati Children's Hospital Medical Center.

Dr. Jefferies did not hold tenure in his faculty appointment at the University of Cincinnati, and therefore Chancellor Schwab articulated another exceptional circumstance warranting the grant of tenure upon initial appointment. The primary focus of Dr. Jefferies' recruitment was to serve as Director of the newly formed UT Methodist Institute for Cardiovascular Science, a position requiring status as a world-famous clinician. As Director of the Institute, Dr. Jefferies is not only responsible for leading current faculty members who have tenure, but also for recruiting exceptional faculty members who are tenured at another institution and for recruiting and making tenure recommendations with respect to tenure-track faculty. For this reason, it is essential that the Director of the Institute hold a tenured faculty appointment. Further, Dr. Jefferies' academic credentials unquestionably meet, and even exceed, the criteria for



tenure at UTHSC. The President confirmed that all required tenure review and recommendation procedures were followed by the campus.

C. Scott Strome, M.D.

On October 1, 2018, Scott Strome, M.D., began employment with the UT Health Science Center as Executive Dean of the College of Medicine, with a concurrent faculty appointment in the Department of Otolaryngology-Head and Neck Surgery. Dr. Strome was recruited from the University of Maryland, where he was a tenured Professor and Chair of the Department of Otorhinolaryngology in the School of Medicine.

The President has confirmed that Dr. Strome satisfies all requirements for tenure upon initial appointment, including (1) that he could not have been successfully recruited from his faculty appointment as Professor, with tenure, in the Department of Otorhinolaryngology in the School of Medicine at the University of Maryland; and (2) that all required tenure review and recommendation procedures were followed by the campus.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the grant of tenure to Paul Hauptman, M.D. and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend to the Board that tenure be granted to Paul Hauptman, M.D., in his faculty appointment in the Department of Medicine within the UTHSC College of Medicine by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Mr. Packer seconded. Hearing no questions or a request for discussion, the Chair called for a voice vote, and the motion passed unanimously.

The Chair directed the committee's attention to the Resolution in the meeting materials concerning the grant of tenure to John Lynn Jefferies, M.D. and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend to the Board that tenure be granted to John Lynn Jefferies, M.D., in his faculty appointment in the Department of Medicine within the UTHSC College of Medicine by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Mr. Packer seconded. Hearing no questions or a request for discussion, the Chair called for a voice vote, and the motion passed unanimously.





The Chair directed the committee's attention to the Resolution in the meeting materials concerning the grant of tenure to Scott Strome, M.D. and asked if a committee member would make the following prepared motion:

I move that the Education, Research, and Service Committee recommend to the Board that tenure be granted to Scott Strome, M.D., in his faculty appointment in the Department of Medicine within the UTHSC College of Medicine by adoption of the Resolution presented in the meeting materials.

Mr. Compton so moved, and Mr. Packer seconded. Hearing no questions or a request for discussion, the Chair called for a voice vote, and the motion passed unanimously.

#### **IX. Overview of UT-Battelle, LLC (Oak Ridge National Laboratory)**

The Chair recognized Dr. Stacey Patterson, UT Vice President for Research, Outreach, and Economic Development to introduce Dr. Thomas Zacharia, Director at the Oak Ridge National Laboratory, who presented an overview of UT-Battelle, LLC and the importance of the UT-Battelle relationship to both ORNL and the University. UT-Battelle holds the U.S. Department of Energy contract for management of ORNL. Celebrating its 75<sup>th</sup> anniversary this year, ORNL strives to be a premiere research institution. Its mission is to deliver scientific discoveries and technical breakthroughs needed to realize solutions in energy and national security and provide economic benefit to the nation. The annual budget for UT-Battelle in 2000, when the contract was first awarded, was \$600 million, and it has grown to the current budget of \$1.4 billion. ORNL has approximately 4,000 employees and hosts over 3,200 research guests annually. There are over 200 joint appointments between UT and ORNL and four joint institutes. ORNL's partnership with UT is a major asset, building strength in strategic research areas, attracting world-class staff and students in key fields, and leveraging resources to serve shared goals. The current contract for management of ORNL expires in April 2020, and a decision by the Department of Energy regarding an extension of the contract is expected in the next three to four months.

#### **X. Overview of the University's Service Mission**

The Chair announced that due to time constraints, the overview of the University's service mission would be deferred to the next regular meeting of the committee.



## **XI. Overview of the Institute for Public Service**

The Chair announced that due to time constraints, the overview of the Institute for Public Service would be deferred to the next regular meeting of the committee.

## **XII. Report on Enrollment and Other Indicators**

The Chair directed the committee's attention to the Report on Enrollment and Other Indicators in the meeting materials, noting the following key items:

- Total enrollment over all UT campuses has exceeded 50,000 students (at 50,810). This represents an increase in undergraduate enrollment across all campuses as well as an increase in graduate enrollment at UTK and UTHSC.
- Undergraduate application numbers have increased at all UT campuses, as have average entering ACT scores. The yield rate (percentage of students accepted who actually enroll), however, has declined at all UT campuses.
- Although UTM showed a decline in the six-year graduation rate from 2017 to 2018, all other UT campuses showed an increase. The system-wide six-year graduation rate is now 61.1% (up from 59.6% for 2017).
- UT has surpassed its State Master Plan Goal in baccalaureate degrees awarded with 8,103 undergraduate degrees awarded for 2018.

The Chair suggested that committee members review these important metrics because they capture trends, highlight favorable changes, and serve to identify opportunities for improvement.

## **XIII. Other Business**

No other business was brought to the Chair's attention prior to the meeting, and therefore the meeting was adjourned.

Respectfully Submitted,

---

Tim L. Cross  
Chancellor, UT Institute of Agriculture





# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **2019 Institutional Mission Profile Statements**

Type: Action

The Complete College Tennessee Act of 2010 (CCTA) requires institutional mission profiles that “characterize distinctiveness in degree offerings by level and focus and student characteristics, including, but not limited to, nontraditional students and part-time students; and address institutional accountability for the quality of instruction, student learning, and, when applicable, research and public service to benefit Tennessee students.” These mission profiles are used to help minimize program redundancy and to help determine mission-based formula weighting in the outcomes-based formula funding model.

More recently, the 2016 Focus on College and University Success (FOCUS) Act emphasizes the importance of these mission profiles. Every year, each public college and university in Tennessee is required to review and update its profile and submit an updated profile to its respective governing board for approval. The 2019 University of Tennessee Institutional Mission Profiles, with revisions and updates in blue font, are presented with the support of the Chancellors, the System Vice President for Academic Affairs and Student Success, and the President. If approved by the Board of Trustees, the profiles will be submitted to THEC for Commission approval.

[Resolution follows]



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
2019 Institutional Mission Profile Statements

Resolved: The Board of Trustees approves the Institutional Mission Profile Statements for The University of Tennessee at Chattanooga, The University of Tennessee Health Science Center, The University of Tennessee, Knoxville, and The University of Tennessee at Martin as presented in the meeting materials, which shall be attached to this Resolution after adoption, and authorizes the administration to submit the statements to the Tennessee Higher Education Commission for approval.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.

### *The University of Tennessee at Chattanooga*

The University of Tennessee at Chattanooga is a comprehensive, metropolitan university, offering bachelor's, master's, specialist, and selected doctoral degrees and certificates through the Colleges of Arts and Sciences; Business; Engineering and Computer Science; and Health, Education, and Applied Professional Studies as well as the Graduate School. Founded in 1886, the private campus joined The University of Tennessee system of public higher education in 1969 and emphasizes strong professional programs essential to the economic vitality of the region with a grounding in the liberal arts. UT Chattanooga is classified as a Carnegie "Master's Large" campus, and in 2008 earned the elective Carnegie classification as a "Community Engagement" campus for both curricular engagement and outreach and partnerships. While pursuing its mission as an engaged metropolitan university, UTC enjoys a strong relationship with the Chattanooga regional community, allowing for numerous cooperative education, internship, volunteer, clinical, and other experiential learning opportunities as well as applied research and partnership efforts. The University of Chattanooga Foundation works to ensure the university's heritage of excellence through support of academic initiatives such as the outstanding Honors program.

*The University of Tennessee Health Science Center*

The University of Tennessee Health Science Center (UTHSC) strives to improve the health and well-being of Tennesseans and **the global community by fostering integrated, collaborative, and inclusive education, research, scientific discovery, clinical care, and public service.** With the home campus in Memphis and major sites in Knoxville, Chattanooga, and Nashville, UTHSC's six colleges - Dentistry, Graduate Health Sciences, Health Professions, Medicine, Nursing, and Pharmacy - offer 41 degree programs and graduate more than 900 new health care professionals and researchers each year. UTHSC is the leading public institution in Tennessee for research on the causes, treatment, and prevention of diseases. Clinical care is provided by UTHSC clinical practice groups, including University Clinical Health, UT Le Bonheur Pediatric Specialists, UT Methodist Physicians, UT Regional One Physicians, and University Dental Practice.

*The University of Tennessee, Knoxville*

The University of Tennessee, Knoxville, Tennessee's flagship and land-grant university, serves Tennessee, the region and world through excellence in research, teaching, and engagement. The university educates over 22,000 undergraduate and 6,000 graduate and professional students, has 1500 full-time faculty and offers a multitude of degree programs. Committed to student success and achievement, the university has the highest first-to-second year retention rate, highest four-year graduation rate, and highest six-year graduation rate for undergraduate students among the state's public institutions. UTK is the only public university in Tennessee to hold the highest Carnegie Classification of Doctoral University, Very High Research Activity, showcasing a commitment to the production of new knowledge across all fields of inquiry. A unique and vital research partnership with Oak Ridge National Laboratories is one of the university's distinguishing programs, sharing faculty and several joint institutes contributing research and innovations in areas such as clean energy, security, computing and nuclear systems. University initiatives like Experience Learning bring students into research partnerships alongside faculty in order to prepare the students for the challenges of a rapidly changing and increasingly global work force. As the Tennessee Volunteers, serving the communities and those around us through service, education, engagement and research is foundational. UTK is proud to be recognized as a Carnegie Community Engagement institution. With top-ten nationally ranked programs in nuclear engineering, supply chain management, and printmaking as well as more than 20 other programs ranked among the best in their fields, the university is committed to continuous improvement to benefit its students, the pursuits of the state, and the citizens of Tennessee.

### *The University of Tennessee at Martin*

The primary purpose of The University of Tennessee at Martin is to provide a quality undergraduate education in a traditional collegiate atmosphere characterized at all levels by close collaboration among students, faculty, and staff. In addition, the university is dedicated to meeting life-long educational needs by providing graduate programs, distance-learning opportunities and other creative endeavors. Furthermore, the university is committed to advancing the regional and global community through scholarly activities, research and public service. Located in Northwest Tennessee on a largely residential campus, the university predominantly serves undergraduate students (**95 percent of total enrollment**). UT Martin is a selective institution that provides outreach programs and special services for sub-populations including first-generation, adult, and transfer students. **The most recent six-year graduation rate was 47.7 percent.** UT Martin's Carnegie Classification is Masters Medium, with select graduate offerings in Education, Business, Family and Consumer Sciences, Agriculture and Natural Resources, and Strategic Communications. The campus is committed to encouraging community engagement and leadership enhancement and has received national recognition for its commitment to volunteering, service learning, and civic engagement.



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **Academic Program Modification – B.S. in Neuroscience at UTK**

Type: Action

The academic discipline of neuroscience is an interdisciplinary science that liaises closely with other disciplines including mathematics, engineering, computer science, chemistry, biology, philosophy, psychology, and medicine. Currently, the UTK College of Arts and Sciences, through its Interdisciplinary Programs, offers a concentration in neuroscience. Building on existing curricula in biology, psychology, and engineering, this program provides a strong foundation in neuroscience that emphasizes hands-on research training.

UTK proposes the establishment of a freestanding neuroscience major from the existing interdisciplinary concentration. The new Bachelor of Science degree program will not include any substantial changes to the existing curriculum. Specifically, the curriculum will maintain its interdisciplinary character but will gain the strength and support of being a stand-alone degree within an established department at the University. Additionally, students who graduate with a stand-alone bachelor's degree in neuroscience will have a specific and powerful credential for employment or post-baccalaureate academic study (e.g., graduate or medical school).

[Resolution follows]



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Academic Program Modification— B.S. in Neuroscience at  
The University of Tennessee, Knoxville

Resolved: The Board of Trustees approves the proposed program modification of the interdisciplinary concentration in neuroscience at The University of Tennessee, Knoxville to establish the degree of Bachelor of Science in Neuroscience, effective Fall Semester 2019.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.



Academic Program Modification Proposal  
**Bachelor of Science in Neuroscience**

Submitted by  
Department of Psychology  
College of Arts and Sciences  
**The University of Tennessee, Knoxville**

Proposed Program Modification

Before the Proposed Change:

Interdisciplinary Program Major, BA – Neuroscience Concentration

CIP code: 03.05.9999.02 – Area, Ethnic, Cultural, and Gender Studies, Other

After the Proposed Change:

Neuroscience Major, BS

CIP Code: 26.1501 - Neuroscience

**Proposed Implementation Date of Proposed Program:** Fall 2019

**Proposed Termination Date of Current Concentration:** Fall 2019

**Anticipated Delivery Site:** UT Knoxville Campus

**Academic Program Liaison:**

Linda C. Martin, VP of Academic Affairs and Student Success

821 Andy Holt Tower Knoxville, TN 37996

[lcmartin@tennessee.edu](mailto:lcmartin@tennessee.edu) / 865.974.3843

## Contents

Background for Proposed Modification .....	2
Institutional Mission .....	2
NeuroNET .....	3
Administration and Organization of Programs .....	4
Need for the Program .....	6
Student Need .....	6
Graduates from the IDP Neuroscience Concentration .....	8
Employer Need and Demand .....	8
Potential Impact of the Modification on the Current Program .....	9
Existing Programs at Other TN Institutions .....	10
Enrollment and Degrees Awarded for Concentration .....	10
Student Learning Outcomes .....	11
Student learning outcomes for the Neuroscience BS Major: .....	11
Central Learning Objectives: .....	11
Accreditation .....	11
Projected Enrollment and Graduation Trends .....	12
Current and Proposed Curriculum Requirements .....	12
New Courses Needed .....	13
Distance Learning .....	13
Current Policies .....	13
Admission .....	13
Retention .....	14
Graduation .....	14
Current Faculty .....	16
Contributing Faculty .....	16
Finance .....	18
Resources and Expenditures .....	18
Academic Resources .....	19
References .....	20
Appendix A – IDP Enrollment and Graduation Figures .....	21
Appendix B –Curriculum Map and Student Learning Activities .....	22
Appendix C – Complete Curriculum (Current and Proposed) .....	24

## Background for Proposed Modification

The academic discipline of neuroscience encompasses the study of a wide array of fields including cellular, molecular, genetic, behavioral, evolutionary, computational and medical aspects of the nervous system. It is an interdisciplinary science that liaises closely with other disciplines such as mathematics, engineering, computer science, chemistry, biology, philosophy, psychology, and medicine. Thus, students who study neuroscience will be afforded numerous career opportunities in both private and public sectors including, but not limited to, universities, research institutes, government facilities, industry, and medicine.

Currently, Interdisciplinary Programs (IDP) at The University of Tennessee, Knoxville (UTK) has a Neuroscience concentration. Building on existing curricula in biology, psychology and engineering, this program provides a strong foundation in the neurosciences that emphasizes hand-on research training. Beyond the core classes in the program, students can choose from an array of courses that are more specialized that focus on a variety of basic, clinical, and applied neuroscience topics. Thus, students can tailor their neuroscience degree to suit their career goals. The neuroscience concentration has had five years of steady growth in enrollment and graduation; the institution is confident that these trends will continue based on student demand, as well as regional and national indicators. This proposal outlines an opportunity at UTK to provide students a formal undergraduate degree in neuroscience.

UTK proposes the establishment of a free-standing Neuroscience (BS) major from the existing interdisciplinary concentration. The new degree program will not include any substantial changes to the existing curriculum. Specifically, the curriculum will maintain its interdisciplinary character but will gain the strength and support of being a stand-alone degree within an established department at the university. Additionally, students who graduate with a stand-alone bachelor's degree in neuroscience will have a specific and powerful credential for employment or post-baccalaureate academic study (e.g., graduate or medical school).

### **Institutional Mission**

UTK's mission as the land grant university is to "move forward the frontiers of human knowledge and enrich and elevate the citizens of the state of Tennessee, the nation and the world ... embodies the spirit of excellence in teaching, research, scholarship, creative activity, outreach, and engagement."<sup>1</sup> A key Volunteer Value touts the importance of seeking knowledge through "intellectual growth, a lifelong

pursuit of knowledge, and a sharing of this knowledge.”<sup>1</sup> Establishing a degree in neuroscience from an existing degree concentration will advance UTK’s mission and values by preparing students for many types of careers that meet these stated goals.

### **NeuroNET**

UTK has a track record of engagement in neuroscience. This engagement is best exemplified by the establishment of the NeuroNET (**Neuro**science **Net**work of **E**ast **T**ennessee) Research Center, which began in July 2014. NeuroNET was created in response to the rapidly growing neuroscience research and teaching presence across the University of Tennessee, Knoxville (UTK), the UT Medical Center (UTMC) and the Oak Ridge National Laboratory (ORNL). Currently, the Center comprises more than 100 members whose research spans five broad areas of Neuroscience including Cellular & Molecular Neuroscience, Cognitive & Behavioral Neuroscience, Systems Neuroscience, Neural Engineering & Computational Neuroscience and Clinical Neuroscience/Nervous System Disorders. The Center includes a unique set of resources, research capabilities, and clinical expertise that are strengthened through interactions with other interdisciplinary organizations at UTK and UTMC, such as the National Institute for Mathematical and Biological Synthesis (NIMBioS) and the UT Medical Center Brain and Spine Institute. These interactions have led to external funding from the Kavli Foundation and helped launch the Pat Summitt Clinic at the UT Medical Center.

A major goal of the NeuroNET Research Center is to facilitate collaborative neuroscience research among Center members as well as collaborations with external neuroscientists. Moreover, the NeuroNET Research Center also serves as the organizing center for coordinating and maximizing the success of the following: (1) the proposed undergraduate interdisciplinary major in neuroscience, (2) the graduate minor in neuroscience, (3) a local chapter of the Society for Neuroscience, and (4) a student-led organization, Advancement of Neuroscience at UT. Together with these groups, NeuroNET is working to enhance neuroscience research, education, and outreach within among local institutions and the surrounding community. The presence of NeuroNET is important for undergraduate recruitment at the university level; moreover, it provides a valuable resource for undergraduate research training and shows that incorporating neuroscience into the academic curriculum is important to the university’s mission.

Neuroscience-oriented engagement activities and academic courses are important to students across campus, not just neuroscience majors. Undergraduates in many

disciplines including, but not limited to, biology, kinesiology, engineering, psychology, and music take advantage of neuroscience offerings to enhance their training and career opportunities. Thus, an established neuroscience major would have a broad influence and impact students in a wide range of disciplines and career paths.

### **Administration and Organization of Programs**

Currently, the UTK Interdisciplinary Program concentration in neuroscience is under the direction of one faculty member and supported by a steering committee comprised of seven faculty members from two departments: (1) Biochemistry & Cellular and Molecular Biology and (2) Psychology. Based on the continued growth in enrollment and degrees awarded in this concentration, the College of Arts and Sciences and the director of the IDP neuroscience concentration as well as members of the steering committee support the programmatic modification to elevate the concentration to a stand-alone Bachelor of Science degree. The proposed modified degree will be housed within the Department of Psychology at UTK. The proposed neuroscience major will be administered by a Neuroscience Program Director appointed by the Head of Psychology with the advice of a Neuroscience Program Steering Committee. Oversight will be provided by the Director of Undergraduate Studies and faculty within the Department of Psychology and will require no additional resources.

### **Instructional Programs and Committees**

With this proposed program modification, the UTK Psychology Department will have undergraduate instructional programs that include the following:

- (1) a BA in Psychology (with an average of 982 majors from 2015-2017)
- (2) A BS in Neuroscience (minors and honors concentrations below)

Current graduate programs in Clinical, Counseling and Experimental Psychology include the following:

- (3) MA in Experimental Psychology
- (4) Ph.D. in Clinical Psychology
- (5) Ph.D. in Counseling Psychology

## (6) Ph.D. in Experimental Psychology

The two undergraduate programs and four graduate programs will each be overseen by a Director with a committee of relevant and interested faculty to assist the Director. The Director of Undergraduate Studies will be appointed from existing faculty by the Department Head with the advice and consent of the Executive Committee, relevant program committees, and the faculty. The term of office shall be five years and the Director may serve additional five-year terms. The Head will consult with the Executive Committee, relevant program committees, and the faculty when considering reappointment.

### Role of the Program Director

The Director will be expected to: (a) monitor the Undergraduate Programs in Psychology and Neuroscience; (b) conduct program assessments; (c) oversee the advising process and scheduling of undergraduate courses; (d) supervise and train graduate student instructors and teaching assistants; (e) assist with the evaluations of non-tenure line instructional faculty; (f) recommend student appointees to the Dean's Student Advisory Committee; and (g) select students to become Peer Advisors.

The Director will consult with the Head on matters involving advising, curriculum, teaching, and activities to enhance the Undergraduate Programs, and report to the Faculty at duly scheduled Faculty Meetings on the activities of the undergraduate programs.

### Neuroscience Undergraduate Program Structure

The Neuroscience undergraduate program will include the BS in Neuroscience, the honors concentration in Neuroscience, the Neuroscience minor, and will serve other students of special programs such as the College Scholars or other Individualized Programs. An existing UTK faculty member will serve as Director of the neuroscience undergraduate program. Given the interdisciplinary nature of the Neuroscience program, this faculty member may be from outside of the psychology department. The Neuroscience Program Director will be appointed by the Head with the advice of the Neuroscience Program Steering Committee.

The Neuroscience Program Director will chair an interdisciplinary Neuroscience Steering Committee, which will be established by the Head with the advice and consent of the Neuroscience Program Director. The Neuroscience Steering Committee will include faculty and full-time lecturers who have demonstrated an interest in neuroscience undergraduate education and may also include graduate and undergraduate students. This committee will include faculty members representing at least two academic departments at UTK with a vested academic interest in the neuroscience program. The membership of the committee may change annually. The Director will advise the Nu Rho Psi Neuroscience National Honor Society, subject to Nu Rho Psi approval, or will recommend an appropriate advisor.

When a periodic review of the curriculum leads to suggestions for change in the Neuroscience program, the Neuroscience Steering Committee will vote on such changes. Once approved by the Steering Committee, the proposed changes will be submitted to the department for placement on the agenda of the Executive Committee and approved by the faculty prior to implementing any changes.

## Need for the Program

### **Student Need**

A total of 345 currently enrolled (2017-2018 academic year) and recently graduated (spring, 2017) IDP Neuroscience concentration students were asked to complete an anonymous qualitative survey using Survey Monkey with a response rate of 68%. Students were asked to (a) comment on the strengths and weaknesses of the UTK Neuroscience degree program, (b) indicate whether they supported elevating the concentration to a stand-alone neuroscience major, and (c) describe their future career plans.

The results of the survey reveal that neuroscience students are passionate about and committed to the discipline. They found particular benefit in the interdisciplinary nature of the degree since it allowed them to tailor the degree to their individual interests. The most frequently expressed programmatic weakness was associated with the limitations of an IDP. Sample qualitative responses are listed below:

- *I like that we are encouraged to explore multiple facets of neuroscience and that we don't have just one set path. That is, you aren't limited to just one discipline of courses.*
- *I think that this is a good concentration to pursue because it can be applied to many different careers and fields.*
- *The IDP - Neuroscience Program has many strengths in research.*
- *Being able to be involved with research and the potential for jobs within the medical field.*
- *I would say autonomy is the biggest strength of the current IDP program. It is so easy to be able to make this major whatever you want it to be, and the freedom to choose makes this major so awesome.*
- *Having neuroscience as a BA instead of a BS seems misleading and confusing.*
- *IDP makes it sound like I don't know what I want to do when I'm speaking to potential employers even though I know exactly what I want to do.*
- *Being that is a concentration rather than a complete major I feel as if we don't have the resources or credibility on campus.*
- *The fact that it is not housed in a certain department such as psychology, biology, etc. and that it is not considered a stand-alone major.*

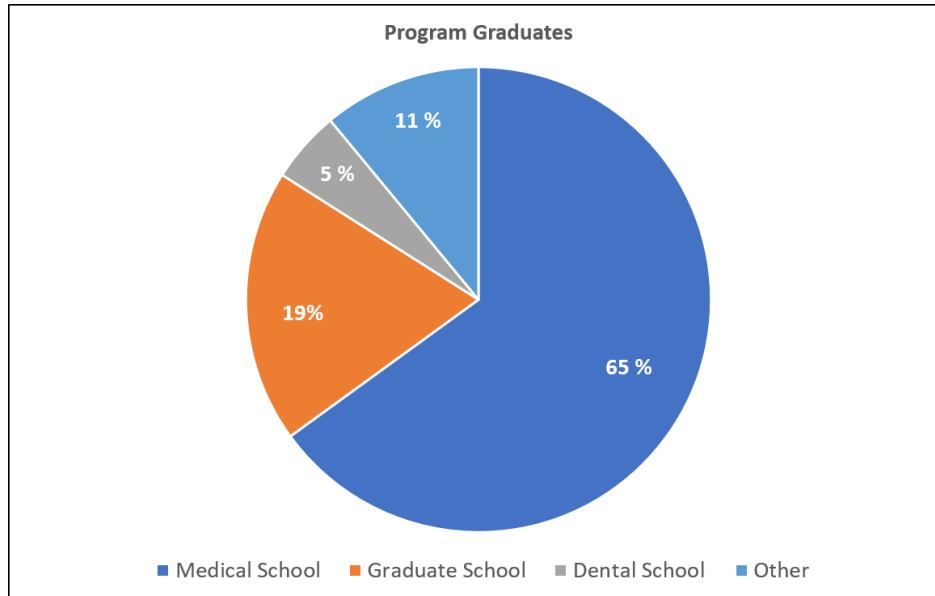
Examples of careers that current neuroscience students plan to pursue include:

- Physician/Surgeon
- Nurse
- Physician's Assistant
- Pharmacist
- Dentist
- High School Teacher
- Marketing
- Forensic Sciences
- Child Adolescent Psychiatry
- Hospital Administrator
- University Professor
- Researcher



### **Graduates from the IDP Neuroscience Concentration**

Graduates from the current concentration are currently either pursuing advanced graduate degrees or have found employment in the private and public sectors. Figure 1 illustrates the status of graduates responding to a recent survey.



**Figure 1.** Status of graduates from the IDP – Neuroscience Concentration

Clearly, most graduates of the program are currently in medical school with a substantial number attending or having completed graduate programs in several different neuroscience-related disciplines with the intent of a career in research and/or teaching.

### **Employer Need and Demand**

Careers that are available for neuroscience graduates can be difficult to isolate and count because they span multiple industries and sectors of the economy. Table 1 summarizes the long-term occupational projections for the state of Tennessee for several careers relevant to neuroscience students. These numbers mirror national data and come from the United States Bureau of Labor Statistics<sup>2</sup>, Projections Central<sup>3</sup>, and Careeronestop<sup>4</sup>. Significantly, the strongest growth potential appears to be among (1) physicians and surgeons and (2) mental health counselors. This finding is critical, given that major health issues faced by Tennesseans include obesity, heart disease, stroke, substance abuse, and dementia.<sup>5-10</sup> Thus, there is

and there will continue to be a high demand for individuals engaged in the diagnosis, treatment, and prevention of these issues. Graduates of the Neuroscience BS Major will be well-positioned to fulfill these roles, thereby making a significant contribution to the state of Tennessee and the nation.

<b>Occupation Name</b>	<b>2014 Employment</b>	<b>2024 Employment</b>	<b>Percent Change</b>
Biological Science Teachers, Postsecondary	1420	1770	24.3
Biomedical Engineers/Research	340	440	29.5
Life Scientists	60	70	14.8
Mental Health Counselors	2740	3580	30.4
Pharmacists	7290	1250	17.2
Physician Assistants	1350	1950	44.3
Physicians and Surgeons	6970	8630	23.8
Psychiatrists	250	310	22.4
Substance Abuse and Behavioral Disorder Counselors	1370	1900	39

**Table 1.** Long-term occupational projections for the state of Tennessee<sup>2-4</sup>

The creation of a stand-alone degree housed within an established academic department will provide neuroscience students with the support, organization, and career networking opportunities that the current IDP concentration may lack. An established academic department can provide communication, marketing, and outreach for the neuroscience degree.

### Potential Impact of the Modification on the Current Program

Fall 2017 total enrollment within the College of Arts and Sciences Interdisciplinary Program included 545 majors and 114 minors. Of those, 58% of the majors and 19% of the minors were in Neuroscience. Administration and resources for each concentration within the Interdisciplinary Program are carried out independently

from one another. A change in one concentration will have no impact on any other concentration. Additionally, most of the IDP concentrations draw from the humanities disciplines whereas the Neuroscience concentration draws heavily from the social and natural sciences disciplines, so the student draw for other concentrations should remain unaffected.

### Existing Programs at Other TN Institutions

There are **NO** programs offering a Neuroscience Major or concentration at public universities in Tennessee. Thus, the only in-state opportunities for students interested in a neuroscience program are at private institutions including Vanderbilt University, Rhodes College, Belmont University, King University and Maryville College. As the preeminent research-based, land-grant university in the state, it is critical that we provide Tennessee students an in-state, affordable and first-rate interdisciplinary and experiential education in neuroscience studies.

### Enrollment and Degrees Awarded for Concentration

Currently, there are 389 students enrolled in the neuroscience concentration, with 22 additional students choosing the concentration as a minor. Since the inception of the concentration in 2013 (Table 2), demand has increased. Based on this growth, the growth in comparable programs at other institutions, and the growth in related jobs, the neuroscience degree program is likely to maintain this level of high enrollment.

Neuroscience Concentration	F-2013	F-2014	F-2015	F-2016	F-2017	F-2018
Number of Enrolled Majors	38	123	164	214	299	389
Number of Graduates	2	8	24	34	50	Not available

**Table 2:** Interdisciplinary Neuroscience Concentration Major and Graduates Fall 2013-2018

[Appendix A](#) provides enrollment and graduation numbers for all current Interdisciplinary Program concentrations.

## Student Learning Outcomes

[Appendix B](#) provides detail about student central learning objectives, curriculum map and assessment activities.

### **Student Learning Outcomes for the Neuroscience BS Major:**

1. Students will be able to identify core concepts of neuroscience.
2. Students will be able to synthesize information to formulate hypotheses, design experiments, and engage in scientific research.
3. Students will be able to communicate neuroscientific information in a clear, reasoned manner, both verbally and in writing.
4. Students will have the foundation to successfully pursue post baccalaureate education and/or professional career.

### **Central Learning Objectives:**

1. **Evolution:** Populations of organisms and their cellular components have changed over time through both selective and non-selective evolutionary processes.
2. **Structure and Function:** All living systems (organisms, ecosystems, etc.) are made of structural components whose arrangement determines the function of the systems.
3. **Information Flow and Storage:** Information and signals are used and exchanged within and among organisms to direct their functioning.
4. **Transformations of Energy and Matter:** All living things acquire, use, and release and cycle matter and energy for cellular functioning.
5. **Systems:** Living systems are interconnected, and they interact and influence each other on multiple levels.

## Accreditation

The Department of Psychology has completed the process of curriculum approval through the College of Arts and Faculty Senate, The Assistant Vice Provost for Accreditation has determined that there is no substantive change between the IDP Major – Neuroscience Concentration curriculum and the proposed Neuroscience, BS Major curriculum and that a SACSCOC substantive change submission will not be necessary. There is no disciplinary accrediting body for neuroscience programs.

[Appendix B](#), as noted, provides detail about student central learning objectives, curriculum map and assessment activities.

Neuroscience students will also learn the skills of professional networking, demonstrate critical thinking and creative engagement through the compilation and presentation of a senior portfolio (INPG 499 – Senior Portfolio, an existing course). The portfolio is a way for students to demonstrate to the department faculty, potential employers or post-baccalaureate academic programs (e.g., graduate or medical schools) the knowledge, skills, and experience they obtained through their undergraduate degree in neuroscience. The portfolio contains a resume, critical reflection essay and other elements such as undergraduate research experiences, research papers, projects from internships, presentations and other creative academic work.

### **Projected Enrollment and Graduation Trends**

The projected 5-year enrollment for the new Neuroscience BS is listed in Table 3. These numbers are based upon annual enrollment trends for the current IDP – Neuroscience concentration. **These figures do not include the IDP-Neuroscience Concentration majors that will be continuing and graduating in large numbers, some of whom will likely change to the new major.** Assuming students will graduate 4 years from their date of entry into the program, we anticipate a graduating of class of approximately 50 students in year 4 of the new program and every year thereafter. Obviously, these numbers are likely to vary dependent upon student academic progress and retention rate.

Year	1	2	3	4	5
Enrollment	50	100	150	200	250

**Table 3:** Five-year projected enrollment for the Neuroscience, BS Major

### **Current and Proposed Curriculum Requirements**

The proposed curriculum is comprised of course work from multiple colleges and departments at UTK. The interdisciplinary nature of the curriculum is one of the primary features drawing students to the degree. The major requires 34-36 prerequisite credit hours and 32 major requirement credit hours. Elective and

university general education requirements make up the remaining course work to obtain the minimum of 120 credit hours for an undergraduate degree.

[Appendix C](#) provides a complete overview of the current and proposed curriculum requirements

As noted, the proposed modification entails the following three changes from the current IDP Neuroscience concentration curriculum:

- (1) The addition of BCMB 401 – Biochemistry I (an existing course) as an elective within the major core
- (2) A credit restriction such that any combination of 2 hours of listed laboratory courses may be applied toward the major
- (3) For INPG 493 – Independent Study (an existing course), a maximum of 6 hours may be applied toward the Neuroscience Major.

### New Courses Needed

No new courses will be required for the proposed modification.

### Distance Learning

The neuroscience degree course work is delivered face-to-face on the UTK campus. However, many faculty use the Canvas learning management system adopted at UTK. Canvas allows the delivery of course material online freeing up class meetings for discussion, collaborative group work and experiential learning activities.

### Current Policies

Policies for the BS in Neuroscience will not differ from those for all other undergraduate degrees at UTK. These policies are easily accessible to students and can be found in the Undergraduate Catalog and *Hilltopics*, the student handbook of the University of Tennessee, Knoxville.<sup>11</sup> Selections of key policy areas have been included below.

#### **Admission**

A minimum grade of C must be earned in each prerequisite. Students must meet prerequisite and co-requisite requirements for all courses with such restrictions,

and no student shall be permitted to register for those courses in which the requirements have not been met.

### **Retention**

All students within the College of Arts and Sciences receive advising from professional advisors during their first two years on campus, after which they are transitioned to a faculty mentor within their major department. Currently, neuroscience students receive first and second year advising through general Arts and Sciences Advising Services, while first and second year psychology majors are advised through a department specific Psychology Advising Center. Models such as psychology's, which embed professional advisors directly in the department, are becoming increasingly popular on campus. These programs create a sense of departmental identity and continuity of advising for our students. Further, the embedded professional advising staff work closely with faculty mentors to provide additional support for students in their junior and senior years.

Upon approval of the new neuroscience major within the Psychology Department, neuroscience students will also benefit from this specialized advising experience. The professional advisors within the Psychology Advising Center will work in collaboration with the Neuroscience Program Director to help declared neuroscience majors select courses and create a degree plan. As neuroscience majors enter their junior year, the professional advisors will oversee the transition of the student to a faculty advisor who will meet annually with the student to discuss professional interests and goals and prepare for the capstone project. Our professional advising staff will continue to collaborate with faculty mentors in the junior and senior year, ensuring the goals of the degree are being met.

To support the influx of neuroscience students, the College of Arts & Sciences will provide resources to the Psychology Advising Center to include two full time professional advisors at no cost to the department. The faculty advisors for the new major will be faculty in psychology and related departments who are affiliated with the interdisciplinary major, many of whom are already advising junior and senior neuroscience students.

### **Graduation**

To receive a bachelor's degree from the University of Tennessee, Knoxville, a student must complete all of the requirements listed below.

- Complete satisfactorily all requirements of the curriculum for which the student is enrolled, as described in the portion of this catalogue devoted to the college or school offering the curriculum, and the [University General Education Requirement](#), as described in the front of this catalogue. Curricular requirements change frequently and students should note the caution on the second page of this catalogue. A student is allowed to satisfy requirements for a bachelor's degree under any curriculum in effect during the student's attendance at UT Knoxville provided the curriculum has been in effect within six years of the date of graduation. This does not obligate the university to offer a discontinued course. Programs may be adjusted by the student's faculty advisor and college dean in consultation with the Office of the University Registrar.
- Achieve a grade point average of at least 2.0 on all work attempted at the University of Tennessee, Knoxville. Incompletes and Not Reported grades must have a letter grade prior to graduation.
- Complete 60 hours of credit offered for the bachelor's degree at an accredited senior college.
- Complete the last 30 hours of credit offered for the bachelor's degree in residence at the University of Tennessee, Knoxville. Credit for correspondence courses taught by the faculty of the UT Knoxville campus may be counted as part of this requirement with the exception of the limitation noted in the regulations concerning correspondence work. Special arrangements to allow study abroad courses, work taken at other University of Tennessee campuses, and all other requests for waiving this requirement must be approved by the dean of the college in which the student is enrolled.
- Comply with the state law that one unit of American history at the high school level or 6 semester hours of collegiate work be satisfactorily completed. This requirement is effective for those graduating July 1, 1978, and thereafter. It may be satisfied by completing [HIST 221-HIST 221](#) (or [HIST 227-HIST 228](#)). [HIST 449](#) may be used in lieu of 3 hours of American history. Students should consult the catalogue of enrollment to determine how the six hour's credit for fulfillment of this requirement is to be included in individual curricula.



- Comply with the Southern Association of Colleges and Schools requirement that students complete 25 percent of the credit hours required for the bachelor's degree at the University of Tennessee, Knoxville.
- Satisfy all financial obligations (fees or fines) owed to the university.
- File an application for a degree with the Office of the University Registrar, Room 209, Student Services Building. Application deadlines for each term are on the web. (<http://registrar.tennessee.edu/>).
- Comply with the Tennessee Higher Education Commission requirements (Senior General Education Test and Senior Major Field Assessment Test).

### Current Faculty

The Department of Psychology consists of 33 tenure-line faculty, 4 full-time lecturers, 4 part-time lecturers and 2 research assistant professors. The Department of Psychology will provide a strong academic base for neuroscience students because departmental faculty can advise and support enrolled students based on their academic backgrounds and research interests. Psychology faculty study overlapping knowledge bases with neuroscience such as the evolutionary processes underlying behavior, the adaptive functions served by behavior, how behavior develops within the context of biological systems, and the mechanisms by which the nervous system regulates behavior.

Selected psychology faculty teach neuroscience and neuroscience-related courses and provide undergraduate research opportunities to neuroscience students (Table 4). Graduates from the IDP in academic year 2016 took, on average, 5 Psychology courses and 9 of the 32 IDP graduates completed a minor in Psychology.

The Department of Psychology is committed to the success of students pursuing undergraduate education in Neuroscience. We are certain that the most effective way to encourage timely graduation, and ultimately foster career placement and graduate level education, is to provide students with a stand-alone bachelor's degree housed within an established department at the University of Tennessee at Knoxville.

### **Contributing Faculty**

Faculty from Psychology and other departments currently engaged in teaching neuroscience-related related courses are listed in Table 4. Their neuroscience-related research and advising contributions are also indicated:

**A** – Teaches Neuroscience Program Core Courses

**B** – Teaches Neuroscience Program Related Courses (Electives)

**C** – Conducts Neuroscience-related Research

**D** – Able to Advise Neuroscience Program Students

<b>Name</b>	<b>Rank</b>	<b>Highest Degree</b>	<b>Department</b>	<b>Contribution</b>
Jim Hall	Associate Professor	Ph.D.	BCMB	Current Director, A, B, C, D
Rebecca Prosser	Professor	Ph.D.	BCMB	A, B, C, D
Keerthi Krishnan	Assistant Professor	Ph.D.	BCMB	B, C, D
Jae Park	Professor	Ph.D.	BCMB	A, B, C, D
Bruce McKee	Professor	Ph.D.	BCMB	A
Joshua Bembenek	Assistant Professor	Ph.D.	BCMB	A
Barry Bruce	Professor	Ph.D.	BCMB	A
Mariano Labrador	Associate Professor	Ph.D.	BCMB	B
Tessa Burch-Smith	Assistant professor	Ph.D.	BCMB	B
Helen Baghdoyan	Professor	Ph.D.	Psychology	B, C, D
Gordon Burghardt	Professor	Ph.D.	Psychology	B, C, D
Aaron Buss	Assistant Professor	Ph.D.	Psychology	B, C, D
Matthew Cooper	Associate Professor	Ph.D.	Psychology	B, C, D
Daniela Corbetta	Professor	Ph.D.	Psychology	A, C
Subimal Data	Professor	Ph.D.	Psychology	A, C, D
Todd Freeberg	Professor	Ph.D.	Psychology	C, D

Theresa Lee	Professor	Ph.D.	Psychology	Dean, Arts & Sciences
Ralph Lydic	Professor	Ph.D.	Psychology	B, C, D
Greg Reynolds	Associate Professor	Ph.D.	Psychology	B, C
Kalynn Schulz	Assistant Professor	Ph.D.	Psychology	A, C, D
Jessica Hay	Associate Professor	Ph.D.	Psychology	B, C
Jennifer Bolden	Assistant professor	Ph.D.	Psychology	B, C
Molly Erickson	Associate Professor	Ph.D.	AuSP	B, C
Mark Hedrick	Professor	Ph.D.	AuSP	B, C
Tim Saltuklaroglu	Professor	Ph.D.	AuSP	B, C
David Palmer	Assistant Professor	Ph.D.	Philosophy	B, C
Bruce MacLennan	Associate Professor	Ph.D.	EECS	B, C
Xiaopeng Zhao	Associate Professor	Ph.D.	MABE	B, C
Hairong Qi	Professor	Ph.D.	EECS	B, C

**Table 4:** Current UTK Faculty Contributing to the IDP – Neuroscience Concentration (**AUSP** – Audiology and Speech Pathology; **BCMB** – Biochemistry & Cellular and Molecular Biology; **EECS** – Electrical Engineering and Computer Science; **MABE** - Mechanical, Aerospace, and Biomedical Engineering).

## Finance

The THEC Financial Projection Form has been included as a separate attachment.

### **Resources and Expenditures**

No new costs or expenditures are anticipated because the degree is being established from an existing concentration and will be housed in an academic department at UTK

**Academic Resources**

Students will have access to multiple resources that will enhance their academic experience, provide internship opportunities and provide career networking opportunities. These offices, departments, facilities and organizations affiliated with UTK include:

- Brain and Spine Institute
- Cole Neuroscience Foundation
- Pat Summitt Clinic
- Pat Summitt Foundation
- Oak Ridge National Laboratories
- Biological and Small Molecule Mass Spectrometry Core
- Bioanalytical Resource Facility
- Advanced Microscopy and Imaging Center
- Office of Undergraduate Research
- Neuroscience Network of East Tennessee (NeuroNET) Research Center

## References

- <sup>1</sup>UTK Journey to the Top 25 (<https://top25.utk.edu/mission-vision/>)
- <sup>2</sup>United States Bureau of Labor Statistics (<https://www.bls.gov/>)
- <sup>3</sup>Projections Central (<http://www.projectionscentral.com/Home/Index>)
- <sup>4</sup>Careeronestop (<https://www.careeronestop.org/>)
- <sup>5</sup>the State of Obesity in Tennessee (<https://stateofobesity.org/states/tn>)
- <sup>6</sup>Alzheimer's Statistics Tennessee  
([https://www.alz.org/documents\\_custom/facts\\_2017/statesheet\\_tennessee.pdf](https://www.alz.org/documents_custom/facts_2017/statesheet_tennessee.pdf))
- <sup>7</sup>The Treatment Center. Addiction Facts by State: Tennessee  
(<https://www.thetreatmentcenter.com/resources/drug-facts-by-state/tennessee/>)
- <sup>8</sup>Lakeview Health. Tennessee Substance Abuse Statistics  
(<https://www.lakeviewhealth.com/resources/substance-abuse-statistics/tennessee/>)
- <sup>9</sup>Tennessee Stroke Registry Report, 2016  
([https://www.etsu.edu/cph/biostat\\_epidemiology/documents/tsr\\_2016\\_report.pdf](https://www.etsu.edu/cph/biostat_epidemiology/documents/tsr_2016_report.pdf))
- <sup>10</sup>Tennessee Department of Health (<https://www.tn.gov/health/news/2017/2/8/heart-disease-still-tennessees-top-cause-of-death.html>)
- <sup>11</sup> *Hilltopics*, the student handbook of the University of Tennessee, Knoxville  
(<https://hilltopics.utk.edu/>)

## Appendix A – IDP Enrollment and Graduation Figures

### Fall Headcount Enrollment

Major	F-2016	F-2017	F-2018	Average
Africana Studies	14	15	9	12.7
Asian Studies	15	13	11	13.0
Cinema Studies	71	64	75	70.0
Global Studies	74	60	48	60.7
Judaic Studies	0	3	4	2.3
Language/World Business	1	2	0	1.0
Latin Amer Carib St-Brazil St	1	0	2	1.0
Latin Amer Carib St-General St	1	0	0	0.3
Linguistics	76	75	57	69.3
Medieval & Renaissance Studies	1	4	4	3.0
Middle East Studies	0	1	6	2.3
Neuroscience	214	299	389	300.7
Women's Studies	7	9	10	8.7
Grand Total	475	545	615	545.0

### Degrees Awarded

Major	2015-16	2016-17	2017-18	Total	Average
Africana Studies	4	7	8	19	6.3
Asian Studies	3	6	2	11	3.7
Cinema Studies	5	16	19	40	13.3
Global Studies/Politics,Econ	20	24	24	68	22.7
Judaic Studies		1		1	1.0
Language/World Business	1			1	1.0
Latin Amer & Caribbean Studies	2	2	0	4	1.3
Latin Amer Carib St-General St	0	0	0	0	0.0
Linguistics	11	17	18	46	15.3
Medieval & Renaissance Studies	1			1	1.0
Middle East Studies			1	1	1.0
Neuroscience	24	34	50	108	36.0
Women, Gender, and Sexuality		1	3	4	2.0
Grand Total	71	108	125	304	101.3

## Appendix B –Curriculum Map and Student Learning Activities

Central Learning Objectives	Curriculum Mapping	Assessment Methods	Use of Assessment Data
1. Students will be able to identify core concepts of neuroscience.	PSYC 301: Foundations of Behavioral Neuroscience; BCMB 415: Foundations in Neurobiology	Selected exam questions from PSYC 301 and BCMB 415 that address the core concepts of behavioral and cognitive as well as cellular and molecular neuroscience will be identified. Student responses on these questions will be evaluated.	We will determine whether the core concepts of behavioral and cognitive neuroscience are adequately covered in PSYC 301 and BCMB 415 as represented on exams and whether student performance on these questions demonstrates knowledge attained. Data will be shared with faculty. Adjustments will be made in the curriculum and/or the assessment process as needed with emphasis on PSYC 301 and BCMB 415 as well as elective courses.
2. Students will be able to synthesize information to formulate hypotheses, design experiments and engage in scientific research.	BCMB 403: Neurogenetics Laboratory; BCMB 416: Neurobiology Laboratory; EEB 459: Comparative Animal Behavior laboratory; Independent Undergraduate Research	A rubric will be used to assess student performance on these aspects of the BCMB 403/416 and EEB 459. Information on participation in research activities and an assessment rubric will be sent to all research project mentors.	Assessment data will be shared with faculty. We will determine if the outcome is being appropriately addressed in BCMB 403/416, EEB 459 and undergraduate research activities. Adjustments will be made in the curriculum and/or the assessment process, as needed.

3. Students will be able to communicate neuroscientific information in a clear, reasoned manner, both verbally and in writing.	BCMB 403: Neurogenetics Laboratory; BCMB 416: Neurobiology Laboratory; EEB 459: Comparative Animal Behavior laboratory; INPG 400: Neuroscience Journal Club; Independent Undergraduate Research	Rubrics will be used to assess student performance in BCMB 403/416, EEB 459 and INPG 400. In addition, information on presentation of research activities will be collected from all research project mentors.	Assessment data will be shared with faculty. We will determine if the outcome is being appropriately addressed in BCMB 403/416, EEB 459, INPG 400 and undergraduate research activities. Adjustments will be made in the curriculum and/or the assessment process, as needed.
4. Students will have the foundation to successfully pursue post baccalaureate education and/or a professional career.	Outcome will be learned throughout the curriculum but particularly in group and individual mentoring meetings with Neuroscience faculty, CAS advisors, and Pre-Professional Health advisors. Outcome will be assessed in senior and post baccalaureate surveys.	The percentage of seniors that feel prepared to pursue their postgraduate career goals will be determined by the senior survey. The percentage of graduate that have entered graduate school, medical school or other post baccalaureate degree programs 4 years after graduation will be determined by the post baccalaureate survey.	Assessment data will be shared with faculty. Adjustments will be made in the curriculum, mentoring and/or the assessment process, as needed.



## Appendix C – Complete Curriculum (Current and Proposed)

Table X

Crosswalk of Course Changes for Neuroscience Modification

	Neuroscience Concentration, IDS	Neuroscience Major, Bachelor of Science
<b>PREREQUISITES</b>	<b>Complete the Following:</b>	<b>Complete the Following:</b>
	BIOL 130 Biodiversity	BIOL 240 General Genetics
	BIOL 140 Organization and Function of the Cell	CHEM 120 General Chemistry I
	CHEM 120 General Chemistry I	CHEM 130 General Chemistry II
	CHEM 130 General Chemistry II	PHYS 221 Elements of Physics I
	CHEM 350 Organic Chemistry I	PHYS 222 Elements of Physics II
	CHEM 360 Organic Chemistry II	PSYC 110 General Psychology
	CHEM 369 Organic Chemistry Lab	
	PHYS 221 Elements of Physics I	<b>Choose One Sequence:</b>
	PHYS 222 Elements of Physics II	MATH 125 Basic Calculus and STAT 201 Intro to Statistics
	PSYC 110 General Psychology	MATH 141 Calculus I and MATH 142 Calculus II
	PSYC 210 Biological Basis of Behavior	MATH 151 Math for Life Sciences I and MATH 152 Math for Life Sciences II
	<b>Choose One Sequence:</b>	<b>Choose One Sequence:</b>
	MATH 125 Basic Calculus and STAT 201 Intro to Statistics	BIOL 150 Organismal and Ecological Biology
	MATH 141 Calculus I and MATH 142 Calculus II	BIOL 160 Cellular and Molecular Biology BIOL 159 Skills of Biological Investigation
	MATH 151 Math for Life Sciences I and MATH 152 Math for Life Sciences II	BIOL 158 Honors Organismal and Ecological
<b>Select One Course:</b>	BIOL 168 Honors: Cellular and Molecular Bio	
BCMB 311 Advanced Cellular Biology	BIOL 167 Honors: Skills of Biological Invest.	
BCMB 401 Biochemistry I		

NEURO CORE	Complete 11 Hours:	Complete 15 Hours:
		BCMB 415 Foundations in Neurobiology (1-hr) INPG 200 Intro Neuroanatomy (1-hr) INPG 400 Advanced Interdisciplinary Topics (4) PHIL 345 Bioethics

LAB EXPERIENCE	Laboratory Experience: Select 4 Hours	Laboratory Experience: Minimum of 2 Hours
		BCMB 416 Neurobiology Laboratory BCMB 452 Independent Research in BCMB COSC 493 Independent Study EEB 400 Undergraduate Research EEB 459 Comparative Animal Behavior Lab INPG 493 Independent Study MSE 494 Special Project Laboratory PSYC 493 Independent Study

REMAINING HOURS	Remaining Hours: Complete 15	Remaining Hours: Complete 15
		<b>Behavioral and Cognitive Neuroscience</b> ANTH 494 Primate Behavior EEB 370 Ethology and Sociobiology EEB 450 Comparative Animal Behavior EEB 454 Animal Communication PSYC 310 Learning and Thinking PSYC 320 Motivation

PSYC 400 Advanced Cognitive Psychology	COSC 420 Biologically Inspired Computation
----------------------------------------	--------------------------------------------

REMAINING HOURS (continued from previous page)	<b>Integrative Neuroscience</b>	ECE 471 Introduction to Pattern Recognition
	AUSP 302 Acoustics and Perception	EEB 450 Comparative Animal Behavior
	AUSP 303 Intro to Hearing Science	EEB 454 Animal Communication
	AUSP 306 Anatomy and Physiology of Speech	INPG 493 Independent Study (max 6 hours)
	BCMB 423 Neural Basis of Behavior	JREM 450 Writing about Science and Medicine
	PSYC 410 Sensory Processes and Perception	MSE 485 Advanced Biomaterials
	PSYC 461 Physiological Psychology	MSE 486 Cell and Tissue Biomaterials
	PSYC 464 Drugs and Behavior	PHIL 373 Philosophy of Mind
	<b>Computation and Materials Neuroscience</b>	PSYC 301 Foundations of Behavioral Neuros.
	BME 480 Computational Cell Biology	PSYC 310 Learning and Thinking
	COSC 420 Biologically Inspired Computation	PSYC 314 Cognitive Basis of Behavior
	ECE 471 Introduction to Pattern Recognition	PSYC 320 Motivation
	MSE 485 Advanced Biomaterials	PSYC 330 Abnormal Psychology
	MSE 486 Cell and Tissue Biomaterials	PSYC 370 Evolutionary Psychology & Ethology
		PSYC 400 Advanced Cognitive Psychology
	PSYC 410 Sensory Processes and Perception	
	PSYC 432 Childhood Psychopathologies	
	PSYC 461 Behavioral Neuroscience	
	PSYC 464 Drugs and Behavior	

## Honors Concentration – Neuroscience

Neuroscience students may elect to pursue the Honors Neuroscience Concentration by submitting an Honors Neuroscience application to the Neuroscience Program chair. Students pursuing the Honors Neuroscience Concentration must complete an honors thesis under the guidance of a faculty member, and this faculty member must endorse a student's application to the Honors Neuroscience program.

The degree requirements for the Honors Neuroscience Concentration are those for the regular Neuroscience Concentration with the following modifications:

Before applying to the Honors Neuroscience program, students must complete BIOL 150\*, BIOL 159\*, BIOL 160\*, and PSYC 110\* with an overall GPA of 3.5 or higher in these four courses.

Before applying to the Honors Neuroscience program, students must have an overall GPA of 3.25 or higher. Students must have an overall GPA of 3.25 or higher at graduation.

12 hours of courses drawn from the Neuroscience Core (Roman Numeral I) and/or Electives (Roman Numeral III) must be completed as Honors-by-contract courses, and a grade of B or higher must be earned in courses used to satisfy this requirement. As part of the Honors Program application, students will be asked to identify the courses that they intend to complete as Honors-by-contract courses.

1 hour of INPG 497 must be completed with a grade of B or higher. This course may be applied to the Neuroscience Laboratory Experience (Roman Numeral II). Students complete this course by completing an honors thesis that is approved by a faculty mentor. The approved honors thesis must be submitted to the Program Chair no later than the first day of finals week of the semester of intended graduation.

\* Meets University General Education Requirement.



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>Revisions to the UTHSC and UTM Student Codes of Conduct to be Consistent with Board-approved Standards of Conduct and Definitions in the UTK Student Code of Conduct</u></b>
Type:	Action
Presenter:	Matthew Scoggins, General Counsel

On March 29, 2017, the Board approved substantial revisions to the student code of conduct for The University of Tennessee, Knoxville (UTK) following a comprehensive review by UTK of its student conduct policies and procedures. Prompted by the revision of the UTK student code of conduct, the Board requested that the other UT campuses conduct similar reviews of their respective student codes of conduct. As a result of those reviews, The University of Tennessee Health Science Center (UTHSC) and The University of Tennessee at Martin (UTM) propose revisions to their standards of conduct for students to be consistent with the standards of conduct for students approved by the Board for UTK. UTHSC and UTM also propose corresponding revisions to the definitions of terms used in their student codes of conduct. UTHSC and UTM are still conducting reviews of their investigation and hearing processes and other aspects of their student codes of conduct and hope to propose further revisions to their student codes of conduct to the Board later this year.

The student codes of conduct for UTHSC and UTM in their entirety are included in the meeting materials with the proposed revisions tracked.

In accordance with the rulemaking procedures of the Tennessee Uniform Administrative Procedures Act, the proposed revisions to the student codes of conduct will be presented for adoption by a roll-call vote in the full Board meeting. Upon adoption by the Board, the revisions will be submitted to the Attorney General for approval and, if approved, filed with the Secretary of State and published for the statutorily required period prior to becoming effective.

[Resolutions follows]



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Revisions to the UTHSC Student Code of Conduct  
to be Consistent with Board-approved Standards of Conduct and Definitions in the  
UTK Student Code of Conduct

Resolved: The Board of Trustees adopts the amendment of Chapter 1720-03-03 of the Rules of The University of Tennessee to incorporate revisions to The University of Tennessee Health Science Center Student Code of Conduct as presented in the meeting materials, which shall be attached to this Resolution after adoption, to become effective after completion of the rulemaking procedures under the Uniform Administrative Procedures Act.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Revisions to the UT Martin Student Code of Conduct  
to be Consistent with Board-approved Standards of Conduct and Definitions in the  
UTK Student Code of Conduct

Resolved: The Board of Trustees adopts the amendment of Chapter 1720-05-01 of the Rules of The University of Tennessee to incorporate revisions to The University of Tennessee at Martin Student Code of Conduct as presented in the meeting materials, which shall be attached to this Resolution after adoption, to become effective after completion of the rulemaking procedures under the Uniform Administrative Procedures Act.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.

**RULES  
OF  
THE UNIVERSITY OF TENNESSEE  
(HEALTH SCIENCE CENTER)**

**CHAPTER 1720-03-03  
STUDENT RIGHTS AND RESPONSIBILITIES**

1720-03-03-.01	Introduction	1720-03-03-.06	No Contact Directives
1720-03-03-.02	Definitions	1720-03-03-.07	Interim Suspension
1720-03-03-.03	Jurisdiction	1720-03-03-.08	Hearing Procedures
1720-03-03-.04	Standards of Conduct	1720-03-03-.09	Student Identification Cards
1720-03-03-.05	Penalties	1720-03-03-.10	Student Health Insurance

**1720-03-03-.01 INTRODUCTION.**

- (1) Students at the University of Tennessee Health Science Center are members of both the University community and the larger community of which the University is a part. Accordingly, students are responsible for conducting themselves in a lawful manner and in compliance with University rules and policies. The University has established the following rules in order to advance the mission of the University by maintaining a safe and secure learning environment, protecting the rights and privileges of all members of the University community, providing a basis for orderly conduct of the affairs of the University, promoting a positive relationship between the University and its surrounding community, preserving institutional integrity and property, encouraging students to engage in conduct that brings credit to themselves and the University, and ensuring that each student who matriculates at the University graduates ready to contribute to society as an ethical and law-abiding citizen.
- (2) The University of Tennessee is committed to respecting students' constitutional rights. Nothing in this chapter is intended or shall be interpreted to restrict students' constitutional rights, including, but not limited to, rights of freedom of speech and assembly.
- (3) Students are responsible for being fully acquainted and for complying with the University catalog, student handbook, and other rules and policies relating to students. Failure or refusal to comply with the rules and policies established by the University may subject a student to disciplinary action up to and including permanent dismissal from the University.

**1720-03-03-.02 DEFINITIONS.** The following words, terms, or phrases, when used in this Chapter, shall have the following meanings:

- (1) Business Day: Any weekday not designated by the University as a holiday or administrative closure day. When calculating a time period of business days specified in this Chapter, the business day of the event that triggers a time period is excluded.
- (2) Disciplinary Hold: The University hold described in Section .05(3).
- (3) Faculty Member: A person hired by the University to conduct teaching, research, or supervised clinical placements.
- (4) Good Faith: Having a belief in the truth of information that a reasonable person in the same position could have, based on the information known to the person communicating the information at the time the information was communicated by that person. Information is not communicated in good faith if it is communicated with knowing or reckless disregard for information that would negate the former information.



- (5) Member of the University Community: A person who is a student, University employee, University volunteer, invited visitor to University-controlled property, or participant in a University-affiliated activity.
- (6) Notice: Written notice transmitted by United States mail, courier service, or hand delivery to the address the University's Registrar has on file for the student; and/or by e-mail to a student's University-provided e-mail account. When a notice is transmitted by United States mail or courier service, the notice is effective on the date that it is mailed or delivered to the courier service. When a notice is transmitted by hand delivery, the notice is effective on the date that it is delivered to the person to whom the notice is addressed. When a notice is transmitted by e-mail, the notice is effective on the date that the e-mail is sent. A student's University-issued email address is the official method of communication used by the University.
- (7) Possession: Direct control of a substance or property, actual knowledge of a substance or property, and/or being in such close proximity to the substance or property that it is a reasonable presumption that one had knowledge of the substance or property.
- (8) Protected Activity: A person's good faith: (1) opposition to conduct prohibited under the Standards of Conduct; (2) report to the University about conduct prohibited under the Standards of Conduct to the University; (3) participation (or reasonable expectation of participation) in any manner in an investigation, meeting, hearing, or interim measure; or (4) exercise of rights or responsibilities under any provision of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act.
- (9) Staff Member: A person employed by the University on a part- or full-time basis, primarily involved in planning, organizing, staffing, directing and controlling efforts to achieve the goals and objectives of the University.
- (10) Standards of Conduct: Chapter 1720-03-03-.04.
- (11) Student: For purposes of this Chapter, the term "student" means:
- (a) A person enrolled or registered for study at the University, either full-time or part-time, pursuing undergraduate, graduate, or professional studies, as well as non-degree and non-credit programs and courses;
  - (b) A student organization;
  - (c) A person who has completed the immediately preceding academic term and is eligible for re-enrollment;
  - (d) A person who is not officially enrolled but who has a continuing relationship with the University (e.g., on educational leave or other approved leave status);
  - (e) A person who attended the University during a previous academic term and who engaged in misconduct during the time of enrollment; and/or
  - (f) A person who has been admitted to the University and later matriculates at the University, with respect to misconduct:
    1. That occurs as part of the application process; or
    2. That occurs post-admission and pre-matriculation and falls within the jurisdiction of the Code (e.g., occurs on University-controlled property).

- (12) Student Organization: An organization that is composed solely of University students that has submitted a pending application or has completed the process for registration according to University rules.
- (13) UAPA: The Uniform Administrative Procedures Act, Tennessee Code Annotated § 4-5-101 et seq.
- (14) University: The University of Tennessee Health Science Center, including without limitation its campuses, centers, institutes, and constituent parts.
- (15) University-Affiliated Activity: means an activity on or off University-controlled property that is initiated, aided, authorized, sponsored, or supervised by the University.
- (16) University-Controlled Property: All land, grounds, structures, or any other property owned, controlled, or operated by the University. For purposes of this rule, University-controlled property includes, without limitation, all streets, alleys, sidewalks, and public ways abutting such property. University-controlled property also includes computers and network systems owned, controlled, or operated by the University or funded by the University.
- (17) University Official: An employee of the University, including, without limitation, faculty members and staff members, or, for purposes of this Chapter, a University-recognized volunteer, when acting in the performance of their duties. Student employees may be considered University officials when acting in the performance of their duties.
- (18) Weapon: Any device, instrument, or substance that is designed to, or reasonably could be expected to, inflict a wound, incapacitate, or cause serious bodily injury or death, including, without limitation, firearms (loaded and unloaded, real firearms and devices that would reasonably appear to a law enforcement officer to be real firearms), ammunition, electronic control devices (such as tasers and stun guns), devices designed to discharge an object (such as bb guns, air guns, pellet guns, potato guns, and slingshots, but not water guns), explosives, dangerous chemicals (such as mace, tear gas, and oleoresin capsicum), martial arts weapons, bows and arrows, artificial knuckles, nightsticks, blackjacks, dirks, daggers, swords, and knives with fixed blades longer than four (4) inches. The term "weapon" does not include pocket knives that fold (but not excluding switchblades); chemical repellents available over-the-counter for self-defense; instruments used solely for personal hygiene, preparation of food, maintenance, University-related instruction, or University employment-related duties.
- (19) Written: To communicate words either on paper and/or electronically. For example, a notice delivered via e-mail constitutes a written notice under the Code.

#### ~~1720-03-03-.02 DEFINITIONS.~~

- ~~— The term "University" means the University of Tennessee Health Science Center.~~
- (1) ~~The term "student" means a person admitted, enrolled or registered for study at the University of Tennessee, either full time or part time, pursuing undergraduate, graduate, or professional studies, as well as non-degree students. Persons not officially registered or enrolled for a particular term but who have a continuing relationship with the University also are considered students for purposes of these rules.~~
- (1) ~~The term "student organization" means an organization that is composed solely of University students that has submitted a pending application or has completed the process for registration according to University rules.~~
- (1) ~~The term "University controlled property" means all land, buildings, facilities, grounds,~~

~~structures, or any other property owned, leased, used, maintained, or operated by the University. For purposes of this rule, University-controlled property includes all streets, alleys, sidewalks, and public ways abutting such property. University-controlled property also includes computers and network systems owned, maintained, or controlled by the University or funded by the University.~~

- ~~(1) The term "University affiliated activity" means any activity on or off University-controlled property that is initiated, aided, authorized, sponsored, or supervised by the University.~~
- ~~(1) The term "University official" means an employee of the University, including faculty members and staff, or for purposes of this rule a University-recognized volunteer. Student employees may be considered University officials when acting in the performance of their duties (e.g., event staff, resident assistants, and teaching assistants).~~
- ~~(1) The term "member of the University community" means any person who is a student, University official, campus visitor, or participant in a University-sponsored or University-affiliated activity.~~
- ~~(1) The term "possession" means actual knowledge of a substance or property and/or being in such close proximity to the substance or property that it is a reasonable presumption that one had knowledge of the substance or property.~~
- ~~(1) The term "weapon" means any device, instrument, or substance that is designed to, or reasonably could be expected to, inflict a wound, incapacitate, or cause serious bodily injury or death, including, but not limited to, firearms (loaded and unloaded, real firearms and devices that appear to a law enforcement officer to be real firearms), ammunition, electronic control devices (such as tasers and stun guns), devices designed to discharge an object (such as bb guns, air guns, pellet guns, potato guns, and slingshots, but not water guns), explosives, dangerous chemicals (such as mace, tear gas, and oleoresin capsicum), martial arts weapons, bows and arrows, artificial knuckles, nightsticks, blackjacks, dirks, daggers, swords, and knives with fixed blades longer than four (4) inches. The term "weapon" does not include pocket knives that fold (but not excluding switchblades); chemical repellents available over the counter for self-defense; instruments used solely for personal hygiene, preparation of food, maintenance, University-related instruction, or University employment-related duties.~~
- ~~(1) The term "notice" means notice given in writing and transmitted by United States mail, courier service, and/or hand delivery to the address the University's Registrar has on file for the student; and/or by e-mail to the student's University-provided e-mail account. When a notice is transmitted by United States mail or courier service, the notice is effective on the date that it is mailed or delivered to the courier service. When a notice is transmitted by hand delivery, the notice is effective on the date that it is delivered to the person to whom the notice is addressed. When a notice is transmitted by e-mail, the notice is effective on the date that the e-mail is sent. A student's University-issued e-mail address is an official method of communication used by the University about student conduct matters.~~
- ~~(1) The term "coercion" means words and/or conduct that, viewed from the perspective of a reasonable person, substantially impair(s) a person's ability to voluntarily choose whether to engage in a particular sexual act (e.g., sexual contact or sexual intercourse). Coercion is something more than mere seduction or persuasion. Coercion includes, without limitation: physical force; and words and/or conduct that would cause a reasonable person to fear imminent: harm to the person's health, safety, or property or that of a third person; threat of the loss or impairment of a job benefit; threat of the loss or impairment of an academic benefit; kidnapping of the person or a third person; or disclosure of sensitive personal information (e.g., disclosure of a person's sexual orientation, gender identity, or~~

~~gender expression).~~

- ~~(1) The term “consent” means an affirmative and voluntary agreement by a person to engage in a specific sexual act. Consent must be obtained, and the responsibility for obtaining consent rests with the individual who voluntarily and physically initiates a specific sexual act, even if the other person initiated the sexual encounter.~~
- ~~( ) One’s own use of alcohol, drugs, or other substances does not diminish one’s responsibility to obtain Consent from the other person. Moreover, another person’s use of alcohol, drugs, or other substances does not diminish one’s responsibility to obtain consent from that person.~~
- ~~( ) The term “affirmative,” as used in the definition of consent, means that consent is communicated only through words and/or non-verbal actions that convey a clear agreement to engage in a specific sexual act. Whether person has communicated an agreement to engage in a specific sexual act generally is evaluated from the perspective of what a reasonable person who perceived the individual’s words and/or non-verbal actions would have understood; however, in the context of a long-term relationship between persons that has involved sexual activity and a pattern of communicating consent, whether consent has been communicated may be evaluated based on a subjective standard (i.e., what did the specific person who initiated the specific sexual act conclude?). A verbal “no” (or words equivalent to “no”) or the nonverbal communication of “no,” even if it sounds or appears insincere or indecisive, always means that consent has not been communicated, or if previously communicated has been withdrawn. The absence of a verbal “no” or the absence of a nonverbal communication of “no” does not necessarily mean that consent has been communicated. Because interpreting non-verbal actions may lead to misunderstanding and a violation of this policy, students are strongly encouraged to err on the side of caution and not rely solely on the non-verbal actions of another person in concluding that the other person has communicated consent. The University urges students to communicate with one another before engaging in a sexual act to ensure that they both wish to engage in the same sexual act.~~
- ~~( ) Consent cannot be obtained by or inferred from:~~
- ~~1. silence that is not accompanied by non-verbal actions conveying a clear agreement to engage in a particular sexual act;~~
  - ~~1. consent communicated by the other person on a previous occasion;~~
  - ~~1. consent communicated to another person;~~
  - ~~1. the other person’s failure to resist physical force (however, for purposes of this policy, the other person’s resistance to physical force will be viewed as a clear demonstration that the person has not communicated consent);~~
  - ~~1. the sexual arousal of the other person;~~
  - ~~1. a current or previous dating, romantic, intimate, or sexual relationship with the other person;~~
  - ~~1. currently or previously cohabitating with the other person;~~
  - ~~1. the other person’s attire;~~

- ~~1. the other person's reputation;~~
- ~~1. the other person's giving or acceptance of gifts; or~~
- ~~1. the other person's extension or acceptance of an invitation to go to a private residence, room, or location.~~
- ~~(-) Consent is not voluntary if it is obtained by coercion. Nor is consent voluntary if it is obtained from a person who is incapacitated if one knows (or a reasonable person would know) that the other person is incapacitated. Because the incapacitation of another person may be difficult for one to discern, students are strongly encouraged to err on the side of caution (i.e., when in doubt, assume that the other person is incapacitated and therefore unable to give consent.)~~
- ~~(-) Consent must be continual, which means that consent must exist from the beginning to the end of each sexual encounter and for each specific sexual act that occurs during a sexual encounter. A person has a right to change his/her mind; thus, consent to engage in a specific sexual act may be withdrawn by a person at any time. A withdrawal of consent is communicated through clear words and/or clear non-verbal actions that indicate that a person no longer agrees to engage in a specific sexual act. Once a person's withdrawal of consent has been communicated, the other person must cease the specific sexual act and must obtain consent before reinitiating the specific sexual act or any other sexual act. Consent is automatically withdrawn when a person becomes incapacitated. Consent to one type of sexual contact or sexual intercourse (e.g., oral intercourse) does not constitute or imply consent for another type of sexual contact or sexual intercourse (e.g., vaginal intercourse), whether during a sexual encounter or during a previous sexual encounter. The University urges students to communicate with one another throughout a sexual encounter to ensure that any progression of sexual activity is done with consent.~~
- ~~(1) The term "course of conduct" means two (2) or more acts, including, but not limited to, acts in which the stalker directly, indirectly, or through third parties, by any action, method, device, or means, follows, monitors, observes, surveils, threatens, or communicates to or about another person, or interferes with another person's property.~~
- ~~(1) The term "dating violence" means violence committed by a person who is or has been in a social relationship of a romantic or intimate nature with the victim of the violence. The existence of such a relationship shall be determined based on the reporting party's statement and with consideration of the following factors: (1) the length of the relationship; (2) the type of relationship; and (3) the frequency of interaction between the persons involved in the relationship. Dating violence includes, without limitation, sexual or physical abuse or the threat of such abuse.~~
- ~~(1) The term "domestic violence" means a felony or misdemeanor crime of violence committed:~~
  - ~~(a) by a current or former spouse or intimate partner of the victim;~~
  - ~~(a) by a person with whom the victim shares a child in common;~~
  - ~~(a) by a person who is cohabitating with or has cohabitated with the victim as a spouse or intimate partner;~~
  - ~~(a) by a person similarly situated to a spouse of the victim under the domestic or family violence laws of the jurisdiction in which the crime of violence occurred; or~~

- ~~(a) — by any other person against an adult or youth victim who is protected from that acts under the domestic or family violence laws of the jurisdiction in which the crime of violence occurred.~~
- ~~(1) — The term “good faith” means having a belief in the truth of information that a reasonable person in the same situation could have, based on the information known to the person communicating the information at the time the information was communicated by that person. Information is not communicated in good faith if it is communicated with knowing or reckless disregard for information that would negate the former information.~~
- ~~(1) — The term “incapacitated” or “incapacitation” means a temporary or permanent physical or mental state in which a person cannot make informed, rational judgments (e.g., judgments concerning sexual contact, sexual intercourse, or sexual exploitation) because: the person lacks the physical or mental capacity to understand the nature or consequences of their words and/or conduct; and/or the person is unable to physically or verbally communicate consent. Incapacitation can be voluntary or involuntary. Incapacitation is determined based on the totality of the circumstances. Incapacitation may result from: sleep; unconsciousness; intermittent consciousness; temporary or permanent physical or mental disability; involuntary physical restraint; or the influence of alcohol, drugs, or other substances, including, without limitation, substances used to facilitate sexual assault (e.g., Rohypnol, Ketamine, GHB, and Burundanga). Alcohol and drugs are common causes of incapacitation. When alcohol or drugs are involved, Incapacitation is a state beyond mere drunkenness or intoxication. The impact of alcohol and drugs varies from person to person; however, warning signs of incapacitation may include, without limitation: lack of control over physical movements (e.g., inability to dress/undress without assistance; inability to walk without assistance); lack of awareness of circumstances or surroundings; vomiting; unresponsiveness; and inability to communicate coherently. A person who is under the age of eighteen (18) (i.e., a minor) is incapable of giving consent; however, a person who is at least the age of thirteen (13) and less than the age of eighteen (18) is capable of giving consent to sexual acts with another person who is less than four (4) years older than them.~~
- ~~(1) — The term “reasonable person” means a sober, objectively reasonable person in the same situation, and with the same sex, gender identity, and sexual orientation as the person whose words and/or conduct are being evaluated.~~
- ~~(1) — The term “relationship violence” means dating violence and/or domestic violence.~~
- ~~(1) — The term “retaliation” means an act (i) taken by a student (including an act taken through a third party) because of another person’s participation in a protected activity (ii) that would discourage a reasonable person from engaging in protected activity. Protected activity includes a person’s good faith: (i) opposition to conduct prohibited under the Standards of Conduct; (ii) report to the University about conduct prohibited under the Standards of Conduct to the University; (iii) participation (or reasonable expectation of participation) in any manner in an investigation, meeting, hearing, or interim measure; or (iv) exercise of rights or responsibilities under any provision of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. Retaliation violates the Standards of Conduct regardless of whether the underlying allegation of a violation of the Standards of Conduct is ultimately found to have merit. Retaliation can include an act taken against a person’s family, friends, advisors, and/or other persons reasonably expected to provide information in connection with a University investigation or hearing.~~
- ~~(1) — The term “sexual assault” means engaging in sexual contact or sexual intercourse with another person without the consent of that person.~~
- ~~(1) — The term “sexual contact” means the intentional touching of another person (including another person’s clothing) in a sexual manner with any part of one’s body or with any~~

~~object. Sexual contact also means intentionally causing another person to touch themselves (including their clothing) in a sexual manner. Whether a touching was done in a sexual manner is determined from the perspective of a sober, objectively reasonable person in the same situation and with the same sex, gender identity, and sexual orientation as the person who was touched.~~

- ~~(1) The term "sexual exploitation" means an act or attempted act by a person for the purpose of sexual arousal or gratification, financial gain, or other personal benefit through the abuse or exploitation of another person's sexuality. Examples of sexual exploitation include, without limitation: observation of a person who is undressed or engaging in sexual contact or sexual intercourse, without the consent of all persons being observed (in a place where a person has a reasonable expectation of privacy); creation or distribution of images, photography, an audiotape, or a videotape of sexual contact, sexual intercourse, or a person's intimate parts (i.e., genitalia, groin, breasts, buttocks) without the consent of all persons being recorded or photographed; prostituting another person; allowing others to observe, either in person or electronically, sexual contact or sexual intercourse without the consent of all persons involved in the sexual contact or sexual intercourse (in a place where a person has a reasonable expectation of privacy); and knowingly exposing another person to a sexually transmitted infection without informing the other person that one has a sexually transmitted infection.~~
- ~~(1) The term "sexual harassment" means with respect to the conduct of a student, unwelcome conduct of a sexual nature that is so severe or pervasive, and objectively offensive, that it substantially interferes with the ability of a person to work, learn, live, or participate in or benefit from the services, activities, or privileges provided by the University. In no event shall the term "sexual harassment" be construed to prohibit speech protected by the First Amendment to the United States Constitution (e.g., mere insulting or offensive speech). Sexual harassment may include, for example, unwelcome sexual advances, requests for sexual favors, and acts of sexual assault. The term "sexual harassment" also means, with respect to the conduct of a student employee (when acting as a student employee): unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when: submission to such conduct is made either explicitly or implicitly a term or condition of an individual's participation in an educational program; submission to or rejection of such conduct by an individual is used as the basis for evaluation or advancement in an educational program; or such conduct has the purpose or effect of unreasonably interfering with an individual's educational performance or creates an intimidating, hostile or offensive educational environment. Sexual harassment is a form of sex discrimination. To determine whether conduct constitutes sexual harassment, consideration shall be given to the totality of the circumstances, including without limitation: the context in which the conduct and/or words occurred; and the frequency, nature, and severity of the conduct and/or words.~~
- ~~(1) The term "sexual intercourse" means the penetration, no matter how slight, of the vagina or anus with any body part or object; or oral penetration by a sex organ of another person.~~
- ~~(1) The term "sexual misconduct" means sexual harassment, sexual assault, and/or sexual exploitation.~~
- ~~(1) The term "stalking" means engaging in a course of conduct directed at a specific person that would cause a reasonable person to: (1) fear for the person's safety or the safety of others; or (2) suffer substantial emotional distress. For the purposes of this definition, the term "reasonable person" means a reasonable person under similar circumstances and with similar identities to the victim.~~
- ~~(1) The term "substantial emotional distress" means significant mental suffering or anguish that may, but does not necessarily, require medical or other professional treatment or~~



~~counseling.~~

### **1720-03-03-.03 JURISDICTION.**

- (1) The Standards of Conduct, Chapter 1720-03-03-.04, apply to conduct that occurs on University-controlled property.
- (2) The University also has the discretion to discipline a student for an act in violation of the Standards of Conduct that occurs off University-controlled property if the conduct adversely affects the interests of the University, including, but not limited to, conduct which:
  - (a) Occurs in connection with a University-affiliated activity, including, but not limited to, an overseas study program or a clinical, field, internship, or in-service experience;
  - (b) Involves another member of the University community; or
  - (c) Threatens, or indicates that the student may pose a threat to, the health or safety of him/herself or others or the security of any person's property, including, but not limited to, alcohol-related offenses, drug-related offenses, arson, battery, fraud, hazing, participation in group violence, rape, sexual assault or misconduct, stalking, and theft.
- (3) The Standards of Conduct have been adopted in furtherance of the University's interests and serve to supplement, rather than substitute for, the enforcement of the civil and criminal law. Accordingly, University disciplinary action may be instituted against a student charged with conduct that potentially violates both the criminal law and the Standards of Conduct without regard to the pendency of criminal charges or civil litigation. At the discretion of the Chief Student Affairs Officer, or his/her designee, disciplinary action relating to a violation of the Standards of Conduct may be carried out prior to, simultaneously with, or following criminal proceedings. Students accused of violating the Standards of Conduct may not challenge the University disciplinary proceedings on the grounds that criminal charges, civil litigation, or other University proceedings regarding the same incident are pending or have been terminated, dismissed, reduced, or not yet adjudicated.
- (4) Each student shall be responsible for his/her conduct from the time of application for admission through the actual awarding of a degree, even though conduct may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment (and even if conduct is not discovered by the University until after a degree is awarded). Should a student withdraw from the University with disciplinary charges pending, the student's academic record and/or ability to register for classes may be encumbered by the appropriate University office.
- (5) Graduate or professional programs within the University may initiate charges against students for alleged violations of professional standards or ethics as a separate issue or as an extension of alleged acts of academic dishonesty or other violations of the Standards of Conduct.

**1720-03-03-.04 STANDARDS OF CONDUCT.** Students are prohibited from engaging in the following types of misconduct:

- (1) Academic Dishonesty. Cheating, plagiarism, or any other act of academic dishonesty, including, without limitation, an act in violation of the Honor Code.
- (2) False Information. Providing false information to a University official.



- (3) Misuse of Information in Connection with University Investigation or Hearing. Falsifying, distorting, misrepresenting, or withholding information in connection with a University investigation or hearing.
- (4) Misconduct Relating to Records or Identification. Forging, altering, destroying, falsifying, or misusing records or identification, whether in print or electronic form.
- (5) Harm to Others. Causing physical harm to any person; endangering the health, safety, or welfare of any person; engaging in conduct that causes a reasonable person to fear harm to his/her health or safety; or making an oral or written statement that an objectively reasonable person hearing or reading the statement would interpret as a serious expression of an intent to commit an act of unlawful violence to a particular individual or group of individuals.
- (6) Harassment. Unwelcome conduct that is so severe, pervasive, and objectively offensive, that it substantially interferes with the ability of a person to work, learn, live, or participate in or benefit from the services, activities, or privileges provided by the University. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution (e.g., mere insulting or offensive speech).
- (7) Sexual Misconduct, Relationship Violence, Stalking, and/or Retaliation. Violating the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and/or Retaliation.
- (8) Invasion of Privacy. Invasion of another person's privacy when that person has a reasonable expectation of privacy, including, without limitation, using electronic or other means to make a video or photographic record of any person in a location in which the person has a reasonable expectation of privacy, without the person's knowledge or consent. This includes, but is not limited to, making a video or photographic record of a person in shower/locker rooms or restrooms. The storing, sharing, and/or distributing of such nonconsensual recordings by any means is also prohibited.
- (9) Private or Public Property. Any of the following conduct with respect to private or public property, including, without limitation, University-controlled property: theft; misappropriation; unauthorized possession, use, sale, duplication, or entry; vandalism; destruction; damage; or conduct that is reasonably likely to cause damage.
- (10) Hazing. Any intentional or reckless act, on or off University-controlled property, by one (1) student, acting alone or with others, which is directed against any other student, which endangers the mental or physical health, safety, or welfare of that student, or which induces or coerces a student to endanger his or her mental or physical health, safety, or welfare. "Hazing" does not include customary athletic events or similar contests or competitions and is limited to those actions taken and situations created in connection with initiation into or affiliation with any organization.
- (11) Disorderly Conduct. Fighting or other physically violent or physically threatening conduct; creating a hazardous or physically offensive condition by any act that serves no legitimate purpose; making noise that could unreasonably disturb others who are carrying on lawful activities; or conduct that breaches the peace.
- (12) Lewd, Indecent, or Obscene Conduct. Engaging in lewd, indecent, or obscene conduct, including, without limitation, public exposure of one's sexual organs, public urinating, and public sexual acts.

- (13) Imminent Lawless Action. Engaging in speech either orally or in writing that is directed to inciting or producing imminent lawless action and is likely to incite or produce such action.
- (14) Fire Safety. Any act of arson; falsely reporting a fire, the presence of an explosive or incendiary device, or other emergency; setting off a false fire alarm; or tampering with, removing, or damaging fire alarms, fire extinguishers or any other safety or emergency equipment from its proper location except when removed in a situation in which there is a reasonable belief of the need for such equipment.
- (15) University Keys, Access Cards, and Identification. Possessing, using, or duplicating University keys, University access cards, or University identification cards without authorization from the University.
- (16) Information Technology. Theft, misuse, or unauthorized use of information technology facilities, resources, or access codes, including, without limitation: unauthorized entry into or transfer of a file; using another person's identification and/or password without that person's consent; using information technology facilities or resources to interfere with the work of another student, faculty member, staff member, or other member of the University community; using information technology facilities or resources to interfere with normal operation of a University information technology system or network; circumventing University information technology system or network security; using information technology facilities or resources in violation of copyright laws; falsifying an e-mail header; and conduct that violates the University's policy on the acceptable use of information technology resources.
- (17) Weapons. Possessing, carrying, using, storing, or manufacturing any weapon on University-controlled property or in connection with a University-affiliated activity, unless authorized in writing by the Chief of Police or his/her designee or unless federal or state law affirmatively gives a student a right, irrespective of this Chapter, to possess or carry a weapon on University-controlled property or in connection with a University-affiliated activity.
- (18) Alcohol-Related Conduct – University Property or University Activities. Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages on University-controlled property or in connection with a University-affiliated activity unless expressly permitted by University policy.
- (19) Alcohol-Related Conduct Prohibited by Law. Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages, if prohibited by federal, state, or local law.
- (20) Providing Alcohol to Underage Person. Providing an alcoholic beverage to a person younger than twenty-one (21) years of age, unless permitted by law.
- (21) Drugs and Drug Paraphernalia. Using, manufacturing, possessing, distributing, selling, dispensing, or being under the influence of drugs, if prohibited by federal, state, or local law; using, manufacturing, possessing, distributing, or selling drug paraphernalia, if prohibited by federal, state, or local law; using or possessing a prescription drug if the prescription was not issued to the student; or distributing or selling a prescription drug to a person to whom the prescription was not originally issued.
- (22) Failure to Fulfill a University Financial Obligation. Failing to timely fulfill a University bill, account, or other financial obligation owed to the University.
- (23) Failure to Respond, Comply, or Identify. Failing to respond to a request to report to a University administrative office; failing to comply with a lawful directive of a University

employee or other public official acting within the scope of his/her duties; or failing to identify oneself to a University employee or other public official acting within the scope of his/her duties when requested to do so.

- (24) Failure to Appear. Failing to appear at a University hearing, including, without limitation, a hearing of a University conduct board, following a request to appear either as a party or as a witness.
- (25) Violation of Interim Administrative Actions, Disciplinary Sanctions, or Conditions of Re-Enrollment. Violating the terms of a no-contact directive, an interim restriction (e.g., interim suspension), a disciplinary sanction, or a condition of re-enrollment imposed by the University.
- (26) Obstruction or Disruption of University Activity. Obstructing or disrupting teaching, learning, studying, research, public service, administration, disciplinary proceedings, emergency services, or any other University-affiliated activity, or the free flow of pedestrian or vehicular traffic on University-controlled property. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution.
- (27) Violation of University Policy or Rule. Violating a University policy or rule, including, without limitation, University policies or rules relating to facilities' use, smoking, the acceptable use of information technology resources, research misconduct, finder's fees relating to clinical investigations involving human subjects or access to University data or materials, University libraries, dining services, parking or transportation, University identification card use, sexual harassment, residence halls, and registered student organizations.
- (28) Act Prohibited by Law. Committing an act that is prohibited by local, state, or federal law.
- (29) Attempted Violation; Accessory to Violation. Attempting to commit a violation of a Standard of Conduct or being an accessory to the commission of an act or attempted act in violation of a Standard of Conduct.
- (30) Retaliation. Engaging in retaliation. Retaliation is an act or omission committed by a student because of another person's participation in a protected activity that would discourage a reasonable person from engaging in protected activity. Retaliation violates the Standards of Conduct regardless of whether the underlying allegation of a violation of the Standards of Conduct is ultimately found to have merit. Retaliation can include, without limitation: (1) an act or omission committed against a person's family, friends, advisors, and/or other persons reasonably expected to provide information in connection with a University investigation or hearing; and (2) an act or omission committed by a student through a third party.

**~~1720-03-03-04 STANDARDS OF CONDUCT.~~** A student or student organization may be disciplined for the following types of misconduct:

- ~~(1) Cheating, plagiarism, or any other act of academic dishonesty, including but not limited to an act in violation of the Honor Code.~~
- ~~(1) Providing false information to a University official.~~
- ~~(1) Falsifying, distorting, misrepresenting, or withholding information in connection with a University investigation or hearing.~~
- ~~(1) Forging, altering, destroying, falsifying, or misusing records, identification, or documents, whether in print or electronic form.~~

- ~~(1) — Causing physical harm to any person (including oneself); endangering the health or safety person (including oneself); engaging in conduct that causes a reasonable person to fear harm to his/her health or safety; or making an oral or written statement that an objectively reasonable person hearing or reading the statement would interpret as a serious expression of an intent to commit an act of unlawful violence to a particular individual or group of individuals.~~
- ~~(1) — Harassment, which is defined as unwelcome conduct that is so severe or pervasive, and objectively offensive, that it substantially interferes with the ability of a person to work, learn, live, or participate in or benefit from the services, activities, or privileges provided by the University. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution (e.g., mere insulting or offensive speech).~~
- ~~(1) — Engaging in sexual misconduct, relationship violence, or stalking.~~
- ~~(1) — Invasion of another person's privacy when that person has a reasonable expectation of privacy, including, but not limited to, using electronic or other means to make a video or photographic record of any person in a location in which the person has a reasonable expectation of privacy, without the person's knowledge or consent. This includes, but is not limited to, making a video or photographic record of a person in shower/locker rooms or restrooms. The storing, sharing, and/or distributing of such unauthorized recordings by any means is also prohibited.~~
- ~~(1) — Theft, misappropriation, unauthorized possession, or unauthorized sale of private or public property, including but not limited to University-controlled property.~~
- ~~(1) — Vandalizing, destroying, damaging, engaging in conduct that reasonably could cause damage to, or misusing private or public property, including but not limited to University-controlled property.~~
- ~~(1) — Participating in hazing. "Hazing" is defined as any intentional or reckless act, on or off University-controlled property, by one (1) student, acting alone or with others, which is directed against any other student, which endangers the mental or physical health or safety of that student, or which induces or coerces a student to endanger his or her mental or physical health or safety. "Hazing" does not include customary athletic events or similar contests or competitions and is limited to those actions taken and situations created in connection with initiation into or affiliation with any organization.~~
- ~~(1) — Engaging in disorderly conduct, which means: fighting or other physically violent or physically threatening conduct; creating a hazardous or physically offensive condition by any act that serves no legitimate purpose; making noise that could unreasonably disturb others who are carrying on lawful activities; or conduct that breaches the peace.~~
- ~~(1) — Engaging in lewd, indecent, or obscene conduct. "Lewd, indecent, or obscene" conduct includes, but is not limited to, public exposure of one's sexual organs, public urinating, and public sexual acts.~~
- ~~(1) — Engaging in speech, either orally or in writing, that is directed to inciting or producing imminent lawless action and is likely to incite or produce such action.~~
- ~~(1) — Any act of arson; falsely reporting a fire, the presence of an explosive or incendiary device, or other emergency; setting off a false fire alarm; or tampering with, removing, or damaging fire alarms, fire extinguishers or any other safety or emergency equipment from its proper location except when removed in a situation in which there is a reasonable belief of the need for such equipment.~~

- ~~(1) Possessing, using, or duplicating University keys, access cards, or identification cards without authorization; possessing, using, or entering University-controlled property without authorization.~~
- ~~(1) Theft, misuse, or unauthorized use of information technology facilities, resources, or access codes, including, but not limited to: unauthorized entry into or transfer of a file; using another person's identification and/or password without that person's consent; using information technology facilities or resources to interfere with the work of another student, faculty member, staff member, or other member of the University community; using information technology facilities or resources to interfere with normal operation of a University information technology system or network; circumventing University information technology system or network security; using information technology facilities or resources in violation of copyright laws; falsifying an e-mail header; and conduct that violates the University's policy on the Acceptable Use of Information Technology Resources.~~
- ~~(1) Possessing, using, storing, or manufacturing any weapon or any facsimile of a weapon on University-controlled property or in connection with a University-affiliated activity, unless authorized in writing by the Chief of Police or his/her designee.~~
- ~~(1) Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages on University-controlled property or in connection with a University-affiliated activity.~~
- ~~(1) Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages, if prohibited by federal, state, or local law.~~
- ~~(1) Providing an alcoholic beverage to a person younger than twenty one (21) years of age, unless permitted by law.~~
- ~~(1) Using, manufacturing, possessing, distributing, selling, dispensing, or being under the influence of drugs or drug paraphernalia, if prohibited by federal, state, or local law; using or possessing a prescription drug if the prescription was not issued to the student; or distributing or selling a prescription drug to a person to whom the prescription was not originally issued.~~
- ~~(1) Failing to pay a University bill, account, or other University financial obligation.~~
- ~~(1) Failing to respond to a request to report to a University administrative office; failing to comply with a lawful directive of a University employee or other public official acting within the scope of his/her duties; or failing to identify oneself to a University employee or other public official acting within the scope of his/her duties when requested to do so.~~
- ~~(1) Failing to appear at a University hearing, including, but not limited to, a hearing of a University judicial board, following a request to appear either as a party or as a witness.~~
- ~~(1) Violating the terms of an interim suspension, a no-contact directive, or a disciplinary penalty imposed by the University.~~
- ~~(1) Obstructing or disrupting teaching, learning, studying, research, public service, administration, disciplinary proceedings, emergency services, or any other University-affiliated activity, or the free flow of pedestrian or vehicular traffic on University-controlled property. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution.~~
- ~~(1) Violating a University policy or rule, including but not limited to University policies or rules~~

~~relating to facilities use, smoking, the acceptable use of information technology resources, research or service misconduct, finder's fees relating to clinical investigations involving human subjects or access to University data or materials, University libraries, dining services, parking or transportation, University identification card use, sexual harassment, residence halls, and registered student organizations.~~

- ~~(1) Committing an act that is prohibited by local, state, or federal law.~~
- ~~(1) Attempting to commit a violation of a Standard of Conduct or being an accessory to the commission of an act or attempted act in violation of a Standard of Conduct.~~
- ~~(1) Engaging in retaliation.~~

#### 1720-03-03-.05 PENALTIESANCTIONS.

- (1) Disciplinary ~~penalties-sanctions~~ are primarily intended to educate students and student organizations about appropriate behavior, encourage students and student organizations to take responsibility for misconduct, promote the personal and professional development of students, discourage other students and student organizations from violating the Standards of Conduct, and protect members of the University community. The ~~penalties-sanctions~~ imposed should be appropriate for the particular case based on the gravity of the offense (including without limitation how the violation affected or reasonably could have affected other members of the University community). Efforts are made to keep ~~penalties-sanctions~~ consistent with those applied to similar cases. In recognition of the fact that the University is an educational institution with a rehabilitative point of view, ~~penalties-sanctions~~ are assessed in accordance with conditions accompanying each offense. Consideration may also be given to the student's or student organization's conduct record; the student's or student organization's responsiveness to the conduct process; whether the student acted in self-defense, and, if so, whether the amount of force used was reasonable under the circumstances; student academic classification; and other aggravating or mitigating factors. ~~PenaltiesSanctions~~ may be applied retroactively to the date of the offense. Intoxication or impairment because of alcohol, drugs, chemicals, or other substances does not diminish or excuse a student violation of the Standards of Conduct. Additionally, official violation notifications are given by the appropriate office, and official records are maintained in that office.
- (2) The following ~~penalties-sanctions~~ may be imposed on any student found to have violated the Standards of Conduct:
  - (a) Disciplinary Warning. A disciplinary warning is a notice that the student is violating or has violated the Standards of Conduct. It is used for minor violations and consists of a restatement of the regulation violated with an official warning concerning future action.
  - (b) Disciplinary Reprimand. A disciplinary reprimand is used for minor violations of the Standards of Conduct when it is evident the misconduct occurred with knowledge and awareness of applicable Standards of Conduct. A reprimand indicates that further violations will result in more severe disciplinary actions. Reprimands may be given to students in either verbal or written form.
  - (c) Loss of Privilege. Loss of privilege is a ~~penaltysanctions~~ imposed most commonly cases involving violation of University rules governing hours, social standards, intramural sports, or misuse of University facilities. The loss of privilege is ordinarily established for a specific period of time, and actions are recorded in appropriate records. Privileges that maybe lost include, but are not limited to, scholarships, stipends, participation in extracurricular activities (e.g. intramurals), participation



in social activities, and use of certain University-controlled property (e.g., information technology resources).

- (d) Education. Students may be required to attend classes, at their own expense, dealing with issues such as the consequences of alcohol or drug use, civility, ethics, or other topics as deemed appropriate by the Chief Student Affairs Officer or his/her designee.
  - (e) Restitution. Restitution may be required in situations that involve destruction, damage, or loss of property, or unreimbursed medical expenses resulting from physical injury. Restitution may take the form of a monetary payment or appropriate service to repair or otherwise compensate for the destruction, damage, or loss.
  - (f) Disciplinary Probation. Disciplinary probation means that a student is permitted to remain in the University on a probationary status. Should a violation occur during probation, the student is normally suspended. Disciplinary probation is recorded on the student's personnel file in the Office of Student Affairs. Conditions of probation are specific to the individual case and may include loss of eligibility to serve as a student organization officer or participation in major student activities. Any specific probation conditions are described in a personal letter to the student. Other conditions of probation are specific to each individual case and may include a requirement of community service or other requirement or restriction.
  - (g) Suspension. The [penaltysanctions](#) of suspension is imposed in cases of serious or repeated misconduct or a violation of probation. A student who is suspended shall have his/her registration cancelled and is not eligible to apply for readmission for a designated period of time. Suspensions are always recorded on the student's permanent record. (Persons suspended from the University may not return to the campus for the duration of their suspension, except to conduct official business with an administrative officer or faculty member).
  - (h) Permanent Dismissal. Permanent dismissal means that a student is permanently barred from matriculating as a student at the University of Tennessee Health Science Center. This [penaltysanctions](#) is used when the violation of one (1) or more of the Standards of Conduct is deemed so serious as to warrant total and permanent disassociation from the University community without the possibility of re-enrollment; or when, by his/her repeated violation of the Standards of Conduct, a student exhibits blatant disregard for the health and safety of other members of the University community or the University's right to establish rules of conduct.
  - (i) Revocation of Degree. Revocation of a degree means revoking a student's a degree already awarded by the University. Revocation of a degree shall be approved by the University of Tennessee Board of Trustees.
- (3) A disciplinary hold may be placed on a student's account until the completion of the student disciplinary process and/or until the student satisfies the terms and conditions of any penalties imposed. A student who, at the time of commencement, is subject to a continuing disciplinary penalty or an unresolved disciplinary charge shall not be awarded a degree before the conclusion of all penalties and/or resolution of all disciplinary charges.
- (4) The following [penaltiesanctions](#) may be imposed on a student organization found to have violated the Standards of Conduct:
- (a) Disciplinary Warning. A disciplinary warning is used for minor violations of the Standards of Conduct and consists of a restatement of the Standard of Conduct

violated with an official warning concerning future action.

- (b) Loss of Privilege. This [penaltysanctions](#) is intended to serve as a reminder of the Standards of Conduct and is for a specific period of time. Examples of privileges that may be lost include participating in extracurricular activities (e.g., intramurals), housing privileges, participating in social activities, and using certain University-controlled property.
  - (c) Education. Student organizations or their representatives may be required to attend classes, at their own expense, dealing with issues such as the consequences of alcohol or drug use, civility, ethics, or other topics as deemed appropriate by the Chief Student Affairs Officer, Student Conduct Officer, and/or his/her designee.
  - (d) Restitution. Restitution may be required in situations that involve destruction, damage, or loss of property, or unreimbursed medical expenses resulting from physical injury. Restitution may take the form of a monetary payment or appropriate service to repair or otherwise compensate for the destruction, damage, or loss.
  - (e) Social Probation. This [penaltysanctions](#) prohibits a student organization from sponsoring or participating in specified social activities. While on social probation, a student organization may not host social events or participate in University-affiliated activities. Any exceptions to social probation must be approved, in advance, by the Chief Student Affairs Officer or his/her designee.
  - (f) Disciplinary Probation. Disciplinary probation means that a student organization is permitted to retain University registration on a probationary status. Violation of the Standards of Conduct during the period of disciplinary probation may result in more serious [penaltiesanctions](#), including revocation of University registration.
  - (g) Revocation of University Registration. In cases of serious misconduct, a student organization's University registration may be revoked.
- (5) More than one (1) of the [penaltiesanctions](#) listed above may be imposed for any single violation of the Standards of Conduct.
  - (6) Except for an interim suspension, disciplinary [penaltiesanctions](#) shall not become effective until after opportunities for appeal have been exhausted. [PenaltiesSanctions](#) may be applied retroactively to the date of the offense. Coursework performed while disciplinary charges are pending or disciplinary proceedings are underway shall be considered conditional. Coursework may be affected or disregarded based on a final finding of misconduct or the [penaltysanctions](#) imposed, which may result in loss of course credit, a loss of tuition and/or fees, a delay in the awarding of a degree, or revocation of a degree that was awarded prior to a final decision in the disciplinary proceeding.

**1720-03-03-.06 NO CONTACT DIRECTIVE.** In cases involving allegations of assault, injury, sexual abuse, harassment, or in cases where there is reason to believe continued contact between a student/student organization and specific persons, including complainants and witnesses, may interfere with those persons' security, safety or ability to participate effectively in work or studies, the Chief Student Affairs Officer, or his/her designee, may require that the student/student organization not have verbal, physical, or written contact with specific persons for a definite or indefinite period of time. The student/student organization will receive notice of the no contact directive. Any student, faculty or staff member or other person with a reasonable justification may request that a no contact directive be issued to a student/student organization. In addition to an internal University no contact directive, complainants are advised that other similar options exist and can be obtained from law enforcement and civil and criminal courts.



**1720-03-03-.07 INTERIM SUSPENSION.**

- (1) When the Chief Student Affairs Officer or his/her designee has reasonable cause to believe that a student's or student organization's continued presence on University-controlled property or at University-affiliated activities poses a significant risk of substantial harm to the health or safety of others or to property or poses an ongoing threat to the disruption of, or interference with, the normal operations of the University, the Chief Student Affairs Officer or his/her designee may impose an interim suspension prior to the conclusion of a full hearing on the alleged misconduct.
- (2) An interim suspension shall be confirmed by a notice that explains the basis for the interim suspension and shall remain in effect until the conclusion of a full hearing in accordance with the rules of the University of Tennessee, which shall be held without undue delay.
- (3) Within three (3) business days of the imposition of the suspension, the student or student organization shall be offered an opportunity to appear personally before the Chief Student Affairs Officer or his/her designee in order to discuss the following issues only: (i) the reliability of the information concerning the student's or student organization's conduct; and (ii) whether the conduct and surrounding circumstances reasonably indicate that the student's or student organization's continued presence on University-controlled property or at University-affiliated activities poses a significant risk of substantial harm to the health or safety of others or to property or poses an imminent threat of disruption of or interference with the normal operations of the University.
- (4) During an interim suspension, the student or student organization shall be denied access to University-controlled property, including residence halls, and all other University-affiliated activities or privileges for which the student might otherwise be eligible, as the Chief Student Affairs Officer or his/her designee determines in his/her sole discretion to be appropriate. A student or student organization who receives an interim suspension and violates the terms of the interim suspension shall be subject to further disciplinary action and may be treated as a trespasser. Permission to be on University-controlled property or participate in University-affiliated activities may be granted by the Chief Student Affairs Officer or his/her designee.

**1720-03-03-.08 HEARING PROCEDURES.**

- (1) Conflicts of Interest
  - (a) The student conduct process must be carried out in a manner that is free from conflicts of interest consistent with due process of law.
  - (b) In cases involving allegations of sexual assault, dating violence, domestic violence, or stalking, the student conduct process must include protections for the accused student/respondent analogous to, and no less protective than, the conflict of interest provisions of Tennessee Code Annotated § 4-5-303. Notwithstanding the preceding sentence: (1) an attorney for the University is allowed to provide legal advice to multiple University employees who serve in different roles in the process of disciplining a student; and (2) the University is allowed to provide the alleged victim/complainant with equivalent rights as the accused student/respondent during the student conduct process.
- (2) Unless otherwise specified in the published policies and procedures of the ~~UT Health Science Center~~ **University**, a student charged with misconduct or who is entitled to an opportunity for a hearing will, upon request, be provided a hearing in accordance with the following procedures:

- (a) Notice - A person charged with misconduct will receive written notification of the following:
1. The substance of the charge(s) against him/her.
  2. The disciplinary action taken or proposed.
  3. His/her right to a hearing should he/she wish to contest the charge(s) or action.
  4. To whom a request for a hearing should be addressed.
  5. That a request for a hearing must be made within five (5) days of the person's receipt of this notice.
  6. His/her right to be accompanied by no more than one (1) advisor during the hearing, including but not limited to a parent, spouse, friend, or attorney. The role of the advisor shall be limited to providing advice or support to the accused student. Even if accompanied by an advisor, the accused student is responsible for presenting his/her own case to the hearing panel. An advisor is not permitted to: introduce evidence; raise objections; present arguments; address directly the members of the hearing panel, the student conduct officer, or any witnesses participating in the hearing; or otherwise participate in the hearing. In consideration of the limited role of the advisor, and of the compelling interest of the University to expeditiously conclude the matter, a hearing shall not be delayed due to the unavailability of an advisor.
  7. His/her rights to a hearing under the Uniform Administrative Procedures Act, T.C.A. § 4-5-101 et seq. ("UAPA"). In the absence of a voluntary written waiver of his/her rights to a hearing under the provisions of the UAPA, a requested hearing will be conducted in accordance with the University's rules for conducting contested case proceedings under the UAPA, Chapter 1720-01-05, and the hearing procedures in this Section .08 shall not apply.
- (b) Notice of Hearing Concerning Allegations of Sexual Assault, Dating Violence, Domestic Violence, or Stalking. At least seventy-two (72) hours prior to a hearing under Section .08(3) concerning allegations of sexual assault, dating violence, domestic violence, or stalking, the University shall provide the accused student/respondent with notice of the following: (1) the time, place, and date of the hearing; (2) the name of each witness the University expects to present at the hearing and those the University may present if the need arises; (3) notice of the right to request a copy of the University's investigative file, redacted in accordance with the Family Educational Rights and Privacy Act of 1974, (20 U.S.C. § 1232g), and the federal regulations implementing that statute, as amended; and (4) notice of the right to request copies of all documents, copies of all electronically stored information, and access to tangible evidence that the University has in its possession, custody, or control and may use to support claims or defenses, unless the use would be solely for impeachment.
- (c) Hearing Panel or Hearing Examiner - A requested hearing will be provided by a panel of individuals or a hearing examiner, selected in accordance with policies of ~~UT Health Science Center~~ the University or, in the absence of applicable policies or procedures, by the Chancellor of the ~~UT Health Science Center~~ University or

his/her designee. The hearing will be conducted by a panel chairman similarly selectd. Panel members shall be impartial and anyone lacking such impartiality shall recuse himself or be removed by the Chancellor of the ~~UT Health Science Center~~University or his/her designee upon the request of any party to a hearing. Neither the Student Conduct Officer nor a person who investigated the allegations of misconduct against the accused student shall be a member of the hearing panel or advise the hearing panel.

- (d) Hearing Process - The chairman of a hearing panel or hearing examiner will conduct the hearing, without regard to technical rules of procedure, in such manner as will best serve the cause of justice within the following general guidelines:
1. Each party to a hearing will be afforded a full and fair opportunity to present all evidence including witnesses, reasonably relating to the charge or action at issue; evidence which is irrelevant, immaterial, repetitious or voluminous may be limited.
  2. The hearing panel or examiner will consider all evidence presented, giving due consideration to the credibility or weight of each item presented; technical rules of evidence will not apply.
  3. Each party will have the right to question opposing witnesses.
  4. A record will be made of the hearing procedures. However, defects in the record will not invalidate the proceedings.
  5. The University will have the burden of providing, by a preponderance of the evidence, the truth of the charge(s) at issue. Where the charge(s) is found to be true, the person charged will have the burden of proving that the disciplinary action taken or proposed is arbitrary, capricious, or unreasonable.
  6. Following the conclusion of the hearing, the hearing panel or examiner will consider the evidence and present written findings within a reasonable time.
  7. In cases involving an allegation of sexual assault or misconduct, the hearing procedures shall be modified to afford the alleged victim all of the rights described in Chapter 1720-03-03-.08(2)(f).
- (e) In accordance with Title IX of the Education Amendments of 1972, the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, and other applicable law, the University will investigate and resolve reports of sexual misconduct, relationship violence, ~~and~~ stalking, and/or retaliation in accordance with the University's Policy on Sexual Misconduct, Relationship Violence, ~~and~~ Stalking, and/or Retaliation. In a case involving an allegation of sexual misconduct, relationship violence, ~~or~~ stalking, and/or retaliation the accused student/respondent and the alleged victim/complainant shall have the rights outlined in the University's Policy on Sexual Misconduct, Relationship Violence, ~~and~~ Stalking, and/or Retaliation. Additionally, in a case involving sexual assault, dating violence, domestic violence, ~~or~~ stalking and/or retaliation, the University shall provide the accused/student/respondent with notice of the role of advisors (e.g., attorneys) in the student conduct process, including the extent to which they are allowed to advise or represent the student in an investigation or hearing.
- (3) The decision of any board or administrative officer of The University of Tennessee is

subject to review by the Chancellor.

~~(3) For purposes of this rule, the term "student" shall mean a student or a student organization.~~

- (4) When, in the judgment of the Chancellor of the University of Tennessee, Health Science Center, conditions are such that an emergency exists which makes it impossible for the system of judicial boards to function, he/she may suspend the procedural regulations described in this Chapter. If the procedures are suspended, he may substitute for them arrangements for handling disciplinary matters that will ensure the orderly functioning of the University and at the same time safeguard the basic rights of the students.

**1720-03-03-.09 STUDENT IDENTIFICATION CARDS.**

- (1) All currently registered students are required to have a ~~UT Health Science Center Student~~University Identification Card. Lost and found I.D. cards should be reported to the Office of Campus Safety and Security. Replacement for lost cards may be obtained from the Office of Campus Safety and Security. A replacement charge will be assessed.
- (2) In order to determine the identity of students, all students are required to present their University identification cards promptly on request of a University police officer or member of the administration or faculty of the University. Identification cards will not ordinarily be retained; however, a card may be retained if an emergency situation exists or if the card may be needed as evidence. The retained card, if valid, will be returned to the student as soon as possible.

**1720-03-03-.10 STUDENT HEALTH INSURANCE.** All students are required to obtain basic health care and medical care insurance to protect themselves, their families, their professional health care associates and providers. The student may elect to enroll in the ~~UT Health Science Center~~University's student health insurance plan or obtain equivalent health insurance with a private carrier. Students who fail to furnish proof of insurance coverage will be prevented from completing their registration for that academic term.

**RULES  
OF  
THE UNIVERSITY OF TENNESSEE  
(MARTIN)**

**CHAPTER 1720-05-01  
STUDENT RIGHTS AND RESPONSIBILITIES**

1720-05-01-.01	Introduction	1720-05-01-.08	Hearing Procedures
1720-05-01-.02	Definitions	1720-05-01-.09	Appeals
1720-05-01-.03	Jurisdiction	1720-05-01-.10	Emergency Powers
1720-05-01-.04	Standards of Conduct	1720-05-01-.11	Involuntary Medical Withdrawal or Suspension
1720-05-01-.05	<b>Penalties/Sanctions</b>	1720-05-01-.12	Inspection and Search Policies
1720-05-01-.06	No Contact Directives	1720-05-01-.13	Academic Dishonesty
1720-05-01-.07	Interim Suspension		

**1720-05-01-.01 INTRODUCTION.**

- (1) Students at the University of Tennessee at Martin are members of both the University community and the larger community of which the University is a part. Accordingly, students are responsible for conducting themselves in a lawful manner and in compliance with University rules and policies. The University has established the following rules in order to advance the mission of the University by maintaining a safe and secure learning environment; protecting the rights and privileges of all members of the University community; providing a basis for orderly conduct of the affairs of the University; promoting a positive relationship between the University and its surrounding community; preserving institutional integrity and property; encouraging students to engage in conduct that brings credit to themselves and the University; and ensuring that each student who matriculates at the University graduates ready to contribute to society as an ethical and law-abiding citizen.
- (2) The University is committed to respecting students' constitutional rights. Nothing in this chapter is intended or shall be interpreted to restrict students' constitutional rights, including, but not limited to, rights of freedom of speech and assembly.
- (3) Students are responsible for being fully acquainted and for complying with the University catalog, handbook, and other rules and policies relating to students. Failure or refusal to comply with the rules and policies established by the University may subject a student to disciplinary action up to and including permanent dismissal from the University.

**1720-05-01-.02 DEFINITIONS.** The following words, terms, or phrases, when used in this Chapter, shall have the following meanings:

- (1) Business Day: Any weekday not designated by the University as a holiday or administrative closure day. When calculating a time period of business days specified in this Chapter, the business day of the event that triggers a time period is excluded.
- (2) Disciplinary Hold: The University hold described in Section .05(3).
- (3) Faculty Member: A person hired by the University to conduct teaching, research, or supervised clinical placements.
- (4) Good Faith: Having a belief in the truth of information that a reasonable person in the same position could have, based on the information known to the person communicating the information at the time the information was communicated by that person.

Information is not communicated in good faith if it is communicated with knowing or reckless disregard for information that would negate the former information.

- (5) Member of the University Community: A person who is a student, University employee, University volunteer, invited visitor to University-controlled property, or participant in a University-affiliated activity.
- (6) Notice: Written notice transmitted by United States mail, courier service, or hand delivery to the address the University's Registrar has on file for the student; and/or by e-mail to a student's University-provided e-mail account. When a notice is transmitted by United States mail or courier service, the notice is effective on the date that it is mailed or delivered to the courier service. When a notice is transmitted by hand delivery, the notice is effective on the date that it is delivered to the person to whom the notice is addressed. When a notice is transmitted by e-mail, the notice is effective on the date that the e-mail is sent. A student's University-issued email address is the official method of communication used by the University.
- (7) Possession: Direct control of a substance or property, actual knowledge of a substance or property, and/or being in such close proximity to the substance or property that it is a reasonable presumption that one had knowledge of the substance or property.
- (8) Protected Activity: A person's good faith: (1) opposition to conduct prohibited under the Standards of Conduct; (2) report to the University about conduct prohibited under the Standards of Conduct to the University; (3) participation (or reasonable expectation of participation) in any manner in an investigation, meeting, hearing, or interim measure; or (4) exercise of rights or responsibilities under any provision of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act.
- (9) Staff Member: A person employed by the University on a part- or full-time basis, primarily involved in planning, organizing, staffing, directing and controlling efforts to achieve the goals and objectives of the University.
- (10) Standards of Conduct: Chapter 1720-05-01-.04.
- (11) Student: For purposes of this Chapter, the term "student" means:
- (a) A person enrolled or registered for study at the University, either full-time or part-time, pursuing undergraduate, graduate, or professional studies, as well as non-degree and non-credit programs and courses;
  - (b) A student organization;
  - (c) A person who has completed the immediately preceding academic term and is eligible for re-enrollment;
  - (d) A person who is not officially enrolled but who has a continuing relationship with the University (e.g., on educational leave or other approved leave status);
  - (e) A person who attended the University during a previous academic term and who engaged in misconduct during the time of enrollment; and/or
  - (f) A person who has been admitted to the University and later matriculates at the University, with respect to misconduct:
    1. That occurs as part of the application process; or

2. That occurs post-admission and pre-matriculation and falls within the jurisdiction of the Code (e.g., occurs on University-controlled property).
- ~~(1)(12) Student Organization: An organization that is composed solely of University students that has submitted a pending application or has completed the process for registration according to University rules.~~
- (13) "UAPA" means the Uniform Administrative Procedures Act, Tennessee Code Annotated § 4-5-101 et seq.
- (14) University: The University of Tennessee Health Science Center, including without limitation its campuses, centers, institutes, and constituent parts.
- (15) University-Affiliated Activity: means an activity on or off University-controlled property that is initiated, aided, authorized, sponsored, or supervised by the University.
- (16) University-Controlled Property: All land, grounds, structures, or any other property owned, controlled, or operated by the University. For purposes of this rule, University-controlled property includes, without limitation, all streets, alleys, sidewalks, and public ways abutting such property. University-controlled property also includes computers and network systems owned, controlled, or operated by the University or funded by the University.
- (17) University Official: An employee of the University, including, without limitation, faculty members and staff members, or, for purposes of this Chapter, a University-recognized volunteer, when acting in the performance of their duties. Student employees may be considered University officials when acting in the performance of their duties.
- (18) Weapon: Any device, instrument, or substance that is designed to, or reasonably could be expected to, inflict a wound, incapacitate, or cause serious bodily injury or death, including, without limitation, firearms (loaded and unloaded, real firearms and devices that would reasonably appear to a law enforcement officer to be real firearms), ammunition, electronic control devices (such as tasers and stun guns), devices designed to discharge an object (such as bb guns, air guns, pellet guns, potato guns, and slingshots, but not water guns), explosives, dangerous chemicals (such as mace, tear gas, and oleoresin capsicum), martial arts weapons, bows and arrows, artificial knuckles, nightsticks, blackjacks, dirks, daggers, swords, and knives with fixed blades longer than four (4) inches. The term "weapon" does not include pocket knives that fold (but not excluding switchblades); chemical repellents available over-the-counter for self-defense; instruments used solely for personal hygiene, preparation of food, maintenance, University-related instruction, or University employment-related duties.
- (19) Written: To communicate words either on paper and/or electronically. For example, a notice delivered via e-mail constitutes a written notice under the Code.

~~1720-05-01-.02 DEFINITIONS.~~

- ~~(1) — The term "University" means the University of Tennessee at Martin.~~
- ~~(2) — The term "student" means a person admitted, enrolled or registered for study at the University of Tennessee, either full-time or part-time, pursuing undergraduate, graduate, or professional studies, as well as non-degree students. Persons not officially registered or enrolled for a particular term but who have a continuing relationship with the University also are considered students for purposes of these rules.~~
- ~~(3) — The term "student organization" means an organization that is composed solely of~~



~~University students that has submitted a pending application or has completed the process for registration according to University rules.~~

- ~~(4) The term "University-controlled property" means all land, buildings, facilities, grounds, structures, or any other property owned, leased, used, maintained, or operated by the University. For purposes of this rule, University-controlled property includes all streets, alleys, sidewalks, and public ways abutting such property. University-controlled property also includes computers and network systems owned, maintained, or controlled by the University or funded by the University.~~
- ~~(5) The term "University-affiliated activity" means any activity on or off University-controlled property that is initiated, aided, authorized, sponsored, or supervised by the University.~~
- ~~(6) The term "University official" means an employee of the University, including faculty members and staff, or for purposes of this rule a University-recognized volunteer. Student employees may be considered University officials when acting in the performance of their duties (e.g., event staff, resident assistants, and teaching assistants).~~
- ~~(7) The term "member of the University community" means any person who is a student, University official, campus visitor, or participant in a University-sponsored or University-affiliated activity.~~
- ~~(8) The term "possession" means actual knowledge of a substance or property and/or being in such close proximity to the substance or property that it is a reasonable presumption that one had knowledge of the substance or property.~~
- ~~(9) The term "weapon" means any device, instrument, or substance that is designed to, or reasonably could be expected to, inflict a wound, incapacitate, or cause serious bodily injury or death, including, but not limited to, firearms (loaded and unloaded, real firearms and devices that appear to a law enforcement officer to be real firearms), ammunition, electronic control devices (such as tasers and stun guns), devices designed to discharge an object (such as bb guns, air guns, pellet guns, potato guns, and slingshots, but not water guns), explosives, dangerous chemicals (such as mace, tear gas, and oleoresin capsicum), martial arts weapons, bows and arrows, artificial knuckles, nightsticks, blackjacks, dirks, daggers, swords, and knives with fixed blades longer than four (4) inches. The term "weapon" does not include pocket knives that fold (but not excluding switchblades); chemical repellents available over the counter for self-defense; instruments used solely for personal hygiene, preparation of food, maintenance, University-related instruction, or University-employment-related duties.~~
- ~~(10) The term "notice" means notice given in writing and transmitted by United States mail, courier service, and/or hand delivery to the address the University's Registrar has on file for the student; and/or by e-mail to the student's University-provided e-mail account. When a notice is transmitted by United States mail or courier service, the notice is effective on the date that it is mailed or delivered to the courier service. When a notice is transmitted by hand delivery, the notice is effective on the date that it is delivered to the person to whom the notice is addressed. When a notice is transmitted by e-mail, the notice is effective on the date that the e-mail is sent. A student's University-issued e-mail address is an official method of communication used by the University about student conduct matters.~~
- ~~(11) The term "coercion" means words and/or conduct that, viewed from the perspective of a reasonable person, substantially impair(s) a person's ability to voluntarily choose whether to engage in a particular sexual act (e.g., sexual contact or sexual intercourse). Coercion is something more than mere seduction or persuasion. Coercion includes, without~~



~~limitation: physical force; and words and/or conduct that would cause a reasonable person to fear imminent harm to the person's health, safety, or property or that of a third person; threat of the loss or impairment of a job benefit; threat of the loss or impairment of an academic benefit; kidnapping of the person or a third person; or disclosure of sensitive personal information (e.g., disclosure of a person's sexual orientation, gender identity, or gender expression).~~

~~(12) The term "consent" means an affirmative and voluntary agreement by a person to engage in a specific sexual act. Consent must be obtained, and the responsibility for obtaining consent rests with the individual who voluntarily and physically initiates a specific sexual act, even if the other person initiated the sexual encounter.~~

~~(a) One's own use of alcohol, drugs, or other substances does not diminish one's responsibility to obtain Consent from the other person. Moreover, another person's use of alcohol, drugs, or other substances does not diminish one's responsibility to obtain consent from that person.~~

~~(b) The term "affirmative," as used in the definition of consent, means that consent is communicated only through words and/or non-verbal actions that convey a clear agreement to engage in a specific sexual act. Whether person has communicated an agreement to engage in a specific sexual act generally is evaluated from the perspective of what a reasonable person who perceived the individual's words and/or non-verbal actions would have understood; however, in the context of a long-term relationship between persons that has involved sexual activity and a pattern of communicating consent, whether consent has been communicated may be evaluated based on a subjective standard (i.e., what did the specific person who initiated the specific sexual act conclude?). A verbal "no" (or words equivalent to "no") or the nonverbal communication of "no," even if it sounds or appears insincere or indecisive, always means that consent has not been communicated, or if previously communicated has been withdrawn. The absence of a verbal "no" or the absence of a nonverbal communication of "no" does not necessarily mean that consent has been communicated. Because interpreting non-verbal actions may lead to misunderstanding and a violation of this policy, students are strongly encouraged to err on the side of caution and not rely solely on the non-verbal actions of another person in concluding that the other person has communicated consent. The University urges students to communicate with one another before engaging in a sexual act to ensure that they both wish to engage in the same sexual act.~~

~~(c) Consent cannot be obtained by or inferred from:~~

- ~~1. silence that is not accompanied by non-verbal actions conveying a clear agreement to engage in a particular sexual act;~~
- ~~2. consent communicated by the other person on a previous occasion;~~
- ~~3. consent communicated to another person;~~
- ~~4. the other person's failure to resist physical force (however, for purposes of this policy, the other person's resistance to physical force will be viewed as a clear demonstration that the person has not communicated consent);~~
- ~~5. the sexual arousal of the other person;~~

- ~~6. a current or previous dating, romantic, intimate, or sexual relationship with the other person;~~
  - ~~7. currently or previously cohabitating with the other person;~~
  - ~~8. the other person's attire;~~
  - ~~9. the other person's reputation;~~
  - ~~10. the other person's giving or acceptance of gifts; or~~
  - ~~11. the other person's extension or acceptance of an invitation to go to a private residence, room, or location.~~
- ~~(d) Consent is not voluntary if it is obtained by coercion. Nor is consent voluntary if it is obtained from a person who is incapacitated if one knows (or a reasonable person would know) that the other person is incapacitated. Because the incapacitation of another person may be difficult for one to discern, students are strongly encouraged to err on the side of caution (i.e., when in doubt, assume that the other person is incapacitated and therefore unable to give consent.)~~
- ~~(e) Consent must be continual, which means that consent must exist from the beginning to the end of each sexual encounter and for each specific sexual act that occurs during a sexual encounter. A person has a right to change his/her mind; thus, consent to engage in a specific sexual act may be withdrawn by a person at any time. A withdrawal of consent is communicated through clear words and/or clear non-verbal actions that indicate that a person no longer agrees to engage in a specific sexual act. Once a person's withdrawal of consent has been communicated, the other person must cease the specific sexual act and must obtain consent before reinitiating the specific sexual act or any other sexual act. Consent is automatically withdrawn when a person becomes incapacitated. Consent to one type of sexual contact or sexual intercourse (e.g., oral intercourse) does not constitute or imply consent for another type of sexual contact or sexual intercourse (e.g., vaginal intercourse), whether during a sexual encounter or during a previous sexual encounter. The University urges students to communicate with one another throughout a sexual encounter to ensure that any progression of sexual activity is done with consent.~~
- ~~(13) The term "course of conduct" means two (2) or more acts, including, but not limited to, acts in which the stalker directly, indirectly, or through third parties, by any action, method, device, or means, follows, monitors, observes, surveils, threatens, or communicates to or about another person, or interferes with another person's property.~~
- ~~(14) The term "dating violence" means violence committed by a person who is or has been in a social relationship of a romantic or intimate nature with the victim of the violence. The existence of such a relationship shall be determined based on the reporting party's statement and with consideration of the following factors: (1) the length of the relationship; (2) the type of relationship; and (3) the frequency of interaction between the persons involved in the relationship. Dating violence includes, without limitation, sexual or physical abuse or the threat of such abuse.~~
- ~~(15) The term "domestic violence" means a felony or misdemeanor crime of violence committed:~~
- ~~(a) by a current or former spouse or intimate partner of the victim;~~

- ~~(b) — by a person with whom the victim shares a child in common;~~
  - ~~(c) — by a person who is cohabitating with or has cohabitated with the victim as a spouse or intimate partner;~~
  - ~~(d) — by a person similarly situated to a spouse of the victim under the domestic or family violence laws of the jurisdiction in which the crime of violence occurred; or~~
  - ~~(e) — by any other person against an adult or youth victim who is protected from that person's acts under the domestic or family violence laws of the jurisdiction in which the crime of violence occurred.~~
- ~~(16) — The term “good faith” means having a belief in the truth of information that a reasonable person in the same situation could have, based on the information known to the person communicating the information at the time the information was communicated by that person. Information is not communicated in good faith if it is communicated with knowing or reckless disregard for information that would negate the former information.~~
- ~~(17) — The term “incapacitated” or “incapacitation” means a temporary or permanent physical or mental state in which a person cannot make informed, rational judgments (e.g., judgments concerning sexual contact, sexual intercourse, or sexual exploitation) because: the person lacks the physical or mental capacity to understand the nature or consequences of their words and/or conduct; and/or the person is unable to physically or verbally communicate consent. Incapacitation can be voluntary or involuntary. Incapacitation is determined based on the totality of the circumstances. Incapacitation may result from: sleep; unconsciousness; intermittent consciousness; temporary or permanent physical or mental disability; involuntary physical restraint; or the influence of alcohol, drugs, or other substances, including, without limitation, substances used to facilitate sexual assault (e.g., Rohypnol, Ketamine, GHB, and Burundanga). Alcohol and drugs are common causes of incapacitation. When alcohol or drugs are involved, incapacitation is a state beyond mere drunkenness or intoxication. The impact of alcohol and drugs varies from person to person; however, warning signs of incapacitation may include, without limitation: lack of control over physical movements (e.g., inability to dress/undress without assistance; inability to walk without assistance); lack of awareness of circumstances or surroundings; vomiting; unresponsiveness; and inability to communicate coherently. A person who is under the age of eighteen (18) (i.e., a minor) is incapable of giving consent; however, a person who is at least the age of thirteen (13) and less than the age of eighteen (18) is capable of giving consent to sexual acts with another person who is less than four (4) years older than them.~~
- ~~(18) — The term “reasonable person” means a sober, objectively reasonable person in the same situation, and with the same sex, gender identity, and sexual orientation as the person whose words and/or conduct are being evaluated.~~
- ~~(19) — The term “relationship violence” means dating violence and/or domestic violence.~~
- ~~(20) — The term “retaliation” means an act (i) taken by a student (including an act taken through a third party) because of another person's participation in a protected activity (ii) that would discourage a reasonable person from engaging in protected activity. Protected activity includes a person's good faith: (i) opposition to conduct prohibited under the Standards of Conduct; (ii) report to the University about conduct prohibited under the Standards of Conduct to the University; (iii) participation (or reasonable expectation of participation) in any manner in an investigation, meeting, hearing, or interim measure; or (iv) exercise of rights or responsibilities under any provision of the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. Retaliation violates the Standards of Conduct regardless of whether the underlying allegation of a~~

~~violation of the Standards of Conduct is ultimately found to have merit. Retaliation can include an act taken against a person's family, friends, advisors, and/or other persons reasonably expected to provide information in connection with a University investigation or hearing.~~

- ~~(21) — The term "sexual assault" means engaging in sexual contact or sexual intercourse with another person without the consent of that person.~~
- ~~(22) — The term "sexual contact" means the intentional touching of another person (including another person's clothing) in a sexual manner with any part of one's body or with any object. Sexual contact also means intentionally causing another person to touch themselves (including their clothing) in a sexual manner. Whether a touching was done in a sexual manner is determined from the perspective of a sober, objectively reasonable person in the same situation and with the same sex, gender identity, and sexual orientation as the person who was touched.~~
- ~~(23) — The term "sexual exploitation" means an act or attempted act by a person for the purpose of sexual arousal or gratification, financial gain, or other personal benefit through the abuse or exploitation of another person's sexuality. Examples of sexual exploitation include, without limitation: observation of a person who is undressed or engaging in sexual contact or sexual intercourse, without the consent of all persons being observed (in a place where a person has a reasonable expectation of privacy); creation or distribution of images, photography, an audiotape, or a videotape of sexual contact, sexual intercourse, or a person's intimate parts (i.e., genitalia, groin, breasts, buttocks) without the consent of all persons being recorded or photographed; prostituting another person; allowing others to observe, either in person or electronically, sexual contact or sexual intercourse without the consent of all persons involved in the sexual contact or sexual intercourse (in a place where a person has a reasonable expectation of privacy); and knowingly exposing another person to a sexually transmitted infection without informing the other person that one has a sexually transmitted infection.~~
- ~~(24) — The term "sexual harassment" means with respect to the conduct of a student, unwelcome conduct of a sexual nature that is so severe or pervasive, and objectively offensive, that it substantially interferes with the ability of a person to work, learn, live, or participate in or benefit from the services, activities, or privileges provided by the University. In no event shall the term "sexual harassment" be construed to prohibit speech protected by the First Amendment to the United States Constitution (e.g., mere insulting or offensive speech). Sexual harassment may include, for example, unwelcome sexual advances, requests for sexual favors, and acts of sexual assault. The term "sexual harassment" also means, with respect to the conduct of a student-employee (when acting as a student-employee): unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when: submission to such conduct is made either explicitly or implicitly a term or condition of an individual's participation in an educational program; submission to or rejection of such conduct by an individual is used as the basis for evaluation or advancement in an educational program; or such conduct has the purpose or effect of unreasonably interfering with an individual's educational performance or creates an intimidating, hostile or offensive educational environment. Sexual harassment is a form of sex discrimination. To determine whether conduct constitutes sexual harassment, consideration shall be given to the totality of the circumstances, including without limitation: the context in which the conduct and/or words occurred; and the frequency, nature, and severity of the conduct and/or words.~~
- ~~(25) — The term "sexual intercourse" means the penetration, no matter how slight, of the vagina or anus with any body part or object; or oral penetration by a sex organ of another person.~~

- ~~(26) — The term “sexual misconduct” means sexual harassment, sexual assault, and/or sexual exploitation.~~
- ~~(27) — The term “stalking” means engaging in a course of conduct directed at a specific person that would cause a reasonable person to: (1) fear for the person’s safety or the safety of others; or (2) suffer substantial emotional distress. For the purposes of this definition, the term “reasonable person” means a reasonable person under similar circumstances and with similar identities to the victim.~~
- ~~(28) — The term “substantial emotional distress” means significant mental suffering or anguish that may, but does not necessarily, require medical or other professional treatment or counseling.~~
- ~~(29)(1) The term “UAPA” means the Uniform Administrative Procedures Act, Tennessee Code Annotated § 4-5-101 et seq.~~

### 1720-05-01-.03 JURISDICTION.

- (1) The Standards of Conduct, Chapter 1720-05-01-.04, apply to conduct that occurs on University-controlled property.
- (2) The University also has the discretion to discipline a student for an act in violation of the Standards of Conduct that occurs off University-controlled property if the conduct adversely affects the interests of the University, including, but not limited to, conduct which:
  - (a) Occurs in connection with a University-affiliated activity, including, but not limited to, an overseas study program or a clinical, field, internship, or in-service experience;
  - (b) Involves another member of the University community; or
  - (c) Threatens, or indicates that the student may pose a threat to, the health or safety of him/herself or others or the security of any person’s property, including, but not limited to, alcohol-related offenses, drug-related offenses, arson, battery, fraud, hazing, participation in group violence, rape, sexual assault or misconduct, stalking, and theft.
- (3) The Standards of Conduct have been adopted in furtherance of the University’s interests and serve to supplement, rather than substitute for, the enforcement of the civil and criminal law. Accordingly, University disciplinary action may be instituted against a student charged with conduct that potentially violates both the criminal law and the Standards of Conduct without regard to the pendency of criminal charges or civil litigation. At the discretion of the Vice Chancellor for Student Affairs, or his/her designee, disciplinary action relating to a violation of the Standards of Conduct may be carried out prior to, simultaneously with, or following criminal proceedings. Students accused of violating the Standards of Conduct may not challenge the University disciplinary proceedings on the grounds that criminal charges, civil litigation, or other University proceedings regarding the same incident are pending or have been terminated, dismissed, reduced, or not yet adjudicated.
- (4) Each student shall be responsible for his/her conduct from the time of application for admission through the actual awarding of a degree, even though conduct may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment (and even if conduct is not discovered by the University until after a degree is awarded). Should a student withdraw from the

University with disciplinary charges pending, the student's academic record and/or ability to register for classes may be encumbered by the appropriate University office.

- (5) Graduate or professional programs within the University may initiate charges against students for alleged violations of professional standards or ethics as a separate issue or as an extension of alleged acts of academic dishonesty or other violations of the Standards of Conduct.

**1720-05-01-.04 STANDARDS OF CONDUCT.** Students are prohibited from engaging in the following types of misconduct:

- (1) Academic Dishonesty. Cheating, plagiarism, or any other act of academic dishonesty, including, without limitation, an act in violation of the Honor Code.
- (2) False Information. Providing false information to a University official.
- (3) Misuse of Information in Connection with University Investigation or Hearing. Falsifying, distorting, misrepresenting, or withholding information in connection with a University investigation or hearing.
- (4) Misconduct Relating to Records or Identification. Forging, altering, destroying, falsifying, or misusing records or identification, whether in print or electronic form.
- (5) Harm to Others. Causing physical harm to any person; endangering the health, safety, or welfare of any person; engaging in conduct that causes a reasonable person to fear harm to his/her health or safety; or making an oral or written statement that an objectively reasonable person hearing or reading the statement would interpret as a serious expression of an intent to commit an act of unlawful violence to a particular individual or group of individuals.
- (6) Harassment. Unwelcome conduct that is so severe, pervasive, and objectively offensive, that it substantially interferes with the ability of a person to work, learn, live, or participate in or benefit from the services, activities, or privileges provided by the University. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution (e.g., mere insulting or offensive speech).
- (7) Sexual Misconduct, Relationship Violence, Stalking, and/or Retaliation. Violating the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and/or Retaliation.
- (8) Invasion of Privacy. Invasion of another person's privacy when that person has a reasonable expectation of privacy, including, without limitation, using electronic or other means to make a video or photographic record of any person in a location in which the person has a reasonable expectation of privacy, without the person's knowledge or consent. This includes, but is not limited to, making a video or photographic record of a person in shower/locker rooms or restrooms. The storing, sharing, and/or distributing of such nonconsensual recordings by any means is also prohibited.
- (9) Private or Public Property. Any of the following conduct with respect to private or public property, including, without limitation, University-controlled property: theft; misappropriation; unauthorized possession, use, sale, duplication, or entry; vandalism; destruction; damage; or conduct that is reasonably likely to cause damage.
- (10) Hazing. Any intentional or reckless act, on or off University-controlled property, by one (1) student, acting alone or with others, which is directed against any other student, which endangers the mental or physical health, safety, or welfare of that student, or which

- induces or coerces a student to endanger his or her mental or physical health, safety, or welfare. "Hazing" does not include customary athletic events or similar contests or competitions and is limited to those actions taken and situations created in connection with initiation into or affiliation with any organization.
- (11) Disorderly Conduct. Fighting or other physically violent or physically threatening conduct; creating a hazardous or physically offensive condition by any act that serves no legitimate purpose; making noise that could unreasonably disturb others who are carrying on lawful activities; or conduct that breaches the peace.
- (12) Lewd, Indecent, or Obscene Conduct. Engaging in lewd, indecent, or obscene conduct, including, without limitation, public exposure of one's sexual organs, public urinating, and public sexual acts.
- (13) Imminent Lawless Action. Engaging in speech either orally or in writing that is directed to inciting or producing imminent lawless action and is likely to incite or produce such action.
- (14) Fire Safety. Any act of arson; falsely reporting a fire, the presence of an explosive or incendiary device, or other emergency; setting off a false fire alarm; or tampering with, removing, or damaging fire alarms, fire extinguishers or any other safety or emergency equipment from its proper location except when removed in a situation in which there is a reasonable belief of the need for such equipment.
- (15) University Keys, Access Cards, and Identification. Possessing, using, or duplicating University keys, University access cards, or University identification cards without authorization from the University.
- (16) Information Technology. Theft, misuse, or unauthorized use of information technology facilities, resources, or access codes, including, without limitation: unauthorized entry into or transfer of a file; using another person's identification and/or password without that person's consent; using information technology facilities or resources to interfere with the work of another student, faculty member, staff member, or other member of the University community; using information technology facilities or resources to interfere with normal operation of a University information technology system or network; circumventing University information technology system or network security; using information technology facilities or resources in violation of copyright laws; falsifying an e-mail header; and conduct that violates the University's policy on the acceptable use of information technology resources.
- (17) Weapons. Possessing, carrying, using, storing, or manufacturing any weapon on University-controlled property or in connection with a University-affiliated activity, unless authorized in writing by the Chief of Police or his/her designee or unless federal or state law affirmatively gives a student a right, irrespective of this Chapter, to possess or carry a weapon on University-controlled property or in connection with a University-affiliated activity.
- (18) Alcohol-Related Conduct – University Property or University Activities. Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages on University-controlled property or in connection with a University-affiliated activity unless expressly permitted by University policy.
- (19) Alcohol-Related Conduct Prohibited by Law. Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages, if prohibited by federal, state, or local law.

- (20) Providing Alcohol to Underage Person. Providing an alcoholic beverage to a person younger than twenty-one (21) years of age, unless permitted by law.
- (21) Drugs and Drug Paraphernalia. Using, manufacturing, possessing, distributing, selling, dispensing, or being under the influence of drugs, if prohibited by federal, state, or local law; using, manufacturing, possessing, distributing, or selling drug paraphernalia, if prohibited by federal, state, or local law; using or possessing a prescription drug if the prescription was not issued to the student; or distributing or selling a prescription drug to a person to whom the prescription was not originally issued.
- (22) Failure to Fulfill a University Financial Obligation. Failing to timely fulfill a University bill, account, or other financial obligation owed to the University.
- (23) Failure to Respond, Comply, or Identify. Failing to respond to a request to report to a University administrative office; failing to comply with a lawful directive of a University employee or other public official acting within the scope of his/her duties; or failing to identify oneself to a University employee or other public official acting within the scope of his/her duties when requested to do so.
- (24) Failure to Appear. Failing to appear at a University hearing, including, without limitation, a hearing of a University conduct board, following a request to appear either as a party or as a witness.
- (25) Violation of Interim Administrative Actions, Disciplinary Sanctions, or Conditions of Re-Enrollment. Violating the terms of a no-contact directive, an interim restriction (e.g., interim suspension), a disciplinary sanction, or a condition of re-enrollment imposed by the University.
- (26) Obstruction or Disruption of University Activity. Obstructing or disrupting teaching, learning, studying, research, public service, administration, disciplinary proceedings, emergency services, or any other University-affiliated activity, or the free flow of pedestrian or vehicular traffic on University-controlled property. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution.
- (27) Violation of University Policy or Rule. Violating a University policy or rule, including, without limitation, University policies or rules relating to facilities' use, smoking, the acceptable use of information technology resources, research misconduct, finder's fees relating to clinical investigations involving human subjects or access to University data or materials, University libraries, dining services, parking or transportation, University identification card use, sexual harassment, residence halls, and registered student organizations.
- (28) Act Prohibited by Law. Committing an act that is prohibited by local, state, or federal law.
- (29) Attempted Violation; Accessory to Violation. Attempting to commit a violation of a Standard of Conduct or being an accessory to the commission of an act or attempted act in violation of a Standard of Conduct.
- (30) Retaliation. Engaging in retaliation. Retaliation is an act or omission committed by a student because of another person's participation in a protected activity that would discourage a reasonable person from engaging in protected activity. Retaliation violates the Standards of Conduct regardless of whether the underlying allegation of a violation of the Standards of Conduct is ultimately found to have merit. Retaliation can include, without limitation: (1) an act or omission committed against a person's family, friends, advisors, and/or other persons reasonably expected to provide information in connection



with a University investigation or hearing; and (2) an act or omission committed by a student through a third party.

~~1720-05-01-.04 STANDARDS OF CONDUCT. A student or student organization may be disciplined for the following types of misconduct:~~

- ~~(1) Cheating, plagiarism, or any other act of academic dishonesty as described in Chapter 1720-05-01-.13.~~
- ~~(2) Providing false information to a University official.~~
- ~~(3) Falsifying, distorting, misrepresenting, or withholding information in connection with a University investigation or hearing.~~
- ~~(4) Forging, altering, destroying, falsifying, or misusing records, identification, or documents, whether in print or electronic form.~~
- ~~(5) Causing physical harm to any person (including oneself); endangering the health or safety of any person (including oneself); engaging in conduct that causes a reasonable person to fear harm to his/her health or safety; or making an oral or written statement that an objectively reasonable person hearing or reading the statement would interpret as a serious expression of an intent to commit an act of unlawful violence to a particular individual or group of individuals.~~
- ~~(6) Harassment, which is defined as unwelcome conduct that is so severe or pervasive, and objectively offensive, that it substantially interferes with the ability of a person to work, learn, live, or participate in or benefit from the services, activities, or privileges provided by the University. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution (e.g., mere insulting or offensive speech).~~
- ~~(7) Engaging in sexual misconduct, relationship violence, or stalking.~~
- ~~(8) Invasion of another person's privacy when that person has a reasonable expectation of privacy, including, but not limited to, using electronic or other means to make a video or photographic record of any person in a location in which the person has a reasonable expectation of privacy, without the person's knowledge or consent. This includes, but is not limited to, making a video or photographic record of a person in shower/locker rooms or restrooms. The storing, sharing, and/or distributing of such unauthorized recordings by any means is also prohibited.~~
- ~~(9) Theft, misappropriation, unauthorized possession, or unauthorized sale of private or public property, including but not limited to University-controlled property.~~
- ~~(10) Vandalizing, destroying, damaging, engaging in conduct that reasonably could cause damage to, or misusing private or public property, including but not limited to University-controlled property.~~
- ~~(11) Participating in hazing. "Hazing" is defined as any intentional or reckless act, on or off University-controlled property, by one (1) student, acting alone or with others, which is directed against any other student, which endangers the mental or physical health or safety of that student, or which induces or coerces a student to endanger his or her mental or physical health or safety. "Hazing" does not include customary athletic events or similar contests or competitions and is limited to those actions taken and situations created in connection with initiation into or affiliation with any organization.~~

- ~~(12) — Engaging in disorderly conduct, which means: fighting or other physically violent or physically threatening conduct; creating a hazardous or physically offensive condition by any act that serves no legitimate purpose; making noise that could unreasonably disturb others who are carrying on lawful activities; or conduct that breaches the peace.~~
- ~~(13) — Engaging in lewd, indecent, or obscene conduct. — “Lewd, indecent, or obscene” conduct includes, but is not limited to, public exposure of one’s sexual organs, public urinating, and public sexual acts.~~
- ~~(14) — Engaging in speech, either orally or in writing, which is directed to inciting or producing imminent lawless action and is likely to incite or produce such action.~~
- ~~(15) — Any act of arson; falsely reporting a fire, the presence of an explosive or incendiary device, or other emergency; setting off a false fire alarm; or tampering with, removing, or damaging fire alarms, fire extinguishers or any other safety or emergency equipment from its proper location except when removed in a situation in which there is a reasonable belief of the need for such equipment.~~
- ~~(16) — Possessing, using, or duplicating University keys, access cards, or identification cards without authorization; possessing, using, or entering University-controlled property without authorization.~~
- ~~(17) — Theft, misuse, or unauthorized use of information technology facilities, resources, or access codes, including, but not limited to: unauthorized entry into or transfer of a file; using another person’s identification and/or password without that person’s consent; using information technology facilities or resources to interfere with the work of another student, faculty member, staff member, or other member of the University community; using information technology facilities or resources to interfere with normal operation of a University information technology system or network; circumventing University information technology system or network security; using information technology facilities or resources in violation of copyright laws; falsifying an e-mail header; and conduct that violates the University’s policy on the Acceptable Use of Information Technology Resources.~~
- ~~(18) — Possessing, using, storing, or manufacturing any weapon or any facsimile of a weapon on University-controlled property or in connection with a University-affiliated activity, unless authorized in writing by the Department of Public Safety.~~
- ~~(19) — Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages on University-controlled property or in connection with a University-affiliated activity.~~
- ~~(20) — Consuming, manufacturing, possessing, distributing, dispensing, selling, or being under the influence of alcoholic beverages, if prohibited by federal, state, or local law.~~
- ~~(21) — Providing an alcoholic beverage to a person younger than twenty one (21) years of age, unless permitted by law.~~
- ~~(22) — Using, manufacturing, possessing, distributing, selling, dispensing, or being under the influence of drugs or drug paraphernalia, if prohibited by federal, state, or local law; using or possessing a prescription drug if the prescription was not issued to the student; or distributing or selling a prescription drug to a person to whom the prescription was not originally issued.~~
- ~~(23) — Failing to pay a University bill, account, or other University financial obligation.~~

- ~~(24) — Failing to respond to a request to report to a University administrative office; failing to comply with a lawful directive of a University employee or other public official acting within the scope of his/her duties; or failing to identify oneself to a University employee or other public official acting within the scope of his/her duties when requested to do so.~~
- ~~(25) — Failing to appear at a University hearing, including, but not limited to, a hearing of a University judicial board, following a request to appear either as a party or as a witness.~~
- ~~(26) — Violating the terms of an interim suspension, a no-contact directive, or a disciplinary penalty imposed by the University.~~
- ~~(27) — Obstructing or disrupting teaching, learning, studying, research, public service, administration, disciplinary proceedings, emergency services, or any other University-affiliated activity, or the free flow of pedestrian or vehicular traffic on University-controlled property. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution.~~
- ~~(28) — Violating a University policy or rule, including but not limited to University policies or rules relating to facilities use, smoking, the acceptable use of information technology resources, research or service misconduct, finder's fees relating to clinical investigations involving human subjects or access to University data or materials, University libraries, dining services, parking or transportation, University identification card use, sexual harassment, residence halls, and registered student organizations.~~
- ~~(29) — Committing an act that is prohibited by local, state, or federal law.~~
- ~~(30) — Attempting to commit a violation of a Standard of Conduct or being an accessory to the commission of an act or attempted act in violation of a Standard of Conduct.~~
- ~~(31)(1) Engaging in retaliation.~~

#### 1720-05-01-.05 **PENALTIES/SANCTIONS.**

- (1) Disciplinary **penalties/sanctions** are primarily intended to educate students and student organizations about appropriate behavior, encourage students and student organizations to take responsibility for misconduct, promote the personal and professional development of students, discourage other students and student organizations from violating the Standards of Conduct, and protect members of the University community. The **penalties/sanctions** imposed should be appropriate for the particular case based on the gravity of the offense (including without limitation how the violation affected or reasonably could have affected other members of the University community). Consideration may also be given to the student's or student organization's conduct record; the student's or student organization's responsiveness to the conduct process; whether the student acted in self-defense, and, if so, whether the amount of force used was reasonable under the circumstances; student academic classification; and other aggravating or mitigating factors.
- (2) The following **penalties/sanctions** may be imposed on any student found to have violated the Standards of Conduct:
- (a) **Warning.** A warning is a notice that the student is violating or has violated the Standards of Conduct. A disciplinary warning is used for minor infractions and consists of a restatement of the Standard(s) of Conduct violated with an official warning concerning future behavior.
- (b) **Loss of Privilege.** A loss of privilege is intended to serve as a reminder of the

Standards of Conduct and is for a specific period of time. Privileges that may be lost include, but are not limited to, scholarships, stipends, participation in extracurricular activities (e.g. intramurals), housing privileges, participation in social activities, and use of certain University-controlled property (e.g., information technology resources).

- (c) Education. Students may be required to attend classes, at their own expense, dealing with issues such as the consequences of alcohol or drug use, civility, ethics, or other topics as deemed appropriate by the Vice Chancellor for Student Affairs or his/her designee.
- (d) Restitution. Restitution may be required in situations that involve destruction, damage, or loss of property, or unreimbursed medical expenses resulting from physical injury. Restitution may take the form of a monetary payment or appropriate service to repair or otherwise compensate for the destruction, damage, or loss.
- (e) Disciplinary Probation. Disciplinary probation permits a student to remain at the University on probationary status but with the understanding that a future violation of the Standards of Conduct may result in suspension. Conditions of probation include loss of eligibility to join a student organization and to serve as an officer in a student organization. Other conditions are specific to the individual case and may include ineligibility to participate in certain student activities. Probation may be for a definite or indefinite period.
- (f) Suspension for a Specific Period of Time. Suspension for a specific period of time means that the student is withdrawn from the University and is not eligible to apply for readmission for a designated period of time. Usually, the designated period of time does not exceed one (1) calendar year. Persons suspended from the University may not return to the campus for the duration of their suspension, except to conduct official business with an administrative officer or faculty member. Upon return to the University following a suspension for a specific period of time, the student shall be placed on indefinite disciplinary probation.
- (g) Indefinite Suspension. Indefinite suspension is imposed in cases of serious or repeated misconduct or in cases in which the prognosis for rehabilitation is uncertain. Indefinite suspension means that the student is withdrawn from the University for an unspecified period of time but typically for a minimum of one (1) calendar year from the effective date of the indefinite suspension. A student who receives the penalty of indefinite suspension is not eligible to apply for readmission until the student successfully petitions the University Council to lift the suspension. Upon return to the University following an indefinite suspension, the student shall be placed on indefinite disciplinary probation.
- (h) Permanent Dismissal. Permanent dismissal means that a student is permanently barred from matriculating as a student on the Martin campus. This penalty is used when the violation of one (1) or more Standards of Conduct is deemed so serious as to warrant total and permanent disassociation from the University community without the possibility of re-enrollment; or when, by his/her repeated violation of the Standards of Conduct, a student exhibits blatant disregard for the health and safety of other members of the University community or the University's right to establish rules of conduct.
- (i) Revocation of Degree. Revocation of a degree means revoking a degree already awarded to a student by the University. Revocation of a degree shall be approved by the University of Tennessee Board of Trustees.

- (3) A disciplinary hold may be placed on a student's account until the completion of the student disciplinary process and/or until the student satisfies the terms and conditions of any penalties/sanctions imposed. A student who, at the time of commencement, is subject to a continuing disciplinary penalty or an unresolved disciplinary charge shall not be awarded a degree before the conclusion of all penalties/sanctions and/or resolution of all disciplinary charges.
- (4) The following penalties/sanctions may be imposed on a student organization found to have violated the Standards of Conduct:
- (a) **Warning.** A warning is a notice that the student organization is violating or has violated the Standards of Conduct. A disciplinary warning is used for minor infractions and consists of a restatement of the Standard(s) of Conduct violated with an official warning concerning future behavior.
  - (b) **Loss of Privilege.** A loss of privilege is intended to serve as a reminder of the Standards of Conduct and is for a specific period of time. Examples of privileges that may be lost include participating in extracurricular activities (e.g., intramurals), housing privileges, participating in social activities, and using certain University-controlled property.
  - (c) **Education.** Student organizations and/or their representatives may be required to attend classes, at their own expense, dealing with issues such as the consequences of alcohol or drug use, civility, ethics, or other topics as deemed appropriate by the Vice Chancellor for Student Affairs or his/her designee.
  - (d) **Restitution.** Restitution may be required in situations that involve destruction, damage, or loss of property, or unreimbursed medical expenses resulting from physical injury. Restitution may take the form of a monetary payment or appropriate service to repair or otherwise compensate for the destruction, damage, or loss.
  - (e) **Social Probation.** This penalty prohibits a student organization from sponsoring or participating in specified social activities. While on social probation, a student organization may not host social events (e.g., mixers, date parties, formals, and band parties) or participate in University-affiliated activities (e.g., Homecoming). Any exceptions to social probation must be approved, in advance, by the Vice Chancellor for Student Affairs or his/her designee.
  - (f) **Disciplinary Probation.** Disciplinary probation means that a student organization is permitted to retain University registration on a probationary status. Violation of the Standards of Conduct during the period of disciplinary probation may result in more serious penalties/sanctions, including revocation of University registration.
  - (g) **Revocation of University Registration.** In cases of serious misconduct, a student organization's University registration may be revoked.
- (5) More than one (1) of the penalties/sanctions listed above may be imposed for any single violation of the Standards of Conduct. Penalties/Sanctions may be applied retroactively to the date of the offense.
- (6) Intoxication or impairment because of alcohol, drugs, chemicals, or other substances does not diminish or excuse a violation of the Standards of Conduct.
- (7) Except for an interim suspension, disciplinary penalties/sanctions shall not become

effective until after opportunities for appeal have been exhausted. Penalties/Sanctions may be applied retroactively to the date of the offense. Coursework performed while disciplinary charges are pending or disciplinary proceedings are underway shall be considered conditional. Coursework may be affected or disregarded based on a final finding of misconduct or the penalty imposed, which may result in loss of course credit, a loss of tuition and/or fees, a delay in the awarding of a degree, or revocation of a degree that was awarded prior to a final decision in the disciplinary proceeding.

**1720-05-01-.06 NO CONTACT DIRECTIVE.** In cases involving allegations of assault, injury, sexual abuse, harassment, or in cases where there is reason to believe continued contact between a student/student organization and specific persons, including complainants and witnesses, may interfere with those persons' security, safety or ability to participate effectively in work or studies, the Vice Chancellor for Student Affairs, or his/her designee, may require that the student/student organization not have verbal, physical, or written contact with specific persons for a definite or indefinite period of time. The student/student organization will receive written or electronic notice of the no contact directive. Any student, faculty or staff member or other person with a reasonable justification may request that a no contact directive be issued to a student/student organization. In addition to an internal University no contact directive, complainants are advised that other similar options exist and can be obtained from law enforcement and civil and criminal courts.

**1720-05-01-.07 INTERIM SUSPENSION.**

- (1) When the Vice Chancellor for Student Affairs or his/her designee has reasonable cause to believe that a student's or student organization's continued presence on University-controlled property or at University-affiliated activities poses a significant risk of substantial harm to the health or safety of others or to property or poses an ongoing threat to the disruption of, or interference with, the normal operations of the University, the Vice Chancellor for Student Affairs or his/her designee may impose an interim suspension prior to the conclusion of a full hearing on the alleged misconduct.
- (2) An interim suspension shall be confirmed by a written statement that explains the basis for the interim suspension and shall remain in effect until the conclusion of a full hearing in accordance with the rules of the University of Tennessee, which shall be held without undue delay. The statement shall be delivered to the student in person, to the address the University has on file for the student, or to the student's University-provided e-mail account. The statement shall be delivered in person or via e-mail to the advisor to the student organization.
- (3) Within three (3) business days of the imposition of the suspension, the student or student organization shall be offered an opportunity to appear personally before the Vice Chancellor for Student Affairs or his/her designee in order to discuss the following issues only: (i) the reliability of the information concerning the student's conduct; and (ii) whether the conduct and surrounding circumstances reasonably indicate that the student's or student organization's continued presence on University-controlled property or at University-affiliated activities poses a significant risk of substantial harm to the health or safety of others or to property or poses an imminent threat of disruption of or interference with the normal operations of the University.
- (4) During an interim suspension, the student or student organization shall be denied access to University-controlled property, including residence halls, and all other University-affiliated activities or privileges for which the student or student organization might otherwise be eligible, as the Vice Chancellor for Student Affairs or his/her designee determines in his/her sole discretion to be appropriate. A student or student organization who receives an interim suspension and violates the terms of the interim suspension shall be subject to further disciplinary action and may be treated as a trespasser.

Permission to be on University-controlled property or participate in University-affiliated activities may be granted by the Vice Chancellor for Student Affairs or his/her designee.

- (5) When a student is placed on interim suspension from the University, he/she may be assigned a grade of "W" or "I," whichever is deemed appropriate by the faculty member involved.

#### **1720-05-01-.08 HEARING PROCEDURES.**

- (1) Conflicts of Interest
- (a) The student conduct process must be carried out in a manner that is free from conflicts of interest consistent with due process of law.
- (b) In cases involving allegations of sexual assault, dating violence, domestic violence, or stalking, the student conduct process must include protections for the accused student/respondent analogous to, and no less protective than, the conflict of interest provisions of Tennessee Code Annotated § 4-5-303. Notwithstanding the preceding sentence: (1) an attorney for the University is allowed to provide legal advice to multiple University employees who serve in different roles in the process of disciplining a student; and (2) the University is allowed to provide the alleged victim/complainant with equivalent rights as the accused student/respondent during the student conduct process.
- (2) A student charged with violating the Standards of Conduct, Chapter 1720-05-01-.04, shall be provided written notice of:
- (a) The substance of the charge(s) against him/her;
- (b) The disciplinary action taken or proposed; and
- (c) His/her rights to a hearing should he/she wish to contest the charge(s) and information concerning the process for requesting a hearing, including the requirement that a request for a hearing before the Disciplinary Hearing Board must be made within five (5) days of the student's receipt of the notice of the charges against him/her.
- (3) A student charged with violating the Standards of Conduct, Chapter 1720-05-01-.04, shall have the following options for a hearing:
- (a) An administrative hearing before the Student Conduct Officer;
- (b) A hearing before the Disciplinary Hearing Board; or
- (c) A hearing in accordance with the University's rules for conducting contested case proceedings under the Uniform Administrative Procedures Act ("UAPA Hearing"). All disciplinary cases that may result in suspension or permanent dismissal of a student, the revocation of a degree, or the revocation of registration of a student organization are subject to the contested case provisions of the UAPA. The University's procedures for conducting contested case hearings under the UAPA are contained in Chapter 1720-01-05, and the University's rules concerning waivers of contested case proceedings are contained in Chapter 1720-01-3. Disciplinary hearings will be conducted in accordance with the University's procedures for conducting contested case proceedings under the UAPA unless

the student waives those procedures in writing and elects to have his or her case resolved in accordance with Section .08(3) or Section .08(4).

- (4) Notice of Hearing Concerning Allegations of Sexual Assault, Dating Violence, Domestic Violence, or Stalking. At least seventy-two (72) hours prior to a hearing under Section .08(3) concerning allegations of sexual assault, dating violence, domestic violence, or stalking, the University shall provide the accused student/respondent with notice of the following: (1) the time, place, and date of the hearing; (2) the name of each witness the University expects to present at the hearing and those the University may present if the need arises; (3) notice of the right to request a copy of the University's investigative file, redacted in accordance with the Family Educational Rights and Privacy Act of 1974, (20 U.S.C. § 1232g), and the federal regulations implementing that statute, as amended; and (4) notice of the right to request copies of all documents, copies of all electronically stored information, and access to tangible evidence that the University has in its possession, custody, or control and may use to support claims or defenses, unless the use would be solely for impeachment.
- (5) Administrative Hearing. A student charged with violating the Standards of Conduct has a right to resolve a disciplinary case through an administrative hearing with the Student Conduct Officer by accepting responsibility for violating the Standards of Conduct. Following the student's written acceptance of responsibility and written waiver of the right to a hearing under the UAPA, the Student Conduct Officer will assess a penalty that is appropriate under Chapter 1720-05-01-.05. Following the assessment of the penalty, the student may acknowledge the acceptance of the penalty in writing or appeal the penalty to the Vice Chancellor for Student Affairs in accordance with Chapter 1720-05-01-.09. A student who resolves a disciplinary case through an administrative hearing with the Student Conduct Officer may only appeal the penalty to the Vice Chancellor for Student Affairs.
- (6) Disciplinary Hearing Board.
  - (a) The Disciplinary Hearing Board is an ad hoc board composed of five (5) members of the University Council, in addition to the Vice Chancellor for Student Affairs, who shall serve as the non-voting chairperson of the Disciplinary Hearing Board. The Disciplinary Hearing Board hears cases of alleged violations of the Standards of Conduct and other cases deemed appropriate by the Vice Chancellor for Student Affairs. The Vice Chancellor for Student Affairs shall select the members of the Disciplinary Hearing Board from the membership of the University Council. A majority vote of the members present is required for all decisions of the board.
  - (b) A request for a hearing before the Disciplinary Hearing Board shall be made within five (5) days of the student's receipt of the notice of the charges against him/her. A hearing shall be scheduled promptly after receipt of the request for a hearing. A student shall be notified of the date, place, and time for the hearing at least seventy-two (72) hours in advance of the hearing. A student has no right to have a hearing before the Disciplinary Hearing Board unless the student waives the provisions of the UAPA in writing.
  - (c) Members of the Disciplinary Hearing Board shall be impartial and anyone lacking such impartiality shall recuse himself/herself. The accused student has the right to challenge any member of the Disciplinary Hearing Board for good cause and request that he/she be dismissed and replaced. The chairperson of the Board determines whether to dismiss and replace a member of the Disciplinary Hearing Board. Neither the Student Conduct Officer nor a person who investigated the



allegations of misconduct against the accused student shall be a member of the Disciplinary Hearing Board or advise the Disciplinary Hearing Board.

- (d) The chairperson of the Disciplinary Hearing Board will conduct the hearing, without regard to technical rules of procedures in such a manner as will best serve the cause of justice within the following general guidelines:
1. An accused student has a right to a hearing closed to the public. In cases involving more than one (1) student, the chairperson may permit the hearings concerning each student to be conducted separately.
  2. The chairperson shall rule on all motions, objections, and other procedural issues. The chairperson shall ascertain that the accused student has been advised of the charges against him/her and shall then read a statement describing the charges. A student who fails to appear before the Disciplinary Hearing Board following proper notice shall be deemed to have waived his/her rights to be present during the hearing, to know the evidence against him/her, to present evidence in his/her own behalf, and to exercise reasonable cross-examination of witnesses appearing against him/her. This waiver shall become effective if the student fails to appear at the designated time and place of the hearing unless, at least twenty-four (24) hours prior to the hearing, the student communicates in writing to the Dean of Students good cause for granting a continuance of the hearing. However, no student may be found to have violated the Standards of Conduct solely because the student failed to appear before the Disciplinary Hearing Board. In all cases, the evidence in support of the charges shall be presented to and considered by the Disciplinary Hearing Board.
  3. The accused shall enter a plea of responsible or not responsible. If a responsible plea is entered, he/she shall be advised of the maximum penalty, and the Board shall review the circumstances of the case and make appropriate decisions or recommendations regarding the penalty.
  4. The accused student may be accompanied by no more than one (1) advisor during the hearing, including but not limited to a parent, spouse, friend, or attorney. The role of the advisor shall be limited to providing advice or support to the accused student. Even if accompanied by an advisor, the accused student is responsible for presenting his/her own case to the Disciplinary Hearing Board. An advisor is not permitted to: introduce evidence; raise objections; present arguments; directly address the members of the Disciplinary Hearing Board, the Student Conduct Officer, or any witnesses participating in the hearing; or otherwise participate in the hearing. In consideration of the limited role of the advisor, and of the compelling interest of the University to expeditiously conclude the matter, a hearing shall not be delayed due to the unavailability of an advisor. The accused student shall inform the Student Conduct Officer of the name of the student's advisor, if any, at least three (3) days before the hearing before the Disciplinary Hearing Board.
  5. Each party to a hearing shall be given an opportunity to make opening and closing statements.
  6. Each party to a hearing shall be afforded a full and fair opportunity to present all evidence, including witnesses, reasonably relating to the

charge or action at issue. Each party will have the right to question opposing witnesses. Technical rules of evidence will not apply. Evidence which is irrelevant, immaterial, repetitious or voluminous may be limited or excluded. Hearsay evidence is admissible. If a not responsible plea has been entered, evidence in mitigation of the alleged offense shall be presented only if the Board has determined that the accused student is responsible for the violation.

7. The Student Conduct Officer shall present the case on behalf of the University. The University shall have the burden of proving, by a preponderance of the evidence, the truth of the charge(s) at issue. Where the charge(s) is found to be true, the accused student shall have the burden of proving that the disciplinary action taken or proposed is arbitrary, capricious, or unreasonable.
  8. The Board will consider all evidence presented, giving due consideration to the credibility or weight of each item presented. During Board deliberations all persons except the Board members shall be excused from the hearing room. The decision shall be based solely upon the evidence presented. No mention will be made during the hearing on innocence or guilt of the student's previous disciplinary record, unless appropriate as rebuttal to character evidence introduced by the accused.
  9. After a determination of responsibility by the Board, the Student Conduct Officer, on behalf of the University, shall present the previous disciplinary record of the accused student if any, and evidence of any other aggravating circumstances, to the Board together with the recommendation of the Student Conduct Officer as to an appropriate penalty.
  10. After presentation of evidence by the Student Conduct Officer, the accused shall be allowed to present character evidence, evidence of mitigating circumstances, and an alternative penalty recommendation.
  11. After the Board determines the penalty, the accused student shall be advised in writing of its decision within forty-eight (48) hours of the hearing.
  12. A record will be made of the hearing procedures. However, defects in the record will not invalidate the proceedings. The results of the Board's decision shall be kept on official University forms. If a verbatim record of the hearing is prepared, it shall be retained in the custody of the Office of Student Conduct and considered a confidential disciplinary record.
  13. Appeals from decisions of the Disciplinary Hearing Board may be made to the Vice Chancellor for Student Affairs in accordance with Chapter 1720-05-01-.09.
  14. In cases involving an allegation of sexual assault or misconduct, the hearing procedures shall be modified to afford the alleged victim all of the rights described in Chapter 1720-05-01-.08(8). The Disciplinary Hearing Board may consider evidence introduced by the alleged victim as part of the University's proof.
- (7) In accordance with Title IX of the Education Amendments of 1972, the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, and other

applicable law, the University will investigate and resolve reports of sexual misconduct, relationship violence, ~~and~~ stalking and/or retaliation in accordance with the University's Policy on Sexual Misconduct, Relationship Violence, ~~and~~ Stalking and/or Retaliation. In a case involving an allegation of sexual misconduct, relationship violence, ~~or~~ stalking and/or retaliation, the accused student/respondent and the alleged victim/complainant shall have the rights outlined in the University's Policy on Sexual Misconduct, Relationship Violence, ~~and~~ Stalking and/or Retaliation. Additionally, in a case involving sexual assault, dating violence, domestic violence, ~~or~~ stalking and/or retaliation, the University shall provide the accused student/respondent with notice of the role of advisors (e.g., attorneys) in the student conduct process, including the extent to which they are allowed to advise or represent the student in an investigation or hearing.

~~(8) For purposes of this rule, the term "student" shall mean a student or a student organization.~~

#### 1720-05-01-.09 APPEALS.

- (1) Appeal. A decision of the Disciplinary Hearing Board, or a decision of the Student Conduct Officer concerning a penalty following an administrative hearing, may be appealed to the Vice Chancellor for Student Affairs.
  - (a) The request for appeal shall be submitted in writing to the Vice Chancellor for Student Affairs within seven (7) calendar days of written notice of the decision of the Disciplinary Hearing Board or Student Conduct Officer. If the seventh day falls on a weekend or holiday, the time is extended to the next regular workday.
  - (b) The request for appeal shall contain:
    1. A statement that the student or student organization appeals the decision of the Disciplinary Hearing Board or Student Conduct Officer; and
    2. A brief statement of the grounds for the appeal.
  - (c) All appeals to the Vice Chancellor for Student Affairs are written and heard based upon the record made before the Disciplinary Hearing Board.
  - (d) Pending the outcome of an appeal, the penalty specified in the decision of the Disciplinary Hearing Board shall not be imposed.
- (2) The Vice Chancellor for Student Affairs may:
  - (a) Affirm the decision of the Disciplinary Hearing Board or Student Conduct Officer;
  - (b) Amend the decision of the Disciplinary Hearing Board or Student Conduct Officer;
  - (c) Return the case to the Disciplinary Hearing Board or Student Conduct Officer with instructions for reconsideration of the case; or
  - (d) Overturn the decision of the Disciplinary Hearing Board.
- (3) The decision of any board or administrative officer of the University of Tennessee at Martin is subject to review by the Chancellor.

**1720-05-01-.10 EMERGENCY POWERS.** When, in the judgment of the Chancellor of The University of

Tennessee at Martin, conditions are such that an emergency exists which makes it impossible for the system of judicial boards to function, he/she may suspend these procedural regulations. If the procedures are suspended, he/she may substitute for them arrangements for handling disciplinary matters that will insure the orderly functioning of the University and at the same time safeguard the basic rights of the students and student organizations.

**1720-05-01-.11 INVOLUNTARY MEDICAL WITHDRAWAL OR SUSPENSION.**

- (1) When a student is unable to effectively pursue his/her academic work, or when his/her behavior is disruptive to the normal educational processes of the University, or constitutes a threat to members of the University community, due to, among other things, alcohol use, drug use, or a physical or mental incapacitating condition, he/she may be withdrawn or temporarily suspended from the University as hereinafter provided.
- (1) Withdrawal. A student may be withdrawn from the University only after an evaluation of his/her mental and physical condition by a panel of at least three (3) persons appointed by the Vice Chancellor for Student Affairs. The student shall be notified of the reasons for the evaluation and given an opportunity to present evidence to the committee. The committee's findings and recommendations shall be forwarded to the Vice Chancellor for Student Affairs, who will notify the student in writing of his/her decision.
- (2) Temporary Suspension. Whenever a student, because of his/her mental or physical condition constitutes a danger to persons or property, or when his/her behavior is disruptive to the normal educational processes of the University, he/she may be suspended from the University, for a reasonable period of time, by the Vice Chancellor for Student Affairs. If the University does not withdraw the student in accordance with procedures outlined above, he/she may return to the University at the end of the suspension period.
- (3) Grades. When a student is withdrawn or temporarily suspended from the University, he/she may be assigned a grade of "W" or "I," whichever is deemed appropriate by the faculty member involved.
- (4) Readmission.
  - (a) A student who is involuntarily withdrawn under this rule may not be readmitted to the University before the start of the next semester or without the approval of the Vice Chancellor for Student Affairs. The student shall also meet all of the admission requirements of the University and of the school or college in which he/she wishes to be readmitted.
  - (b) A student shall submit a written request for permission to reapply to the University with the Vice Chancellor for Student Affairs by October 1 for Spring enrollment, by February 1 for Summer enrollment, and by May 1 for Fall enrollment. The student's written request shall include an explanation of why the Vice Chancellor for Student Affairs should allow the student to reapply and an explanation of the student's plan to transition successfully back into the academic community.
  - (c) The Vice Chancellor for Student Affairs may require the student to provide the panel of individuals who recommended that the student be involuntarily withdrawn with proof that the condition that caused the withdrawal is no longer present or that the condition is under control through treatment such that the student does not present a direct threat to the health or safety of him/herself or others and will not disrupt the normal educational processes of the University. Proof may consist of a current medical or mental health evaluation,

demonstration of ongoing medical or mental health treatment, and a plan for treatment upon readmission. The panel may request any other information or documentation that it deems necessary. In exceptional circumstances, the panel may request a second, independent opinion of a qualified medical or mental health professional paid for by the University. In cases where the Vice Chancellor for Student Affairs has imposed other conditions for readmission, it is the responsibility of the student to provide documentation of compliance with those conditions.

- (d) The panel's recommendation concerning reenrollment or readmission shall be provided to the Vice Chancellor for Student Affairs, who will notify the student in writing of his/her decision. The decision of the Vice Chancellor for Student Affairs is final and may not be appealed.

#### **1720-05-01-.12 INSPECTION AND SEARCH POLICIES.**

- (1) Entry by University authorities into occupied rooms in residence halls will be divided into three (3) categories; inspection, search, and emergency. Inspection is defined as the entry into an occupied room by University authorities in order to ascertain the health and safety conditions in the room, to check the physical condition of the room, to make repairs on facilities, or to perform cleaning and janitorial operations. Search is defined as the entry into an occupied room by on-campus authorities for the purpose of investigating suspected violations of campus regulations. An emergency situation exists when the delay necessary to obtain a search authorization constitutes an apparent danger to person, property, or the building itself.
- (2) Inspection: Scheduled inspections by on-campus authorities with the exception of daily janitorial operations shall be preceded, if possible, by twenty-four (24) hours' notice to the residents. During the inspection there will be no search of drawers, closets, or personal belongings. This policy is applicable for residence halls and fraternity houses.
- (3) Search: On-campus authorities will not enter a room for purposes of search without the permission of the resident unless they have a campus authorization to search, authorized by the Vice Chancellor for Student Affairs or his/her designee, which specifies the reasons for the search and the objects or information sought, or unless they enter in compliance with federal or state law. If possible, the student should be present during the search. Normally these searches will not be made unless the Vice Chancellor for Student Affairs or his/her designee is present.
- (4) If the search reveals objects the possession of which violates a law or a University rule, the University may take appropriate disciplinary action even though the objects were not listed on the search authorization.

**1720-05-01-.13 ACADEMIC DISHONESTY.** The University of Tennessee at Martin has chosen as its primary objective quality undergraduate education. Commitment to this objective must include an obligation by all members of the University community to promote and protect the highest standards of integrity in study, research, instruction and evaluation. Dishonesty or unethical behavior does not belong at an institution dedicated to the promotion of knowledge and learning. Integrity of the academic process requires fair and impartial evaluation by faculty and honest academic conduct by students. A student may be found to have violated this obligation if he/she:

- (1) Refers during an academic evaluation to materials, sources, or devices not authorized by the instructor;
- (2) Provides assistance during an academic evaluation or assignment to another person in a manner not authorized by the instructor;

- (3) Receives assistance during an academic evaluation or assignment from another person in a manner not authorized by the instructor;
- (4) Possesses, buys, sells, obtains, or uses a copy of any materials intended to be used as an instrument of academic evaluation in advance of its administration;
- (5) Acts as a substitute for another person in any academic evaluation or assignment;
- (6) Utilizes another person as a substitute for him/herself in any academic evaluation or assignment;
- (7) Practices any form of deceit in an academic evaluation or assignment;
- (8) Depends on the aid of others, in a manner expressly prohibited by the instructor, in the research, preparation, creation, writing, performing, or publication of work to be submitted for academic credit or evaluation;
- (9) Provides aid to another person, knowing such aid is expressly prohibited by the instructor, in the research, preparation, creation, writing, performing, or publication of work to be submitted for academic credit or evaluation;
- (10) Indulges in plagiarism by presenting as one's own, for academic evaluation or assignment, the ideas, representations, or works of another person or persons without customary and proper acknowledgment of sources;
- (11) Submits the work of another person in a manner that represents the work to be one's own;
- (12) Knowingly permits one's work to be submitted by another person without the instructor's authorization;
- (13) Attempts deceitfully to influence or change one's academic evaluation or record; or
- (14) Indulges in conduct that is so disruptive as to infringe upon the rights of an instructor or fellow students during a class or examination session.



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **Authorization for Conferral of Degrees, 2019 Spring Semester**

Type: Action

In accordance with Tennessee Code Annotated § 49-7-166 and § 49-9-209(f), the Resolution in the meeting materials authorizes the President and Chancellors to confer degrees following the end of the 2019 Spring Semester upon certification by the appropriate University offices that students have satisfied all degree requirements and all obligations to the University.

[Resolution follows]



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Authorization for Conferral of Degrees, 2019 Spring Semester

Resolved: The Board of Trustees authorizes the President and Chancellors to confer degrees following the end of the 2019 Spring Semester on students in any Board-approved bachelor's, master's, or doctoral degree program upon certification by the appropriate University offices that students have satisfied all degree requirements and all obligations to the University; provided that official diplomas, certificates of credit, and transcripts shall be issued only in accordance with the provisions of Tennessee Code Annotated § 49-7-166 as it may be amended from time to time.

Adopted this 1st day of March, 2019.

---

\* Number will be inserted after adoption.





# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **Grant of Tenure upon Initial Appointment at UTIA**

Type: Action

Presenter: Randy Boyd, Interim President

**Note: The following background information applies to the two candidates for tenure upon initial appointment at UTIA presented at Tabs 3 and 4 in the meeting materials.**

### BACKGROUND

1. On March 23, 2018, the Board revised its tenure policy to delegate to the President authority to grant tenure to faculty members except in the following three cases:
  - Officers of the University (as defined by the Bylaws of the Board) who concurrently hold a faculty appointment;
  - Any faculty member who is to be granted tenure upon initial appointment without serving a probationary period at a University campus; and
  - Any faculty member to be tenured after serving less than a six-year probationary period.
  
2. The revised tenure policy includes the following additional requirements for granting tenure upon initial appointment:
  - The Board will grant tenure upon initial appointment only if (1) the candidate was tenured at the institution from which he or she was recruited and could not have been successfully recruited without being considered for tenure upon initial appointment; or (2) other exceptional circumstances warrant the grant of tenure upon initial appointment.
  - The President's recommendation to the Board for tenure upon initial appointment must include (1) documentation that the candidate would not have been successfully recruited without being considered for tenure upon initial appointment; and (2) documentation of compliance with the minimum tenure review and recommendation procedures required by the Board's tenure policy and any further requirements established by the campus.



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

3

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **Grant of Tenure upon Initial Appointment at UTIA-Professor Tong Wang**

Type: Action

Presenter: Randy Boyd, Interim President

### Background (see Tab 2)

#### SUMMARY

Dr. Tong Wang has been offered and has accepted a faculty appointment as professor in the Department of Food Science in the Institute of Agriculture, effective May 16, 2019. Dr. Wang is currently a professor, with tenure, at Iowa State University. She is married to Dr. Hongwei Xin, who has been appointed as the new Dean for AgResearch. Chancellor Cross has recommended to the President that tenure be granted to Dr. Wang upon initial appointment without serving a probationary period.

Dr. Wang has received over \$8.9 million in funding as a principal investigator or co-principal investigator; has published 153 peer-reviewed journal articles and 12 book chapters; has given 27 invited presentations at national and international professional meetings; and has mentored 36 graduate students. The American Oil Chemists Society recognized Dr. Wang as a Fellow in 2016, and Iowa State University named her the Endowed Bacon Louis Faculty Fellow in 2017.

The President has confirmed that Dr. Wang satisfies all requirements for tenure upon initial appointment, including (1) that Dr. Wang had two competing offers from UTIA peer institutions that included granting of tenure, and she could not have been successfully recruited without being considered for tenure upon initial appointment; and (2) that all required tenure review and recommendation procedures were followed by the Institute of Agriculture. Dr. Wang received the unanimous positive vote of the departmental and college committees and the strong support of the department head, interim Dean of AgResearch, and Dean of the Herbert College of Agriculture.

After his independent review of the tenure dossier, the President recommends that the Board grant tenure to Dr. Wang in her faculty appointment in the Department of Food Science in the Institute of Agriculture. Dr. Wang's curriculum vitae and other supporting documents are included in the meeting materials.

[Motion follows]



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution in the meeting materials to grant tenure to Professor Tong Wang in her faculty appointment in the Department of Food Science in the Institute of Agriculture.**



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Grant of Tenure upon Initial Appointment to Professor Tong Wang

Resolved: Upon the recommendation of the President, the Board of Trustees grants tenure to Professor Tong Wang in her faculty appointment in the Department of Food Science in The University of Tennessee Institute of Agriculture.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.

**TENURE UPON HIRE CHECKLIST**

*Faculty Member:* **Dr. Tong Wang**; Professor in Food Science in the UT Institute of Agriculture (UTIA)

<input checked="" type="checkbox"/>	All documentation associated/required for the review of the individual for tenure upon hire (i.e. voting reports, department committee recommendation, department head/chair recommendation,...)
<input checked="" type="checkbox"/>	Copy of candidate's Curriculum Vitae and other application materials submitted for the position
<input checked="" type="checkbox"/>	Copy of the position description
<input checked="" type="checkbox"/>	Copy of the offer letter, appointment letter, or other document showing the UT salary and the commitment made as to when the candidate would be considered for tenure
<input checked="" type="checkbox"/>	Explanation of the process used to confirm information on the CV and other application materials submitted for the position (degrees, prior employment, research/publication record, etc.)
<input checked="" type="checkbox"/>	Explanation of the process used to confirm that the individual was tenured at prior institution(s) and was not terminated involuntarily from prior institution(s)
<input checked="" type="checkbox"/>	Date the search for the position was initiated
<input checked="" type="checkbox"/>	Number of applicants for the position
<input checked="" type="checkbox"/>	Documentation of candidate's salary at his or her immediately prior institution

**Dr. Tong "Toni" Wang  
Documentation of Tenure Review**



Office of the Chancellor

101 Morgan Hall  
2621 Morgan Circle  
Knoxville, TN 37996-4505  
office: 865-974-7342  
fax: 865-974-8781

3

January 29, 2019

Mr. Randy Boyd, Interim President  
University of Tennessee  
800 Andy Holt Tower

Dear President Boyd:

This letter is to request tenure upon appointment for Dr. Tong Wang, who has accepted a spousal hire opportunity as Professor in the Department of Food Science at the Institute of Agriculture. This request is based on the following information:

- Dr. Wang is currently a Professor in the Department of Food Science and Human Nutrition at Iowa State University (one of the top colleges of agriculture in the world). She was awarded tenure in 2005.
- She is the spouse of Dr. Hongwei Xin who has accepted the position of Dean for AgResearch at the Institute of Agriculture. Dr. Wang was recruited as a spousal hire opportunity.
- Offering the possibility of tenure was required to successfully recruit both candidates, who had two competing offers for similar positions at UTIA peer institutions.
- Dr. Wang was named Endowed Jean Bacon Louis Faculty Fellow at Iowa State University in 2017.
- The American Oil Chemists Society recognized Dr. Wang as a Fellow in 2016, and she has received numerous other national and university awards during her career.
- Dr. Wang has received \$8.9 million in total funding as PI or Co-Pi. She has published 153 peer-reviewed journal articles and 12 book chapters. She has presented 27 invited talks at national and international meetings, and she has mentored 36 graduate students.
- Dr. Wang's work in processing and value-added utilization of dairy, soybeans, corn, eggs, and other products align very well with Tennessee's agricultural needs and opportunities.
- Appointing Dr. Wang with tenure will be beneficial to our Food Science Department, which currently includes 8 assistant professors and 2 professors. An additional tenured professor will provide valuable mentoring, advice and guidance to a faculty that is largely untenured.

The UTIA Promotion and Tenure Review Committee has evaluated Dr. Wang's dossier which includes a recommendation in support of tenure at the rank of professor. The department head provided a letter that expresses full support of awarding tenure and appointment at the rank of professor. The review committee voted unanimously in support of tenure and the rank of professor, and Deans Tompkins and Beyl expressed strong support of these recommendations.

I am very confident that Dr. Wang exceeds the requirements for tenure at the rank of professor, and will continue her outstanding record of scholarly accomplishments as a faculty member in the UT Institute of Agriculture. I recommend her appointment as professor with tenure, with no reservations.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tim Cross", with a long horizontal flourish extending to the right.

Tim L. Cross  
Chancellor

Attachment



### Summary Sheet: Recommendations for Promotion and/or Tenure

Name of faculty member: Dr. Tong (Toni) Wang

Present rank: Professor Candidate for:  Tenure  Promotion to \_\_\_\_\_

Department: Food Science Highest degree earned: Ph.D.

Original rank at UTK: N/A Subsequent promotions (year, rank): N/A

#### RECORD AT THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Date of original appointment as a full-time probationary faculty member: N/A

Years of full-time teaching experience at instructor rank or above before UTK probationary period:  
18

Years of full-time teaching at UTK, as of the May 31st prior to the review: N/A

Total years of teaching: 18

Latest year for tenure review as stipulated in appointment letter: N/A

#### RECOMMENDATIONS

##### DEPARTMENTAL FACULTY

Date of departmental discussion: 11/30/2018

Result of discussion: For: 3 Against: 0 Abstain: 0

Recuse (attach explanation for conflict of interest): 0

Is there a dissenting report?  Yes (please attach)  No

Is there a response from the candidate  Yes (please attach)  No

##### INTERDISCIPLINARY COMMITTEE OR DIRECTOR (where appropriate)

For: \_\_\_\_\_ Against: \_\_\_\_\_ (Provide letter)

Mark Wagon  
DEPARTMENT HEAD

Approve  Disapprove   
(Provide letter)

Provide a statement on the professional record and a summary recommendation.

##### COLLEGE COMMITTEE

For: 8 Against: 0 Abstain: 1

Recuse (attach explanation for conflict of interest): FACULTY MEMBER IN DEPT. RECUSED.

*A copy of the report of the departmental and college committees must also be attached. In cases where this report disagrees in any substantial way with the departmental recommendation, this report must go beyond a listing of the vote to indicate as fully as possible the reasons for the differences.*

[Signature]  
DEAN

Approve  Disapprove   
(Provide letter)

[Signature]  
CHIEF ACADEMIC OFFICER

Approve  Disapprove

[Signature]  
CHANCELLOR (RECOMMENDATION ON TENURE)

Approve  Disapprove

[Signature]  
CHANCELLOR (DECISION ON PROMOTION)

Approve  Disapprove



January 28, 2019

Dr. Tim Cross, Chancellor  
University of Tennessee  
Institute of Agriculture  
101 Morgan Hall  
Knoxville, TN 37996

**Dean's Office**  
2621 Morgan Circle  
103 Morgan Hall  
Knoxville, TN 37996-4506  
office: 865-974-7105  
fax: 865-974-6479  
[taes.tennessee.edu](http://taes.tennessee.edu)

3

Dear Dr. Cross:

As Interim Dean of AgResearch, I am writing to provide my support to grant tenure to Dr. Tong Wang. She brings a strong background with extensive experience in the field of lipid chemistry. This has allowed her to make valuable contributions to the science and technology of bio-derived chemicals and materials, as well as egg and dairy product quality. Her curriculum vitae clearly describes the achievements of a highly productive researcher who has managed to maintain an ideal balance of fundamental and applied elements in the overall program. The provided information also suggests that she is at a career stage where her contributions are likely to have even greater impact in the years to come.

Dr. Tong Wang has established herself as a productive and influential lipid chemist. She has compiled an impressive publication record consisting of 12 book chapters and 153 journal articles. Over the most recent decade she has averaged slightly more than 10 peer-reviewed publications annually that have appeared in highly regarded journals. Another 4 manuscripts are currently in review. An h-index of 29 (Google) is very high for this science arena and is indicative of the relevance and quality of her program, as well as the quantity of research products. As mentioned above, this notable record reflects a penchant for collaboration and an active role mentoring graduate research assistants, postdoctoral researchers and visiting scientists. I would also highlight the 9 patents/patent applications that she has authored as evidence of the value she places in moving research products from the laboratory to practice in the field, which is a commendable and highly desirable outcome from my perspective. Further, Dr. Wang has delivered 50 presentations on her laboratory's research results at professional meetings, including 27 invited lectures.

Dr. Wang has also demonstrated success in securing external funds to further her research program. She has been involved in grants totaling almost \$9 million with more than \$5.9 million directly supporting her laboratory. This impressive record of grantsmanship has engaged her in 80 projects, highlighting her versatility and valued skills as a researcher. It is worth noting that investment in her program has come from numerous sources (USDA, United Soybean Board, ConocoPhillips, etc.), consistent with a commitment to aggressively pursue resources. Even with the workload presented by her personal research, Dr. Wang has also actively supported the broader research enterprise at Iowa State University taking on several important leadership roles. She has been very active in the American Oil Chemists Society, working diligently to enhance the benefits of membership in this professional organization.



This activity is indicative of a strong reputation nationally and internationally, as is her work to build collaborative programs overseas.

The granting of tenure to Dr. Tong Wang is fully supported by the Dean of the Herbert College of Agriculture in part because of her outstanding record of achievement in supporting various aspects of the academic mission and also due to her demonstrated passion for student learning and success. At Iowa State University in the Department of Food Science and Human Nutrition, she has served as the Director of Graduate Education for Food Science and Technology since 2014. Her record of both teaching and mentorship are outstanding.

Dr. Wang has taught undergraduate courses on such topics as Food Analysis, Food Chemistry, Food Ingredient Interaction, Food Processing, Scientific Presentation, and a China Study Abroad course. Her courses have been well attended even though the course topics are rigorous with as many as 61 students! At the graduate level, she has taught Advanced Food Chemistry, Graduate Orientation, Food Lipids, Seminar Reflection, Proposal Writing, and Graduate Research. Under her guidance as major professor, 36 masters or doctoral students have earned their degrees and even more impressive, she has kept track of their current positions, which range from roles as research associates to important positions in industries prominent nationally (Brinker International, KemXGlobal, Pilgrims, Midamar, Bay Valley Foods, Pioneer Hi-bred, among others). She was also a valued member of the graduate committees of another 34 masters or doctoral students, some of which were from other discipline areas such as agronomy and engineering. Her passion for sharing the excitement of research has also extended to mentoring undergraduate research. Under her guidance, a dozen undergraduates have completed research projects on such topics as soy oil based waxes, corn ethanol fermentation, egg quality, protein foaming, skim fermentation, and emulsion and coating.

Dr. Wang brings with her a rich and accomplished record of teaching, mentorship of graduate students, and a strong belief in providing undergraduate students experiential learning. She has established herself as a leading scientist in lipid chemistry, an area that is relevant to several current and emerging research challenges. I have no doubt that she will be a true and valued asset to the Department of Food Science and will greatly enhance the academic offerings and mission, as well as the research capacity, of the department, the Herbert College of Agriculture, and UTIA AgResearch.

Sincerely,



Fred Tompkins, Interim Dean  
UT AgResearch



Caula Beyl, Dean  
UT Herbert College



University of Tennessee  
Institute of Agriculture  
2621 Morgan Circle  
Knoxville, TN 37996  
865-974-7342  
ag.tennessee.edu

3

January 28, 2019

Dr. Fred Tompkins, Interim Dean of UT AgResearch  
The University of Tennessee, 103 Morgan Hall  
Knoxville, TN 37996

Dr. Caula Beyl, Dean of Herbert College of Agriculture  
The University of Tennessee, 126 Morgan Hall  
Knoxville, TN 37996

RE: Tenure and Appointment Review for Dr. Tong Wang

Dear Drs. Tompkins and Beyl:

The UTIA Promotion and Tenure Committee recommends Dr. Tong Wang for an appointment as a Full Professor (70% research and 30% teaching) with tenure in the Department of Food Science (FS). The Committee met on January 23, 2019, to consider her qualifications. Dr. Wang currently holds the position of Endowed Bacon Louis Faculty Fellow in the Food Science and Human Nutrition Department at Iowa State University. She joined ISU as a tenure-track Assistant Professor in 2000, and was subsequently promoted to Associate Professor with tenure in 2005 and Full Professor in 2010.

Dr. Wang is an outstanding researcher. She has a total of more than 150 refereed publications, a highly impressive publication record. It is particularly notable that almost 100 of those papers were published since she became a full professor in 2010. Dr. Wang demonstrates excellence in grantsmanship. Since 2010, she has secured funds in the amounts of \$4,320,547 as PI and \$4,586,587 as CoPI. The tenured faculty in FS Department found "Dr. Wang's research funding and scientific contribution noteworthy and impressive."

Dr. Wang is an accomplished teacher. In her 18 year career as a faculty member at ISU, her main contributions to the classroom include both undergraduate courses in Food Chemistry and Food Analysis and graduate courses in Food Liquids and Advanced Food Chemistry. Dr. Wang has mentored 31 graduate students to completion and is currently serving as major/co-major professor for 5 graduate students. In addition, she has trained 21 postdocs and visiting scientists. The tenured FS faculty "commend Dr. Wang's teaching endeavor at the rank of Professor."

Dr. Wang's service record is also highly impressive. She has been an exemplary citizen at ISU by serving on various types of committees at the department, college and university levels. Her services to her profession are notable, which include editorship on the Journal of American Oil Chemists' Society. She has also provided extensive service to the Food and Agricultural Industry and served on grant review panels for a number of federal agencies. The tenured FS faculty found the "service of Dr. Wang commendable at the rank



Page 2 of 2

Drs. Tompkins and Beyl

RE: Tenure and Appointment Review for Dr. Tong Wang

of Professor.”

The votes of the tenured FS faculty were unanimous for the appointment of Dr. Wang at the rank of Full Professor in Food Science (3 for, 0 against) with tenure (3 for, 0 against). Dr. Mark Morgan, the Department Head of FS, fully supports the recommendation of the tenured FS faculty.

The UTIA P&T Committee (with Dr. D’Souza recused) concurs with the tenured FS faculty and Dr. Morgan’s recommendation and unanimously supports the appointment of Dr. Wang at Full Professor (8 for, 0 against) with tenure (8 for, 0 against) in the FS Department.

Please contact me if the UTIA P&T Committee can answer any questions or provide further information regarding this recommendation.

Best regards,



Matthew Devereaux, Professor

Chair, UTIA Promotion and Tenure Committee

- Cc: UTIA Promotion and Tenure Committee
- Dr. Feng Chen                      Dr. Seong-Hoon Cho
- Dr. Doris D’Souza                Dr. Mark Fly
- Dr. Jun Lin                         Dr. Carrie Stephens
- Dr. Scott Stewart                 Dr. Forbes Walker

Department Head: Dr. Mark T. Morgan

Candidate: Dr. Tong Wang



**Food Science**

2510 River Drive  
Knoxville, TN 37996  
office: 865-974-7331

3

[ag.tennessee.edu/foodscience](http://ag.tennessee.edu/foodscience)

December 10, 2018

Dr. Tim Cross, Chancellor  
University of Tennessee  
Institute of Agriculture  
101A Morgan Hall  
Knoxville, TN 37996

Dear Chancellor Cross:

This letter fully supports Dr. Tong Wang's unanimous recommendation for tenure and appointment at Full Professor. Since the Food Science Department only has two active Full Professors, I asked Dr. David Golden (former full professor in Food Science and currently Executive Assistant to the President), to assist with the critical review of Dr. Wang's CV.

Dr. Wang is currently the Endowed Jean Bacon Louis Faculty Fellow in the Food Science and Human Nutrition Department at Iowa State University. She was promoted to full professor at Iowa State University in 2010 and assumed her current position in 2017. Without reiterating all of the details Dr. Wang's many accomplishments, I just want to point out her excellent publication record, ~154 refereed publications total, with almost 100 of them since becoming a full professor in 2010. Her CV clearly demonstrates that she has maintained a productive faculty career at Iowa State University for the past 18 years.

In addition to her publication record, it is worth noting that she has also received at least 8 honors and awards since achieving the rank of full professor. Although Iowa State University was not selected as a comparable peer institution by the UT Institute of Agriculture, it is a comparable peer institution for the University of Tennessee Knoxville. Therefore, based on the productivity described in her CV at a peer-level institution, I am fully supportive of her appointment as a full professor with tenure.

I look forward to many more years of productivity and contributions from Dr. Wang. If you have any questions or need further clarification, please don't hesitate to contact me.

Sincerely,

Mark T. Morgan, Professor and Head  
PH: 865-974-7499; [Mark.Morgan@utk.edu](mailto:Mark.Morgan@utk.edu)



**Food Science**

2510 River Drive  
Knoxville, TN 37996  
office: 865-974-7331

[ag.tennessee.edu/foodscience](http://ag.tennessee.edu/foodscience)

3

**To:** Mark T. Morgan, Professor and Head

**From:** Doris D'Souza, Professor *Doris D'Souza*  
David Golden, Professor *David Golden*  
Qixin Zhong, Professor *Qixin Zhong*

**Date:** November 30, 2018

**Subject:** Appointment of Dr. Tong Wang as Professor with Tenure in Food Science

---

Dear Dr. Morgan:

The UTIA Food Science tenured faculty met on November 30, 2018 to discuss and evaluate Dr. Tong Wang's CV for the appointment as Professor with tenure (70% Research and 30% Teaching) in the Food Science Department.

The tenured Food Science (FS) faculty voted unanimously for the appointment of Dr. Wang at the rank of Professor in Food Science (3 for, 0 against), and also unanimously voted for tenure within the Food Science Department (3 for, 0 against) at UTIA.

A summary of her Teaching and Research Accomplishments and Evaluation by the tenured FS faculty are provided below:

**Teaching:** Dr. Wang brings with her ~18 years of commendable experience as a faculty member from Iowa State University (ISU). She has successfully contributed towards undergraduate teaching classes in Food Chemistry and Food Analysis and graduate level classes in Food Lipids and Advanced Food Chemistry at ISU. In addition, she also contributed towards classes in Food Ingredient Interaction (FSHN 411), Food Processing (FSHN472/572), Scientific Presentations (FSHN 480), China Study Abroad (FSHN 496A/596A), Graduate Student Orientation, Seminar Reflection, Proposal Writing and Graduate Research. She hosted minority and international undergraduate and high school interns. She served as a major professor of 31 graduate students (M.S. and Ph.D.) and currently serves as a Major or co-Major professor of 5 graduate students (4 Ph.D. and 1 M.S.). She has trained and mentored 21 Postdoctoral Research Associates and Visiting Scientists and also 12 undergraduate students. She has served as a committee member of 34 graduate students. She also serves as the Graduate Director of Graduate Education for Food Science and Technology at ISU.

The tenured FS faculty commend Dr. Wang's teaching endeavors at the rank of Professor.

**Research:**

The tenured faculty recognized Dr. Wang's outstanding research program in lipid chemistry and sustainable processing approaches, along with nutrition and egg and dairy product quality and value enhancement research. Her excellence in research is evidenced by her outstanding publication record of 154 manuscripts, 12 book chapters, and 9 patent applications. She is a well-recognized and highly sought after speaker at national and international scientific conferences with 27 invited presentations from 2013 alone (averaging ~4 per year) and 23 scientific presentations/abstracts from 2013. She has been highly successful in securing funds to support her research program with \$4,320,547 as PI from 46 projects, and \$4,586,587 as co-PI (with \$1,600,919 directly to her program) since January 2000, totaling \$8,907,134 in research support.

The tenured FS faculty found Dr. Wang's research funding and scientific contribution noteworthy and impressive.

**Service:**

Dr. Wang has provided extensive service to the Food and Agricultural Industry, served on federal funding agencies grant review panels, Canada Foundation Panels, among others. She is also the Editor of the Journal of American Oil Chemists' Society (AOCS) since 2005 and serves as a member of the publications steering committee of AOCS since 2005. She regularly serves as a reviewer for various journals including Journal of Food Science, Journal of Food Composition, and Journal of Agricultural and Food Chemistry, Lipids, Journal of American Oil Chemists' Society, Journal of the Science of Food and Agriculture. She has also served as an external PhD examiner for Australian Universities among other international institution visits. She also extensively contributed to university, college and departmental level service (including P& T committee, Strategic Planning Committee, Faculty Search Committee, Graduate Admissions Committee, Curriculum Committee, International Programs, Award Committees, Faculty Review Committee, and Departmental Advisory Committee and serving as a mentor for junior faculty) while at ISU.

The tenured FS faculty found the service of Dr. Wang commendable at the rank of Professor.

Overall, the tenured FS faculty found that the materials presented by Dr. Wang were adequate for the rank of Professor with tenure in Food Science and enthusiastically look forward to having her join and contribute to the FS Department.



**Dr. Tong “Toni” Wang  
Confirmation of Curriculum Vitae**

**TONG WANG, Ph.D., Professor**

Endowed Jean Bacon Louis Faculty Fellow

Director of Graduate Education for Food Science and Technology

Department of Food Science and Human Nutrition (FSHN)

2312 Food Sciences Building

Iowa State University, Ames, Iowa 50011, USA

515-294-5448 (Voice) 515-294-8181 (Fax) E-mail: tongwang@iastate.edu

<http://www.fshn.hs.iastate.edu/content/directory/websites/wang.php>**EDUCATION**

Ph.D.	Food Science	Iowa State University	May, 1998
M.S.	Food Science	University of Arkansas	May, 1992
M.S.	Pharmaceutics	Shenyang Pharmaceutical University, China	July, 1988
B.S.	Pharmacy	Shenyang Pharmaceutical University, China	July, 1985

**ACADEMIC AND PROFESSIONAL APPOINTMENTS**

2017 – Now	Endowed Jean Bacon Louis Faculty Fellow
2014 – Now	Director of Graduate Education for Food Science and Technology, FSHN, ISU
2010 – Now	<i>Professor</i> , FSHN, ISU
2005 – 2009	<i>Associate Professor</i> , FSHN, ISU
2000 – 2005	<i>Assistant Professor</i> , FSHN, ISU
1998 – 1999	<i>Postdoctoral Research Associate</i> , Center for Crops Utilization Research, ISU
1995 – 1998	<i>Graduate Research Assistant</i> , FSHN, ISU
1994 – 1995	<i>Research Associate</i> , FSHN, ISU
1993	<i>Research Associate</i> , Food Science, University of Arkansas
1991 – 1992	<i>Graduate Research Assistant</i> , Food Science, University of Arkansas
1989 – 1990	<i>Graduate Research Assistant</i> , Food Science and Technology, University of Nebraska
1985 – 1988	<i>Graduate Research Assistant</i> , Shenyang Pharmaceutical University, China

**RESEARCH AREAS**

Processing and value-added utilization of soybeans, corn, egg, and other agricultural products or by-products, primarily for their lipid components, with the following two areas of specialization:

Creating Smart Lipid Materials and Sustainable Lipid Processing:

- 1) Characterization of health-promoting lipids in oilseeds, agricultural co-products, and microbial biomass
- 2) Mechanism of lipid oxidation and stabilization
- 3) Synthesis of health promoting and functional lipids
- 4) Synthesis, evaluation, and application of vegetable oil-based coating and binding materials and biofuel and biolubricants
- 5) Maximization of oil extraction and lipid class fractionation from corn fermentation by-products, microbial biomass, and dairy processing by-products

Egg and Dairy Product Quality and Value Enhancement:

- 1) Egg nutrient enhancement by feed formulation and egg quality monitoring by modified environment
- 2) Fractionation and characterization of egg yolk lecithin and special dairy polar lipids from waste streams for high-value infant formula and geriatric nutrition
- 3) Improving quality and functionality of egg and egg products

**TEACHING (more details later):**

- Undergraduate level: Food Chemistry (2000-2009), Food Analysis (2013-2018)
- Graduate level: Food Lipids (2004-2016), Advanced Food Chemistry (2018)

**MEMBERSHIP IN PROFESSIONAL SOCIETIES**

- AOCS (American Oil Chemists Society), belonging to its Processing, Lipid Oxidation, Phospholipids, Edible Applications Technology, Protein and Co-products Divisions, 1995-present
- Institute of Food Technologists (IFT), 1992-1993, Food Chemistry Division, 1999-present
- Sigma Xi Scientific Research Society, since 1997
- Gamma Sigma Delta Honor Society of Agriculture, since 1992

**AWARDS AND HONORS**

- Endowed Jean Bacon Louis Faculty Fellow, Iowa State University (ISU), 2017
- National Innovation Award, TechConnect World Innovation Conference and Expo in Washington, D.C. 2017
- AOCS Society Fellow, 2016
- Corn Utilization and Technology Conference Research Poster Competition 1<sup>st</sup> Place (awarded to my PhD student), 2014, 2016
- Iowa State University Mid-Career Achievement in Research, 2014
- AOCS Timothy L. Mounts Award for Excellence of Research in Basic or Applied Edible Oils, 2013
- College of Agriculture and Life Sciences Mid-Career Achievement in Research Award (ISU), 2012
- IFT Mark Bieber Nutrition Division Poster Competition 4th place to (my MS student), 2011
- Women of Innovation in Research Innovation and Leadership, Technology Association of Iowa, 2009
- Gamma Sigma Delta Mission Award for Research (ISU), 2009
- College of Agriculture and Life Sciences Team Research Award (ISU), 2009
- American Oil Chemists' Society (AOCS) Phospholipids Division Best Paper Honorable Mention, 2009
- College of Agriculture Early Achievement in Research Award (ISU), 2004
- AOCS Outstanding Paper Presentation Award, 1997 (2), 2001, 2002 (3), and 2003
- Graduate Research Excellence Award, Graduate College (ISU), 1998
- AOCS Honored Student Award, 1997
- Academic Excellence Award, Office of Minority Student Affairs (ISU), 1996, 1997
- Being nominated for 2018/2019 academic year
  - CALS Outstanding Achievement in Research
  - CALS Rossmann Mannatt Faculty Development Award
  - CALS Outstanding Achievement in International Agriculture Award
  - The AOCS Alton E. Bailey Award (for recognizing outstanding research and exceptional service in the field of lipids and associated products)

**TRAINING AND PROFESSIONAL IMPROVEMENT**

- Emerging Leaders Academy 2013-2014, ISU
- Lead 21 Class 14, 2018-2019, training for Land Grant University's leaders

**ACHIEVEMENT HIGHLIGHTS**Research Accomplishments

- Received 80 funded research grants, with \$8.9 million total funding, served as PI for 46 projects (\$4.3 million) and co-PI for 34 (\$4.6 million, of which \$1.6 million under my direct supervision/use)
- Published 153 peer-reviewed journal articles and 12 book chapters
- Published 3 patents and 3 patent applications
- Mentored 36 graduate students (16 PhD, 20 MS), with 23 (8 PhD, 15 MS) to completion; and 20 post-docs and visiting scientists
- Served on 34 POS committees (18 PhD, 16 MS)
- Delivered 27 invited talks at national and international levels since 2013

Professional and Institutional Services

- Significant service contributions to AOCS:
  - Currently serving on AOCS Books and Special Publications Committee;
  - An Associate Editor for Journal of AOCS since 2006;
  - Served as the Chair of the Phospholipid Division of AOCS for 2-years (13-14);
  - Obtained 2 student scholarships from two Chinese companies (working with professor Xingguo Wang) each at \$2000/year for 10-year commitment;
  - Recruited new AOCS professional and student members from China through co-organizing the 1<sup>st</sup> AOCS-China section conference;
  - Co-organized AOCS-PHOS Division's Short Course and Forum;
  - Actively involved in Professional Educators' Common Interest Group.
- Service at Iowa State University:
  - As the Director of Graduate Education for Food Science and Technology graduate program, obtained USDA-NIFA National Need Fellowship grant of \$262,500 (with additional \$252,900 ISU match) and with 4 Ph.D. Fellows currently working on lipid nanoscience and Technology;
  - Faculty lead of the Strategic Areas of Excellence (SAE) of the Green and Sustainable Food and Biomaterials Processing Technologies to coordinate the development of 5-year activity plan, building website, meeting for research collaborations, and proposal writing and submission.
- Served as External Examiner for PhD Dissertations for Deakin University, as proposal reviewer for USDA-ARS, USDA-NIFA, as *ad hoc* reviewer for various government funding agencies, such as the Natural Sciences and Engineering Research Council of Canada.

International Activities:

- Currently helping Naasakle International (www.shea.care, Shane Bohbrink) to design strategies to prevent shea butter degradation during postharvest degradation, and increase oil yield by screw press to produce natural shea butter. This will improve women and family life in rural West Africa (millions of women rely on shea as their primary source of income).
- Assisted in the development of 2+2 joint Food Science undergraduate degree program with Henan Ag University of China
- Member of the International Joint Research Laboratory for Lipid Nutrition and Safety established in 2016 at Jiangnan University, China; organized its 2<sup>nd</sup> Annual Conference in Ames, IA, May 2018
- Appointed as Visiting Professor at Dalian Polytechnic University (2015 – Now), Visiting Professor in School of Food Science and Technology at Jiangnan University (2012 – Now), and Distinguished Professorship in Food Science College at Northeast Agricultural University (2012 – Now)
- Developed China Study Abroad program and offered first class in May 2015
- Jointly submitted and obtained a highly competitive and prestigious research grant from the *China National Science Foundation* (\$564,516) on soybean aqueous processing
- Current USDA-NIFA funded project on developing PhD graduate student training programs on Lipid Nano Sciences with Aarhus University in Denmark

Leadership Roles:

- As the Professor-in-Charge for Green Processing SAE (Strategic Areas of Excellence) area, currently leading discussion on interdisciplinary collaboration and team building;
- As DOGE, has led effort in upgrade graduate curriculum and degree rigor and quality evaluation; currently developing on-line graduate degree to address the needs from the industry and the graduate program;
- Led (unofficially) USB (United Soybean Board)-funding discussion on platform industrial products, future directions, and with continued mutual funding-research commitments.

**PUBLICATIONS****Refereed Journal Articles (\* indicates paper as the corresponding author) [citation # updated September 2018, selected papers]**1993:

1. **Wang, T.**, A.R. Gonzalez, E.E. Gbur, and J.M. Aselage. 1993. Organic acid changes during ripening of processing peaches. *Journal of Food Science* 58:631-632.

1997:

2. **Wang, T.**, E.G. Hammond, and W.R. Fehr. 1997. Phospholipid fatty acid composition and stereospecific distribution of soybeans with a wide range of fatty acid compositions. *Journal of the American Oil Chemists' Society* 74:1587-1594.
3. Hammond, E.G., D. Duvick, **T. Wang**, H. Dodo, and R.N. Pittman. 1997. Survey of the fatty acid composition of peanut (*Arachis hypogaea*) germplasm and characterization of their epoxy and eicosenoic acids. *Journal of the American Oil Chemists' Society* 74:1235-1239.

1999:

4. **Wang, T.**, and E.G. Hammond. 1999. Fractionation of soybean phospholipids by high-performance liquid chromatography with an evaporative light scattering detector. *Journal of the American Oil Chemists' Society* 76:1313-1321.

2001:

5. Crowe, T.W., L.A. Johnson, and **T. Wang**. 2001. Characterization of extruded-expelled soybean meals and edible flours. *Journal of the American Oil Chemists' Society* 78:775-779.
6. **\*Wang, T.**, and L. A. Johnson. 2001. Refining normal and genetically enhanced soybean oils obtained by various extraction methods. *Journal of the American Oil Chemists' Society* 78:809-815.
7. **\*Wang, T.**, and L. A. Johnson. 2001. Natural refining of extruded-expelled soybean oils having various fatty acid compositions. *Journal of the American Oil Chemists' Society* 78:461-466.
8. **\*Wang, T.**, and L.A. Johnson. 2001. Survey of soybean oil and meal qualities produced by different processes. *Journal of the American Oil Chemists' Society* 78:311-318.
9. **\*Wang, T.**, and L. A. Johnson. 2001. Refining high-free fatty acid wheat germ oil. *Journal of the American Oil Chemists' Society* 78:71-76. [83]
10. **\*Wang, T.**, E.G. Hammond, and W.R. Fehr. 2001. Neutral and polar lipid phase transition of soybeans with altered saturated fatty acid contents. *Journal of the American Oil Chemists' Society* 78:1139-1144.
11. **\*Wang, T.**, T. Harp, E.G. Hammond, J.S. Burris, and W.R. Fehr. 2001. Seed physiological performance of soybeans with altered fatty acid contents. *Seed Science Research* 11:93-97.

2002:

12. **\*Rezaei, K.**, **T. Wang**, and L. A. Johnson. 2002. Hydrogenated vegetable oils as candle wax. *Journal of the American Oil Chemists' Society* 79:1241-1247.
13. **\*Wang, X.**, **T. Wang**, and L.A. Johnson. 2002. Composition and sensory qualities of minimum-refined soybean oils. *Journal of the American Oil Chemists' Society* 79:1207-1214.
14. **\*Wang, T.**, K.B. Hicks, and R. Moreau. 2002. Antioxidant activity of phytosterols, oryzanol, and other phytosterol conjugates. *Journal of the American Oil Chemists' Society* 79:1201-1206. [181]
15. **\*Rezaei, K.**, **T. Wang**, and L.A. Johnson. 2002. Combustion characteristics of candles made from

hydrogenated soybean oil. *Journal of the American Oil Chemists' Society* 79:803-808.

16. \*Wang, T., and J.L. Briggs. 2002. Rheological and thermal properties of soybean oils with modified FA compositions. *Journal of the American Oil Chemists' Society* 79:831-836.
17. \*Wang, T., D. J. Myers, and A. A. Heywood. 2002. Functionality and utilization of soy flour produced from extrusion-expelling processing. *Inform* 13:708-713. (Review)

#### 2003:

18. \*Wu, Y.Z., and T. Wang. 2003. Total and polar lipids in soybean protein meals. *Journal of the American Oil Chemists' Society* 80:983-985.
19. Boylston, T.D., and T. Wang. 2003. Integration of team-building skills into food chemistry team research projects. *Journal of Food Science Education* 2:18-24.
20. \*Wu, Y.Z., and T. Wang. 2003. Soybean lecithin fractionation and functionality. *Journal of the American Oil Chemists' Society* 80:319-326. [79]
21. \*Wang, X., T. Wang, and L.A. Johnson. 2003. Chemical and sensory properties of gas-purged, minimum-refined, extruded-expelled soybean oil. *Journal of the American Oil Chemists' Society* 80:923-926.
22. \*Wu, Y.Z., and T. Wang. 2003. Phospholipid class and fatty acid compositions of modified soybeans processed with two extraction methods. *Journal of the American Oil Chemists' Society* 80:127-132.
23. \*Wang, T. 2003. Use of fats and oils in candle production, *Journal of Lipid Technology* 15:131-134. (Review)

#### 2004:

24. \*Gutierrez, E. and T. Wang. 2004. Effect of processing on sphingolipid content in soybean products. *Journal of the American Oil Chemists' Society* 81:971-977.
25. \*Wang, H., T. Wang, and L.A. Johnson. 2004. Refunctionalization of extruded-expelled soybean meals. *Journal of the American Oil Chemists' Society* 81:789-794.
26. \*Wang, H., L.A. Johnson, and T. Wang. 2004. Preparation of soy protein concentrate and isolate from extruded-expelled meals. *Journal of the American Oil Chemists' Society* 81:713-717.
27. \*Gutierrez, E., T. Wang, and W. R. Fehr. 2004. Quantification of sphingolipids in soybeans. *Journal of the American Oil Chemists' Society* 81:737-742.
28. \*Wu, Y.Z., and T. Wang. 2004. Fractionation of crude soybean lecithin with aqueous ethanol. *Journal of the American Oil Chemists' Society* 81:697-704.
29. McCord, K.L., W.R. Fehr, T. Wang, G.A. Welke, S.R. Cianzio, and S.R. Schnebly. 2004. Tocopherol content of soybean lines with reduced linolenate in the seed oil. *Crop Science* 44:772-776.
30. \*Briggs, J.L., and T. Wang. 2004. Influence of shearing and time on the rheological properties of milk chocolate during tempering. *Journal of the American Oil Chemists' Society* 81:117-121.

#### 2005:

31. \*Palacios L. E. and T. Wang. 2005. Extraction of egg-yolk lecithin. *Journal of the American Oil Chemists' Society* 82:565-569.
32. \*Palacios L. E. and T. Wang. 2005. Egg-yolk lipid fractionation and lecithin characterization. *Journal of the American Oil Chemists' Society* 82: 571-578. [142]
33. \*Wang, H., T. Wang, and L.A. Johnson, 2005. Effect of alkali on refunctionalization of soy protein by hydrothermal cooking. *Journal of the American Oil Chemists' Society* 82:451-456.
34. \*Wang, T., Y. Jiang, and E. G. Hammond. 2005. The effect of randomization on the oxidative stability of corn oil. *Journal of the American Oil Chemists' Society* 82:111-117.
35. \*Jiang, Y. and T. Wang. 2005. Phytosterols in agricultural by-products. *Journal of the American Oil Chemists' Society* 82:439-444. [106]

2006:

36. Bhuyan, S., S. Sundararajan, L. Yao, E.G. Hammond, and **T. Wang**. 2006. Boundary lubrication properties of lipid-based compounds evaluated using microtribological methods. *Tribology Letters* 22: 167-172.
37. \*Wang, L., **T. Wang**, and W.R. Fehr. 2006. Effect of seed development stage on sphingolipid and phospholipid contents in soybean seeds. *Journal of Agricultural and Food Chemistry* 54:7812-7816.
38. \*Wang, L., **T. Wang**, and W.R. Fehr. 2006. HPLC quantification of sphingolipids in soybeans with modified palmitate content. *Journal of Agricultural and Food Chemistry* 54:7422-7428.
39. Scherder, C. W., W. R. Fehr, G. A. Welke, and **T. Wang**. 2006. Tocopherol content and agronomic performance of soybean lines with reduced palmitate. *Crop Science* 46:1286-1290.
40. Zhang, S., **Wang, T.**, and Beitz, D.C. 2006. Soy Lecithin but Not Egg Lecithin Decreased the Plasma Cholesterol Concentration in Golden Syrian Hamsters. Animal Industry Report: AS 652, ASL R2080. [http://lib.dr.iastate.edu/ans\\_air/vol652/iss1/21](http://lib.dr.iastate.edu/ans_air/vol652/iss1/21).
41. \*Wang, H., **T. Wang**, and L.A. Johnson. 2006. Mechanism for refunctionalizing heat-denatured soy protein by alkaline hydrothermal cooking. *Journal of the American Oil Chemists' Society* 83:39-45.

2007:

42. \*Wang, L. and **T. Wang**. 2007. Chemical modification of partially hydrogenated vegetable oil to improve its functional properties for candles. *Journal of the American Oil Chemists' Society* 84:1149-1159.
43. Stevenson, D.G., F. J. Eller, L. Wang, J. Jane, **T. Wang**, and G. E. Inglett. 2007. Oil and tocopherol content and composition of pumpkin seed oil in twelve cultivars and review of literature. *Journal of Agricultural and Food Chemistry* 55:4005-4013. [261]

2008:

44. \*Wang, G., and **T. Wang**. 2008. Oxidative stability of egg and soy lecithin as affected by transition metal ions and pH in emulsion. *Journal of Agricultural and Food Chemistry* 56:11424-11431. [67]
45. \*Wang, H., **T. Wang**, L.A. Johnson, and A.L. Pometto III. 2008. Effect of corn breaking method on oil distribution between stillage phases of dry-grind corn ethanol production. *Journal of Agricultural and Food Chemistry* 56: 9975-9980.
46. \*Faris, R., H. Wang, and **T. Wang**. 2008. Improving digestibility of soy flour by reducing disulfide bonds with thioredoxin. *Journal of Agricultural and Food Chemistry* 56:7146-7150.
47. Yao, L. E.G. Hammond, and **T. Wang**. 2008. Melting points and viscosities of fatty acid esters that are potential targets for engineered oilseed. *Journal of the American Oil Chemists' Society* 85:77-82.
48. \***Wang, T.** 2008. Recovering oil from corn ethanol fermentation by-products. *Lipid Technology* 20:203-207. **(Review)**
49. \***Wang, T.** 2008. Emerging soy protein processing technologies. *Inform* 19:13-16. **(Review)**

2009:

50. \*Wang, H., **T. Wang**, A.L. Pometto III, and L.A. Johnson. 2009. Establishing a laboratory decanting procedure to simulate whole stillage separation during industrial corn dry-grind fuel ethanol process. *Journal of the American Oil Chemists' Society*. 86:1241-1250.
51. \*Wang, G., **T. Wang**. 2009. Restoration of foaming properties of yolk-contaminated liquid egg white by interaction with basic soy protein isolate. *Journal of Food Science*. 74: C581-C587.
52. \*Wang, H., R.J. Faris, **T. Wang**, M.E. Spurlock, and N. Gabler. 2009. Increased *in vitro* and *in vivo* digestibility of soy proteins by chemical reduction of disulfide bonds. *Journal of the American Oil Chemists' Society*. 86:1093-1099.
53. \*Wang, H., **T. Wang**, L.A. Johnson, and A.L. Pometto. 2009. Effect of low-shear extrusion on corn fermentation and oil partition. *Journal of Agricultural and Food Chemistry* 57:2302-2307.
54. Chand, P., C. Reddy, J. G. Verkade, **T. Wang**, and D. Grewell. 2009. Thermogravimetric quantification of biodiesel produced via alkali catalyzed transesterification of soybean oil. *Energy & Fuels* 23:989-992.

55. \*Wang, G., and T. Wang. 2009. Effects of yolk contamination, shearing force, and heating on foam properties of fresh egg white. *Journal of Food Science* 74:C147-C156.
56. \*Wang, G., and T. Wang. 2009. Egg yolk protein modification by controlled enzymatic hydrolysis for improved functionalities. *International Journal of Food Science and Technology* 44:763–769.

2010:

57. \*Ma, Y., and T. Wang. 2010. Deactivation of soybean agglutinin by enzymatic and other physical treatments. *Journal of Agricultural and Food Chemistry* 58:11413–11419.
58. Yao, L., E. G. Hammond, and T. Wang. 2010. Synthesis and physical properties of ricinoleate esters that are potential biolubricants. *Journal of the American Oil Chemists' Society* 87:937-945.
59. \*Wang, H., L.A. Johnson, and T. Wang. 2010. Effect of corn breaking and fermentation on germ integrity and oil quality. *Journal of Agricultural and Food Chemistry*. 58:10039-10044.
60. Baumgartner, R.M., W. R. Fehr, T. Wang, and G. Wang. 2010. Tocopherol content of soybean lines with mid-oleate and 1%-linolenate. *Crop Science*. 50:770-774.
61. \*Wang, G., T. Wang. 2010. The role of plasmalogen in oxidative stability of neutral lipid and phospholipids. *Journal of Agricultural and Food Chemistry*. 58:2554-2561.
62. \*Majoni, S., and T. Wang. 2010. Characterization of deposit in corn oil and corn oil extracted from corn fermentation co-products. *Journal of the American Oil Chemists' Society*. 87: 205-213.

2011:

63. \*Majoni, S., T. Wang, and L.A. Johnson. 2011. Physical and chemical processes to enhance oil recovery from condensed corn distillers solubles. *Journal of the American Oil Chemists' Society*. 88: 425-434.
64. \*Majoni, S., T. Wang, and L.A. Johnson. 2011. Enzyme treatments to enhance oil recovery from condensed corn distillers solubles. *Journal of the American Oil Chemists' Society*. 88: 523-532
65. \*Ma, Y., and T. Wang. 2011. Identification and validation of soy peptides with in-vitro Hemagglutination activity. *Journal of the American Oil Chemists' Society*. 88:833–842.
66. \*Ma, Y., T. Wang, R. Faris, M. Spurlock. 2011. In vitro hemagglutination activity of  $\beta$ -conglycinin and glycinin fractions and feeding study of non-thermal treated soy protein. *Journal of the American Oil Chemists' Society*. 88: 983-992.
67. Towa, L.T., V. N. Kapchie, G. Wang, C. Hauck, T. Wang, and P. A. Murphy. 2011. Quantity and quality of free oil recovered enzymatically disrupted oleosomes. *Journal of the American Oil Chemists' Society*. 88:1581-1591.
68. \*Dolde, D., and T. Wang. 2011. Oxidation of crude corn oil with and without elevated tocotrienols. *Journal of the American Oil Chemists' Society*. 88: 1367-1372.
69. \*Dolde, D., and T. Wang. 2011. Oxidation of corn oils with spiked tococls. *Journal of the American Oil Chemists' Society*. 88: 1759-1765
70. \*Yao, L., T. Wang, H. Wang. 2011. Effect of soy skim from soybean aqueous processing on the performance of corn ethanol fermentation. *Bioresource Technology*. 102: 9199–9205. **Identified and collected by the Target Selection team of Renewable Energy Global Innovations as the important contribution to the progress in renewable energy technologies.**

2012:

71. Wang, X., Q. Jin, T. Wang, J. Huang, Y. Xia, L. Yao, X. Wang. 2012. Screening of glucosinolate-degrading strains and its application in improving the quality of rapeseed meal. *Ann Microbiol*. 62: 1013-1020. 62: 1013-1020.
72. \*Wang, G. and T. Wang. 2012. Lipid and biomass recovery from two microalgae by aqueous and alcohol processing. *Journal of the American Oil Chemists' Society*. 89: 335-345.
73. \*Wang, G., and T. Wang. 2012. Characterization of lipid components in two microalgae for biofuel application. *Journal of the American Oil Chemists' Society*. 89: 135-143. [82]
74. \*Yao, L., and T. Wang. 2012. Textural and physical properties of biorenewable “waxes” containing partial acylglycerides. *Journal of the American Oil Chemists' Society* 89: 155-166.



75. Mitra, D., M.L. Rasmussen, P. Chand, V.R. Chintareddy, L. Yao, D. Grewell, J.G. Verkade, **Wang, T.**, and J. van Leeuwen. 2012. Value-added oil and animal feed production from corn-ethanol stillage by oleaginous *Mucor circinelloides*. *Bioresource Technology*. 107: 368–375.
76. \*Wang, X., X. Wang, **T. Wang**. 2012. Synthesis of oleoyl ethanolamide using lipase. *Journal of Agricultural and Food Chemistry*. 60, 451–457.
77. \*Wang, X., **T. Wang**, X. Wang. 2012. An improved method for the synthesis of stearoyl and palmitoyl ethanolamide. *Journal of the American Oil Chemists' Society*. 89: 1305-1313.
78. \*Wang, G., M. Troendle, C. A. Reitmeier, and **T. Wang**. 2012. Using modified soy protein to enhance foaming of egg white protein. *International Journal of Food Properties*. 92: 2091–2097.
79. \*Walker, L., **T. Wang**, H. Xin, and D. Dolde. 2012. Supplementation of laying-hen feed with tocos and algal astaxanthin for egg yolk nutrient enrichment. *Journal of Agricultural and Food Chemistry*. 60: 1989-1999.
80. \*Wang, H., L. Yao, and **T. Wang**. 2012. Extraction of phospholipids from structured dry chicken egg. *Journal of Lipid Technology*. 24: 1-3.
81. \*Yang, S., J. Y. Lio, and **T. Wang**. 2012. Solid state fermentation of soybean fiber and dried distiller's grains. *Applied Biochemistry and Biotechnology*. 167: 109-121.
82. \*Yao, L., S. Lee, **T. Wang**, J. M. L. N. de Moura, and L. A. Johnson. 2012. Effects of fermentation substrate conditions on corn-soy co-fermentation for fuel Ethanol production. *Bioresource Technology*. 120: 140–148.
83. \*Yao, L., J. A. Gerde, and **T. Wang**. 2012. Oil extraction from microalga *Nannochloropsis* sp. with isopropyl alcohol, *J Am Oil Chem Soc*. 89:2279–2287.
84. \*Lio, J. Y. and **T. Wang**. 2012. Solid-state fermentation of soybean and corn processing co-products for improved feed quality. *Journal of Agricultural and Food Chemistry*. 60: 7702–7709.
85. \*Yao, L., **T. Wang**, B. Walton. 2012. Modifying Vegetable Oil for Encaustic Painting. *Inform* 23:474-475.
86. \*Gerde, J.A., M. Montalbo-Lomboy, L. Yao, D. Grewell, and **T. Wang**. 2012. Evaluation of microalgae cell disruption by ultrasonic treatment. *Bioresource Technology*. 125: 175–181. [100]
87. \*Yao, L., S-L Lee, **T. Wang**, and J. A. Gerde. 2013. Comparison of isopropanol oil extraction performance on two species of microalgae and soy flour, *J Am Oil Chem* 90: 571–578.
88. \*Lio, J., **T. Wang**. 2012. *Pythium irregulare* fermentation to produce arachidonic acid (ARA) and eicosapentaenoic acid (EPA) using soybean processing co-products as substrates. *Applied Biochemistry and Biotechnology* 169:595–611.
89. \*Yao, L., **T. Wang**, M. Persia, R. L. Horst, and M. Higgins. 2012. Egg vitamin D enrichment Effects of Vitamin D Enriched Diet on Egg yolk Vitamin D Content and Quality, *Journal of Food Science*. 78: C178-183.

2013:

90. \*Gerde, J. A., **T. Wang**, L. Yao, S. Jung, L. A. Johnson, and B. Lamsal. 2013. Optimizing protein isolation from defatted and non-defatted *Nannochloropsis* microalgae biomass. *Algal Research*. 2: 145–153.
91. de Moura Bell, J.M.L.N., D. Maurer, L. Yao, **T. Wang**, S. Jung, and L.A. Johnson. 2013. Characteristics of oil and skim in enzyme-assisted aqueous extraction of soybeans. *J Am Oil Chem Soc*. 90:1079–1088.
92. Kapchie, V.N. Yao, Y. Hauck, C.C., **Wang, T.**, and Murphy, P.A. 2013. Oxidative Stability of Soybean Oil in Oleosomes as Affected by pH and Iron. *Food Chemistry*, 141:2286-2293.
93. \*Yao, L., Lio, J., **Wang, T.** and Jarboe, D.H. 2013. Synthesis and characterization of acetylated and stearilyzed soy wax. *J Am Oil Chem Soc*, 90:1063–1071.
94. \*Wang, X., X. Wang, **T. Wang**. 2013. Enrichment of arachidonic acid for the synthesis of arachidonoyl ethanolamide. *J Am Oil Chem Soc* 90:1031–1039.
95. \*Wang, X., Wang, X., Jin, Q. **Wang, T.** 2013. Improved synthesis of monopalmitin on a large scale by

two enzymatic methods. *J Am Oil Chem Soc*, 90: 1455-1463

96. Wang, X. Jin, Q., **Wang, T.**, Huang, J., Wang, X. 2013. An improved method for the synthesis of 1-monoolein. *Journal of Molecular Catalysis B: Enzymatic* 97: 130-136.
97. Persia, M., Higgins, M., **Wang, T.**, Trampel, D. Bobeck, E. 2013. Effects of long-term supplementation of laying hens with high concentrations of cholecalciferol on performance and egg quality. *Poultry Science* 92: 2930–2937.

#### 2014:

98. Bigelow, T. A., Xu, J., Stessman, J. Yao, L. Spalding, M.H., and **Wang, T.** 2014. Lysis of *Chlamydomonas reinhardtii* by high-intensity focused ultrasound as a function of exposure time. *Ultrasonics Sonochemistry*. 21:1258-1264
99. Liu, M., L. Yao, **T. Wang**, and C. Yu. 2014. Rapid determination of egg yolk contamination in egg white by VIS spectroscopy. *Journal of Food Engineering*. 124: 2014: 117-121.
100. \*Gerde, J. A., L. Yao, J. Lio, Z. Wen, and **T. Wang**. 2014. Microalgae flocculation: impact of the flocculant type, algae species, and cell concentration. *Algal Research*. 3:30-35. [56]
101. \*Montalbo-Lombay, M., Kantekin, M.N., **Wang, T.** 2014. Quantification of Surfactant Extracted Microalgae Oil Using Nile Red. *JAACS*. 91:665-680.
102. \*Wang, H., L. Yao, and **T. Wang**. 2014. Extraction of phospholipids from structured dry egg yolk, *JAACS*. 91: 513-520.
103. Zhao, Y., Xin, H. Zhao, D, Zheng, W., Tian, W., Ma, H., Liu, K., Hu, H., **Wang, T.**, Soupir, M. 2014. Free chlorine loss during spray of membrane-less acidic electrolyzed water and its antimicrobial effect on airborne bacteria from poultry house, *Annals of Agricultural and Environmental Medicine*. 21:249-255.
104. Li, Y., Sui, X., Qi, B., Zhang, Y., Feng, H., Zhang, Y., Jiang, L., **Wang, T.** 2014. Optimization of Ethanol-Ultrasound-Assisted Destabilization of a Cream Recovered from Enzymatic Extraction of Soybean Oil. *J Am Oil Chem Soc* 91:159–168.
105. \*Yao, L., Zhou, W., **Wang, T.**, Liu, M., Yu, C. 2014. Quantification of egg yolk contamination in egg white using UV/Vis spectroscopy: predictive model development and analysis. *Food Control* 43: 88-97.
106. \*Yao, L., E. G. Hammond, **T. Wang**, W. Bu, and D. Vaknin. 2014. Physical and monomolecular film properties of potential fatty ester biolubricants. *European J Lipid Science and Technology*. 116, 910–917.
107. Kang, J., **T. Wang**, H. Xin, Z. Wen. 2014. A laboratory study of mitigating ammonia gas emission from animal housing operations using microalgae. *Journal of the Air & Waste Management Association*. 64: 330–339.
108. Wang, X., Li, M., **Wang, T.**, Jin, Q., Wang, X. 2014. An improved method for the synthesis of 2-arachidonoylglycerol, *Process Biochemistry*. 49:1415-1421.
109. Ai, Y, Zhao Y, Nelson B, Birt DF, **Wang T**, Jane J. 2014. Characterization and in vivo hydrolysis of amylose-stearic-acid complex. *Cereal Chem*. 91:466-472.
110. Riesberg, G., T. A. Bigelow, D. J. Stessman, L. Yao, M. H. Spalding, **T. Wang**, and J. Xu. 2014. Flow rate and duty cycle effects in lysis of *Chlamydomonas reinhardtii* using high intensity focused ultrasound. *Journal of the Acoustical Society of America*. 135: 3632-3638.
111. \*Yao, L., P. Luangthongkam, **T. Wang**, B. Lamsal, T. Fei, H. Wang, L.A. Johnson, and M. Dasari. 2014. Improved corn ethanol fermentation by using polysaccharide modifying enzymes. *Journal of Bioprocess Engineering and Biorefinery*. 3: 323-331.

#### 2015:

112. Yu, X., Li, Q., Sun, D., Dong, X., and **Wang, T.** 2015. Determination of peroxide value of edible oils by FTIR spectroscopy using polyethylene film. *Analytical Methods*. 19:50:23.
113. \*Xin, C., Y. Zhao, L. Yao, and **T. Wang**. 2015. Effect of electrolyzed water on lipid oxidation. *J Am Oil Chem Soc*. 92:371–381. Target Selection Team at Advances in Engineering has identified paper as a **Key Scientific Article** contributing to excellence in engineering, scientific and industrial research. It is featured in *Advances in Engineering Series*.

114. \*Yao, L., Jose, J. A., Lee, S., **Wang, T.**, Harrata, K.A. 2015. Microalgae Lipid Characterization. *Journal of Agricultural and Food Chemistry*. 63: 1773-1787.
115. \*Hansen, H., **Wang, T.**, Xin, H., Prusa, K., Dolde, D. 2015. Supplementation of laying-hen feed with Annatto tocotrienols for egg nutrient enrichment. *Journal of Agricultural and Food Chemistry*, 63, 2537-2544.
116. \***Wang, T.**, S. Lee, J. André C da Silva, E.G. Hammond, and L. Yao. 2015. Determination of Oxidation of Methyl Ricinoleates. *J Am Oil Chem Soc*. 92:871–880.
117. \*Sekhon, J.K. Jung, S., **Wang, T.**, Rosentrater, K.A., Johnson, L.A., 2015. Effect of Co-products of Enzyme-assisted Aqueous Extraction of Soybeans on Ethanol Production in Dry-grind Corn Fermentation. *Bioresource Technology*. 192: 451-460.
118. \*Hansen, H., **Wang, T.**, Dolde, D., Xin, H. 2015. Tocopherol and Annatto tocotrienols distribution in laying hen body. *J. Agric. Food Chem*. 63: 2537–2544.
119. \*Fang, L., **Wang, T.**, Lamsal, B. 2015. Synergistic effect of surfactants and silica nanoparticles on oil recovery from condensed corn distillers solubles (CCDS). *Industrial Crops and Products*, 77: 553-559.
120. \*Hansen, H., **Wang, T.** 2015. Does the saponification-GC method underestimate total cholesterol content for samples having considerable cholesterol esters? *J Am Oil Chem Soc*. 92:1735–1738.
121. \*Au, C., **T. Wang**, N.C. Acevedo, H.T. Horner. 2015. Determination of the gelation mechanism of freeze-thawed hen egg yolk. *Journal of Agricultural and Food Chemistry*. 63:10170-10180.

2016:

122. Long, H., Zhao, Y., **Wang, T.**, Ning, Z., Xin, H. 2016. Effect of light-emitting diode (LED) vs. fluorescent (FL) lighting on laying hens in aviary hen houses: Part 1 – Operational characteristics of lights and production traits of hens. *Poultry Science*. 95:1-11.
123. \*Long, H., Zhao, Y., **Wang, T.**, Ning, Z., Xin, H. Hansen, H. 2016. Effect of light-emitting diode (LED) vs. fluorescent (FL) lighting on laying hens in aviary hen houses: Part 2 – Egg quality, shelf life and lipid composition. *Poultry Science*. 95:115–124.
124. \*Yao, L. Li, X. Zhao, Y., **Wang, T.** 2016. Design and synthesis of cross-linked micellar particles to assist microalgae lipid recovery from aqueous extract. *J Am Oil Chem Soc*. 93:51–60.
125. Huang L, **Wang T**, Han Z, Lu X. 2016. Effect of frozen yolk on properties of mayonnaise during storage time. *Food Hydrocolloids*. 56:311-317.
126. Liu, L., Wang, N., Xu, L., Yu, X., Zhang, R., **Wang, T.** 2016. A novel method of determining wax cohesiveness by using texture analyzer. *Journal of Texture Studies*, 47:161-166.
127. \*Fei, T., Cazeneuve, C., Wen, Z., Wu, L., and **Wang, T.** 2016. Effective recovery of poly- $\beta$ -hydroxybutyrate (PHB) biopolymer from *Cupriavidus necator* using a novel and non-toxic solvent system. *Biotechnology Progress*. 32: 678-685. DOI 10.1002/btpr.2247.
128. \*Au, C., **T. Wang**, N.A. Acevedo. 2016. Development of a low resolution  $^1\text{H}$  NMR spectroscopic technique for the study of matrix mobility in fresh and freeze-thawed hen egg yolk. *Food Chemistry*. 204: 159-166.
129. \*Kulchaiyawat, C, Han, Z, and **Wang, T.** 2016. Improving albumen thermal stability using succinylation reaction with octenyl succinic anhydride. *LWT - Food Science and Technology* 73: 630-639.
130. \*Kulchaiyawat, C, Wang, C., Yu, C., Han, Z, and **Wang, T.** 2016. Combination of treatments to improve thermal stability of egg albumen. *LWT - Food Science and Technology* 72: 267-276.
131. \*Wang, X., **Wang, T.**, Spurlock, M.E., Wang, X. 2016. Effects of triacylglycerol structure and solid fat content on fasting response of mice. *Eur J Nutr* 55:1545-1553.
132. \***Wang, T.**, Wang, X., Wang, X. 2016. Effects of lipid structure changed by interesterification on melting property and lipemia. *Lipids*, 51:1115-1126.
133. \*Zhang, S., **Wang, T.** 2016. Destabilization of emulsion formed during aqueous extraction of peanut oil: Synergistic effect of Tween 20 and pH. *J Am Oil Chem Soc* 93:1551-1561.

2017:

134. \*Wang, H. Yao, L., Lee, S., **Wang, T.** 2017. Simultaneous texturization and extraction of phospholipids from liquid egg yolk using green solvents. *European Journal Lipid Science and Technology*. DOI: 10.1002/ejlt.201500523. 119: 1500523, 8 pages.

135. \*Wang, H. Yao, L., Lee, S., **Wang, T.** 2017. Extraction of phospholipids from dried egg yolk flakes using aqueous alcohol. *J Am Oil Chem Soc* 94:309-314.
136. \*Wang, X., Wang, X., and **Wang, T.** 2017. An effective method for reducing free fatty acid content of high-acid rice bran oil by enzymatic amidation. *Journal of Industrial and Engineering Chemistry*. 48: 119-124.
137. \***Wang, T.**, Zhou, D. 2017. Advances in phospholipid quantification methods. *Current Opinion in Food Science* 16:15-20.
138. \*Fei, T. **Wang, T.** 2017. A review of recent development of sustainable waxes derived from vegetable oils. *Current Opinion in Food Science* 16:7-14.
139. Chai, L. Zhao, Y., Xin, H., **Wang, T.**, Atilgan, A., Soupir, M., Liu, K. 2017. Reduction of particulate matter and ammonia by spraying acidic electrolyzed water onto litter of aviary hen houses – a lab-scale study. *Transaction of ASABE*. 60:497-506.
140. Chai, L. Zhao, Y., Xin, H., **Wang, T.**, Soupir. 2017. Mitigating airborne bacteria generations from cage-free layer litter by spraying acidic electrolyzed water. *Biosystems Engineering*. 170:61-71.

**2018:**

141. \*Primacella, M., **Wang, T.**, Acevedo, N. 2018. Use of reconstituted yolk systems to study the gelation mechanism of frozen-thawed hen egg yolk. *J. Agric. Food Chem.*, 66: 512–520.
142. \*Fei, T., Walker, J.A., Vickerman, K.L., Stanley, L.M., Jarboe, D., **Wang, T.** 2018. Synthesis and characterization of soybean oil-based waxes and their application as paraffin substitute for corrugated coating, *Journal of Industrial and Engineering Chemistry*. 58: 113-122.
143. \*Fang, L., Lamsal, B., **Wang, T.** 2018. Effect of using hydrolyzing enzymes during fermentation on characteristics of dry distillers grain with solubles (DDGS). *Industrial Crops and Products*. 111:329-335.
144. \*Fei, T., **Wang, T.**, Jarboe, D. 2018. Soybean oil as feedstock for the synthesis and characterization of a carnauba substitute and a study of the structure-function relationships. *Journal of Industrial and Engineering Chemistry*. 58: 416-423.
145. Cheng, M.H., Rosentrater, K.A., Sekhon, J.K., **Wang, T.**, Jung, S., Johnson, L.A. 2018. Environmental impact assessment of soybean oil production: Extruding-expelling process, hexane extraction and aqueous extraction. *Food and Bioprocess Technology*. 108:58-68.
146. Liu, K., Xin, H., Sekhon, J., and **Wang, T.** 2018. Effect of fluorescent vs. poultry-specific light-emitting diode lights on production performance and egg quality of W-36 laying hens. *J. Poultry Science*. 97:834-844.
147. \*Primacella, M., Fei, T., Acevedo, N., **Wang, T.** 2018. Effect of food additives on egg yolk gelation induced by freezing. *Food Chem*, 263: 142-150.
148. \*Sekhon, JK, Rosentrater, KA, Jung, S, and **Wang, T.** 2018. Effect of co-products of enzyme assisted aqueous extraction of soybeans, enzymes and surfactant on oil recovery from integrated corn-soy fermentation. *Industrial Crops and Products*. Crop and Coproduct. 121: 441-451.
149. \*Sekhon, J., Maurer, D., **Wang, T.**, Jung, S., Rosentrater, K.A. 2018. Ethanol production by soy fiber treatment and simultaneous saccharification and co-fermentation in an integrated corn-soy biorefinery. *Fermentation*. 4, 35 (<http://dx.doi.org/10.3390/fermentation4020035>).
150. \*Fei, T., Slagle, M.A., Jarboe, D., **Wang, T.** 2018. A soybean oil-based adhesive and its application for birdseed binding. *JAOCS*. In press.
151. \*Fang, L., **Wang, T.**, Lamsal, B. Use of surfactant and enzymes in dry-grind ethanol fermentation improves yield of ethanol and distillers corn oil. *Industrial Crops and Products*. Accepted.
152. \*Price, N., Fei, T., Clark, S., **Wang, T.** 2018. Extraction of phospholipids from a dairy by-product (whey protein phospholipid concentrate) using ethanol. *J. Dairy Sci*. 101:1–10.
153. \*Bothers, B., Wang, H., **Wang, T.** 2018. Free fatty acid generation and lipid oxidation during dry-grind corn ethanol fermentation. *J Am Oil Chem Soc*. In Press.
154. Zhou, D., Liu, Z., Zhu, B., Wang, T., Shahidi, F. 2018. Effect of various hot air drying processes on clam *Ruditapes philippinarum* lipids: Composition changes and oxidation development. *Journal of Food Science*. Accepted.

**Note:** \* indicates Tong Wang as the corresponding author.

**Refereed Book Chapters (12)**

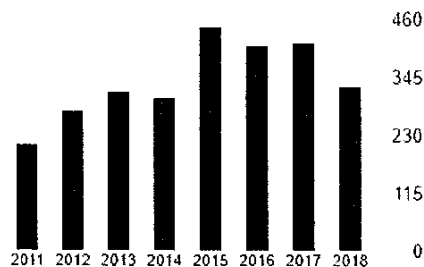
155. **Wang, T.** Soybean Oil. In *Vegetable Oils in Food Technology* (ed F. Gunstone). CRC Press 2002, pp 18-58.
156. **Wang, T.,** L.A. Johnson, and W. Wijeratne. Low Cost Oil Processing Techniques. In *Nutritionally Enhanced Edible Oil Processing* (ed. N.T. Dunford and H.B. Dunford) AOCS Press, 2004, pp 219-238.
157. Wijeratne, W., **T. Wang,** and L. A. Johnson. Extrusion-Based Oilseed Processing Methods. In *Nutritionally Enhanced Edible Oil* (ed. N. T. Dunford and H. B. Dunford) AOCS Press, 2004, pp 21-88.
158. **Wang, T.,** L. A. Johnson, and D. J. Myers. Value-Added Products from Extruding-Expelling Soybeans. In *Soybeans as Functional Food* (ed. K. Liu and C. Wang). AOCS Press, 2004, pp 185-200.
159. **Wang, T.** Soybean: Processing (Oil). In: *Encyclopedia of Grain Sciences*. Elsevier Science, UK 2004, pp 159-168.
160. Hammond, E.G., L.A. Johnson, C. Su, **T. Wang,** and P.J. White. Soybean Oil. In: *Bailey's Industrial Oil and Fat Products (6<sup>th</sup> edition)* (ed. F. Shahidi). Vol 2. John Wiley & Sons, Inc., 2005, pp 577-653.
161. List, G.R. **Wang, T.,** and V. K.S. Shukla. Storage, Handling, and Transport of Fats and Oils. In: *Bailey's Industrial Oil and Fat Products (6<sup>th</sup> edition)* (ed. F. Shahidi). Vol. 5. John Wiley & Sons, Inc., 2005, pp 191-229.
162. **Wang, T.** Minor Constituents and Phytochemicals of Soybeans. In: *Soybeans: Chemistry, Production, Processing and Utilization* (ed. L.A. Johnson, P.J. White and R. Galloway). AOCS Press, 2008, pp 297-329.
163. **Wang, T.** Chemical Structure and Biological Function. In: *Phospholipid Science and Technology* (ed. F. D. Gunstone). The Oily Press, 2008, pp 1-19.
164. **Wang, T.,** and Earl G. Hammond. Lipoxygenase and lipid oxidation. In *Oxidation in foods and beverages and antioxidant applications* (ed E. Decker, R. Elias, J. McClements), Woodhead Publishing, 2010, pp105-121.
165. **Wang, T.** Soybean Oil. In *Vegetable Oil in Food Technology*, 2<sup>nd</sup> Edition (ed F. Gunstone). Wiley-Blackwell, 2011, pp 59-105.
166. **Wang, T.,** White, P.J. Chapter 13: Lipids of the Kernel. In *Corn: Chemistry and Technology*, 3<sup>rd</sup> Edition: (Ed Sergio O. Serna Saldivar). 2018. Elsevier S&T Books.

**PATENTS AWARDED AND APPLICATIONS**

1. Hammond, E.G., and **T. Wang.** 2005. Method of converting free fatty acids to fatty acid methyl esters with small excess of methanol. **US Patent 6,965,044 B1.**
2. **Wang, T.,** and L. Wang. 2008. Chemical modification of partially hydrogenated vegetable oil to improve its functional properties to replace petroleum waxes. US Patent App. 12/113,464.
3. Wang, H., **T. Wang,** L.A. Johnson. 2010. Corn degerming ethanol fermentation processes. US Patent App. 12/798,193 (61/165,681 Oct 2010 publication date). **US Patent 9,567,612 B2** (granted Feb 2017).
4. **Wang, T.** Oil extraction from microalgae. 2012. US Patent App. 13/418,560.
5. **Wang, T.,** Wang, X. 2015. Method of making fatty acid N-acylalkanolamines. **US Patent 9,221,747 B2.**
6. Wang, H., **T. Wang,** A new lipids/phospholipids extraction method with green solvents. Application # 62/208,916, filed August 24, 2015
7. **Wang, T.,** Fei, T. 2018. Fatty acid ester-based wax compositions and methods of making thereof. Provisional Patent Application, filed Jan 20, 2017. Application # 62/448,760 (provisional). Application number 15/875,803 (utility, filed 01/09/2018). Application Publication **US2018/0208874 A1.** Pub date 7/26/2018.
8. **Wang, T.,** Fei, T. 2017. A novel vegetable oil-based material as a substitute for carnauba wax, filed Mar 22, 2017. U.S. Serial No. 62/474,896. **Utility application filed March 20, 2018 Application #: 15/926,203.**
9. **Wang, T.** Acevedo, N., Primacella, M. 2018. An effective treatment to prevent freeze induced egg yolk gelation. ISURF Disclosure 04724. **International Patent Application Number PCT/US18/33473.**

**Google Scholar (h-index of 29) and Scopus (h-index of 23) Citations and Indices**, updated September, 2018  
(Research Gate Score = 38.96 for 163 research items);  
[http://scholar.google.com/citations?user=Vmlo4csAAAAJ&hl=en:](http://scholar.google.com/citations?user=Vmlo4csAAAAJ&hl=en)

Cited by	VIEW ALL	
	All	Since 2013
Citations	3361	2218
h-index	29	24
i10-index	84	61



Scopus citation (2123 total citation, 9/9/18), [https://www.scopus.com/authid/detail.uri?authorId=35763164100:](https://www.scopus.com/authid/detail.uri?authorId=35763164100)

This is an overview of citations for these authors.

Author h-index: 23 View h-graph

161 Cited Documents from "Wang, Tong" and "Wang, Tong" [+ Save to list](#)

Date range: 2003 to 2018  Exclude self citations of selected authors  Exclude self citations of all authors  Exclude citations from books [Update](#)



Orcid ID and link - <https://orcid.org/0000-0002-6667-6498>

#### Manuscripts under Review (\* indicate T. Wang is the corresponding author)

- Peña, P., Bayon de Noyer, S., Park, H., Nguyen, H., Hou, L., Changa, T., Wang, T., Cahoon, E., Clemente, T. 2018. Expression of the Arabidopsis WRINKLED 1 transcription factor leads to higher accumulation of palmitate in soybean seed. *Plant Biotechnology Journal*. Submitted.
- Zhou, D. ... Wang T. 2018. Kinetics of astaxanthin degradation in three types of Antarctic Krill (*Euphausia superba*) oil during storage, *JAOCs R1* under review (4/28/18)
- Cheng, M.H., Rosentrater, K.A., Sekhon, J.K., Wang, T., Jung, S., Johnson, L.A. 2018. Economic feasibility of soybean oil production by enzyme assisted aqueous extraction processing. *Food and Bioprocess Technology* (June 23, 2018 submitted).
- \*Sekhon, JK, Rosentrater, KA, Jung, S., Wang, T. Nutrient enhancement of corn DDG by addition of co-products of EAEP of soybeans in corn fermentation, *JAOCs*.

## Summary of Quality of Journals my works have been published in

Journal	Impact Factor
Algal Research	4.62 (5-year)
Analytical Methods	1.90
Annals of Agricultural and Environmental Medicine	3.06
Annals of Microbiology	1.55
Applied Biochemistry and Biotechnology	1.94 (5-year)
Bioresource Technology	6.10 (5-year)
Biotechnology Progress	2.1
Biosystems Engineering	2.24 (5-year)
Cereal Chemistry	2.71 (5-year)
Crop Science	2.10 (5-year)
Current Opinion in Food Science	2.62 (CiteScore)
Energy & Fuels	3.09 (16/17)
European Journal of Lipid Science and Technology	2.31 (5-year)
European Journal of Nutrition	3.84
Food and Bioproducts Processing	2.97 (5-year)
Food Chemistry	4.50 (5-year)
Food Control	3.01 (5-year)
Food Hydrocolloids	5.46 (5-year)
Industrial Crops and Products	3.21
International Journal of Food Properties	1.14 (5-year)
International Journal of Food Science and Technology	1.35
Journal of Agricultural and Food Chemistry	3.11
Journal of the Air & Waste Management Association	1.57 (2016)
Journal of Bioprocess Engineering and Biorefinery	No report
Journal of Food Engineering	2.98 (5-year)
Journal of Food Science	1.78
Journal of Industrial and Engineering Chemistry	3.46 (5-year)
Journal of Molecular Catalysis B: Enzymatic	2.81 (5-year)
Journal of Texture Studies	1.37
Journal of the American Oil Chemists' Society	1.62
Journal of the Science of Food and Agriculture	1.89
Lipids	1.93 (16/17)
LWT - Food Science and Technology	2.93 (5-year)

Poultry Science	2.07 (5-year)
Process Biochemistry	2.92 (5-year)
The Journal of the Acoustical Society of America	1.92 (5-year)
Transaction of ASABE	0.96 (RG 15/16)

### Conference Proceedings

1. Sekhon J. K., Maurer D., Rosentrater K. A., **Wang T.**, Jung S. 2015. Effect of pretreatment of soy insoluble fiber and SSCF with *Saccharomyces cerevisiae* and *Escherichia coli* KO11 on ethanol production in an integrated corn-soy biorefinery Paper Number: 152190086, 2015 ASABE Annual International Meeting Sponsored by ASABE New Orleans, Louisiana July 26 – 29.
2. Long, H., Y. Zhao, **T. Wang**, H. Xin, Z. Ning. 2014. Comparative Evaluation of Light-emitting Diode (LED) vs. Fluorescent (FL) Lighting in Commercial Aviary Hen Houses. ASABE 2014 conference paper. Montreal, Quebec Canada, July 13 – 16, 2014.
3. Grewell, D., **T. Wang**, M. Montalbo-Lomboy, L. Yao, P. Gramann, J. Cruz. Effects of Biodiesel on Plastics. Paper presented at the Society of Plastics Engineers (SPE) ANTEC conference, Cincinnati, Ohio, April 21-24, 2013.
4. Gramann, P. J. Cruz, D. Grewell, M. Montalbo-Lomboy, **T. Wang**. Effects of Glycerin Antifreeze on CPVC. Paper presented at the Society of Plastics Engineers (SPE) ANTEC conference, Cincinnati, Ohio, April 21-24, 2013.
5. **Wang, T.**, and Walter Fehr. 2009. Sphingolipids in soybeans and its change with seed maturity and further processing. The 8<sup>th</sup> World Soybean Research Conference. August 10-15. Beijing, China. Paper # G1-005.
6. **Wang, T.**, and L.A. Johnson. 2003. Extruding-expelling soybeans and utilizing the products at planetary outpost. International Conference on Environmental Systems (ICES). Paper # 2003-01-2379.
7. **Wang, T.**, and L.A. Johnson. 2002. Functional properties and characterization of soybean meal and oil produced with extrusion-expelling process (**Invited**), in *Proceeding of China and International Soybean Conference & Exhibition*, Nov. 6-9, Beijing, China. Pp 220-221.
8. Xin, H., A. Tanaka, **T. Wang**, R.S. Gates, E.F. Wheeler, K. D. Casey, A.J. Heber, J. Ni, and T. Lim. 2002. A Portable System for Continuous Ammonia Measurement in the Field. American Society of Agricultural Engineer's Annual International Meeting / CIGR XVth World Congress, Chicago, IL July 28-31. Paper Number: 024168
9. **Wang, T.**, and L.A. Johnson. 2001. Minimal refining of mechanically extracted soybean oils with modified fatty acid compositions (**Invited**), in *Proceedings of Promoting Global Innovation of Agricultural Science & Technology and Sustainable Agricultural Development*. International Conference on Agricultural Sciences and Technology, Beijing, China. Nov. 7-9. pp 114-121.
10. Johnson, L.A., and **T. Wang**. 2000. Effects of processing on soybean meal quality (**Invited**). Proceedings of the 61<sup>th</sup> Minnesota Nutrition Conference & Minnesota Soybean Research and Promotion Council Technical Symposium, September 19-20, Bloomington, MN. pp 5-17.
11. **Wang, T.**, and L. A. Johnson. 1999. Comparison of qualities of soybean oils and meals produced by extrusion-expelling and solvent extraction (**Invited**). Conference on Biotechnologically Enhanced Crops: Implications Before and Beyond the Farm Gate, March 24-25, 1999, Kansas City, MO.

### Invited presentations (2013 - now):

1. **Wang, T.** 2018. Modification of fats and oils for functional performance and human health. The 2018 International Conference on Smart Agriculture and Biotechnology. Beijing China Agriculture University, July 13-16.
2. **Wang, T.**, Fei, Tao. 2018. Developing vegetable oil based wax coating alternatives. 2018 AOCS Annual Meeting and Expo, May 6-9 Minneapolis, MN.
3. **Wang, T.**, Fei, T., and Jarboe, D. 2018. Developing soybean oil-based alternative coating materials. St



- Louis, MO, March 6, 2018.
4. **Wang, T.** 2017. Effect of palmitic acid's TAG sn-position on fasting lipid profile... and more questions. 2017 AOCS April 30 - May 3rd, Orlando, FL.
  5. **Wang, T.** 2017. Functional and nutritional properties of interesterified trans-free fat. International Symposium on Lipid Nutrition and Safety, Jiangnan University, Wuxi, June 9-10.
  6. **Wang, T.** 2017. Fat structure and properties. DPU 2017 International Symposium of Food Nutrition and Health May 26-28.
  7. **Wang, T.** 2017. Use of egg yolk in infant formula. The 2017 International Egg Commission, Monte Carlo, Monaco, April 1-5.
  8. **Wang, T.** 2017. Egg albumen modification for improved thermal stability. The 2017 International Egg Commission, Monte Carlo, Monaco, April 1-5.
  9. **Wang, T.** 2016. Soybean aqueous processing and co-product utilization. The 7<sup>th</sup> International Soybean Processing and Utilization Conference (ISPUC VII), August 8-10, Harbin, China
  10. **Wang, T.** 2016. Egg Yolk Gelation Mechanism and Prevention to Reduce Freeze-induced Quality Loss. EB annual meeting, April 5-7, 2016. San Diego, CA.
  11. Fei, T, Jarboe, D., and **Wang, T.** 2016. Developing and commercializing vegetable oil based coating materials. United Soybean Board's Adhesives/Paper/Coatings/Inks Technical Advisory Panel (TAP), March 15-17. St. Louis, MO.
  12. **Wang, T.** 2015. Yolk Processing: Technology and Functional Products. International Egg Commission (IEC)'s Global Leadership Conference, Berlin, September 20<sup>th</sup> - 24<sup>th</sup>, 2015.
  13. **Wang, T.** 2015. Soybean Aqueous Processing Research Update. Northeast Agricultural University, June 4<sup>th</sup> to 6<sup>th</sup>, 2015.
  14. **Wang, T.** 2015. An Introduction of Department of Food Science and Human Nutrition. Jianxi Agricultural University, May 21<sup>st</sup> - 24<sup>th</sup>, 2015.
  15. **Wang, T.** 2015. Overview of ISU, Department of Food Science and Human Nutrition, Wang's Lipid Research, and Collaboration Possibilities. Shenyang Pharmaceutical University, June 8<sup>th</sup>-9<sup>th</sup>, 2015.
  16. **Wang, T.** 2015. Egg Processing and Value-added Opportunities. 2015 Egg Industry Issues Forum. Des Moines, IA, April 7-8, 2015.
  17. **Wang, T.** 2015. Developing Soybean Oil-Based Plastic Fat as Substitute for Paraffin and Beeswax. United Soybean Board's Adhesives/Paper/Coatings/Inks Technical Advisory Panel (TAP), March 17-19, 2015, Hilton Inn St. Louis Airport - St. Louis, MO.
  18. **Wang, T.** 2014. International Symposium on Egg Industry, Beijing, China, Nov 18-22, 2014.
  19. **Wang, T.** 2014. Developing soybean oil based materials as substitutes for petro-wax. USB TAP meeting, St Louis, MO, March 18-19, 2014.
  20. **Wang T.** 2014. The 2014 Midwest Ethanol Plant Managers Meeting, Ames, IA. Feb 11-12, 2014.
  21. **Wang T.** 2013. Egg processing and specialty products. International Symposium on Egg Science & Technology, Huazhong Agricultural University, Wuhan, Hubei, China, Nov 1-4, 2013
  22. **Wang T.** 2013. Corn Oil Recovery from Ethanol Fermentation Co-products. Buckman International Research Discussion, Memphis, TN, June 19-20, 2013.
  23. **Wang T.** 2013. Microalgae processing – dewatering and fractionation of lipids and proteins. The Forum on Emerging Technologies – What's on the Horizon: Microalgae Technologies and Products. The 104th American Oil Chemists' Society Annual Meeting & Expo., Montréal, Québec, Canada, April 28-May 1, 2013.
  24. **Wang T.** 2013. Alternative sources of polar lipids with unique functionalities. Lecithin Functions in Technology and Nutrition Short Course, The 104th American Oil Chemists' Society Annual Meeting & Expo., Montréal, Québec, Canada, April 27-28, 2013.
  25. **Wang T.** 2013. Microalgae lipid and protein fractionation (Timothy L. Mounts Award presentation). The 104th American Oil Chemists' Society Annual Meeting & Expo., Montréal, Québec, Canada, April 28-

May 1, 2013.

26. **Wang, T.** 2013. Increase feed quality through fermentation of corn and soy processing co-product. The 104th American Oil Chemists' Society Annual Meeting & Expo., Montréal, Québec, Canada, April 28-May 1, 2013.
27. **Wang, T.** 2013. Developing soybean oil based material as a substitute for petro-wax. USB TAP meeting, March 19-21, 2013. St Louis, MO.

**Contributed scientific presentations (2013 – now):**

1. Price N, Fei T, Clark S., **Wang T.** Extraction of phospholipids from a dairy by-product (whey protein phospholipid concentrate) using ethanol (Abstract #: M129) American Dairy Science Association, Knoxville, TN, July 24-27, 2018.
2. Fei, T., Slagle, M.A., Jarboe, D.H., **Wang, T.** A soybean oil-based adhesive and its application as a bird seed binder. 2018 AOCS Annual Meeting and Expo, May 6-9 Minneapolis, MN.
3. Au, C., **Wang, T.**, Acevedo, N.C. A low resolution <sup>1</sup>H NMR study of fresh and freeze-thawed hen egg yolk. 253rd ACS National Meeting, San Francisco. April 2-6, 2017.
4. Primacella, M., **Wang, T.**, Acevedo, N.C. Use of reconstituted egg yolk systems to study the roles of plasma and granules on gelation initiated by freezing-thawing. 253rd ACS National Meeting, San Francisco. April 2-6, 2017.
5. Au, C., Acevedo, N.C., **Wang, T.** Elucidation of the gelation mechanism of frozen-thawed egg yolk. 253rd ACS National Meeting, San Francisco. April 2-6, 2017.
6. Fang, L., **Wang, T.**, Lamsal, B. Adding hydrolyzing enzymes during fermentation step of dry grind ethanol process affects the process favorably. The 108<sup>th</sup> AOCS Annual Meeting & Expo, April 30 – May 3, 2017. Orlando, Florida.
7. Fang, L., **Wang, T.**, Lamsal, B.P. Synergistic effect of surfactant and enzymes during dry-grind ethanol fermentation on distillers corn oil distribution and recovery. The 107<sup>th</sup> AOCS Annual Meeting & Expo, May 1-4, 2016. Salt Lake City, Utah.
8. Sekhon, J., Rosentrater, K., Jung, S., and **Wang, T.** Maximizing oil recovery from corn-soy slurry after fermentation with *Saccharomyces cerevisiae*. The 107<sup>th</sup> AOCS Annual Meeting & Expo, May 1-4, 2016. Salt Lake City, Utah.
9. D. Grewell, E. Cochran, T. **Wang, T.** Martin, J. Zhang, Biobased Adhesives and Coatings, American Coating Show, Indianapolis, IN, April 11-13, 2016.
10. Fei, T, **Wang T.**, Cazeneuve S, Wen Z. Poly-β-hydroxybutyrate (PHB) Extraction and Recovery: A New Non-toxic and Environment Friendly Solvent System. The 106<sup>th</sup> AOCS Annual Meeting & Expo. May 3-6, 2015, Orlando, Florida.
11. Sekhon JK, Rosentrater K, **Wang T.**, Johnson L, Jung J. Effects of Co-Products of Enzyme-assisted Aqueous Extraction of Soybeans on Ethanol Production in Corn Fermentation. The 106<sup>th</sup> AOCS Annual Meeting & Expo. May 3-6, 2015, Orlando, Florida.
12. Fang L, **Wang T.**, and Lamsal BP. Synergistic Effect Between Silica Nano Particles and Non-ionic Surfactants on Oil Recovery from Condensed Corn Distillers Solubles (CCDS). The 106<sup>th</sup> AOCS Annual Meeting & Expo. May 3-6, 2015, Orlando, Florida.
13. Ravi S, Yao L, **Wang T.**, Leeuwen J, Mitra D, Ozsoy HD. Fungal oil with EPA in *Mucor circinelloides* cultivated on thin stillage from corn-to-ethanol production. The 105<sup>th</sup> AOCS Annual Meeting & Expo. May 4-7, 2014, San Antonio, Texas.
14. Wang H, **Wang T.**, Yao L, Lee S. Extracting phospholipids from egg yolk by green solvents. 105<sup>th</sup> AOCS Annual Meeting & Expo. May 4-7, 2014, San Antonio, Texas.
15. Yu X, Li Q, Sun D, Chen X, **Wang T.** Determination of peroxide value in edible oils by FTIR spectroscopy using disposable polyethylene films. 105<sup>th</sup> AOCS Annual Meeting & Expo. May 4-7, 2014, San Antonio, Texas.

16. Au C, Acevedo N, **Wang T**. Determination of gelation mechanism of frozen-thawed hen's egg yolk. Poster. 105th AOCS Annual Meeting & Expo. May 4-7, 2014, San Antonio, Texas.
17. Hansen H, **Wang T**, Xin H, Dolde D. Supplementation of laying hen feed with annatto tocotrienols for egg nutrient and cholesterol reduction. Poster (won presentation 2<sup>nd</sup> prize). 105th AOCS Annual Meeting & Expo. May 4-7, 2014, San Antonio, Texas.
18. Luangthongkam P, Yao L, Fei T, Elend C, Wang H, Johnson L, **Wang T**, Lamsal B. Enzymes during fermentation of corn improve ethanol production, oil distribution, and DDGS feeding quality. Poster. 105th AOCS Annual Meeting & Expo. May 4-7, 2014, San Antonio, Texas.
19. Sekthon J, Yao L, Johnson L, **Wang T**, Rosentrater, Jung S. Optimizing ethanol production, oil partition, and DDGS quality in integrated corn/soybean biorefineries. Poster. 105th AOCS Annual Meeting & Expo. May 4-7, 2014, San Antonio, Texas.
20. Lee S-L, Yao L, **Wang T**. Microalgae oil recovery from IPA (isopropanol) extract by chemical-caused precipitation. Institute of Food Technology Annual Meeting and Food Expo, Chicago, IL, July 14-17, 2013.
21. Yao L, **Wang T**. Synthesis and characterization of acetylated and stearylized soy wax (Poster). The 104<sup>th</sup> American Oil Chemists' Society Annual Meeting & Expo., Montréal, Québec, Canada, April 28-May 1, 2013.
22. Johnson LA, Nobrega de Moura J, **Wang T**, Jung S. Recent advances in enzyme-assisted aqueous extraction of soybeans. The 104th American Oil Chemists' Society Annual Meeting & Expo., Montréal, Québec, Canada, April 28-May 1, 2013.
23. Yao L, Li X, **Wang T**, Zhao Y. Extraction of algal lipids with surface crosslinked micellar materials. The 104th American Oil Chemists' Society Annual Meeting & Expo., Montréal, Québec, Canada, April 28-May 1, 2013.

#### FUNDED RESEARCH

##### Summary of total sponsored projects (Jan 2000 – Sept 2018)

Project Role	Number of Funded Projects	Intramural	Extramural	Total Funding
PI	46	\$605,327	\$3,715,220	\$4,320,547
Co-PI	34	\$680,208	\$3,906,379	\$4,586,587 (\$1,600,919 to my use)
Total	80	\$1,032,635	\$7,621,599	\$8,907,134

##### Recent Grants/Contracts as PI or Co-PI (E = external, I= internal)

Project Title	Grantor	Role, % effort	Other Investigators	Amount	Effective Date
80. Developing coating for fresh produce from commodity and high oleic soybean oil.	USB	PI, 90%	T. Fei	\$89,595	2018-2019
79. Technology for novel and scalable isolation of dairy phospholipids (PL) and its stabilization against lipid auto-oxidation	Midwest Dairy Association, Dairy Management Inc, E	PI, 80%	S. Clark	\$80,753	2017-2019
77. Use of High-Oleic Soybean Oil and Soybean Hardstock in Commercializing Soy-based Coating Waxes	USB, E Bunge (in-kind)	PI, 90%	D. Jarboe, T. Fei	\$250,000 (100K in-kind)	2017-2018

76. Develop feasible methods to extract immune-enhancing yolk IgY and produce differentiated and functional yolk products	Egg Industry Center, E	PI, 100%		\$62,601	2017-2019
75. Interdisciplinary Graduate Training Program in Lipid Nano Sciences	USDA-NIFA-NNF, E	PI, 60%	N. Acevedo, J. Talbert	\$262,500 + (252,900 ISU)	2017-2022
73. Release Mechanism and Regulation of Soybean Oil Through Biological Dissociation of Subcellular Oil Bodies	China National Science Foundation, E	Co-PI, 5%	L. Jiang, X. Sui, L. Johnson, et al	\$564,516	2015-2019
70. Mechanism and Prevention of Egg Yolk Freeze-thaw Gelation	USDA-NIFA, E	PI, 60%	N. Acevedo	\$420,685	2015-2019
69. An Innovative System to Improve Environment and Productivity of Aviary Hen Housing	USDA-NIFA, E	Co-PI, 15%	H. Xin, M. Soupir, Y. Zhao, S. Millman,	\$499,176	2015-2018
<b>Finished since 2010</b>					
78. Iowa State University-China Scientific Program on Food Safety Exchange	USDA-MOA, FAS, E	Co-PI, 20%	A Shaw, C. Yu	\$5,000	2017-2018
74. Comprehensive Evaluation of a Programmable LED Light vs. Traditional CFL Light for Egg Production (Phase II)	Hy-Line International and CIRAS E/I	Co-PI, 20%	H. Xin, K. Liu	\$105,223	2016
72. Comprehensive Evaluation of a Programmable LED Light vs. Traditional CFL Light for Egg Production (phase I)	Hy-Line International E	Co-PI, 20%	H. Xin	\$40,000	2015
71. Using Modified Vegetable Oil Based Fat for Bird Seed Binding and Block Formation	C&S Products and IPRT E/I	PI, 70%	D. Jarboe, B. Martin	\$49,428	2015-1016
68. Commercialization of Soybean Oil-based Waxes	Unite Soybean Board, E	PI, 90%	L. Yao, D. Jarboe	\$90,194	2014-2016
67. Comparing the Environmental Footprint of U.S. Eggs with Other Plant and Animal Food Sources	American Egg Board, E	Co-PI, 20%	H. Xin, M. Ibarburu, L. Vold, N. Pelletier	\$75,048	2014-2015
66. Leading the Bioeconomy PhD fellowship	ISU, I	Co-PI, 50%	B. Lamsal	\$33,000	2014-2015
65. Supplementation of laying-hen feed with Annatto tocotrienols for egg nutrient enrichment and cholesterol reduction	American River Nutrition, E	PI, 100%		\$64,633	2013-2015
64. The Kiverdi project: Hybrid process to convert syngas to extractable lipids using microbes	Iowa Economic Development and Kiverdi, E	Co-PI, 40%	Z. Wen	\$210,000	2013-2015
63. Evaluation of LED vs. CFL Lighting in Aviary Hen Houses	Iowa Cage Free and ISU-IPRT, E	Co-PI, 30%	H. Xin, Y. Zhao	\$50,216	2013-2014
62. Improving Economics of Corn and Soybean Conversion to Biofuels	ISU-Fermentation initiative, I	Co-PI, 25%	Z. Wen, L. Johnson, B. Lamsal, S. Jung, K. Rosentrater	\$250,000	2013-2015
61. Technologies for and Demonstration of Integrated Corn/Soybean Biorefineries	USDA-NIFA, E	Co-PI, 40%	K. Rosentrater, S. Jung, L., Johnson	\$500,000	2013-2016

60. Mesoporous Block Copolymer Membranes with Tunable Selectivity for Bioseparations	ISU New Biochemical Separations Initiative, I	Co-PI, 30%	E. Cochran, Z. Shao	\$247,427	2013-2016
59. China Food and Culture Study Abroad Experience	ISU- Council on International Programs, I	PI, 100%		\$4,500	2013-2014
58. Enzyme Modification of Whole Beer to Produce Value-added DDGS. Phase I: Laboratory and Small Pilot-scale	DIREVO Industrial Biotech, GE E	Co-PI, 5%	L. Johnson, H. Wang	\$7,368	2012
57. Production of food grade egg lecithin with green technologies and pilot feeding study with pregnant women	Egg Nutrition Center, E	PI, 90%	C. Campbell, H. Wang,	\$45,000	2012-2013
56. Enzyme Modification of Whole Beer to Produce Value-added DDGS Phase I: Laboratory and Small Pilot-scale Investigations	DIREVO Industrial Biotechnology GmbH, E	Co-PI, 20%	H. Wang. L. Johnson	\$17,036	2012
55. Developing a novel attached algal culture system and fractionation technology for preparing algae-based pyrolysis feedstock	ConocoPhillips, E	Co-PI, 40%	Z. Wen	\$214,719	2012-2013
54. High-Frequency Ultrasound Extraction of Lipids from Microalgae	ConocoPhillips E	Co-PI, 20%	T. Bigelow, D. Liang, M. Spalding, D. Grewell	\$297,946	2012-2013
53. Developing Soybean Oil-based Plastic Fat as Substitute for Paraffin and Beeswax	Unite Soybean Board, E	PI, 70%	L. Yao, D. Jarboe, B. Walton	\$121,454	2011-2014
52. Synthesizing Nanoparticles and Fractionating Lipids from Green Microalgae	ConocoPhillips, E	PI, 50%	Z. Wen, Y. Zhao	\$348,389	2011-2013
51. Advanced Soybean Refineries: integrated refinery and SSF	USDA (special appropriation), E	Co-PI	L. Johnson (lead), etc	\$96,098 (Wang's portion)	2010-2012
50. Effects of Long-term Supplementation of Layer Rations with High Concentrations of Cholecalciferol on Egg Yolk Vitamin D Concentration, Egg Quality, Hen Performance and Hen Health	American Egg Board, E	Co-PI, 40%	M. Persia, S. Lamont, D. Beitz, H. Xin	\$171,474	2010-2011
49. Effects of Lipids on Physical Properties, Digestibility, and Nutritional Benefits of Starchy Foods	USDA, E	Collaborator, 5%	Jane, J., S. Hendrich, D. Birt, T. Wang, E. Whitley	\$473,869	2009-2013
48. Evaluating Strategies for Clean Fractionation of Algae Oil, Protein, and Cell Wall Components	ConocoPhillips, E	PI, 60%	L. Johnson, B. Lamsal, S. Jung, S. Beatties, D. Grewell	\$277,796	2010-2012

## Grants Pending

Project Title	Grantor	Project Role, % effort	Other Investigators	Amount	Effective Date
Egg yolk fractionation to obtain high-value IgY and lipoproteins with improved food functionality	USDA-NIFA	PI, 100%		\$481,397	2019-2022
Investigate the role of triacylglycerol (TAG) structure in inflammation, satiety, and obesity	USDA-NIFA	PI, 60%	K. Schalinske, J. Hollis	\$496,757	2019-2022
Further develop scalable process for phospholipid-enriched and high-value dairy co-products	MDA-NDC	PI, 80%	S. Clark (invited for full submission)	\$91,377	2019-2021

## TEACHING

Course number (title)	Semester/Year (credits)	% Responsibility	# of students
FSHN 410 (Food Analysis)	S2013 (3 cr.)	100	18
	S2014	75	31
	S2015	100	36
	S2016	100	36
	F2016	100	30
	F2017	100	31
	F2018	100	31
FSHN 311 (Food Chemistry)	F2000 (3 cr.)	50	~ 35
	F2001	50	
	F2002	50	
	F2003 (4 cr.)	50	
	F2004	100	
	F2005	50	
	F2007	80	
	F2008	100	
F2009	75		
F2011	5		
FSHN 411 (Food Ingredient Interaction)	F2008 (2 cr.)		~ 50
	S2009	8	
	S2010	13	
	F2010	60	
	S2011	13	
F2012	6		
FSHN 472/572 (Food Processing)	F2000 (2 cr.)		~ 20
	F2001		
	F2002	10	
	F2003		
FSHN 480 (Scientific Presentation)	S2000 (1 cr.)		~ 12
	S2001	100	
	S2002		
FSHN 496A/596A (China Study Abroad)	SS2015 (4 cr.)	50	9
	S2003 (1 cr.)		
	S2005		

FSHN 502 (Adv Food Chem)	S2007 S2009 S2011	100	~ 5
FSHN 580 (Graduate Orientation)	F2008 (1 cr.) F2012	33 50	15 17
FSHN 612 (Food Lipids), Changed to Advanced Food Chemistry in 2018	S2004 (3 cr.) S2010 S2012 S2014 S2016 S2018	50 100 100 100 100 100	9 6 11 16 12 12
FSHN 682 (Seminar Reflection)	F2013	100	52
FSHN 695 (Proposal Writing)	F2015 (1 cr.)	50	5
FSHN 699 B (Graduate Research)	S, SS, F (var. cr.) 2000 – now	100	~ 3 every semester

Special Teaching: Minority and international undergraduate and high school interns: 4 students during 2002-2004 (2 with George Washington Carver program and 2 from Mexico)

#### Major Professor for Graduate Students

Name	Degree	Thesis Title/Area of Training	Start	Finish	Current Position
36. Shalini Wijeratne	Ph.D.	Lipid in nano-sensing	Aug 18	Aug 22	RA (co-prof)
35. Ariana Saffold	Ph.D.	Organogelator and oleogel finction	Aug 18	Aug 22	RA (co-prof)
34. Abbey Boyd	Ph.D.	Lipid nano-structuring for improved nutrition	Aug 18	Aug 22	RA (co-prof)
33. Francisco Leyva	Ph.D.	Smart lipid for coating	Jul 18	Aug 22	RA
32. Jessica Schaumberg	M.S.	IgY extraction from yolk	Aug 17	May 19	RA
31. Brett Brothers	M.S.	Mechanism of free fatty acid generation during corn ethanol fermentation	Aug 16	May 18	The Kraft Heinz Company (R&D Cost Engineering), Chicago
30. Nathan Price (co-major prof with Clark)	Ph.D.	Dairy phospholipids isolation	Aug 16	May 20	RA
29. Monica Primacella (co-major prof with Acevedo)	M.S.	Yolk gelation and prevention	Aug 15	Dec 17	Research Scientist, ISU
28. Shree Banjara (co-major prof with Acevedo)	Ph.D.	Superamolecular engineering to improve thermal and mechanical properties of coating material	Aug 15	Dec 16	DMACC instructor
27. Melissa Slagle	M.S.	Textural property evaluation of	Aug	Aug 16	Industrial Engineer,

		coating	15		Brinker International, Inc
26. John Fox (co-major prof with Acevedo)	M.S.	Yolk freeze-thaw gelation	Jan 15	Dec 16	JR Watkins Inc. MN
25. Lei Fang (co-major prof w/ Lamsal)	Ph.D.	Corn oil recovery from ethanol fermentation	Jan 14	May 17	R/D director KemXGlobal, Boone IA
24. Pawarisa Luangthongkam (co-major prof w/ Lamsal)	M.S.	Corn ethanol fermentation optimization	Aug 13	Jul 14	Thailand
23. Tao Fei*	Ph.D.	Vegetable oil based coating	Aug 13	May 17	Postdoc at ISU Wang lab, and Owner of Coating Tech LLC
22. Carmen Au (co-major prof w/ Acevedo)	M.S.	Lipid and protein interaction in egg yolk gelation	Aug 13	May 15	Senior Food Technologist at Pilgrim's
21. Hannah Fuller	M.S.	Tocotrienol transfer to eggs	Aug 13	May 15	Tone's Spice, Ankeny IA
20. Charlwit Kulchaiyawat	Ph.D.	Improve egg protein heat stability	Aug 11	May 15	Foster Farms, CA
19. Joshua Leutscher (co-major prof w/ Jane)	M.S.	High-lipid oat storage-ability	Aug 10	Aug 12	Food and feed dient production, DSM, IA
18. Xiaosan Wang	Ph.D.	Structured lipids and nutritional properties	Dec 10	Dec 12	Assoc prof of Jiangnan Univ
17. Jose Andre	Ph.D.	Biolubricant synthesis and testing	Oct 10	Dec 12	Process Engineer of Petrobras, Brazil
16. Mallory Higgins (Co-advising with Persia)	M.S.	Egg vitamin D enrichment through feeding	May 10	May 12	Changed school, in NE now
15. Jun Yi Lio	M.S.	Solid state fermentation to produce value added products from corn and soy fibers	May 10	May 12	Midamar (Cedar Rapids), QA and HACCP Coordinator
14. Laurie Walker	M.S.	Making of artificial oil body and study of oil stabilization	Jan 10	Dec 11	Quality Assurance Manager at Bay Valley Foods, IA
13. Yating Ma	M.S.	Soybean lectin deactivation	Aug 08	May 10	Software engineer at Facebook
12. Guang Wang	Ph.D.	Egg white protein functionalities	Aug 07	Dec 09	R&D Manager, IOI Loders Croklaan, IL



11. David Dolde	M.S.	Tocotrienols and their antioxidant activities in genetically modified corn	Aug 04	Dec 09	Pioneer Hi-bred, Johnston, IA
10. Haixia Liu	M.S.	High oleic biodiesel, surface oxidation and combustion residual characterization	Jan 08	Aug 09	Research Scientist, Univ Kansas
9. Sandra Majoni	Ph.D.	Oil recovery from condensed corn distillers solubles (CCDS)	Aug 06	Aug 09	MN
8. Linxing Yao*(co-major Prof with Hammond)	Ph.D.	Physical property wax esters of branched fatty acid and alcohols	May 05	May 09	Postdoc Research Associate, FSHN, ISU; Instrumentation facility at Colorado State University
7. Guang Wang	M.S.	Egg yolk lipid and protein separation and characterization	May 05	Dec 07	Director – R&D Food processors of Bunge-Loders Croklaan, Chicago
6. Hui Wang (co-major Prof with Johnson)	Ph.D.	Refunctionalization of soy protein obtained from extruded-expelled processing	Aug 01	Dec 07	ISU-CCUR Pilot Plant Manager
5. Liping Wang	M.S.	Sphingolipid Content as Affected by Maturity and Palmitate Percentage in Soybeans	Jan 04	Dec 06	Microconstants, Inc. CA
4. Luz Palacio	M.S.	Egg yolk lecithin fractionation	Aug 02	Dec 04	Researcher, Kellog, MI
3. Margaret Jiang	Ph.D.	Characterization of phytosterols in agricultural by-products and lipid oxidation	Aug 00	Dec 04	Minneapolis, MN
2. Elizabeth Gutierrez*	M.S.	Sphingolipids in soybeans and soy foods – database development	Jan 02	Dec 03	Jim Beam, Louisville, KY
1. Yingzi Wu*	M.S.	Characterization of phospholipids of solvent extracted and mechanically pressed soybean oils and oils with modified compositions	Jul 00	Aug 02	Researcher, Osmetech Plc, Atlanta

\* Recipient of ISU Graduate Research Excellence Award

#### POS Committee Member for Graduate Students

Name	Degree	Area of Training	Start	Finish
34. Kangzi Ren	Ph.D.	Synthesis of bio-surfactant	2014	Dec 2017
33. Sumreet Johar	M.S.	Lipase catalysis	2015	May 2017
32. Varsha Gaonkar	M.S. (ABE)	Corn ethanol fermentation	2015	2017

31. Ming-Hsun Cheng	Ph.D. (ABE)	TEA of corn ethanol production	2013	May 2017
30. Weitao Zhang	Ph.D. (ABE)	TEA of soybean processing	2013	May 2017
29. Zoey Nguyen	M.S.	Lipid crystallization	2013	2015
28. Erin McAllister	M.S.	Oleosome isolation and characterization	2013	Dropped
27. Juhyon Kang	Ph.D.	Microalgae astaxanthin production	2013	2016
26. Matthew Kieffer	Ph.D. (ME)	Hydrothermal processing	2012	2015
25. Rajat Sharma	Ph.D.	Biosurfactant	2011	2018
24. Kaige Wang	Ph.D. (ME)	Thermal chemical processing of microalgae	2010	2015
23. Juhyon Kang	M.S.	Microalgae cultivation	2011	2013
22. Yi Liang	Ph.D.	Microalgae utilization of thermochemical co-products	2010	2012
21. Jordan Spear	Ph.D. (Agron)	High oleate soybean traits and environmental stability	2009	2012
20. Maitri Thakur	Ph.D. (ABE)	Biofuel and sonication	2009	2012
19. Yongfeng Ai	Ph.D.	Resistant starch making and characterization	2008	2013
18. Babu Chinnasamy	Ph.D.	Dairy phospholipids and nutraceuticals	2009	2018
17. Agatha Agustiana	M.S.	Vitamin A	2008	2010
16. Ryan Brace	M.S. (Agronomy)	Agronomic and seed traits of soybean lines with high oleate content		2010
15. Jelena Gutesa	Ph.D.	Starch characterization	2006	2010
14. Hongxin Jiang	Ph.D.	Structure and properties of high-amylose cornstarches as resistant starch		2010
13. Rachel Baumgartner	M.S. (Agronomy)	Soybean tocopherol modification	08	May 09
12. John Schmitz	Ph.D.	Biorenewable and biomaterial	Jan 2007	Aug 2009
11. Jovin Hasjim	Ph.D.	Novel process for resistant starch	Aug 2005	May 2009

10. Satyam Bhuyan	Ph.D. (Mech. Eng.)	Mechanical and tribological properties of biobased materials	Jan 2005	May 2009
9. Drew Cookman	M.S. (ChemE)	AEP soy protein purification		May 08
8. Maitri Thakur	M.S. (ABE)	Global soybean and soybean meal quality update		May 06
7. Curtis Scherder	M.S. (Agronomy)	Plant (soybean) breeding, tocopherols in low-sat soybean oil		Dec 05
6. Dian Octaviani	M.S.	Extraction of recombinant therapeutic proteins from corn	Aug 2003	Did not finish
5. Linxing Yao	M.S.	Branched-chain fatty ester	Jan 03	May 05
4. Xiaolan Li	M.S. (Statistics)	Statistical modeling	Jan 01	May 03
3. Kristen McCord	M.S. (Agronomy)	Association of modified fatty ester profile with tocopherol composition in soybean oil	Sept 01	May 03
2. Safir Moizuddin	M.S.	Soybean protein meal quality	Jan 00	Dec 02
1. Caiping Su	Ph.D.	Vegetable oil oxidation and quality	Jan 99	Dec 02

#### Mentor for Post-Doctoral Research Associates and Visiting Scientists

Name	Title	Research Project	Start	Finish	Current Position
21. Kangzi Ren	Postdoc	Coating property and evaluation	Jan 18	June 18	Postdoc at ISU
20. Tao Fei	Postdoc	Soy coating commercialization	Jul 17	Jun 18	Postdoc at ISU, and Owner of Coating Tech LLC
19. Jasreen Sekhon	Postdoc	Soy-corn integrated biorefinery (NIFA)	Jun 13	Aug 16	Assistant Professor, Drexel Univ
18. Shaobing Zhang	Assoc Prof	Peanut aqueous processing and oil quality	Feb 15	Feb 16	Professor, Henan University of Technology
17. Youyi Huang	Assoc Prof	Tea lipid and protein utilization	Apr 14	Mar 15	Huazhong Ag Univ
16. Marie Fontanet	BS/ME student	Coating material synthesis and evaluation	Mar 14	Sept 14	Oniris, France
15. Stacy Cazeneuve	BS/ME student	Optimizing PHB extraction with non-toxic solvents	Mar 14	Sept 14	Oniris, France
14. Xiuzhu Yu	Assoc Prof	Lipid oxidation and antioxidants	Jan 14	Dec 14	Professor, Northwest A & F Univ
13. Zhen Zhang	MS student	Enzyme technology	Oct 13	May 14	Wilmar International, Shanghai

12. Wenbin Zhang	Assoc Prof	Aqueous oil seed processing	Sept 13	Jan 14	Professor, Jiangnan Univ
11. Jose Gerde	Postdoc	Algae lipid and cellular components fractionation and characterization	Oct 10	Dec 11	Assistant professor, Universidad Nacional de Rosario, Argentina
10. Peiyu Qin	Postdoc	Microalgae protein fractionation	Apr 12	Jun 13	Division of Research Management of CAAS, Beijing
9. Linxing Yao	Postdoc	Nanoparticle assisted algae lipid extraction	Jan 11	Dec 12	P&S scientist, Colorado State Univ
8. Shengli Yang	Visiting professor	Solid state fermentation of DDGS and soy fibers	Nov 09	Nov 10	Professor, Hangzhou Pharm College
7. Guang Wang	Postdoc	Algae fractionation	Jan 10	Dec 11	R&D Director, IOI Loders Croklaan, IL
6. Yuanying Ni	Visiting Professor	Cumin essential oil extraction and commercialization	Oct 10	Oct 16	Professor, China Ag Univ (multiple visits)
5. Hui Wang	Postdoc	Corn oil extraction from corn-fermentation by-products	Aug 07	Nov 08	ISU-CCUR PP Manager
4. Yuanying Ni	Visiting Professor	Phytochemical extraction and characterization	Sep 05	Sep 05	China Ag Univ
3. Yuanying Ni	Visiting Professor	Phytochemical extraction and characterization	Sep 04	Sep 04	China Ag Univ
2. Karamat Rezaei	Postdoc	Hydrogenated soybean oil used as wax in candle and paper-coating applications	Nov 00	Feb 02	Professor, University of Tehran, Iran
1. Xi Wang	Postdoc	Value-added processing of oil and protein meal from extrusion-expelling	Nov 00	Sep 01	Research scientist at Clemson University

#### Mentoring Undergraduate Researchers

Name	Title	Research Project	Start	Finish
Rachel Khor	Undergrad assistant	Emulsion and coating	2018	2018
Jiaao Wang	Undergrad assistant	Cobb value determination	2018	2018
Alex King	Undergrad assistant	Soy oil based waxes - testing	2016	2016
Daniel Tarte	Undergrad assistant	Corn ethanol ferm	2014	2014
Katherine Rapp	Undergrad assistant	Egg yolk characterization	2016	2016
De' Airius Salibi	Undergrad assistant	Corn ethanol ferm	2014	2015
Eunice Chang	Undergrad assistant	Egg quality	May 10	Aug 10
Evelyn Foo Seam Lim	Undergrad assistant	Soy-corn refinery	Dec 09	current
Nicole Siew Din Sun	Undergrad assistant	Protein foaming	Feb 10	current
Joshua Carter	Undergrad assistant	Dairy with Babu	Feb 10	current
Shirley Witorsa	Undergrad assistant	Skim fermentation	Jun 09	Dec 09
Kevin Friedman	Undergrad assistant	Egg foaming	Jan 09	May 09

Mentoring minority, international, high school students, and undergraduate students:

- Minority graduate students of Hispanic (Palacio, Leyva) and African-American (Majoni and Saffold)
- International graduate students, as shown above
- George Washington Carver minority undergraduate students Davida Alexandra and Vickie Hsu
- International undergraduate students from Mexico: Rosa Paloma, Vargas Rocha, and Elier Jimenez; from France Marie Fontanet and Stacy Cazeneuve; from China Flora Zhang
- Minority student research mentoring – Cyclone Scholar, De'Airi D. Salibi of FSHN-ISU

**INTERNATIONAL ACTIVITIES**

- Currently helping Naasakle International ([www.shea.care](http://www.shea.care), Shane Bohbrink) to design strategies to prevent shea butter degradation during postharvest degradation, and increase oil yield by screw press to produce natural shea butter to improve women and family life in rural West Africa (millions of women rely on shea as their primary source of income)
- Conducted “Lipid Chemistry and Processing” short course at Dalian Polytechnic University, Liaoning province, China, June, 2018
- Assisted in establishing formal collaboration with Northeast Agricultural University on undergraduate education, research internships, and short courses, co-advising graduate students with identified faculty match, and hosting junior faculty, since Dec 2017
- Conducted “Lipid Chemistry and Processing” short course at Northwest Agriculture and Forestry University, Yangling, Shaanxi province, China, January, 2017
- Research collaboration with Dalian Polytechnic University, since 2016
- Assisted in establishing 2+2 program with Henan Agricultural University, 2014-2018
- Visited the Department of Food, Environmental and Nutritional Sciences, University of Milan with professor Alyssa Hidalgo Vidal on grain processing and egg research, September, 17, 2015
- Invited lectures in Jiangxi Ag Univ, Shenyang Pharmacy Univ, and Northeast Ag Univ, summer 2015
- Led a China Study Abroad summer course (with Professors Chenxu Yu and Hongwei Xin), May 2015
- Visiting Professor of Dalian Polytechnic University, since 2015
- Honorary Professorship - Visiting Professor, School of Food Science and Technology, Jiangnan University, China, since Dec 2012. Helping establishing collaborative research center focused on fats and oil science and technology; 2+2 program development; establish study abroad program for summer 2014
- Honorary Professorship - Distinguished Professor, Food Science College, Northeast Agricultural University, China, since Dec 2012. Research collaboration on oilseed aqueous extraction and commercial applications. Research/visiting scientist exchange planned
- Research and product development discussion and collaboration with Beijing DQY company and the Chinese National Egg Engineering Research Center, from spring 2011 to now
- Professorship appointment by the Chinese Academy of Tropical Agricultural Sciences, and research and thesis direction, from summer 2010 to 2012
- Academic exchange with China Agricultural University and the Chinese Academy of Agricultural Sciences (CAAS) during the VIII World Soy Research Conference, Beijing, China, Aug 2009
- Collaborating with Professor Emeritus Frank Gunstone (University of St Andrew, Scotland) on book chapters and review journal articles
- Collaborating with Professor Naomichi Baba of Okayama University of Japan on studying the oxidation/antioxidation mechanism of plasmalogens, 2009
- Visiting University of Costa Rica, and CITA (Food Research Center) and delivering research presentation and interacting with students, faculty and industry representatives for potential research collaboration, Feb, 2009

- Visiting Japan with an Iowa-Japan agriculture trade group sponsored by IDED, delivered research presentation on soybean utilization, Feb 2008
- Summer research exchange at China Agricultural University, helped guide graduate student research (on proper experimental design) and prepare and publish manuscripts in international journals, 2006
- Hosting professor Ni, Yuanying of the China Agricultural University for 3 weeks in fall, 2004 and 2005
- Participant to the Zhejiang University and Iowa State University co-sponsored workshop on Safety and Sustainability of Food and Agricultural Systems in Hangzhou, China, September 23-27, 2002
- Forum AGROSANTE, invited presentation, Beauvais, France, April 5-6, 2001
- ISU/Cargill European Food Safety Study Tour (UK and Belgium), May 14-24, 2000
- Zheng Zhou Grain College and Chinese Agricultural University visits for potential research collaboration, June, 1999

#### OUTREACH ACTIVITIES AND SERIVE TO INDUSTRY (since 2010, shortened list)

Company	Location	Activity	Time
Naasakle International <a href="http://www.shea.care">www.shea.care</a> (Shane Bohbrink)	UK: +44 (0)7874 951801; US: +1 312 725 0263	Helping to prevent shea butter degradation during postharvest degradation, and increase oil yield by screw press (500 women manually collect seeds and processing)	Sept 2018
POET	Sioux Fall, SD	Discussing problem solving oil quantification and potential research on corn ethanol fermentation	Since Aug 2018
Henningsen Foods	Omaha, NE	Discuss mutual research product development interest and potential collaboration	Since June 2014
Rembrandt Foods	Okoboji, IA	Serving on “Scientific & Human Health/Nutrition Advisory Board”	Aug 14
Michelman Inc	Cincinnati, OH	Testing soywax performance	Since 2013
Georgia Pacific Chemicals	Decatur, GA	Testing soywax performance	Since 2013
Hydrite Chemicals	Brookfield, WI	Discussion on corn oil recovery mechanism and processing aid	2012
C and S Products	Cedar Rapids, IA	Bird seed oil composition testing and formation innovation with modified soywax	Since 2011
Buckman International	Memphis, Tennessee	Corn oil recovery mechanism and practice	June 2013
Feed Energy Solution	Des Moines, IA	Various research and development discussion via on campus visits, phone conversation, analytical testing, and research support	Since 2000
Direvo Biotech	Germany	Testing enzyme package’s effectiveness in corn oil recovery and feed quality improvement	2012-2015
DQY	Beijing China	Egg quality and processing related challenges, and help with research activities	Since 2008
American Egg Board-Egg Nutrition Center	Chicago, ILL	Assisted in interpreting patent on “Beyond egg” egg replacer	Dec 2013

Bioprocess Algae	Portsmouth, RI	Providing technical and processing assistance for oil separation from microalgae produced from co-locating plant in Shenandoah, IA.	2011-2012
Nutriom LLC	Lacey, WA	Developing plan and statement for omega-3 eggs marketing to the US Navy.	2010

**PROFESSIONAL SERVICE (since 2010, shortened list)**

- PhD Dissertation External Examiner for Deakin University of Australia by invitation of Major Professors Jacqui Adcock and Colin Barrow, School of Life and Environmental Sciences, Deakin University, dissertation “Synthesis of anti-inflammatory lipid mediators using soybean flour lipoxygenase” by Hoang-Anh Tu.
- Dalhousie University site visit for Senior Industrial Research Chair of the Natural Sciences and Engineering Research Council of Canada, Nov 1-2, 2018.
- Organized the 2<sup>nd</sup> Annual Jiangnan University International Joint Research Laboratory Symposium on Lipid Nutrition and Safety, Ames, Iowa, May 10-12, 2018.
- On Advisory Council and co-chaired session at the 1<sup>st</sup> China Section AOCS Congress on Oilseeds and Co-products, Wuxi, China, Nov 8-10, 2017.
- PhD Dissertation External Examiner for Deakin University of Australia by invitation of Major Professor Colin Barrow (Chair in Biotechnology Director of Centre for Chemistry and Biotechnology). The thesis is titled “Preparation and Stabilisation of Omega-3 Concentrates” and authored by Qiuyu Xia. Dec, 2017.
- USDA-NIFA grant review panel, Washington DC, Oct 16-18, 2017
- AOCS Books and Special Publications Committee, since 2015.
- Proposal reviewer for USDA-ARS NP 306 Quality and Utilization of Agricultural Products; Panel 1: Lipid-Based Bioproducts (2015)
- PhD Dissertation External Examiner for Deakin University of Australia by invitation of Major Professor Colin Barrow (Chair in Biotechnology Director of Centre for Chemistry and Biotechnology). The thesis is titled “Characterization and Lipase Concentration of Omega-3 Rich Oils” and authored by Taiwo O. Akanbi. October, 2014;
- Proposal reviewer for The United States - Israel Binational Agricultural Research and Development Fund, December, 2014
- Serving on “Scientific & Human Health/Nutrition Advisory Board” of Rembrandt Foods, Okoboji, IA, 2014
- USDA proposal review panel “ARS National Program 107 Panel 5: Food Chemistry Analysis Panel Review”, conducted Dec 2013
- Invited proposal reviewer for Canada Foundation for Innovation/Foundation (canadienne pour l’innovation), 2011-2012
- AOCS Professional Educators’ Common Interest Group Newsletter Editor, since 2011
- AOCS Phospholipids Division Chair, organizing short-course and Forum for 2013 annual meeting
- USDA proposal review panel (NP 306 Panel 10 – Technologies for Lipid-Based Industrial Products). April 28-29, 2010. Beltsville, MD
- Associate Editor for *Journal of American Oil Chemists’ Society* (AOCS), since 2006
- Serving as a member of the Publications Steering Committee of AOCS, since 2005
- Serving as the Incoming Chair of the Phospholipid Division of AOCS (09/10), previously served as member-at-large, treasurer, and secretary
- Regular manuscript reviewer for *Journal of the Science of Food and Agriculture*, *Journal of American Oil*

*Chemists' Society, Journal of Agricultural and Food Chemistry, Lipids, Journal of Food Science, Journal of Food Composition*

## **INSTITUTIONAL SERVICE**

### **University Level**

- Member, User Committee of the Roy J Carver High Resolution Microscopy Facility, 16/17
- ISU Faculty Senate Recognition and Development Committee, 13/14
- ISU Library Liaison for FSHN, 09-14
- ISU Plant Sciences Institute, At-large Council Members, 2012
- BEI Faculty Advisory Board (FAB), member, 13/14

### **College Level**

- Member, CCUR/BCRF Director Search Committee, 14/15
- Member, CALS P&T Committee, 14/15, 15/16, 16/17
- Member, CALS Curriculum Committee, 09/10
- Member, NWRC Internal Steering Committee, 08/09, 09/11
- Member, CHS Scholarship Committee, 07/08
- Member, Ag Curriculum Committee, 01/02, 02/03

### **Department Level (shortened list since 2010)**

- Member, FSHN Curriculum Committee, 17/18
- Leader for the “Green and Sustainable Food and Biomaterials Processing Technologies” Strategic Areas of Excellence of FSHN, since 2015
- Senior faculty mentor for Dr. Nuria Acevedo, Buddhi Lamsal, Byron Brehm-Stecher, and Shelley Shi
- DOGE of FST, since Aug 2014
- Chair, FST Graduate Advisory Committee, since Aug 2014
- Member, FSHN Graduate Education, since 2014
- Member, FST Graduate Admission Committee, since 2011
- Member, Faculty Review Committee, 16/17
- Member, Strategic Planning Committee, since 15
- Member, FSHN International Programs, since 15
- Faculty Mentor for assistant professor Nuria Acevedo, Buddhi Lamsal, and Byron Brehm-Stecher
- Chair, P&T Committee, 14/15
- Chair, FSHN Award Committee, 13/14
- Member, FSHN Departmental Advisory Committee, 12-15
- Member, FSHN P&T Committee, 12-15
- Chair, FSHN International Programs, 12-15
- Member, FSHN Strategic Planning Committee, 11/12
- Member, FSHN Award Committee, 11/12
- Member, Faculty Search Committee (Global Nutrition), 12/13
- Chair, FST Graduate Admission Committee, 09/11
- Member, FSHN Curriculum Committee, 09/10
- Member, Faculty Search Committee (Micro/Fermentation), 09/10



**Dr. Tong “Toni” Wang  
Position Description**

**Position:** Professor  
Department of Food Science

**Location:** University of Tennessee Institute of Agriculture

**Duties and Responsibilities:**

This is a 12 month, full time position consisting of a 70% appointment in UT AgResearch and a 30% appointment in the Herbert College of Agriculture. The research appointment includes working in the areas of food materials processing, lipid chemistry and bio-derived fuels, chemicals, and/or smart materials.

Develops an active and nationally recognized program in the broad areas of lipid chemistry and food materials processing while mentoring master's and doctoral students. Seeks and obtains extramural funding such as grants, contracts, and/or gifts to support research program and creates scholarly publications including peer-reviewed papers, research abstracts, and popular press articles. Collaborates in research projects with other university faculty and industry partners.

Advises students and teaches undergraduate and graduate courses based upon departmental needs and area of expertise. As a member of the undergraduate teaching faculty in Food Science, provides data on outcomes-based assessments of courses taught, participates in the annual program assessment, and provides an excellent learning environment for students while continually seeking ways to improve student learning.

Provides service by participating in department, college, and university governance. Serves the Food Science disciplines by providing leadership in appropriate public, private, professional, and governmental organizations. Benefits the community beyond the institution by lending professional expertise to aid or lead organizations that create beneficial linkages between the university and the community.

Fosters an environment of collegiality, teamwork, diversity, and respect for multicultural and multi-disciplinary settings. Successfully mentors junior faculty.

**Required Qualifications:**

Successful candidate must qualify for the rank of Professor in the Department of Food Science and have earned a doctorate in food science, food chemistry, food engineering or related discipline well-suited to the requirements of the position with a distinguished record of professional accomplishments.

Demonstrated ability to secure funds that support research and development with evidence (e.g. grant or contract titles, years, amounts, description of applicant's role) of successful competition for funding with an array of funding sources, public and private, national, and international.

Demonstrated knowledge of inclusivity, civility, diversity, and commitment to equal employment opportunity and affirmative action.

**Dr. Tong "Toni" Wang  
Offer Letter**



**Food Science**  
2510 River Drive  
Knoxville, TN 37996  
office: 865-974-7331

November 6, 2018

[foodscience.tennessee.edu](http://foodscience.tennessee.edu)

Dr. Tong (Toni) Wang  
3037 Bayberry Road  
Ames, Iowa 50014

Dear Dr. Wang,

It is my pleasure to invite you to join the faculty of The University of Tennessee Institute of Agriculture (UTIA) as Full Professor in the Department of Food Science (FS) working in the areas of Food Materials Processing, Lipid Chemistry and Bio-derived Fuels, Chemicals, and Smart Materials. This position consists of a 70% appointment in UT AgResearch and a 30% appointment in the Herbert College of Agriculture.

Your compensation package will include a base annual salary of \$150,000 to be paid in 12 monthly installments. The University of Tennessee offers a comprehensive benefits program including retirement plans; health, life, dental, and disability insurance plans; educational assistance program for employees and dependents; paid holidays, annual and sick leave. You will also be eligible to participate in our Salary Incentive Program, giving you the opportunity to increase your annual pay (up to 50 percent of the base). In the event of separation, The University of Tennessee Institute of Agriculture is not obligated to pay any unpaid portion of this annualized salary for the balance of the year not in employment.

Your appointment date will be May 16, 2019. This is a 12-month appointment requiring your full-time service during the summer months as well as the academic year. Because you are a well-credentialed tenured full professor at your current institution, the UT President, in accordance with the University's Policies Governing Academic Freedom, Responsibility, and Tenure, will seek consideration of you for tenure immediately upon your initial appointment as a full professor at UTIA.

Further, we will seek to bestow upon you the title of Distinguished Professor or Fellow or similar in recognition of performance excellence. Currently, we are working with the Chancellor and relevant parties to facilitate this process. The stipend associated with the title will be part of the base salary specified above.


For your AgResearch appointment, you will be expected to develop an active and nationally recognized program in the broad areas of lipid chemistry and food materials processing while mentoring master's and doctoral students. You will also be expected to seek and obtain extramural funding such as grants, contracts, and/or gifts and create scholarly publications including peer-reviewed papers, research abstracts, and popular press articles. You will be expected to collaborate in research projects with other university faculty and the food industry. Since commercialization of your work is also valued, where applicable, you will be expected to submit disclosures of new intellectual property for patent consideration by the UT Research Foundation.




For your Herbert College of Agriculture appointment, you will be expected to advise students and teach undergraduate and graduate courses based upon departmental needs and your areas of expertise. Assigned courses may change over time based on the needs of the department as determined by the department head. As a member of the undergraduate teaching faculty in Food Science, you will be responsible for providing data on outcomes-based assessment of your courses, participating in our annual program assessment, and providing an excellent learning environment for your students while continually seeking ways to improve student learning. To support and facilitate your efforts, UT AgResearch, the Herbert College of Agriculture, the Department of Food Science, and the University of Tennessee System Treasurer's Office will jointly provide startup funding in the amount of \$750,000.

If you accept this appointment, please sign and return the original letter so that processing of your appointment may proceed.

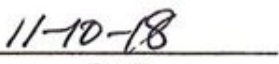
  
Mark Morgan, Department Head  
Department of Food Science

  
Fred Tompkins, Interim Dean  
UT AgResearch

  
Tim Cross, Chancellor  
UT Institute of Agriculture

  
Caula Beyl, Dean  
Herbert College of Agriculture

I hereby accept this offer:   
Tong Wang

  
Date

*This offer is contingent upon successful completion of a background check. If you have not already done so, you must execute the University's background check Authorization Form. If the University decides that the results of your background check are not satisfactory, this offer may be rescinded or your employment may be terminated. Misrepresentation of academic credentials is a Class A misdemeanor in Tennessee. A person commits the offense of misrepresentation of academic credentials who, knowing that the statement is false and with the intent to secure employment at or admission to an institution of higher education in Tennessee, represents, orally or in writing, that such person has successfully completed the required course work for and has been awarded one or more degrees or diplomas in a particular field or specialty from an accredited institution of higher education.*

**Dr. Tong “Toni” Wang  
Confirmation of Curriculum Vita**

Dr. Tong “Toni” Wang has been employed as a research faculty member at Iowa State University since 1998. Her curriculum vita includes more than 150 published scholarly works that represent the results of her research. Her Google scholar profile was reviewed to evaluate her citations and the impacts of her research. A sample of her most frequently cited articles was verified through published websites for articles in which Dr. Wang was listed as an author or co-author. A list of her 20 most frequently cited articles is attached.



## Dr. Tong Wang

Professor of Food Science and Human Nutrition,  
Iowa State University  
food and lipid chemistry

### GET MY OWN PROFILE

	All	Since 2014
Citations	3521	2061
h-index	30	23
i10-index	86	57

3

TITLE	CITED BY	YEAR
<a href="#">Oil and tocopherol content and composition of pumpkin seed oil in 12 cultivars</a> DG Stevenson, FJ Eller, L Wang, JL Jane, T Wang, GE Inglett Journal of agricultural and food chemistry 55 (10), 4005-4013	282	2007
<a href="#">Antioxidant activity of phytosterols, oryzanol, and other phytosterol conjugates</a> T Wang, KB Hicks, R Moreau Journal of the American Oil Chemists' Society 79 (12), 1201-1206	184	2002
<a href="#">Egg-yolk lipid fractionation and lecithin characterization</a> LE Palacios, T Wang Journal of the American Oil Chemists' Society 82 (8), 571-578	146	2005
<a href="#">Soybean oil</a> EG Hammond, LA Johnson, C Su, T Wang, PJ White Bailey's industrial oil and fat products 2, 577-653	143	2005
<a href="#">Phytosterols in cereal by-products</a> Y Jiang, T Wang Journal of the American Oil Chemists' Society 82 (6), 439-444	109	2005
<a href="#">Evaluation of microalgae cell disruption by ultrasonic treatment</a> JA Gerde, M Montalbo-Lomboy, L Yao, D Grewell, T Wang Bioresource technology 125, 175-181	106	2012
<a href="#">Microalgae flocculation: impact of flocculant type, algae species and cell concentration</a> JA Gerde, L Yao, JY Lio, Z Wen, T Wang Algal research 3, 30-35	85	2014
<a href="#">Characterization of lipid components in two microalgae for biofuel application</a> G Wang, T Wang Journal of the American Oil Chemists' Society 89 (1), 135-143	85	2012
<a href="#">Refining high-free fatty acid wheat germ oil</a> T Wang, LA Johnson Journal of the American Oil Chemists' Society 78 (1), 71-76	84	2001
<a href="#">Soybean lecithin fractionation and functionality</a> Y Wu, T Wang Journal of the American Oil Chemists' Society 80 (4), 319-326	80	2003



TITLE	CITED BY	YEAR
Method of converting free fatty acids to fatty acid methyl esters with small excess of methanol EG Hammond, T Wang US Patent 6,965,044	78	2005
Oxidative stability of egg and soy lecithin as affected by transition metal ions and pH in emulsion G Wang, T Wang Journal of agricultural and food chemistry 56 (23), 11424-11431	67	2008
Thermogravimetric quantification of biodiesel produced via alkali catalyzed transesterification of soybean oil P Chand, CV Reddy, JG Verkade, T Wang, D Grewell Energy & Fuels 23 (2), 989-992	63	2009
3 Soybean Oil T Wang Vegetable Oils in Food Technology: Composition, Properties and Uses, 59	59	2011
Extraction of egg-yolk lecithin LE Palacios, T Wang Journal of the American Oil Chemists' Society 82 (8), 565-569	57	2005
Preparation of soy protein concentrate and isolate from extruded-expelled soybean meals H Wang, LA Johnson, T Wang Journal of the American Oil Chemists' Society 81 (7), 713-717	52	2004
Value-added oil and animal feed production from corn-ethanol stillage using the oleaginous fungus <i>Mucor circinelloides</i> D Mitra, ML Rasmussen, P Chand, VR Chintareddy, L Yao, D Grewell, ... Bioresource technology 107, 368-375	51	2012
Survey of soybean oil and meal qualities produced by different processes T Wang, LA Johnson Journal of the American Oil Chemists' Society 78 (3), 311-318	49	2001
Optimizing protein isolation from defatted and non-defatted <i>Nannochloropsis</i> microalgae biomass JA Gerde, T Wang, L Yao, S Jung, LA Johnson, B Lamsal Algal Research 2 (2), 145-153	48	2013
Influence of shearing and time on the rheological properties of milk chocolate during tempering JL Briggs, T Wang Journal of the American Oil Chemists' Society 81 (2), 117-121	46	2004



**Dr. Tong “Toni” Wang  
Confirmation of Tenure and Employment**



Office of the Chancellor

101 Morgan Hall  
2621 Morgan Circle  
Knoxville, TN 37996-4505  
office: 865-974-7342  
fax: 865-974-8781

January 3, 2019

Ms. Brenda Behling  
Director of Academic Policy and Personnel  
Iowa State University  
1550 Bearshear Hall  
Ames, IA 50011

Dear Ms. Behling:

The University of Tennessee Institute of Agriculture has extended an offer of employment to Dr. Tong Wang, Professor/Jean Bacon Louis Faculty Fellow, in the Department of Food Science and Human Nutrition. This letter is to confirm Dr. Wang's employment and tenure status at Iowa State University. Your response to the questions below is requested. Please let me know if you have any questions or concerns.

Sincerely,

Tim L. Cross  
Chancellor

- 1. Dr. Tong Wang is currently an employee of Iowa State University.  Yes  No
- 2. Dr. Tong Wang has been granted tenure at Iowa State University.  Yes  No

Brenda Behling 1/9/19 (Date)  
Brenda Behling  
Director of Academic Policy and Personnel

**Dr. Tong “Toni” Wang  
Position Summary**

Date search was initiated:                    October 30, 2018

Number of applicants:                        1

Dr. Tong “Toni” Wang has been offered a position as a spousal hire, in conjunction with the employment of her spouse, Dr. Hongwei Xin, who has been appointed Dean of AgResearch. The employment offer was extended following her interview on October 30, 2018, which included an open seminar in the Department of Food Science followed by meetings with the department head, faculty, staff and students in the department.

**Dr. Tong “Toni” Wang  
Documentation of Salary  
Iowa State University**

The Des Moines Register maintains a publicly accessible database of Iowa State University salaries. In 2017, (the most recent data available), Dr. Tong Wang received \$171,351.39 in salary.

**indigo WHEAT** | Get KCBOT + 23¢ per bushel & Average 13% Yield Increase | Watch Our Video to See How

DES MOINES REGISTER - NEWS  
**DATACENTRAL**

REGISTER INVESTIGATIONS  
 DATACENTRAL SPORTS

NEWS CATEGORIES: Education Government Business Public safety General interest Iowa facts and figures

## Database: State of Iowa employee salaries

The Des Moines Register maintains the database of state employees based on electronic files used for the annual printing of the state salary book. The salary information is based on fiscal year periods dating back to fiscal year 2006. The "July Salary" column indicates the employee's base salary; annual salary may include bonuses.

Community Based Corrections officers and State Fair Board members are not included in this release of public data. A status of "TERMINATED" does not indicate that the employee was fired, only that the person no longer works in that position.

NOTE: Some data is truncated. Also, some employees show up multiple times in instances where they are listed under more than one department. Inaccuracies in the data should be referred to the Iowa Department of Administrative Services, the source of the state salary book.

Source: Iowa Department of Administrative Services. Updated: January 8, 2018.

Employee

1 page of results

EMPLOYEE	DEPARTMENT	POSITION	COUNTY	SEX	JULY SALARY	TRAVEL ETC	FY SALARY	FY
WANG, TONG	Iowa State University	Prof	STORY	F	\$119,002.00	\$5,392.13	\$171,351.39	2017
WANG, TONG	University of Iowa	Assistant Professor	JOHNSON	F	\$135,000.00	\$4,088.38	\$159,000.00	2017

1 page of results



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>Grant of Tenure upon Initial Appointment at UTIA–Professor Hongwei Xin</u></b>
Type:	Action
Presenter:	Randy Boyd, Interim President

### BACKGROUND (see Tab 2)

#### SUMMARY

Dr. Hongwei Xin has been offered and has accepted appointment as Dean of AgResearch in the Institute of Agriculture, effective May 16, 2019, with a concurrent faculty appointment in the Department of Biosystems Engineering and Soil Science. Dr. Xin is currently employed as Assistant Dean for Research in the College of Agriculture and Life Sciences at Iowa State University, with a concurrent faculty appointment as professor with tenure. Chancellor Cross has recommended to the President that tenure be granted to Dr. Xin in his faculty appointment without serving a probationary period.

Dr. Xin is a highly accomplished researcher with a strong international reputation. He has served as principal investigator or co-principal investigator for contracts and grants totaling more than \$23.7 million during his career at Iowa State; has authored or co-authored 190 refereed journal articles; has presented 143 invited talks in 16 countries; and has mentored 36 graduate students. He was elected as a Fellow in the American Society of Agricultural and Biological Engineers in 2008 and named Charles F. Curtiss Distinguished Professor at Iowa State in 2014.

The President has confirmed that Dr. Xin satisfies all requirements for tenure upon initial appointment, including (1) that Dr. Xin had two competing offers for similar positions at UTIA peer institutions that included granting of tenure, and he could not have been successfully recruited without being considered for tenure upon initial appointment; and (2) that all required tenure review and recommendation procedures were followed by the Institute of Agriculture. Dr. Xin received the unanimous positive vote of the departmental and college tenure committees and the strong support of the department head and interim Dean for AgResearch.

After his independent review of the tenure dossier, the President recommends that the Board grant tenure to Dr. Xin in his faculty appointment in the Department of Biosystems Engineering and Soil Science in the Institute of Agriculture. Dr. Xin's curriculum vitae and other supporting documents are included in the meeting materials.

[Motion follows]



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

**Motion:** I move that the Education, Research, and Service Committee recommend adoption of the Resolution in the meeting materials to grant tenure to Professor Hongwei Xin in his faculty appointment in the Department of Biosystems Engineering and Soil Science in the Institute of Agriculture.



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Grant of Tenure upon Initial Appointment to Professor Hongwei Xin

Resolved: Upon the recommendation of the President, the Board of Trustees grants tenure to Professor Hongwei Xin in his faculty appointment in the Department of Biosystems Engineering and Soil Science in The University of Tennessee Institute of Agriculture.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.



**TENURE UPON HIRE CHECKLIST**

*Faculty Member:* **Dr. Hongwei Xin**; Dean for AgResearch in the UT Institute of Agriculture (UTIA)

<input checked="" type="checkbox"/>	All documentation associated/required for the review of the individual for tenure upon hire (i.e. voting reports, department committee recommendation, department head/chair recommendation)
<input checked="" type="checkbox"/>	Copy of candidate's Curriculum Vitae and other application materials submitted for the position
<input checked="" type="checkbox"/>	Copy of the position description
<input checked="" type="checkbox"/>	Copy of the offer letter, appointment letter, or other document showing the UT salary and the commitment made as to when the candidate would be considered for tenure
<input checked="" type="checkbox"/>	Explanation of the process used to confirm information on the CV and other application materials submitted for the position (degrees, prior employment, research/publication record, etc.)
<input checked="" type="checkbox"/>	Explanation of the process used to confirm that the individual was tenured at prior institution(s) and was not terminated involuntarily from prior institution(s)
<input checked="" type="checkbox"/>	Date the search for the position was initiated
<input checked="" type="checkbox"/>	Number of applicants for the position
<input checked="" type="checkbox"/>	Documentation of candidate's salary at his or her immediately prior institution

**Dr. Hongwei Xin**  
**Documentation of Tenure Review**



**Office of the Chancellor**

101 Morgan Hall  
2621 Morgan Circle  
Knoxville, TN 37996-4505  
office: 865-974-7342  
fax: 865-974-8781

January 29, 2019

Mr. Randy Boyd, Interim President  
University of Tennessee  
800 Andy Holt Tower

Dear President Boyd:

I am requesting approval to grant Dr. Hongwei Xin tenure upon his appointment as Dean for AgResearch in the Institute of Agriculture. This request is based on the following facts:

- Dr. Xin has held tenure at Iowa State University (one of the top colleges of agriculture in the world) since 1998 in the Department of Agricultural and Biosystems Engineering.
- He has been named a Charles F. Curtiss Distinguished Professor, the highest award available to ISU professors.
- Dr. Xin had two competing offers for similar positions at UTIA peer institutions which included granting of tenure.
- The offer to Dr. Xin would not be accepted if it did not include the possibility of tenure on appointment.
- Dr. Xin is extremely accomplished with a strong international reputation. He has served as PI or Co-PI for contracts and grants totaling more than \$23.7 million during his career at Iowa State University. He has mentored 36 graduate students, authored or co-authored 190 refereed journal articles, and presented 143 invited talks in 16 countries.
- Dr. Xin is a Fellow of the American Society of Agricultural and Biological Engineers, elected in 2008.
- Numerous international, national and university awards have been received by Dr. Xin.

Dr. Xin's academic home will be the Department of Biosystems Engineering and Soil Science. The faculty voted unanimously (12 in favor, 0 opposed) in support of granting tenure at the rank of professor to Dr. Xin. The department head wrote a letter in strong support of tenure at the rank of professor.

The UTIA Promotion and Tenure Review Committee reviewed Dr. Xin's dossier and concurred with the departmental recommendations, voting unanimously (8 in favor, 0 opposed) in support of tenure at the rank of professor. Finally, these recommendations were strongly supported by Dr. Fred Tompkins, Interim Dean of AgResearch.

I recommend, with absolutely no reservations, that Dr. Hongwei Xin be awarded tenure with the rank of professor based on the uniformly positive reviews of Dr. Xin's accomplishments. He has the right experience and training to provide outstanding leadership for our research programs as the new Dean of AgResearch.

A curriculum vita for Dr. Xin is attached.

Sincerely,

A handwritten signature in blue ink that reads "Tim Cross". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Tim L. Cross  
Chancellor

Attachment

### Summary Sheet: Recommendations for Promotion and/or Tenure

Name of faculty member: Hongwei Xin  
 Present rank: Prof. Candidate for:  Tenure  Promotion to Professor  
 Department: BESS Highest degree earned: PhD  
 Original rank at UTK: — Subsequent promotions (year, rank): \_\_\_\_\_

#### RECORD AT THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Date of original appointment as a full-time probationary faculty member: 5/16/2019  
 Years of full-time teaching experience at instructor rank or above before UTK probationary period:  
25 years  
 Years of full-time teaching at UTK, as of the May 31st prior to the review: 0  
 Total years of teaching: 25 years  
 Latest year for tenure review as stipulated in appointment letter: \_\_\_\_\_

#### RECOMMENDATIONS

##### DEPARTMENTAL FACULTY

Date of departmental discussion: 11/30/2018  
 Result of discussion: For: 12 Against: 0 Abstain: 1  
 Recuse (attach explanation for conflict of interest): \_\_\_\_\_  
 Is there a dissenting report?  Yes (please attach)  No  
 Is there a response from the candidate  Yes (please attach)  No  
 INTERDISCIPLINARY COMMITTEE OR DIRECTOR (where appropriate)  
 For: \_\_\_\_\_ Against: \_\_\_\_\_ (Provide letter)

\_\_\_\_\_ Danielle Julie Carrier    
 DEPARTMENT HEAD (Provide letter)

Provide a statement on the professional record and a summary recommendation.

##### COLLEGE COMMITTEE

For: 8 Against: 0 Abstain: 1  
 Recuse (attach explanation for conflict of interest) FACULTY MEMBER FROM DEPT. RECUSED

A copy of the report of the departmental and college committees must also be attached. In cases where this report disagrees in any substantial way with the departmental recommendation, this report must go beyond a listing of the vote to indicate as fully as possible the reasons for the differences.

\_\_\_\_\_    
 DEAN (Provide letter)

\_\_\_\_\_    
 CHIEF ACADEMIC OFFICER

\_\_\_\_\_    
 CHANCELLOR (RECOMMENDATION ON TENURE)

\_\_\_\_\_    
 CHANCELLOR (DECISION ON PROMOTION)





January 28, 2019

Dr. Tim Cross, Chancellor  
University of Tennessee  
Institute of Agriculture  
101 Morgan Hall  
Knoxville, TN 37996

**Dean's Office**  
2621 Morgan Circle  
103 Morgan Hall  
Knoxville, TN 37996-4506  
office: 865-974-7105  
fax: 865-974-6479  
[taes.tennessee.edu](mailto:taes.tennessee.edu)

4

Dear Dr. Cross:

Having reviewed the curriculum vitae for Dr. Hongwei Xin, I am writing to offer my unqualified support for granting tenure. By virtually any measure, the document points to a highly productive research career that is balanced with extensive, impactful outreach activities while contributing valuable leadership to the broader research enterprise at Iowa State University. Particularly impressive achievements shaping my assessment of his qualifications are expanded below.

The foundation for Dr. Hongwei Xin's success was laid through a solid educational background from leading academic institutions in China (Shenyang Agricultural University) and the United States (University of Nebraska), as well as postdoctoral researcher experience at the University of Arkansas. He joined the faculty at Iowa State University in 1993 where he began to build an expansive science and engineering program to improve management of poultry operations for enhanced productivity and product quality. Steady progress understanding the significant role that animal-environment interaction and housing systems control of environment plays led to innovative concepts introducing Precision Livestock Farming to the poultry industry. This advance promises continued progress in productivity while ensuring improved sustainability metrics for poultry products. In my opinion, his contributions highlight a capacity for focus and commitment; a unique aptitude for creative thought and targeted experimentation; and an impressive work ethic to drive the many components of the program forward. These characteristics, coupled with a broad appreciation of the issues, are central to the visionary thought expected of a mature scientist deserving of tenure.

Evidence supporting my assessment is clearly presented in the curriculum vitae. Dr. Hongwei Xin has compiled an impressive bibliography of 190 peer-reviewed publications appearing in highly-regarded journal outlets and 6 book chapters. He has contributed to more than 280 conference presentations with 143 of those invited and many of them offered at international conferences. This impressive record highlights the value he places on information transfer, as well as the value that the community places on his research program. Importantly, he also has 65 Extension publications, confirming his commitment to moving results in the laboratory to impacts on industry practices. Seventy graduate students, postdoctoral researchers and visiting scientists have studied under him, many of whom are now in influential positions with academia, as well as industry. Dr. Xin has also been very active in professional societies related to his interest area, including leadership in several international associations. This further

substantiates his commitment to advancing the discipline as a whole and the value of sharing his knowledge and experience to a broader audience. Finally, an extensive list of awards and recognition lends further testament to his impeccable reputation as a researcher, as well as a person.

Achieving this impressive record of accomplishments necessarily requires support from extramural funding sources. Clearly, it is an element of the job where he also excels. Dr. Xin has garnered almost \$24 million dollars to further his research vision. These resources were obtained from more than 40 different organizations, including industry consortia, international programs, and conventional competitive grants programs (e.g., USDA-NIFA). This suggests considerable versatility and flexibility in his approach for funding in support of his research goals, which is necessary for steady progress but difficult in practice. Also noteworthy, Dr. Xin has held several positions of leadership at Iowa State University that have benefitted the institution's research enterprise.

In closing, Dr. Hongwei Xin brings to UTIA an extensive record of science and engineering with a clear track record of contributions that have improved the effectiveness and efficiency of the poultry industry. He has demonstrated the capacity to commit to a vision and the ability to secure the resources needed to achieve the goal. I am convinced that his work will continue to impact the research community, industry and related stakeholders, and improve sustainability of poultry products. The level of productivity and impact of his research have increased since he first joined Iowa State University. As such, I have no doubt that he will be an invaluable asset to the Department of Biosystems Engineering and Soil Science, and strongly support tenure for this accomplished leader.

Sincerely,



Fred Tompkins, Interim Dean  
UT AgResearch





University of Tennessee  
Institute of Agriculture  
2621 Morgan Circle  
Knoxville, TN 37996  
865-974-7342  
ag.tennessee.edu

4

January 28, 2019

Dr. Fred D. Tompkins, Interim Dean UT AgResearch  
The University of Tennessee, 103 Morgan Hall  
Knoxville, TN 37996

RE: Tenure and Appointment Review for Dr. Hongwei Xin

Dear Dr. Tompkins:

The UTIA Promotion and Tenure Committee recommends Dr. Hongwei Xin for an appointment as a Professor (100% research) with tenure in the Department of Biosystems Engineering & Soil Science (BESS). Dr. Xin currently holds the rank of Professor with tenure at Iowa State University. The UTIA Promotion and Tenure Committee met on January 23, 2019, to consider his application materials. The vote of this committee was 8 in favor and 0 against for the appointment of Dr. Hongwei Xin as a Professor with tenure. Dr. Forbes Walker in the Department of Biosystems Engineering & Soil Science was recused.

The committee noted that Dr. Hongwei Xin has developed an excellent and internationally recognized research program directed toward animal production systems engineering including air quality, animal-environmental interactions, housing systems and environmental control, and precision livestock farming for sustainable operation. His work has had major impacts on US and global animal agriculture. For example, as the Director for Egg Industry Center (EIC) since 2008, Dr. Xin has raised \$6.1 million private funds to support research mission of EIC for egg producers, processors and consumers through national and international collaborations. By June 2018, EIC has funded 36 problem-solving multi-institutional projects (totaling > \$1 million), leading to significant publications as well as more than \$3.5 million external funding. Over the past 10 years, Dr. Hongwei Xin led EIC to become a national and global clearinghouse on egg production. Dr. Hongwei Xin's research also has produced significant contributions to scientific literature and engineering practices related to animal production systems. He has published 190 peer-reviewed journal articles in high quality journals, 5 book chapters, 87 conference proceedings, and more than 280 technical papers and presentations. Dr. Hongwei Xin is the principal or co-principal investigator of more than \$23.7 million in competitive grants and contracts for research, extension, and education programs. He has served on numerous academic, industry and government scientific advisory boards or task forces at state, national and international levels.

Dr. Hongwei Xin is highly commended for his collaborative work in facilitating linkages between academics, research, and economic development; supporting international academic partnerships; and raising significant private dollars to fund a state-of-the-art poultry teaching and research farm. He has also been instrumental and actively engaged in global capacity building and collaborations toward sustainable animal production. His wealth of experience will be invaluable to UTIA as we continue to explore ways to enhance our public-private partnerships.



Page 2 of 2  
Dr. Tompkins  
RE: Promotion Review for Dr. Hongwei Xin

Given his significant efforts and outstanding leadership, primarily at Iowa State University (1993 – Present), Dr. Hongwei Xin has received numerous awards and honors, such as Cyrus Hall McCormick-Jerome Increase Case Gold Medal Award by American Society of Agricultural and Biological Engineers in 2018, Iowa State University Exemplary Mentor Award for 2017–2018 academic year, and Iowa State University International Service Award in 2017.

The full Professors in the BESS department voted 12 “for” and 0 “against” with respect to Dr. Hongwei Xin’s tenure at the rank of Professor. Dr. Danielle Carrier, the department head of BESS, also strongly supported that Dr. Hongwei Xin should be granted tenure at the rank of Professor in the BESS department.

Our committee concurs with Dr. Carrier’s recommendation and the BEES Department’s faculty by unanimously supporting (8 yes and 0 no) the appointment of Dr. Hongwei Xin as a Professor with tenure in the BEES department.

Please contact me if the UTIA Promotion and Tenure Committee can answer any questions or provide further information regarding this recommendation.

Best regards,



Matthew Devereaux, Professor  
Chair, UTIA Promotion and Tenure Committee

- Cc: UTIA Promotion and Tenure Committee  
Dr. Doris D’Souza                      Dr. Feng Chen  
Dr. Seong-Hoon Cho                    Dr. Mark Fly  
Dr. Jun Lin                                Dr. Carrie Stephens  
Dr. Scott Stewart                        Dr. Forbes Walker

Department Head: Dr. Danielle J. Carrier  
Candidate: Dr. Hongwei Xin

December 3, 2018

Dear UTIA Executive Committee and P&T Committees,

This letter is in support of Dr. Hongwei Xin's tenure at the rank of Professor in the department of Biosystems Engineering and Soil Science (BESS).

Dr. Xin has administrative experience, namely assistant dean for research at the College of Agriculture and Life Sciences at Iowa State University (ISU) and Director of Egg Industry Center at (ISU). His research area spans: air quality, animal-environment interactions, housing systems and environmental control and precision livestock farming for sustainable operation.

Over his career, he has been involved in over \$23.7 millions as a principle investigator or a co-principle investigator. He has to his credit 190 refereed journal articles in high quality journals, such as Transactions of the ASABE, International Journal of Agricultural and Biological Engineering, Applied Animal Behavior Science, Animal, Poultry Science, Environmental Science and Technology and Applied Engineering in Agriculture. He has five book chapters in, but not limited to, International Symposium on Animal Environment and Welfare, ASABE Monographs and in Poultry Housing and Equipment Handbook. He has to his credit over 280 technical presentations.

BESS faculty at the rank of professor voted electronically with respect to Dr. Xin's appointment: 12 YES votes and 0 NO votes with 1 ABSTAIN (from myself *per* BESS tradition).

In sum, Dr. Xin's record is very strong. We are very glad that he is joining UTIA and has selected BESS as his tenure department.

Yours truly,



Danielle Julie Carrier, PhD  
Professor and Head  
Biosystems Engineering & Soil Science

## **Dr. Hongwei Xin**

**P&T Committee Overall Summary**

**Compiled by Daniel Yoder**

**Nov. 30, 2018**

**4**

Dr. Xin received his Ph.D. in 1989, attained the academic rank of Professor in 2002, and thereafter held several administrative positions at Iowa State University. Following an external search, he was chosen as the next University of Tennessee AgResearch Dean, scheduled to begin his activity in May 2019. Since Dr. Xin was previously tenured and promoted within the Agricultural and Biosystems Engineering program at Iowa State University, it is logical for his tenure to be housed within the BESS Department at the University of Tennessee. Based on analysis of Dr. Xin's CV, the BESS Promotion and Tenure Committee (with 13 faculty eligible to vote based on BESS Bylaws) concluded with a vote of 12 YES votes and 0 NO votes with 1 ABSTAIN (from the Dept. Head) that Dr. Xin should be GRANTED TENURE in the department at the rank of PROFESSOR.

The CV distribution, analysis, and voting were all done electronically, there was no mentor for Dr. Xin within the department, and none of the respondents raised comments or concerns, so there are no comments or suggestions to include.

**Dr. Hongwei Xin**  
**Confirmation of Curriculum Vitae**

## Hongwei Xin, Ph.D.

Assistant Dean for Research, College of Agriculture and Life Sciences  
 Director of Egg Industry Center, Iowa Egg Council Endowed Professor  
 Charles F. Curtiss Distinguished Professor of Ag & Biosystems Engineering and Animal Science  
 1202 NSRIC, Iowa State University, 1029 N. University Blvd, Ames, Iowa 50011-3310, USA  
 Office: (+1) 515-294-4240; Mobile: (+1) 515-450-2593; Email: [hxin@iastate.edu](mailto:hxin@iastate.edu)  
 Faculty website: <http://www.abe.iastate.edu/hongwei-xin/>  
 Citation Indices: <http://scholar.google.com/citations?user=I02uQPAAAAAJ&hl=en>

### EDUCATION

Ph.D.	Engineering (Bio-environmental Engineering Field), University of Nebraska (Dissertation Advisor: Dr. James A. DeShazer)	1989
M.S.	Agricultural Engineering, University of Nebraska (Thesis Advisor: Dr. James A. DeShazer)	1985
B.S.	Agricultural Engineering, Shenyang Agricultural University, China	1982

### ACADEMIC APPOINTMENTS

2017–present	Assistant Dean for Research, College of Agriculture and Life Sciences, ISU
2017–2018	Interim Director, Iowa Nutrient Research Center, CALS, ISU
2014–present	Charles F. Curtiss Distinguished Professor, ISU
2013–present	Iowa Egg Council Endowed Professor, ISU
2011–2013	Associate Chair for Research of Agricultural and Biosystems Engineering, ISU
2008–present	Director, Egg Industry Center located at ISU
2002–present	Professor, Department of Agricultural and Biosystems Engineering, ISU
2002–present	Professor, courtesy appointment of Animal Science, ISU
1998–2002	Associate Professor, Department of Agricultural and Biosystems Engineering, ISU
1993–1998	Assistant Professor, Department of Agricultural and Biosystems Engineering, ISU
1990–1993	Post-doctoral Research Associate, Dept. of Biological and Agricultural Engineering, University of Arkansas, Fayetteville, Arkansas
1990–1990	Post-doctoral Research Associate, Dept. of Biological Systems Engineering, University of Nebraska-Lincoln (UNL), Lincoln, Nebraska
1984–1989	MS and PhD Graduate Research Assistant, Dept. of Agricultural Engineering, UNL
1982–1983	Instructor, Dep. of Agricultural Engineering, Shenyang Agricultural University, China

### ADMINISTRATIVE/LEADERSHIP EXPERIENCE AND ACCOMPLISHMENTS

- 1) Assistant Dean for Research, CALS (April 2017–present). As a member of the Dean's Leadership Team, Dr. Xin works with the Dean and Senior Associate Dean in providing the direction and support for the research enterprise of the College; facilitates linkages between the College and Experiment Station research and economic development; and supports international academic partnerships. A few examples of the leadership responsibilities and accomplishments are listed below.
  - Providing leadership in planning and coordinating for the new state-of-the-art ISU Poultry Teaching and Research Facilities (~ 40,000 ft<sup>2</sup> at \$6.05 million private funds plus ~\$500,000 gift-in-kind equipment donations). Working with the ISU Foundation in the fundraising; working with faculty and staff in Animal Science, ABE and Vet Med on planning of the facilities to meet the programmatic needs; working as a liaison between Facility Planning and Management (FPM) and the faculty and staff to ensure that the cost of the facilities fit the budget; working with commercial manufacturers on donations of equipment for the new farm. As an "add-on" project to the construction of the new ISU Poultry Facilities, planning and fundraising (a target of \$1.5 million) on a Turkey Research Facility and support of turkey research is currently in progress (\$1M private funds raised to date). Groundbreaking of the new poultry facility took place August 31, 2018.

- Served as interim director of the Iowa Nutrient Research Center (INRC) (April 1, 2017–Aug. 31, 2018). The INRC was established by the Iowa Board of Regents in response to legislation passed by the Iowa Legislature in 2013 (<https://www.cals.iastate.edu/nutrientcenter>). The center pursues science-based approach to evaluating the performance of current and emerging nutrient management practices, and provides recommendations on implementing the practices and developing new practices for the Iowa Nutrient Reduction Strategy. In this role, Dr. Xin oversaw the operation of the center, assisted by a program coordinator, by proactively interacting with the researchers at the Regents institutions (ISU, University of Iowa, University of Northern Iowa) who received funding from the center, coordinating review/evaluation of research proposals, managing the budget (\$1.3–\$1.6 million/year), convening stakeholders to solicit input on research priorities, coordinating Advisory Council meetings, and updating the state legislators about the center’s programmatic activities and progresses made.
- 2) Director, Egg Industry Center (<https://www.eggindustrycenter.org/>) (2008–present). As inaugural director, Dr. Xin oversees the operation of EIC that is also staffed with a Business Analyst, a Communications Specialist, and a part-time Office Assistant. The EIC’s mission is to add value to the egg industry by facilitating research and learning for egg producers, processors and consumers through national and international collaborations. Routinely works with a 15-member visionary Advisory Board that consists of stakeholders ranging from egg producers, allied industry representatives, government officials, to academic faculty in fulfilling the EIC mission. At its onset, EIC set a goal of establishing a \$10 million endowment to support the research mission. To date, \$6.1 million has been raised (all private funds). Since 2013 EIC has been funding mission-oriented research through a national RFA competition process. As of June 2018, EIC has funded 36 problem-solving projects totaling slightly over \$1 million, involving nine land-grant universities, affecting/touching more than 50 scientists or researchers, leading to ~60 publications, and leveraging more than \$3.5M external funding. Over the past 10 years, EIC has evolved from an unknown entity to a national and even global clearinghouse on egg production.
  - 3) Overseas Chair, Board of Directors, International Research Center for Animal Environment and Welfare (<http://www.ircaew.org/>) (since 2011). Dr. Xin was instrumental in establishing this international center that now consists of 20 member institutions from ten countries (Australia, Belgium, Brazil, Canada, China, Croatia, Denmark, Italy, The Netherlands, USA). In this leadership role, working with a board of diverse technical background and culture, Dr. Xin spearheads organizing the biennial international symposia (2011/2013/2015/2017/2019) and special workshops (2012/2014/2016/2018), which attract leading experts of related disciplines from around the world; and coordinate global academic collaborations. Attendance of the symposia grew from about 50 scientists in 2011 to over 400 in 2015 and 2017. He is serving in second (4-year) term as the Overseas chair of the board.
  - 4) Chair, United Egg Producers Environment Scientific Panel (2004–present). UEP represents over 90% of the U.S. egg producers. The missions of ESP are a) to serve as the clearinghouse for the egg industry regarding environmental issues related to egg production and state of the science on environmental research; and b) to explore practical means and make recommendations on best management practices to improve air quality and environmental stewardship. The 14-member ESP consists of representative from land-grant universities (ISU, Penn State University, Purdue, University of Illinois, The Ohio State University), allied companies, egg producers, and government agency (USDA). During 2008–2010, in partnership with UEP, Dr. Xin successfully led a multi-institutional USDA-CIG project (~\$1M) that demonstrated the use of dietary manipulation to mitigate ammonia emissions and improve manure nutrient values in laying-hen operations. The mitigation strategy has been adopted by egg producers.
  - 5) Associate Chair for Research, ABE (2011–2013). As an integral part of the ABE Leadership Team, Dr. Xin spearheaded the development of key performance indicators (KPI’s) on the department research program; inspired faculty with KPI-based performance data; and worked with faculty to encourage or foster development of large grant proposals. ISU-ABE has been consistently top-ranked nationally among the peers in research expenditures. Today the Department continues using these KPI’s to inspire our faculty to excel in research. Incidentally, AEB ranked #1 nationally in both graduate and undergraduate programs in 2016, and #1 in undergraduate program and #2 in graduate program in 2017 by the U.S. News and World Report.

- 6) Program Director, Midwest Poultry Research Consortium (2008–2013). MPRC involved 12 states and an annual budget of \$450,000 to \$800,000 (appropriated by the U.S. Congress, A.K.A. ear-marked funding). Each year 8-10 proposals were selected for funding through a competitive process. As the program director, Dr. Xin was responsible for managing the overall project budget, communicating with the PI's, and compiling and submitting the project's annual reports. The program was a hallmark of ear-marked-fund-supported research for its significant socio-economic impacts on the poultry industry, training of next-generation scientists, and return of investment.

#### LEADERSHIP TRAINING

- 1) Food Systems Leadership Institute (FSLI; <http://www.fsli.org/>), NC State University/The Ohio State University/California State University at St. Luis Obispo (Oct 2018–June 2019).
- 2) North Central Region Administrative Management Training Boot Camp, Crowne Plaza Aire, Bloomington, MN (<http://www.nceea.org/nc-admin-boot-camp/>) (June 20-22, 2017).
- 3) Emerging Leaders Academy (ELA) (<https://www.extension.iastate.edu/ela/>), Iowa State University, offered by the Office of the Senior Vice President and Provost (Jan–Dec, 2012).
- 4) Shared Leadership for Institutional Change (SLIC), Iowa State University, funded by the Kellogg Foundation and the Office of the Senior Vice President and Provost (Jan–Oct, 2003).

#### RESEARCH/EXTENSION/MENTORING PROGRAMS, OUTPUTS AND IMPACTS

##### Focus areas in animal production systems engineering:

- Air quality;
- Animal-environment interactions;
- Housing systems and environment control; and
- Precision livestock farming (PLF) for sustainable operation

##### Outputs:

- Principal investigator (PI) or Co-PI of over \$23.7 million contracts and grants for research, extension and education;
- Mentor of 36 graduate students (15 MS, 21 PhD), 12 post-docs, 22 visiting professors and scholars, and numerous undergraduate research assistants (2-6 per semester);
- Author/co-author of 192 refereed journal articles, 5 book chapters, 149 invited talks in 16 countries, 93 conference proceedings, 280+ technical papers and presentations, 65 extension publications, and 100+ research project reports; and
- Regularly serving on academic, industry and government scientific advisory boards or task forces at state, national and international levels.

##### Impacts:

- Significant impacts on the U.S. and global animal agriculture in science, policies and practices;
- Contributions to scientific literature and professional practices (e.g., engineering standards);
- Training of future leaders and next-generation scientists and engineers; twenty-six (26) former advisees are now on faculty (assistant to full professor rankings) at U.S. or overseas academic or government research institutions, and three (3) are leaders in U.S. industries;
- Contributions to the fulfillment of ISU's land-grant missions, national and global academic visibility;
- Enhanced public-private partnerships; and
- Cultivated faculty collaborations and teamwork inside ISU and with external peer institutions.

**PROFESSIONAL AND HONOR SOCIETIES**

- American Society of Agricultural and Biological Engineers (ASABE) – *Lifetime Member*
  - Elected to the Grade of Fellow (2008)
- Committees Served & Offices Held:
  - Organizing Committee of the 10<sup>th</sup> International Livestock Environment Symposium (2016–2018)
  - Organizing Committee of the 9<sup>th</sup> International Livestock Environment Symposium (2011–2012)
  - Program Chair of the 8<sup>th</sup> International Livestock Environment Symposium (2006–2008)
  - Structure and Environment (SE) Division Program Chair (2003–2005)
  - Associate Editor of SE Division (1994–2004; 2009–2013)
  - Meetings Council – SE Representative (2003–2005)
  - Publications Council – Member at large (2003–2005)
  - Planning Committee for the 7<sup>th</sup> International Livestock Environment Symposium (2002–2005)
  - Publications Council - SE Representative (1999–2002)
  - P-511 Refereed Publications, SE Liaison (1996–1999)
  - SE-04 Paper Awards (Chair, 1996; Vice Chair, 1995; Secretary, 1994)
  - SE-05 Publication Review (1995–2004)
  - SE-301 Environmental Physiology (Chair, 1996; Vice Chair, 1995; Secretary, 1994)
  - SE-302 Environment of Animal Structures (Chair, 1999; Vice Chair, 1998; Secretary, 1997)
  - SE-404 Swine Housing (member, 1990 - present)
  - SE-405 Poultry Housing (Chair, 2001; Vice Chair, 2000; Secretary, 1999)
  - Vice Chair Membership of the Iowa Section of ASAE (2000–2001)
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
  - Chair of TC 2.2 Handbook Committee (2000–2003)
- Alpha Epsilon Honor Society of Agricultural Engineers
- Association of Overseas Chinese Agricultural, Biological and Food Engineers
  - Vice President (2003-2004)
- Gamma Sigma Delta – The Honor Society of Agriculture
- Poultry Science Association
  - Chair of Animal Welfare Session for the 2016 Annual Meeting in New Orleans, LA
- Sigma Xi Scientific Research Society

**AWARDS AND HONORS**

- The University of Nebraska Biological Systems Engineering 2018 Hall of Fame Inductee (2018)
- Cyrus Hall McCormick-Jerome Increase Case Gold Medal Award of ASABE (2018)
- Iowa Egg Council Partner Award Bestowed to the Egg Industry Center (2018)
- ISU Exemplary Mentor Award for 2017–2018 academic year (2018)
- Iowa State University International Service Award (2017)
- Invited participant of the National Academies of Science, Engineering and Medicine (NASEM) Jamboree Workshop on Science Breakthroughs 2030: *A Strategy for Food and Agricultural Research*, Oct. 2-4, 2017, Irvine, CA, USA
- Featured in “Retaking the Field” Strengthening the Science of Farm and Food Production – *Clearing the air in a cage-free production system* (pp12-13). The Supporters of Agricultural Research (SoAR) Foundation, Volume 2, March 2017.
- Deputy Director of International Experts Committee, National Alliance for Technological Innovation on Animal Manure Resource Management, Ministry of Agriculture, China (2017-2018)
- Henry Giese Structures and Environment Award of ASABE (2016)
- Distinguished Career Award of the Association of Overseas Chinese Agricultural and Biological Engineers (AOCABFE) (2016)



- ISU College of Agriculture and Life Sciences Dean's Citation for Extraordinary Contributions Award (for timely responses to the 2015 high pathogenic avian influenza outbreaks) (2016)
- Gamma Sigma Delta – The Honor Society of Agriculture, Iowa State University Chapter's Extension Award of Merit (2016)
- Founding member of the Global Expert Group on Avian Influenza, International Egg Commission headquartered in London, United Kingdom (2015–)
- Founding member of the Global Roundtable for Sustainable Egg Production, International Egg Commission headquartered in London, United Kingdom (2015–)
- Charles F. Curtiss Distinguished Professor, Iowa State University (2014)
- USPOULTRY 2014 Workhorse of the Year Award (2014) (a total of five recipients from academia since starting of the award in 1962)
- Technical Paper Award by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) (2014)
- Inaugural Iowa Egg Council Endowed Professor (2013–present)
- Appointed by the U.S. Secretary of Agriculture to the USDA Agricultural Air Quality Task Force (AAQTF) (2008–2010, 2011–2013, 2013–2015)
- Iowa State University College of Engineering Superior Extension Award (2012)
- Foreign Member of the Scientific Advisory Committee for the Science and Information Centre for Sustainable Poultry Industry [WING]), Raum, Germany (2012–present)
- Overseas Chair for Board of Directors, International Research Center for Animal Environment and Welfare headquartered at Chongqing Academy of Animal Sciences, China (2012–2016; 2016–2020)
- Member of the Scientific Advisory Committee for the Key Laboratory of Energy Conservation and Waste Management of Agricultural Structures, Ministry of Agriculture, China (2012–2017)
- Member of the Scientific Advisory Committee for the State Key Laboratory in Animal Nutrition (SKLAN), the Chinese Academy of Agricultural Sciences, Beijing, China (2011–2016)
- Member of the Scientific Advisory Committee for the Key Laboratory on Agricultural Structures and Environment, China Agricultural University, Beijing, China (2008–2011, 2011–2015)
- Midwest Poultry Consortium Outstanding Service Award (2011) (Past recipients include Dr. Dennis Casey, Former President of Hy-Line International; Mr. Bob Sparboe, Founder and President of Sparboe Company; the Honorable Tom Harkin, U.S. Senator; the Honorable Tom Latham, U.S. Congressman; Dr. Wendy Wintersteen, former Endowed Dean of ISU College of Agriculture and Life Sciences and now ISU President; Dr. Susan Lamont, ISU Distinguished Professor)
- Educational Materials Award – Certificate of Excellence by the Council for Agricultural Science and Technology for creation of educational material “*Air Issues Associated with Animal Agriculture: A North American Perspective*” (2011)
- Iowa State University Award for Outstanding Achievement in Research (2010)
- ISU CALS Outstanding Achievement in International Agriculture Award (2010)
- Guest Professor, College of Biosystems Engr. & Food Science, Zhejiang University, China (2010–)
- Appeared in the History Channel show “*The Modern Marvels: Eggs*” (First aired Jan 20, 2010)
- President's Citation Award, the American Society of Ag. and Biological Engineers (ASABE) (2009)
- ISU College of Agriculture and Life Sciences Outstanding Research Award (2009)
- Appointment to Director of the Egg Industry Center (2008–present)
- Project Director of the Midwest Poultry Research Program (2008–2013)
- Inducted to Fellow of the American Society of Agricultural and Biological Engineers (2008)
- ISU College of Engineering David R. Boylan Eminent Faculty Research Award (2008)
- Appointment of Adjunct Professor of China Agricultural University, Beijing, China (2008–present)
- Iowa Poultry Association 2007 Industry Person of the Year Award (2007)
- Chair of the United Egg Producers Environmental Scientific Panel on Air Emissions (2004–present)
- Member of the USDA-NRI Air Quality Program Review Panel (2007–2012)

- U.S. Member of Scientific Board for SMART 2006 Conference, Brescia, Italy (2005-2006)
- Honorary Scientist of the Rural Development Administration of the Republic of Korea (2004-2006)
- Member of EPA National Air Emission Study Planning Committee (2003-2004)
- New Holland Young Researcher Award of the ASAE/ASABE (2001)
- Young Member of the Year Award, Mid-Central Section of the ASAE/ASABE (2001)
- Young Engineer of the Year Award, Iowa Section of the ASAE/ASABE (2001)
- Research Award for Foreign Expert, Ministry of Agriculture, Forestry and Fisheries, Japan (2000)
- Featured in the ISU Campaign “Advancing Technology to Become the Best” (2000)
- Invited member of USDA CSREES delegation to China for assessing environmental issues related to intensive animal production (2000)
- ASABE Paper Awards (14)
  - Nine Superior Paper Awards (1997[2], 2000, 2005[2], 2015, 2017, 2018[2]) (top 2.5% articles)
  - Five Honorable Mention Awards (1998, 2001, 2002, 2003, 2009) (top 5% articles)
- Newcomer Engineer of the Year Award, Iowa Section of the ASAE (1997)
- Honorary Professor of the Chinese Academy of Agricultural Sciences (1998)
- Honorary Professor of China Agricultural University (1996)
- ASAE Educational Blue Ribbon Award (1995)
- Invited speaker at 73 conferences/workshops held in the USA (professional societies, animal and food industry stakeholders, land-grant universities, government agencies) and 70 conferences/workshops held overseas (Belgium, Brazil, Canada, China, Columbia, Costa Rica, Denmark, France, Germany, Italy, Japan, Mexico, The Netherlands, Spain, United Kingdom)
- Sigma Xi Scientific Research Society Travel Award (1987)
- University of Nebraska Widaman Trust Distinguished Graduate Student Award (1986)

## PUBLICATIONS AND PRESENTATIONS

Refereed journal articles – 192; Book chapters – 5; Conference proceedings – 93; Technical papers and presentations – 280+; Extension publications – 65; Project reports – 100+; Invited talks – 149 in 16 countries.

### Refereed Journal Articles (In chronological and alphabetical order. \*Xin was the first author’s mentor.)

1. Chai\*, L., Y. Zhao, **H. Xin**, T. Wang, and M.L. Soupir. 2018. Mitigating airborne bacterial emissions from litter of cage-free hen houses by spray of acidic electrolyzed water: A laboratory study. *Biosystems Engineering*, 170:61-71.
2. Chai\*, L., Y. Zhao, **H. Xin**, T. Wang, M. Soupir, and K. Liu. 2018. Mitigating ammonia and PM generations of cage-free henhouse litter with solid additive and liquid spray. *Transactions of the ASABE* 61(1): 287-294. <https://doi.org/10.13031/trans.12481>
3. Dong, R., H. Dong, K. A. Beauchemin, and **H. Xin**. 2018. Evaluation of manure nitrogen excretion models suitable for lactating dairy cows in China. *Transactions of the ASABE* 61(5): 1713-1727 ((doi: 10.13031/trans.12710)
4. Hui, X., B. Li, **H. Xin**, W. Zheng, Z. Shi, X. Yang, and S. Zhao. 2018. New control strategy against temperature sudden-drop in the initial stage of pad cooling process in poultry houses. *International Journal of Agricultural and Biological Engineering* 11 (1): 66-73.
5. Lin, X., R. Zhang, S. Jiang, H.M. El-Mashad, **H. Xin**. 2018. Fan and ventilation rate monitoring of cage free layer 13 houses in California. *Transactions of the ASABE* 61(6): 1939-1950 (doi: 10.13031/trans.12831)
6. Liu\*, K., **H. Xin**, J. Sekhon, T. Wang. 2018. Effect of fluorescent vs. poultry-specific light-emitting diode lights on production performance and egg quality of W-36 laying hens. *Poultry Science* 97:834-844. <http://dx.doi.org/10.3382/ps/pex371>

7. Liu\*, K., **H. Xin**, T.A. Shepherd, Y. Zhao. 2018. Perch-shape preference and perching behaviors of young laying hens. *Applied Animal Behaviour Science*, 203(2018):34-41. <https://doi.org/10.1016/j.applanim.2018.02.009>
8. Liu\*, K. **H. Xin**, and P. Settar. 2018. Effects of light-emitting diode light v. fluorescent light on growing performance, activity levels and wellbeing of non-beak-trimmed W-36 pullets. *Animal* 12(1):106-115. <http://dx.doi.org/10.1017/S1751731117001240>
9. Oliveira\*, J.L., **H. Xin**, and H. Wu. 2018. Impact of feeder space on laying hen feeding behavior in enriched colony housing. *Animal* <https://doi.org/10.1017/S1751731118001106>
10. Oliveira\*, J.L., **H. Xin**, L. Chai, and S. Millman. 2018. Effects of litter floor access and inclusion of experienced hens in aviary housing on floor eggs, litter condition, air quality, and hen welfare. *Poultry Science* (in press)
11. Su, Y, X. Zhang, **H. Xin**, S. Li, J. Li, R. Zhang, X. Li, J. Li, and J. Bao. 2018. Effects of prior cold stimulation on inflammatory and immune regulation in ileum of cold-stressed broilers. *Poultry Science* <http://dx.doi.org/10.3382/ps/pey308>
12. Zhao\*, Y., L. Chai, B.J. Richardson, and **H. Xin**. 2018. Field Evaluation of an electrostatic air filtration system for reducing incoming particulate matter of a hen house. *Transactions of the ASABE* 61(1):295-304. <https://doi.org/10.13031/trans.12533>
13. Zhou, Y., H. Dong, **H. Xin**, Z. Zhu, W. Huang, and Y. Wang. 2018. Carbon footprint assessment of large-scale pig production systems in Northern China: A case study. *Transactions of the ASABE* 61(3):1121-1131. <https://doi.org/10.13031/trans.12805>
14. Chai\*, L., Y. Zhao, **H. Xin**, T. Wang, M. Soupier, and K. Liu. 2017. Reduction of particulate matter and ammonia by spraying acidic electrolyzed water onto litter of aviary hen houses – a lab-scale study. *Transactions of the ASABE* 60(2): 479-506. <http://doi.org/10.13031/trans.12081>
15. Harmon, J.D., S.J. Hoff, T.J. Baas, Y. Zhao, **H. Xin**, and L.R. Follet. 2017. Evaluation of conditions during weaned pig transport. *Applied Engineering in Agriculture* 33(6): 901-912. <http://doi.org/10.13031/aea.12367> (Superior Paper Award)
16. Li\*, L., Y. Zhao, J. Oliveira, W. Verhoijesen, and **H. Xin**. 2017. A UHF RFID system for studying individual feeding and nesting behaviors of group-housed laying hens. *Transactions of the ASABE* 60(4): 1337-1347. <https://doi.org/10.13031/trans.12202> (Superior Paper Award)
17. Lin, X., R. Zhang, S. Jiang, H. El-Mashad, and **H. Xin**. 2017. Emissions monitoring of ammonia, carbon dioxide and particulate matters in two Californian cage-free layer houses. *Atmospheric Environment* 152(2017):246-255. <http://dx.doi.org/10.1016/j.atmosenv.2016.12.018>
18. Liu\*, K. and **H. Xin**. 2017. Effects of horizontal distance between perches on perching behavior of Lohmann hens. *Applied Animal Behaviour Science* 194(2017): 54-61. <https://doi.org/10.1016/j.applanim.2017.05.001>
19. Liu\*, K. **H. Xin**, and L. Chai. 2017. Choice between fluorescent and poultry-specific LED lights by pullets and laying hens. *Transactions of the ASABE* 60(6): 2185-2195. <https://doi.org/10.13031/trans.12402>
20. Lu, Y., M. Hayes, J.P. Stinn, T.M. Brown-Brandl, **H. Xin**. 2017. Evaluating ventilation rates based on new heat and moisture production data for swine production. *Transactions of the ASABE* 60(1):237-245. DOI 10.13031/trans.11888
21. Ponciano, P.F., T. Yanagi, Jr., **H. Xin**. 2017. Performance of chicks subjected to thermal challenge. *Pesq. agropec. bras.* 52(2), doi.org/10.1590/s0100-204x2017000200005
22. Shepherd\*, T.A., **H. Xin**, J.P. Stinn, M.D. Hayes, Y. Zhao, and H. Li. 2017. Ammonia and carbon dioxide emissions of three laying-hen housing systems as affected by manure accumulation time. *Transactions of the ASABE* 60(1):229-236. (doi: 10.13031/trans.11860)
23. Wang, Y., H. Dong, Z. Zhu, P.J. Gerber, **H. Xin**, P. Smith, C. Opio, H. Steinfeld, and D. Chadwick. 2017. Mitigating greenhouse gas and ammonia emissions from swine manure management: a system analysis. *Environ. Sci. Technol.* DOI: 10.1021/acs.est.6b06430

24. Xin, H. and K. Liu. 2017. Precision livestock farming in egg production. *Animal Frontier* 7(1): 24-31.
25. Chen, H. H. Xin, G. Teng, C. Meng, X. Du, T. Mao, and C. Wang. 2016. Cloud-based data management system for automatic real-time data acquisition from large-scale laying-hen farms. *Int J Agric & Biol Eng* 9(4):106-115. doi: 10.3965/j.ijabe.20160904.2488
26. Lao\*, F. T.M. Brown-Brandl, J.P. Stinn, K. Liu, G. Teng, and H. Xin. 2016. Automatic recognition of lactating sow behaviors through depth image processing. *Computers and Electronics in Agriculture* 125:56-62. doi.org/10.1016/j.compag.2016.04.026
27. Long\*, H., Y. Zhao, T. Wang, Z. Ning, and H. Xin. 2016. Effect of light-emitting diode (LED) vs. fluorescent lighting (FL) on laying hens in aviary hen houses: Part 1 – Operational characteristics of lights and production traits of hens. *Poultry Science* 95(1):1-11. doi.org/10.3382/ps/pev121
28. Long\*, H., Y. Zhao, H. Xin, H. Hansen, Z. Ning, and T. Wang. 2016. Effect of light-emitting diode (LED) vs. fluorescent (FL) lighting on laying hens in aviary hen houses: Part 2 – Egg quality, shelf life and lipid composition. *Poultry Sci.* 95(1):115-124. doi.org/10.3382/ps/pev306
29. Ma\*, H., H. Xin, Y. Zhao, B. Li, T.A. Shepherd, and I. Alvarez. 2016. Assessment of lighting needs by W-36 laying hens via preference test. *Animal* 10(4): 671-680. doi.org/10.1017/S1751731115002384
30. Roberts\*, S.A., H. Xin, R. Swestka, M. Yum, and K. Bregendahl. 2016. Spatial variation and sampling strategy of manure nutrients in high-rise laying-hen houses. *J. App. Poult. Res.* doi.org/10.3382/japr/pfw013
31. Zhao\*, Y., D. Zhao, H. Ma, K. Liu, A. Atilgan, H. Xin. 2016. Environmental assessment of three egg production systems – Part III: airborne bacteria concentrations and emissions. *Poultry Sci.* 1473-1481. doi.org/10.3382/ps/pew053
32. Zhao\*, Y., H. Xin, J.D. Harmon, and T.J. Baas. 2016. Mortality rate of weaned and feeder pigs as affected by ground transportation conditions. *Transactions of the ASABE* 59(4):943-948. DOI 10.13031/trans.59.11671 (Superior Paper Award)
33. Hansen, H., T. Wang, D. Dolde, and H. Xin. 2015. Tocopherol and annatto tocotrienols distribution in laying-hen body. *Poultry Sci.* 94(10):2421-2433. doi.org/10.3382/ps/pev228
34. Hansen, H., T. Wang, D. Dolde, H. Xin, and K. Prusa. 2015. Supplementation of laying-hen feed with annatto tocotrienols and impact of  $\alpha$ -tocopherol on tocotrienol transfer to egg yolk. *J. Agric. Food Chem.* 63(9):2537-2544. doi.org/10.1021/jf505536u
35. Karcher, D.M., D.R. Jones, Z. Abdo, Y. Zhao, T.A. Shepherd, and H. Xin. 2015. Impact of commercial housing system and nutrition and energy intake on laying hen performance and egg quality parameters. *Poultry Science* 94(3):485-501.
36. Li, H., C. Zhang and H. Xin. 2015. Performance of an infrared photoacoustic single gas analyzer in measuring ammonia from poultry houses. *Applied Engineering in Agriculture* 31(3):471-477.
37. Shepherd\*, T.A., Y. Zhao, H. Li, J.P. Stinn, M.D. Hayes, and H. Xin. 2015. Environmental assessment of three laying-hen housing systems– Part II: ammonia, greenhouse gas, and particulate matter emissions. *Poultry Science* 94(3):534-543.
38. Wang, Y, H. Dong, Z. Zhu, L. Li, T. Zhou, B. Jiang, H. Xin. 2015. CH<sub>4</sub>, NH<sub>3</sub>, N<sub>2</sub>O and NO emissions from stored biogas digester effluent of pig manure at different temperatures. *Agriculture, Ecosystems & Environment* doi:10.1016/j.agee.2015.10.020
39. Zhao\*, Y., T. A. Shepherd, J. Swanson, J. A. Mench, D.M. Karcher, and H. Xin. 2015. Comparative evaluation of three laying-hen housing systems: description of the production systems and management practices. *Poultry Science* 94(3): 475-484.
40. Zhao\*, Y., T.A. Shepherd, T.A., H. Li, J.P. Stinn, M.D. Hayes, and H. Xin. 2015. Environmental assessment of three laying-hen housing systems–Part I: monitoring system and indoor air quality. *Poultry Science* 94(3): 518-533.

41. Brown-Brandl, T.M, M.D. Hayes, **H. Xin**, J.A. Nienaber, H. Li, R.A. Eigenberg, J.P. Stinn, and T.A. Shepherd. 2014. Heat and moisture production of modern swine. *Transactions of the ASHRAE* 120(1):469-489 (ASHRAE Technical Paper Award).
42. Hayes\*, M.D. **H. Xin**, H. Li, T. A. Shepherd, and J. P. Stinn. 2014. Electricity and fuel usage of aviary layer houses in the Midwestern USA. *Applied Engineering in Agriculture* 30(2): 259-266.
43. Kang, J., T. Wang, **H. Xin**, and Z. Wen. 2014. A laboratory study of mitigating ammonia gas emission from animal production operations using microalgae. *J. Air and Waste Management Association* 64(3):330-339.
44. Mendes\*, L.B., **H. Xin**, J.W. Nascimento, and H. Li. 2014. Evaluation of a soil moisture sensor for real-time measurement of poultry manure or litter moisture content. *Applied Engineering in Agriculture* 30(2):277-284.
45. Nakarmi\*, A., L. Tang, and **H. Xin**. 2014. Automated tracking and behavior quantification of laying hens using 3D computer vision and radio frequency identification technologies. *Transactions of the ASABE* 57(5):1455-1472.
46. Pelletier, N., M. Ibarburu, and **H. Xin**. 2014. Comparative assessment of the environmental footprint of the U.S. egg industry in 1960 and 2010. *Poultry Science* 93:241-255 (invited review)
47. Stinn\*, J.P. and **H. Xin**. 2014. Heat and moisture production rates of a modern U.S. swine breeding-gestation-farrowing facility. *Transactions of the ASABE* 57(5): 1517-1528 (**Superior Paper Award**).
48. Stinn\*, J.P. **H. Xin**, T.A. Shepherd, H. Li, and R.T. Burns. 2014. Ammonia and greenhouse gas emissions of a modern U.S. swine breeding-gestation-farrowing system. *Atmospheric Environment* 98(2014):620-628.
49. Tao, X., B. Shang, H. Dong, Y. Chen, and **H. Xin**. 2014. Effects of digestate from swine manure digester on in vitro growth of crop fungal pathogens: a laboratory study. *Transactions of the ASABE* 57(6):1803-1810.
50. Wang, Y., H. Dong, Z. Zhu, C. Liu, and **H. Xin**. 2014. Comparison of greenhouse gas and ammonia emissions during storage of raw liquid pig manure and biogas digester effluent. *Transactions of the ASABE* 57(2):635-645.
51. Wang, Y., H. Dong, Z. Zhu, T. Li, K. Mei, and **H. Xin**. 2014. Ammonia and greenhouse gas emissions from biogas digester effluent stored at different depths. *Transactions of the ASABE* 57(5):1483-1491.
52. Zhao, Y., A. Aarnink, and **H. Xin**. 2014. Inactivation of airborne *Enterococcus faecalis* and infectious bursal disease virus using a pilot-scale ultraviolet photocatalytic oxidation scrubber. *Journal of the Air & Waste Management Association* 64(1):38-46.
53. Zhao\*, Y, **H. Xin**, D. Zhao, W. Zheng, W. Tian, H. Ma, K. Liu, H. Hu, T. Wang, M.L. Soupir. 2014. Free chlorine loss during spray of membrane-less acidic electrolyzed water and its antimicrobial effect on airborne bacteria from poultry house. *Annals of Agricultural and Environmental Medicine* 21(2):249-255.
54. Zheng\*, W., Y. Zhao, **H. Xin**, B. Li, R.S. Gates, Y. Zhang and M.L. Soupir. 2014. Airborne particulate matter and bacteria reduction from spraying slightly acidic electrolyzed water in an experimental aviary laying-hen housing system. *Transactions of the ASABE* 57(1):229-236.
55. Zhu, Z., H. Dong, J. Xi, and **H. Xin**. 2014. Ammonia and greenhouse gas emissions from co-composting of dead hens with manure as affected by forced aeration rate. *Transactions of the ASABE* 57(1):211-217.
56. Hayes\*, M.D. **H. Xin**, H. Li, T. A. Shepherd, Y. Zhao, and J. P. Stinn. 2013. Heat and moisture production of Hy-Line brown hens in aviary houses in the Midwestern United States. *Transactions of the ASABE* 56(2):753-761.
57. Hayes\*, M.D. **H. Xin**, H. Li, T.A. Shepherd, Y. Zhao, and J. P. Stinn. 2013. Ammonia, greenhouse gas, and particulate matter concentrations and emissions of aviary layer houses in the Midwestern USA. *Transactions of the ASABE* 56(5):1921-1932.

58. Na, R., H. Dong, Z. Zhu, Y. Chen, and H. Xin. 2013. Effects of forage type and concentrate-to-forage ratio on methane emission and rumen fermentation characteristics of dairy cows in China. *Transactions of the ASABE* 56(3): 1115-1122.
59. Pelletier, N., M. Ibarburu, and H. Xin. 2013. A carbon footprint analysis of egg production and processing supply chains in the Midwestern United States. *J. Cleaner Production* 54(2013):108-114.
60. Trabue, S.L., K. Scoggin, H. Li, R.T. Burns, H. Xin, L. McConnell, R.S. Gates, A. Hasson, S. Ogunjemiyo, and J. Hatfield. 2013. Performance of commercial non-methane hydrocarbon analyzers in monitoring oxygenated volatile organic compounds emitted from animal feeding operations. *Journal of the Air & Waste Management Association* 63(10):1163-1172.
61. Zhao\*, Y., H. Xin, and B. Dong. 2013. Use of infrared thermography to assess laying-hen feather coverage. *Poultry Science* 92(2):295-302.
62. Zhao\*, Y., H. Xin, T.A. Shepherd, M.D. Hayes, J.P. Stinn. 2013. Modeling ventilation, balance temperature and supplemental heat requirement in alternative versus conventional laying-hen housing systems. *Biosystems Engineering* 115(2013):311-323.
63. Zhao\*, Y., H. Xin, T.A. Shepherd, M.D. Hayes, J.P. Stinn, and H. Li. 2013. Thermal environment, ammonia concentrations and ammonia emissions of aviary houses with white laying hens. *Transactions of the ASABE* 56(3):1145-1156.
64. Zheng\*, W., Y. Zhao, H. Xin, B. Li, R.S. Gates, Y. Zhang and M.L. Soupir. 2013. Concentrations and size distributions of airborne particulate matter and bacteria in an experimental aviary laying-hen setting. *Transactions of the ASABE* 56(6):1493-1501.
65. Chepete\*, J.H., H. Xin, and H. Li. 2012. Effect of partially covering turkey litter surface on ammonia emission. *J. App. Poult. Res.* 21:521-529.
66. Chepete\*, J.H., H. Xin, H. Li, L. Mendes, and T. Bailey. 2012. Ammonia emission and performance of laying hens as affected by different dosages of yucca schidigera. *J. App. Poult. Res.* 21:530-538.
67. Li\*, H., H. Xin, R. T. Burns, S.A. Roberts, S. Li, J. Kliebenstein, and K. Bregendahl. 2012. Reducing ammonia emissions from high-rise laying-hen houses through dietary manipulation. *J. Air and Waste Management Association* 62(2):160-169.
68. Mendes\*, L.B., H. Xin and H. Li. 2012. Ammonia emissions of pullets and laying hens as affected by stocking density and manure accumulation time. *Transactions of the ASABE* 55(3):1067-1075.
69. Rahman\*, S., H. Xin, S.A. Roberts, J.A. Arthur, R.T. Burns, H. Li, Z. Zhu, L.B. Moody, and K. Bregendahl. 2012. Effects of laying-hen variety on manure properties and ammonia emission. *Transactions of the ASABE* 55(3):105-1065.
70. Tao, X., H. Dong, H. Zhang, and H. Xin. 2012. Sex-based responses of plasma creatine kinase in broilers to thermoneutral constant and cyclic high temperatures. *British Poul. Sci.* 52(6):800-806.
71. Walker, L., T. Wang, H. Xin, and D. Dolde. 2012. Supplementation of laying-hen feed with palm tocos and algal astaxanthin for egg yolk nutrient enrichment. *J. Agric. Food Chem.* 60:1989-1999.
72. Zhu\*, Z., H. Xin, H. Li, and H. Dong. 2012. Assessment of tubing type on ammonia gas adsorption. *Applied Engineering in Agriculture* 28(2):265-269.
73. Chepete\*, J.H., H. Xin, and H. Li. 2011. Technical Note: Heat and moisture production of W-36 laying hens at 24 to 27 °C temperature conditions. *Transactions of the ASABE* 54(4):1491-1493.
74. Chepete\*, J.H., H. Xin, and H. Li. 2011. Ammonia emissions of laying hen manure as affected by accumulation time. *J. Poult. Sci.*, 48:138-143.
75. Davis\*, J.D., M.J. Darr, H. Xin, J.D. Harmon and J.R. Russell. 2011. Development of a GPS herd activity and well-being kit (GPS HAWK) to monitor cattle behavior and the effect of sample interval on travel distance. *Applied Engineering in Agriculture* 27(1):143-150.

76. Dong, H., Z. Zhu, Z. Zhou, **H. Xin**, and Y. Chen. 2011. Greenhouse gas emissions from swine manure stored at different stack heights. *Animal Feed Science and Technology* 166-167:557-561
77. Huang, Y., Dong, H., B. Shang, and **H. Xin**, and Z. Zhu. 2011. Characterization of animal manure and cornstalk ashes as affected by incineration temperature. *Applied Energy* 88(3): 947-952. DOI: 10.1016/j.apenergy.2010.08.011
78. Jacobson, L.D., B.W. Auvermann, R. Massey, F.M. Mitloehner, A.L. Sutton, and **H. Xin** (co-authors in alphabetical order) 2011. Air Issues Associated with Animal Agriculture: A North American Perspective. IP47, The Council for Agricultural Science and Technology Issue paper. IP47, May 2011, 24 pp., <http://www.cast-science.org/displayProductDetails.asp?idProduct=172>
79. Li\*, S., H. Li, **H. Xin**, and R.T. Burns. 2011. Particulate matter concentration and emissions of a high-rise layer house in Iowa. *Transactions of the ASABE* 54(3):1093-1101.
80. Li\*, H., **H. Xin**, R. T. Burns, L. D. Jacobson, S. Noll, S. J. Hoff, J. D. Harmon, J. A. Koziel, I. Celen, and B. Hetchler. 2011. Air emissions from tom and hen turkey houses in the U.S. Midwest. *Transactions of the ASABE* 54(1): 305-314.
81. Muhlbauer R.V., T.A. Shepherd, H. Li, R.T. Burns, and **H. Xin**. 2011. Technical Note: Development and application of an induction-operated current switch for monitoring fan operation. *Applied Engineering in Agriculture* 27(2): 287-292.
82. Pang, Z, B. Li, **H. Xin**, L. Xi, W. Cao, C. Wang, and W. Li. 2011. Field evaluation of a water-cooled cover for cooling sows in hot and humid climates. *Biosystems Engineering* 110(2011):413-420
83. Tu\*, X. S. Du, L. Tang, **H. Xin**, and B. Wood. 2011. A real-time automated system for monitoring individual feed intake and body weight of group housed turkeys. *Computer and Electronics in Agriculture* 75(2011): 313-320.
84. **Xin, H.**, R.S. Gates, A.R. Green, F.M. Mitloehner, P.A. Moore, Jr. and C.M. Wathes. 2011. Environmental impacts and sustainability of egg production systems. *Poultry Science* 90(1):263-277. doi:10.3382/ps.2010-00877
85. Zhu, Z., H. Dong, Z. Zhou, **H. Xin**, and Y. Chen. 2011. Ammonia and greenhouse gases concentrations and emissions of a naturally-ventilated laying hen house in Northeast China. *Transactions of the ASABE* 54(3):1085-1091.
86. Gu, Z., **H. Xin**, C. Wang, Z. Shi, W. Cao, and B. Li. 2010. Characterization of two types of covered creep boxes for gaseous concentrations, piglet usage and piglet performance. *Applied Engineering in Agriculture* 26(6): 1043-1049.
87. Gu, Z., **H. Xin**, C. Wang, Z. Shi, Z. Liu, F. Yang, B. Lin, C. Wang, B. Li. 2010. Effects of neoprene mat on diarrhea, mortality and foreleg abrasion of pre-weaning piglets. *Preventive Veterinary Medicine* 95 (2010): 16-22.
88. Li\*, H. and **H. Xin**. 2010. Lab-scale assessment of gaseous emissions from laying-hen manure storage as affected by physical and environmental factors. *Transactions of the ASAE* 53(2): 593-604.
89. Pang, Z., B. Li, **H. Xin**, X. Yuan, and C. Wang. 2010. Characterization of an experimental water-cooled cover for sows. *Biosystems Engineering* 105(2010): 439-447.
90. Trabue, S.L., K.D. Scoggin, H. Li, R.T. Burns, **H. Xin**, and J.L. Hatfield. 2010. Speciation of volatile organic compounds from poultry production. *Atmospheric Environment* 44(2010):3538-3546.
91. Dong, H., G. Kang, Z. Zhu, X. Tao, Y. Chen, **H. Xin**, and J.D. Harmon. 2009. Ammonia and greenhouse gas concentrations and emissions of a hoop-structure grower-finisher swine barn. *Transactions of the ASABE* 52(5): 1741-1747.
92. Gates, R.S., K.D. Casey, **H. Xin**, and R.T. Burns. 2009. Building emissions uncertainty estimates. *Transactions of the ASABE* 52(4): 1345-1351.
93. Green\*, A.R., I. Wesley, D. W. Trampel, and **H. Xin**. 2009. Air quality and hen health status in three types of commercial laying hen houses. *J. App. Poult. Res.* 18(3): 605-621.

94. Green, A.R. and **H. Xin**. 2009. Effects of stocking density and group size on heat and moisture production of laying hens under thermoneutral and heat challenging conditions. *Transactions of the ASABE* 52(6): 2027-2032.
95. Green\*, A.R. and **H. Xin**. 2009. Effects of stocking density and group size on thermoregulatory responses of laying hens under heat challenging conditions. *Transactions of the ASABE* 52(6): 2033-2038.
96. Li\*, H., **H. Xin**, S. Li, and R.T. Burns. 2009. Technical Notes: Upstream vs. downstream placement of FANS to determine fan performance *in situ*. *Transactions of the ASABE* 52(6): 2087-2090.
97. Liang\*, Y., G.T. Tabler, S.E. Watkins, **H. Xin** and I.L. Berry. 2009. Energy use analysis of open-curtain vs. totally enclosed broiler houses in northwest Arkansas. *Applied Engineering in Agriculture* 25(4): 577-584.
98. **Xin, H.**, H. Li., Burns, R.S. Gates, D.G. Overhults, and J.W. Earnest. 2009. Use of CO<sub>2</sub> concentration or CO<sub>2</sub> balance to assess ventilation rate of commercial broiler houses. *Transactions of the ASABE* 52(4): 1353-1361.
99. Casey, K.D., R.S. Gates, E.F. Wheeler, **H. Xin**, Y. Liang, A.J. Pescatore, and M.J. Ford. 2008. On-farm fan performance: implications for ventilation and operating cost. *J. App. Poult. Res.* 17: (2): 283-295.
100. Cui, X., B. Li, Z. Shi, **H. Xin**, and W. Cao. 2008. Physicochemical properties and bactericidal efficiency of neutral and acidic electrolyzed water under different storage conditions. *Journal of Food Engineering* 91:582-586.
101. Davis\*, J.D., **H. Xin**, R.D. MacDonald. 2008. Infrared thermography evaluation of commercially available incandescent heat lamps. *Applied Engineering in Agriculture* 24(5): 685-693.
102. Gates, R.S. and **H. Xin**. 2008. Extracting poultry behavior from time-series weigh scale records. *Computers and Electronics in Agriculture* 62(1): 8-14.
103. Gates, R. S., K.D. Casey, E.F. Wheeler, **H. Xin** and A.J. Pescatore. 2008. U.S. broiler ammonia emissions inventory model. *Atmospheric Environment* 42(14): 3342-3350.
104. Green\*, A.R., C.W. Wathes, T.G.M. Demmers, J.M., Clark, and **H. Xin**. 2008. Development and application of a novel environmental preference test system for assessing responses of laboratory mice to atmospheric ammonia. *J. American Association for Laboratory Animal Science* 47(2):49-56.
105. Li\*, H., **H. Xin**, R.T. Burns, Y. Liang. 2008. Reduction of ammonia emission from stored poultry manure using additives: Zeolite, Al<sup>+</sup>Clear, Ferix-3 and PLT. *J. App. Poult. Res.* 17(4): 421-431.
106. Lo, Y. M., J.A. Koziel, L. Cai, S.J. Hoff, W.S. Jenks, and **H. Xin**. 2008. Simultaneous chemical and sensory characterization of volatile organic compounds and semi-volatile organic compounds emitted from swine manure using Solid Phase Microextraction and Multidimensional Gas Chromatography–Mass Spectrometry–Olfactometry. *J Environ Qual* 37: 521-534.
107. Moody, L., H. Li, R.T. Burns, **H. Xin**, and R.S. Gates, S.J. Hoff, and D.G. Overhults. 2008. Broiler gaseous and particulate matter emission monitoring quality assurance project plan. *A Special Pub of ASABE*: [http://asae.frymulti.com/aqap\\_handbook.asp?confid=aqap2008](http://asae.frymulti.com/aqap_handbook.asp?confid=aqap2008) (289 pages)
108. Shao\*, B. and **Xin, H.** 2008. A real-time computer vision assessment and control of thermal comfort of group-housed pigs. *Computers and Electronics in Agriculture* 62(1): 15-21.
109. Trabue, S.L., K.D. Scoggin, F. Mitloehner, H. Li, R.T. Burns, and **H. Xin**. 2008. Field sampling method for quantifying volatile sulfur compounds emitted from animal feeding operations. *Atmospheric Environment* 42 (2008): 3332–3341.
110. Trabue, S.L., K. D. Scoggin, R.T. Burns, and **H. Xin**, and H. Li. 2008. Field sampling method for quantifying odorants in humid environments. *Environmental Science and Technology* 42(10): 3745-3750.
111. Topper, P.A., E.F. Wheeler, J.S. Zajaczkowski, R.S. Gates, **H. Xin**, Y. Liang, K.D. Casey. 2008. Ammonia emissions from two empty broiler houses with built-up Litter. *Transactions of the ASAE* 51(1): 219-225 (**Honorable Mention Award**)



112. Cai, L., J. A. Koziel, Y. Liang, and **H. Xin**. 2007. Evaluation of zeolite for control of odorants emissions from simulated poultry manure storage. *Journal of Environ. Quality* 36(1):184-193.
113. Dong, H., Z. Zhu, and **H. Xin**. 2007. Emissions of greenhouse gases from a typical Chinese swine farrowing house. *Transactions of the ASAE* 50(3): 1037-1044.
114. Dong, H., Z. Zhu, and **H. Xin**. 2007. Greenhouse gas emissions from swine buildings of various production stages in suburban Beijing, China. *Atmospheric Environment* 41: 2391-2399.
115. Roberts, S.A., **H. Xin**, B. J. Kerr, J. R. Russell, and K. Bregendahl. 2007. Effects of dietary fiber and low crude protein on nitrogen balance and egg production in laying hens. *Poultry Science* 86:1625-1632.
116. Roberts, S.A., **H. Xin**, B. J. Kerr, J. R. Russell, and K. Bregendahl. 2007. Effects of dietary fiber and low crude protein on ammonia emission from laying-hen manure. *Poultry Science* 86:1716-1725.
117. Zhu\*, Z., **H. Xin**, H. Li, R.T. Burns and H. Dong. 2007. Assessment of in-line filter type and condition on ammonia measurement, *Transactions of the ASAE* 50(5): 1823-1830
118. Cai, L., J. A. Koziel, J. D. Davis, and **H. Xin**. 2006. Characterization of volatile organic compounds and odors by in vivo sampling of beef cattle rumen gas using solid phase microextraction and gas chromatography-mass spectrometry-olfactometry. *Journal of Analytical and Bioanalytical Chemistry* 386: 1791-1802.
119. Cook\*, R.N., **H. Xin**, and D. Nettleton. 2006. Effects of cage stocking density on feeding behaviors of group-housed laying hens. *Transactions of the ASAE* 49(1): 187-192.
120. Liang\*, Y., **H. Xin**, H. Li, R.S. Gates, E.F. Wheeler and K.D. Casey. 2006. Effect of measurement interval on estimation of ammonia emission rates for layer houses. *Transactions of the ASAE* 49(1): 183-186.
121. Panetta, D.M., W. J. Powers, **H. Xin**, B. J. Kerr, and K. J. Stalder. 2006. Nitrogen excretion and ammonia emissions from pigs fed modified diets. *Journal of Environmental Quality* 35 (4):1297-1308.
122. Tao, X., Z. Zhang, H. Dong, and **H. Xin**. 2006. Responses of thyroid hormones of market-size broilers at thermoneutral constant and warm cyclic temperatures. *Poultry Science* 85:1520-1528.
123. Wheeler, E.F., K.D. Casey, R.S. Gates, **H. Xin**, J.L. Zajaczkowski, P.A. Topper, Y. Liang, A. J. Pescatore. 2006. Ammonia emissions from twelve U.S.A. broiler chicken houses. *Transactions of the ASAE* 49(5): 1495-1512.
124. Gates, R. S., **H. Xin**, K. D. Casey, Y. Liang, and E.F. Wheeler. 2005. A method for measuring ammonia emissions from poultry houses. *Applied Poultry Res.* 14: 622-634.
125. Li\*, H., **H. Xin**, Y. Liang, R. S. Gates, E. F. Wheeler, and A.J. Heber. 2005. Comparison of direct vs. indirect ventilation rate determinations in layer barns using manure belts. *Transactions of the ASAE* 48(1): 367-372.
126. Liang\*, Y., **H. Xin**, E. F. Wheeler, R. S. Gates, J. S. Zajaczkowski, P. Topper, H. Li and K. D. Casey. 2005. Ammonia emissions from U.S. laying hen houses in Iowa and Pennsylvania. *Transactions of the ASAE* 48(5): 1927-1941.
127. Zhang, Q. and **H. Xin**. 2005. Resting behavior of piglets in farrowing crates equipped with heat mats. *Applied Engineering in Agriculture* 21(6): 1067-1071.
128. Brown-Brandl, T.M., J. A. Nienaber, **H. Xin**, and R.S. Gates. 2004. A literature review of swine heat and moisture production. *Transactions of the ASAE* 47(1): 259-270. (**Superior Paper Award**)
129. Chepete\*, H. J. and **H. Xin**. 2004. Heat and moisture production of poultry and their housing systems: *Molting layers*. *Transactions of the ASHRAE* 110(2): 274-285.
130. Chepete\*, H. J., **H. Xin**, M.C. Puma, and R.S. Gates. 2004. Heat and moisture production of poultry and their housing systems: *Pullets and layers*. *Transactions of the ASHRAE* 110(2): 286-299.
131. Chepete\*, H. J. and **H. Xin**. 2004. Ventilation rates of laying hen houses based on new vs. old heat moisture production data. *Applied Engineering in Agriculture* 20(6): 835-842.

132. Dong, H. X. Tao, **H. Xin**, and Q. He. 2004. Enteric methane emissions in China estimated with different IPCC methods and production schemes. *Transactions of the ASAE* 47(6): 2051-2057.
133. Gates, R. S., K. D. Casey, **H. Xin**, E. F. Wheeler, and J. D. Simmons. 2004. Fan assessment numeration system (FANS) design and calibration specifications. *Transactions of the ASAE* 47(5): 1709-1715.
134. Liang\*, Y., **H. Xin**, S. J. Hoff, and T. L. Richard. 2004. Performance of Single Point Monitor in measuring ammonia and hydrogen sulfide gases. *Applied Engineering in Agriculture* 20(6): 863-872.
135. Persyn\*, K.E., **H. Xin**, D. Nettleton, A. Ikeguchi, and R.S. Gates. 2004. Feeding behaviors of laying hens with or without beak-trimming. *Transactions of the ASAE* 47(2): 591-596 (**Superior Paper Award**)
136. Pedersen, S., G. J. Monteny, **H. Xin** and H. Takai. 2004. Progress in research into ammonia and greenhouse gas emissions from animal production facilities. CIGR E-Journal Vol 6. <http://cigr-ejournal.tamu.edu/Volume6.html>.
137. Brown-Brandl, T.M., T. Yanagi, Jr., **H. Xin**, R.S. Gates, R. Bucklin, and G. Ross. 2003. A new telemetry system for measuring core body temperature in livestock and poultry. *Applied Engineering in Agriculture* 19(5): 583-589.
138. Tao\*, X. and **H. Xin**. 2003. Surface wetting and its optimization to cool broiler chickens. *Transactions of the ASAE* 46(2): 483-490.
139. Tao\*, X. and **H. Xin**. 2003. Acute, synergistic effects of air temperature, humidity and velocity on homeostasis of market-size broilers. *Transactions of the ASAE* 46(2): 491-497.
140. Chepete\*, H. J. and **H. Xin**. 2002. Heat and moisture production of poultry and their housing systems: *Literature review*. *Transactions of the ASHRAE* 108(2): 448-466.
141. Chinkuyu, A.J., R.S. Kanwar, J.C. Lorimor, **H. Xin**, and T.B. Bailey. 2002. Effects of laying hen manure application rate on water quality. *Transactions of the ASAE* 45(2): 299-308
142. Tabler, G. T., I. L. Berry, and **H. Xin**, and T. L. Barton. 2002. Spatial distribution of mortality in broiler flocks. *Applied Poultry Res.* 11: 388-396.
143. **Xin, H.**, Puma, M.C., R.S. Gates, and D. U. Ahn. 2002. Effects of drinking water temperature on laying hens subjected to warm cyclic environments. *Poultry Science* 81:608-617.
144. Yanagi\*, Jr., T., **H. Xin**, and R. S. Gates. 2002. A research facility for studying poultry responses to heat stress and its relief. *Applied Engineering in Agriculture* 18(2): 255-260.
145. Yanagi\*, Jr., T., **H. Xin**, and R. S. Gates. 2002. Optimization of partial surface wetting to cool caged laying hens. *Transactions of the ASAE* 45(4): 1091-1100 (**Honorable Mention Paper Award**).
146. Dong, H. X. Tao, J. Lin, Y. Li, and **H. Xin**. 2001. Comparative evaluation of cooling systems for farrowing sows. *Applied Engineering in Agriculture* 17(1): 91-96.
147. Ikeguchi\*, A. and **H. Xin**. 2001. Field evaluation of a sprinkling system for cooling commercial laying hens in Iowa. *Applied Engineering in Agriculture* 17(2): 217-221.
148. Puma\*, M.C., **H. Xin**, R.S. Gates, and D.J. Burnham. 2001. An instrumentation system for measuring feeding and drinking behavior of poultry. *Applied Engineering in Agriculture* 17(3): 365-374.
149. Zhang\*, Q. and **H. Xin**. 2001. Responses of piglets to creep heat type and location in farrowing crate. *Applied Engineering in Agriculture* 17(4): 515-519 (**Honorable Mention Paper Award**).
150. **Xin, H.**, I. L. Berry, G. T. Tabler, and T. A. Costello. 2001. Heat and moisture production of poultry and their housing system: *Broilers*. *Transactions of the ASAE* 44(6): 1853-1859.
151. Chepete\*, H.J. and **H. Xin**. 2000. Alleviating heat stress of laying hens by intermittent partial surface cooling. *Transactions of the ASAE* 43(4): 965-971.
152. Han\*, T. and **H. Xin**. 2000. Effects of intermittent lighting on limited-fed neonatal chicks. *Transactions of the ASAE* 43(6): 1767-1770.

153. Hu\*, J. and H. Xin. 2000. Image-processing algorithms for swine postural behavior analysis. *Behavior Research Methods, Instruments & Computers* 32(1): 72-85.
154. Ibarra, J. G., Y. Tao, and H. Xin. 2000. Combined IR imaging – neural network for the estimate of internal temperature in cooked chicken meat. *Optical Engineering* 39(11): 3032-3048.
155. Xin, H., Q. Zhang, M. Puma, J.D. Harmon, D.H. Harris, and M.L. Gramer. 2000. Effects of fluctuating temperatures on isowean pigs. *Transactions of the ASAE* 43(2): 433-438.
156. Yang\*, P., J.C. Lorimor, and H. Xin. 2000. Nitrogen loss from laying hen manure in high-rise layer houses. *Transactions of the ASAE* 43(6): 1771-1780 (**Honorable Mention Paper Award**).
157. Ye\*, W. and H. Xin. 2000. Measurement of surface temperature and postural responses of group-housed pigs to thermal conditions by thermography. *Transactions of the ASAE* 43(6): 1843-1851.
158. Zhang\*, Q. and H. Xin. 2000. Static and dynamic temperature distribution of heat mats for swine farrowing creep heating. *Applied Engineering in Agriculture* 16(5): 563-569.
159. Zhang\*, Q. and H. Xin. 2000. Modeling of heat mat operation for piglet creep heating. *Transactions of the ASAE* 43(5): 1261-1267.
160. Lorimor, J.C. and H. Xin. 1999. Manure production and nutrient concentrations from high-rise layer houses. *Applied Engineering in Agriculture* 15(4): 337-340.
161. Xin, H. 1999. Assessing swine thermal comfort by image analysis of postural behaviors. *J. Anim. Sci.* 77, Suppl. 2:1-9 (**Invited article**).
162. Xin, H. and Q. Zhang. 1999. Preference of heat lamp or heat mat by neonatal pigs at cool and warm ambient temperatures with low to high drafts. *Applied Engineering in Agriculture* 15(5): 547-551.
163. Xin, H., J.D. Harmon, H. Dong, D.H. Harris, H.J. Chepete, R.C. Ewan, and M.L. Gramer. 1999. Effects of post-weaning nutritional conditions on SEW pigs. *Transactions of the ASAE* 42 (5): 1463-1473.
164. Zhou\*, H. and H. Xin. 1999. Effects of heat lamp output and color on piglets at cool and warm environments. *Applied Engineering in Agriculture* 15(4): 327-330 (**Superior Paper Award**).
165. Xin, H., H.J. Chepete, J. Shao, and J.L. Sell. 1998. Heat and moisture production and minimum ventilation requirements of tom turkeys during brooding-growing period. *Transactions of the ASAE* 41(5): 1489-1498.
166. Shao\*, J., H. Xin, and J.D. Harmon. 1998. Comparison of image feature extraction for classification of swine thermal comfort behavior. *Computer and Electronics in Agriculture* 19: 223-232.
167. Harmon, J.D., H. Xin, and J. Shao. 1997. Energetics of segregated early weaned pigs. *Transactions of the ASAE* 40(6): 1693-1698.
168. Shao\*, J., H. Xin, and J.D. Harmon. 1997. Neural network analysis of postural behavior of young swine to determine their thermal comfort state. *Transactions of the ASAE* 40(3): 755-760 (**Honorable Mention Paper Award**).
169. Tanaka\*, A. and H. Xin. 1997. Energetics, mortality, and body mass change of breeder chicks subjected to different post-hatch feed dosages. *Transactions of the ASAE* 40(5): 1457-1461.
170. Tanaka\*, A. and H. Xin. 1997. Thermal characteristics of a hoop structure for swine production. *Transactions of the ASAE* 40(4): 1171-1177.
171. Tanaka\*, A. and H. Xin. 1997. Effects of structural and stacking configuration of containers for transporting chicks on their microenvironment. *Transactions of the ASAE* 40(3): 777-782.
172. Xin, H. and K. Lee. 1997. Physiological evaluation of chick morbidity during extended post-hatch holding. *J. App. Poult. Res.* 6(4): 417-421.
173. Xin, H. 1997. Mortality and body weight of neonatal breeder chicks as influenced by air temperature fluctuations. *Appl. Poultry Res.* 6: 199-204.
174. Xin, H., H. Zhou, and D.S. Bundy. 1997. Comparison of energy use and piglet performance between the conventional and an energy-efficient heat lamp. *Applied Engineering in Agriculture* 13(1): 95-99.
175. Xin, H. and K. Lee. 1996. Use of Aqua-Jel® and feed for nutrient supply during long-journey air transport of baby chicks. *Transactions of the ASAE* 39(3): 1123-1126 (**Superior Paper Award**).

176. **Xin, H.**, I.L. Berry, and G.T. Tabler. 1996. Minimum ventilation requirement and associated energy cost for aerial ammonia control in broiler houses. *Transactions of the ASAE* 39(2): 645-648 (**Superior Paper Award**).
177. **Xin, H.** and J.D. Harmon. 1996. Responses of group-housed neonatal chicks to post-hatch holding environment. *Transactions of the ASAE* 39(6): 2249-2254.
178. **Xin, H.**, J.L. Sell, and D.U. Ahn. 1996. Effect of light and darkness on heat and moisture production of broilers. *Transactions of the ASAE* 39(6): 2255-2258.
179. Zhou\*, H., **H. Xin**, and D.S. Bundy. 1996. Sampling rate for measurement of piglet thermoregulatory behavior. *Transactions of the ASAE* 39(6): 2259-2260.
180. **Xin, H.** and S.R. Rieger. 1995. Transport conditions and mortalities associated with remote international shipment of young chicks. *Transactions of the ASAE* 38(6): 1863-1867.
181. **Xin, H.**, I.L. Berry, G.T. Tabler, and T.L. Barton. 1994. Feed and water consumption, growth, and mortality of male broilers. *Poultry Sci.* 73: 610-616.
182. **Xin, H.**, I.L. Berry, T.L. Barton, and G.T. Tabler. 1994. Temperature and humidity profiles of broiler houses with experimental conventional and tunnel ventilation systems. *Applied Engineering in Agriculture* 10(4): 535-542.
183. **Xin, H.**, I.L. Berry and T.A. Costello. 1994. A computerized measurement and data acquisition system for field poultry research. *Computer and Electronics in Agriculture* 11: 143-156.
184. **Xin, H.**, I. L. Berry, T. L. Barton, and G. T. Tabler. 1993. Feeding and drinking patterns of broilers subjected to different feeding and lighting programs. *J. App. Poult. Res.* 2(4): 365-372.
185. **Xin, H.**, I. L. Berry, T. L. Barton, and G. T. Tabler. 1993. Sidewall effects on energy use in broiler houses. *J. App. Poult. Res.* 2: 176-183.
186. **Xin, H.**, J. A. DeShazer, and M. M. Beck. 1992. Energetic responses of pre-fasted growing turkeys to acute heat exposure. *Transactions of the ASAE* 35(1): 315-318.
187. **Xin, H.**, J. A. DeShazer, K. P. Rajurkar, and J. J. R. Feddes. 1992. Data dependent system analysis of stochastic swine energetic responses. *J. Thermal Biol.* 17 (4/5): 225-234.
188. **Xin, H.**, and J. A. DeShazer. 1992. Feeding patterns of growing pigs at warm constant and cyclic temperatures. *Transactions of the ASAE* 35(1): 319-323.
189. **Xin, H.**, and J. A. DeShazer. 1991. Swine responses to constant and modified diurnal cyclic temperatures. *Transactions of the ASAE* 34(6): 2533-2540.
190. **Xin, H.**, J. A. Deshazer, and D. W. Leger. 1989. Pig vocalizations under selected husbandry practices. *Transactions of the ASAE* 32(6): 2181-2184.
191. **Xin, H.**, J.A. DeShazer and M.M. Beck. 1987. Post-effect of ammonia on energetics of laying hens at high temperatures. *Transactions of the ASAE* 30(4): 1121-1125.
192. **Xin, H.**, J.A. DeShazer and M.M. Beck. 1987. Heat loss and respiration patterns of layers as influenced by aerial ammonia and high temperatures. *Transactions of the CSAE* 87(2): 98-103.

#### **Books and Book Chapters**

1. Gates, R.S., **H. Xin**, B. Li and R. Zhao, editors. 2013. International Symposium on Animal Environment and Welfare. 19-22 October, 2013. Rongchang, Chongqing, China. 543 pp.
2. DeShazer, J.A., G. L. Hahn, and **H. Xin**. 2009. Chapter 1. Basic Principles of the Thermal Environment and Livestock Energetics. In ASABE Monograph "Livestock Energetics and Thermal Environmental Management" Ed. J.A. DeShazer, ISBN: 1-892769-74-3, St. Joseph, MI: ASABE, pp1-22.
3. Nienaber, J.A., J.A. DeShazer, **H. Xin**, P.E. Hillma, J.T. Yen, C.F. Ferrell. 2009. Chapter 4. Measuring Energetics of Biological Processes. In ASABE Monograph "Livestock Energetics and Thermal Environmental Management" Ed. J.A. DeShazer, ISBN: 1-892769-74-3, St. Joseph, MI: ASABE, pp73-112.
4. **Xin, H.** Indirect Animal Calorimetry. In: *Biomeasurement and Experimental Techniques for Avian Species* <http://web.uconn.edu/poultry/NE-127/NewFiles/calorimetry.html>

5. **Xin, H.** et al. Heating, Cooling and Ventilation. In: *Poultry Housing and equipment Handbook*, a publication of Natural Resources and Agricultural Engineering Service, Cornell University, Ithaca, NY (in review).  
[Role: Chair of the multiple-author chapter committee - coordinating composition of the initial draft, writing sections of the chapter, editing and revising the chapter.]
6. 4<sup>th</sup> CIGR Report of Working Group on Climatization of Animal Houses – Heat and moisture production at animal and house levels. 2002. Eds. S. Pedersen and K. Silvik. [www.agrsci.dk/jbt/spe/CIGRReport](http://www.agrsci.dk/jbt/spe/CIGRReport)

**Conference Proceedings** (\*Xin was the first author's mentor.)

1. Chai\*, L., **H. Xin**, Y. Wang, J. Oliveira, K. Wang, Y. Zhao. 2018. Particulate matter suppression and heat stress relief in a cage-free henhouse. In Proc. of the Tenth International Symposium on Livestock Environment (ILES X), Sept 24-27, 2018, Omaha, NE, USA: ASABE
2. Oliveira\*, J. and **H. Xin**. 2018. Responses of laying hens to full vs. partial litter access in aviary housing. In Proc. of the Tenth International Symposium on Livestock Environment (ILES X), Sept 24-27, 2018, Omaha, NE, USA: ASABE
3. Leonard\*, S., **H. Xin**, T. Brown-Brandl, and B. Ramirez. 2018. An image acquisition system for studying behaviors of sows and piglets in farrowing barns. In Proc. of the Tenth International Symposium on Livestock Environment (ILES X), Sept 24-27, 2018, Omaha, NE, USA: ASABE
4. Liu\*, K. K. Wang, T. Fei., L. Chai, and **H. Xin**. 2018. Behavioral and Production Responses of W-36 Chicks to Supplementary UVA Light. In Proc. of the Tenth International Symposium on Livestock Environment (ILES X), Sept 24-27, 2018, Omaha, NE, USA: ASABE
5. Wang\*, K., **H. Xin**, L. Chai, Y. Wang, T. Fei, J. Oliveira, K. J. Pan, and Y. Ying. 2018. An RFID-based monitoring system for characterization of perching behaviors of individual poultry. In Proc. of the Tenth International Symposium on Livestock Environment (ILES X), Sept 24-27, 2018, Omaha, NE, USA: ASABE
6. Wang\*, Y., D. Li, S. Leonard, Z. Shi, **H. Xin**, L. Chai, B. Li. 2018. Spatial and diurnal variations of particulate matter concentration of a pilot-scale aviary layer house in winter. In Proc. of the Tenth International Symposium on Livestock Environment (ILES X), Sept 24-27, 2018, Omaha, NE, USA: ASABE
7. Chai\*, L., Y. Zhao, **H. Xin**, T. Wang, M. Soupir, K. Liu. 2017. A laboratory study on mitigation of particulate matter, ammonia and airborne bacteria from litter of cage-free layer housing. In Proc. of the International Symposium on Animal Environment and Welfare, Oct 23-26, 2017, Chongqing, China, eds. J. Ni, C. Wang, L. Zhao, and T. Lim.
8. Oliveira, J.\*, **H. Xin**, S. Leonard. 2017. Responses of laying hens to completely open vs. partially open aviary housing. In Proc. of the International Symposium on Animal Environment and Welfare, Oct 23-26, 2017, Chongqing, China, eds. J. Ni, C. Wang, L. Zhao, and T. Lim.
9. Lao\*, F., T.M. Brown-Brandl, J.P. Stinn, G. Teng, K. Liu, S.M. Leonard, and **H. Xin**. 2016. Sow lying behaviors before, during and after farrowing. In Proc. of the First Asian Precision Livestock Farming (1<sup>st</sup> LF-Asia) Conference held at China Agricultural University, Sept 9-11, 2016, Beijing, China, eds. G. Zhang, C. Wang, W. Zheng, and D. Berckmans, pp177-179.
10. Liu\*, K. L. Chai, and **H. Xin**. 2016. Preference of W-36 pullets between a commercial LED light and a typical CFL light. In Proc. of the First Asian Precision Livestock Farming (1<sup>st</sup> PLF-Asia) Conference held at China Agricultural University, Sept 9-11, 2016, Beijing, China, eds. G. Zhang, C. Wang, W. Zheng, and D. Berckmans, pp121-123.
11. Oliveira\*, J., **H. Xin**, Y. Zhao, and K. Glaess. 2016. Feeding and nesting behaviors of laying hens in enriched colony housing. In Proc. of the First Asian Precision Livestock Farming (1<sup>st</sup> PLF-Asia) Conference held at China Agricultural University, Sept 9-11, 2016, Beijing, China, eds. G. Zhang, C. Wang, W. Zheng, and D. Berckmans, pp114-115.

12. Ma\*, H. H. Xin, Y. Zhao, B. Li, T. A. Shepherd, I. Alvarez. 2015. Assessment of lighting needs by laying hens via preference test. In Proc. of International Symposium on Animal Environment and Welfare, Chongqing, China, 23-26 October, 2015, eds. J. Ni, T. Lim, and C. Wang, pp241-248.
13. Xin, H., Y. Zhao, W. Verhoijesen, L. Li. 2015. An automated tracking and monitoring system for laying-hen behavioral research in an enriched colony system. In Proc. of International Symposium on Animal Environment and Welfare, Chongqing, China, 23-26 October, 2015, eds. J. Ni, T. Lim, and C. Wang, pp319-326.
14. Lao\*, F. J.P. Stinn, H. Xin, T. Brown-Brandl, and K. Liu. 2015. Determination of piglet location in farrowing crates based on depth and digital images. In Proc. of the 7<sup>th</sup> European Conference on Precision Livestock Farming, Milan, Italy, 15-18 September, 2015, eds. M. Guarino and D. Berckmans, pp563-572.
15. Nakarmi\*, A.D., L. Tang and H. Xin. 2013. Automatic quantification of laying-hen behaviors using a 3D vision camera and radio frequency identification technology. In Proc of the 6<sup>th</sup> European Conference on Precision Livestock Farming, Leuven, Belgium, 10-12 September 2013, eds. D. Berckmans and J. Vandermeulen, pp903-915.
16. Stinn\*, J.P. and H. Xin. 2013. Heat and moisture production rates of a modern U.S. swine breeding-gestation-farrowing facility. In Proceedings of the International Symposium on Animal Environment and Welfare, Oct 20-22, 2013, Chongqing, China.
17. Xin, H., M.D. Hayes, Y. Zhao, M. Ibarburu, S. Millman. 2013. On aviary hen housing. An invited plenary presentation at the International Symposium on Animal Environment and Welfare, Oct 20-22, 2013, Chongqing, China.
18. Chen\*, Y. H. Xin, H. Li, T.A. Shepherd, M.D. Hayes, J.P. Stinn, R.T. Burns, R.S. Gates, and H. Dong. 2012. Comparison of using diurnal integration vs. daily mean concentration and ventilation rate to determine ammonia emissions from poultry houses. In *Proc of the 9<sup>th</sup> International Livestock Environment Symposium*, July 8-12, 2012, Valencia, Spain. St Joseph, MI: ASABE
19. Hayes\*, M.D., H. Xin, H. Li, T.A. Shepherd, Y. Chen, Y. Zhao, and J. P. Stinn. 2012. Bioenergetics of Hy-Line brown hens in aviary houses. In *Proc of the 9<sup>th</sup> International Livestock Environment Symposium*, July 8-12, 2012, Valencia, Spain. St Joseph, MI: ASABE
20. Hayes\*, M.D., H. Xin, H. Li, T.A. Shepherd, Y. Chen, Y. Zhao, and J. P. Stinn. 2012. Ammonia, greenhouse gas, and particulate matter concentrations and emissions of aviary layer houses in the Midwestern USA. In *Proc of the 9<sup>th</sup> International Livestock Environment Symposium*, July 8-12, 2012, Valencia, Spain. St Joseph, MI: ASABE
21. Hayes\*, M.D., H. Xin, H. Li, T.A. Shepherd, and J. P. Stinn. Electricity and fuel usage of aviary laying-hen houses in the Midwestern United States. In *Proc of the 9<sup>th</sup> International Livestock Environment Symposium*, July 8-12, 2012, Valencia, Spain. St Joseph, MI: ASABE
22. Purswell, J.L., W.A. Dozier III, H.A. Olanrewaju, J.D. Davis, H. Xin, and R.S. Gates. 2012. Effect of temperature-humidity index on live performance and processing yields in broiler chickens grown from 49 to 63 days. In *Proc of the 9<sup>th</sup> International Livestock Environment Symposium*, July 8-12, 2012, Valencia, Spain. St Joseph, MI: ASABE
23. Stinn\*, J. P., H. Xin, T.A. Shepherd, and R.T. Burns. 2012. Ammonia and greenhouse gas concentrations and emissions of a swine breeding-gestation-farrowing facility in the Midwestern USA. In *Proc of the 9<sup>th</sup> International Livestock Environment Symposium*, July 8-12, 2012, Valencia, Spain. St Joseph, MI: ASABE
24. Zhao\*, Y., H. Xin, T.A. Shepherd, M.D. Hayes, and J. P. Stinn. 2012. Characterizing thermal environment, supplemental heat and ventilation needs of alternative laying-hen housing systems. In *Proc of the 9<sup>th</sup> International Livestock Environment Symposium*, July 8-12, 2012, Valencia, Spain. St Joseph, MI: ASABE
25. Pepple, L.M., R.T. Burns, H. Xin, H. Li, and J.F. Patience. 2010. A comparison of gaseous emissions from swine finisher facilities fed traditional vs. a DDGS-based diet. In *Proc of International Symposium on Air Quality and Manure Management for Agriculture*, held in Dallas, TX. ASABE, St. Joseph, MI.

26. Wheeler, E.F., P. H. Patterson, **H. Xin**, R.S. Gates, C. Gregory, A. Y. Pikel, H.K. Burley. 2010. Ammonia emission, manure nutrients and egg production of laying hens fed distiller dried grain diets. In *Proc of International Symposium on Air Quality and Manure Management for Agriculture* held in Dallas, TX. ASABE, St. Joseph, MI.
27. **Xin, H.** 2009. Cooling poultry in tropical climates. Proc. of the Ensminger School International Conference held on February 11-13, 2009 in San Jose, Costa Rica.
28. Amaral, M.F.P., R.S. Gates, D.G. Overhults, I.F.F. Tinôco1, H. Li, R.T. Burns, **H. Xin** and J.W. Earnest. 2008. Analysis of different methods to compute ammonia concentration and emission rate. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE,
29. Burns, R.T., H. Li, L. Moody, **H. Xin**, R. Gates, D. Overhults, J. Earnest. 2008. Quantification of particulate emissions from broiler houses in the southeastern United States. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
30. Carvalho, V.F., T. Yanagi Jr., **H. Xin**, R. S. Gates, F. Damasceno, S. R. P. Moraes. 2008. Mathematical model for thermal environment and broiler chickens performance prediction in acclimatized housing. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
31. Gates, R.S., K.D. Casey, **H. Xin**, R. Burns, H. Li. 2008. Uncertainty analysis in animal building aerial emissions measurements. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
32. Green\*, A.R. and **H. Xin**. 2008. Effects of stocking density and group size on thermoregulatory response of laying hens under heat challenging conditions. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
33. Green\*, A.R. and **H. Xin**. 2008. Effects of stocking density and group size on heat and moisture production of laying hens under thermoneutral and heat challenging conditions. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
34. Li\*, H, **H. Xin**, R.T. Burns, S.A. Roberts, K. Bregendahl. 2008. Effects of dietary modification on laying hens in high-rise houses: Part I – Emissions of ammonia, hydrogen sulfide and carbon dioxide. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
35. Li\*, H., **H. Xin**, R.T. Burns, S.J. Hoff, J.D. Harmon, L.D. Jacobson, S. Noll. 2008. Effects of bird activity, ventilation rate and humidity on pm10 concentration and emission rate of a turkey barn. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
36. Li\*, H., **H. Xin**, R.T. Burns, S.J. Hoff, J.D. Harmon, L.D. Jacobson, S. Noll. 2008. effect of sampling interval on ammonia and particulate matter emissions from turkey grow-out barns. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
37. Roberts\*, S.A., H. Li, **H. Xin**, R. T. Burns, and K. Bregendahl. 2008. Effects of dietary modifications on laying hens in high-rise houses: Part II – Hen production performance. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
38. Wheeler, E.F., K. D. Casey, R. S. Gates, **H. Xin**, P. A. Topper, Y. Liang. 2008. Ammonia emissions from usa broiler chicken barns managed with new bedding, built-up litter, or acid-treated litter. Proc of the 8<sup>th</sup> International Livestock Environment Symposium, Sept 1-3, 2008, Iguassu Falls, Brazil. (eds) R.R Stowell, E.F. Wheeler and H. Xin. St Joseph, MI: ASAE
39. Amaral, M.F.P., R.S. Gates, E.G. Wilkerson, D.G. Overhults, I.F.F. Tinôco1, H. Li, R.T. Burns, **H. Xin** and J.W. Earnest. 2007. Comparison between two systems for ammonia emission

- monitoring in broiler houses. In: Proc International Symposium on Air Quality and Waste Management for Agriculture, Sept 15-19, 2007; Broomfield, CO, USA
40. Burns, R.T., **H. Xin**, R.S. Gates, H. Li, D.G. Overhults, L. Moody, and J.W. Earnest. 2007. Ammonia emissions from broiler houses in the southeastern United States. In: Proc International Symposium on Air Quality and Waste Management for Agriculture, Sept 15-19, 2007; Broomfield, CO, USA
  41. Burns, R.T., **H. Xin**, R.S. Gates, H. Li, L.B. Moody, D.G. Overhults, J. Earnest & S. Hoff. 2007. Continuous Monitoring Method for Ammonia Emissions from Poultry Broiler Houses in the United States. In: Proc. International Conference on Ammonia in Agriculture, March 19-21, 2007; Ede, The Netherlands.
  42. **Xin, H.**, H. Li, Lang, Y. & R.T. Burns. 2007. Mitigation of Ammonia Emissions from Laying Hen Manure Storage by Physical and Chemical Means. In: Proc. International Conference on Ammonia in Agriculture, March 19-21, 2007; Ede, The Netherlands.
  43. Burns, R.T., **H. Xin**, H. Li, S.J. Hoff, L. Moody, R.S. Gates, D.G. Overhults, J.W. Earnest. 2006. Monitoring system design for the Southeastern broiler gaseous and particulate matter air emissions project. In Proceedings of the Symposium on Air Quality Measurement Methods and Technology, May 9-11, 2006, Sheraton Imperial Hotel and Convention Center, Durham, NC. Paper # 042806, Air and Waste Management Association.
  44. Burns, R.T., **H. Xin**, R. Gates, H. Li, S.J. Hoff, L.B. Moody, D. Overhults, and J. Earnest. 2006. Monitoring system design for the southeastern broiler gaseous and particulate matter air emissions monitoring project. In: Proc. Workshop on Agricultural Air Quality: State of the Science, June 5-8, 2006, Bolger Conference Center, Potomac, MD, (eds.) V.P. Aneja et al., Raleigh, NC 27695. ISBN 0-9669770-4-1. pp 615-620.
  45. Cai, L. J.A. Koziel, Y. Liang, and **H. Xin**. 2006. Evaluation of zeolite for control of odorants emissions from simulated poultry manure storage. In: Proc. Workshop on Agricultural Air Quality: State of the Science, June 5-8, 2006, Bolger Conference Center, Potomac, MD, (eds.) V.P. Aneja et al., Raleigh, NC 27695. ISBN 0-9669770-4-1. pp 533-534.
  46. Cai, L. J.A. Koziel, J.D. Davis, and **H. Xin**. 2006. Characterization of volatile organic compounds and odors by in vivo sampling of beef cattle rumen gas using solid phase microextraction and gas chromatography-mass spectrometry-olfactometry: Implications for gaseous emissions from livestock. In: Proc. Workshop on Agricultural Air Quality: State of the Science, June 5-8, 2006, Bolger Conference Center, Potomac, MD, (eds.) V.P. Aneja et al., Raleigh, NC 27695. ISBN 0-9669770-4-1. pp 824-825.
  47. Casey, K.D., R.S. Gates, A.T. Pescatore, **H. Xin**, Y. Liang, and E.F. Wheeler. 2006. Comparison of measured annual ammonia emissions from poultry production facilities with mass balance approaches. In: Proc. Workshop on Agricultural Air Quality: State of the Science, June 5-8, 2006, Bolger Conference Center, Potomac, MD, (eds.) V.P. Aneja et al., Raleigh, NC 27695. ISBN 0-9669770-4-1. pp 542-545.
  48. Casey, K.D., R.S. Gates, A. Singh, A.J. Pescatore, E.F. Wheeler, **H. Xin**, Y. Liang. 2006. Managing litter to reduce ammonia emissions from broiler chicken houses in the U.S.A. In: Proc. Poultry Information Exchange 2006, April 2-4, 2006; Surfers Paradise, Gold Coast, Australia. PIX Association Inc.
  49. Casey, K.D., Gates, R.S., A. Singh, A. J. Pescatore, E.F. Wheeler, **H. Xin**, and Y. Liang. 2005. The effect of litter management on ammonia emissions from U.S. broiler chicken houses. Paper # 615, Air and Waste Management Association.
  50. Li\*, H., R.T. Burns, **H. Xin**, L.B. Moody, R. Gates, D. Overhults, and J. Earnest. 2006. Development of a continuous NH<sub>3</sub> emissions monitoring system for commercial broiler houses. In: Proc Annual Air & Waste Management Association Conference.
  51. Moody, L. B., H. Li, R.T. Burns, **H. Xin**, and R. Gates. 2006. Quality Assurance Project Plan (QAPP) for monitoring gaseous and particulate matter emissions from Southeastern broiler houses. In: Proc. Workshop on Agricultural Air Quality: State of the Science, June 5-8, 2006, Bolger



- Conference Center, Potomac, MD, (eds.) V.P. Aneja et al., Raleigh, NC 27695. ISBN 0-9669770-4-1. pp 621-626.
52. Moody, L., H. Li, R.T. Burns, **H. Xin**, and R.S. Gates. 2006. Quality Assurance Project Plan (QAPP) for monitoring gaseous and particulate matter emissions from southeastern broiler houses. In Proc. Symposium on Air Quality Measurement Methods and Technology, May 9-11, 2006, Sheraton Imperial Hotel and Convention Center, Durham. NC. Paper # 042706, Air and Waste Management Association.
  53. **Xin, H.** 2006. United Egg Producers Initiative on Air Emission Mitigation. In: Proc. The National Poultry Waste Management Symposium held in Springdale, AR, Oct. 24-25, 2006.
  54. **Xin, H.**, H. Li, R.T. Burns. 2006. Strategies to reduce air emissions in layer facilities. In: Proc. The National Poultry Waste Management Symposium held in Springdale, AR, Oct. 24-25, 2006.
  55. Cook\*, R. N. and **H. Xin**. 2005. Effects of cage stocking density on feeding behaviors of group-housed laying hens. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 629-635. LCCN 2005924086. ASAE Pub #701P0205.
  56. Cordeiro, M.B., I.F.F. Tinoco, R.B. Vigoderis, P.A.V. Oliveira, R.S. Gates, and **H. Xin**. 2005. Ammonia concentration evaluation in deep-bedded and concrete floor housing systems for grow-finish swine in Brazil. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 485-487. LCCN 2005924086. ASAE Pub #701P0205.
  57. Davis\*, J.D., M.J. Darr, **H. Xin**, J.D. Harmon, T.M. Brown-Brandl. 2005. Development of a Low-Cost GPS Herd Activity and Welfare Kit (HAWK) For Livestock Monitoring. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 607-612. LCCN 2005924086. ASAE Pub #701P0205.
  58. Dong, H., Z. Zhu, Y. Li, X. Tao, and **H. Xin**. 2005. Temporal variation of greenhouse gas emission in swine gestation building. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 396-401. LCCN 2005924086. ASAE Pub #701P0205.
  59. Gates, R.S., K. D. Casey, A. J. Pescatore, E.F. Wheeler, and **H. Xin**. 2005. Assessing annual U.S. broiler chicken house emissions. Paper # 1292, Air and Waste Management Association
  60. Li\*, H., **H. Xin**, and Y. Liang. 2005. Moisture production of a commercial laying hen house with manure belt. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 162-170. LCCN 2005924086. ASAE Pub #701P0205.
  61. Tao, X., H. Dong, Z. Zhang, and **H. Xin**. 2005. Daily variation of Thyroid hormones in broilers under high temperature conditions. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 516-523. LCCN 2005924086. ASAE Pub #701P0205.
  62. **Xin, H.** and B. Shao. 2005. Real-time behavior-based assessment and control of swine thermal comfort. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 694-702. LCCN 2005924086. ASAE Pub #701P0205.
  63. Zhu, Z., H. Dong, X. Tao, and H. Xin. 2005. Evaluation of airborne dust concentration and effectiveness of cooling fan with spray-misting system in swine gestation houses. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. (eds) T. Brown-Brandl and R. Maghirang. St Joseph, MI: ASAE, Pp 224-229. LCCN 2005924086. ASAE Pub #701P0205.
  64. Li\*, H., **H. Xin**, and Y. Liang. 2005. Effects of stack surface to volume ratio and air exchange rate on ammonia emission of laying hen manure storage. Paper #1157, Air and Waste Management Association.

65. Li\*, H., **H. Xin**, and Y. Liang. 2005. Moisture production of commercial manure-belt laying hen houses. Proc of the 7<sup>th</sup> International Livestock Environment Symposium, May 18-20, 2005, Beijing, China. St Joseph, MI: ASAE
66. Brown-Brandl, T.M., J.A. Nienaber, **H. Xin**, and R. S. Gates. 2003. A literature review of swine heat and moisture production. Proc. of the 2<sup>nd</sup> International Swine Housing Symposium, October 11-14, 2003, Raleigh, NC., St. Joseph, MI: ASAE.
67. Casey, K.D., R.S. Gates, E.F. Wheeler, **H. Xin**, J. Zajaczkowski, P. Topper and Y. Liang. 2003. Ammonia emissions from broiler houses in Kentucky during cold weather. Proc of the Gaseous and Odor Emissions from Animal Production Facilities, Scandic Hotel Bygholm Park, Horsens, Denmark, June 1-4, 2003.
68. Liang, Y., **H. Xin**, A. Tanaka, S. H. Lee, H. Li, E. F. Wheeler, R. S. Gates, J. S. Zajaczkowski, P. Topper and K. D. Casey. 2003. Ammonia emissions from layer houses in Iowa. Proc of the Gaseous and Odor Emissions from Animal Production Facilities, Scandic Hotel Bygholm Park, Horsens, Denmark, June 1-4, 2003.
69. Liang\*, Y., **H. Xin**, A. Tanaka, S. H. Lee, H. Li, E. F. Wheeler, R. S. Gates, J. S. Zajaczkowski, P. Topper and K. D. Casey. 2003. Ammonia Emissions from U.S. Poultry Houses: Part II – Layer Houses. In Proc. Third International Conference on Air Pollution from Agricultural Operations. Oct 12-13, 2003, Raleigh, NC, pp147-158.
70. Lim, T.T., A. J. Heber, J. Q. Ni, X. Gallien, and **H. Xin**. 2003. Air quality measurement at a laying hen house: Particulate matter concentrations and emissions. In Proc. Third International Conference on Air Pollution from Agricultural Operations. Oct 12-13, 2003, Raleigh, NC, pp249-256.
71. Wheeler, E. F., J. S. Zajaczkowski, P. A. Topper, R. S. Gates, **H. Xin**, K. D. Casey, and Y. Liang. 2003. Ammonia emissions from broiler houses in Pennsylvania during cold weather. Proc of the Gaseous and Odor Emissions from Animal Production Facilities, Scandic Hotel Bygholm Park, Horsens, Denmark, June 1-4, 2003.
72. Wheeler, E. F., K.D. Casey, J.S. Zajaczkowski, P.A. Topper, R.S. Gates, **H. Xin**, Y. Liang, and A. Tanaka. 2003. Ammonia Emissions from U.S. Poultry Houses: Part III – Broiler Houses. In Proc. Third International Conference on Air Pollution from Agricultural Operations. Oct 12-13, 2003, Raleigh, NC.
73. **Xin, H.**, Y. Liang, A. Tanaka, R.S. Gates, E.F. Wheeler, K.D. Casey, A.J. Heber, J. Ni and H. Li. 2003. Ammonia emissions from U.S. poultry houses: Part I – Measurement system and techniques. In Proc. Third International Conference on Air Pollution from Agricultural Operations. Oct 12-13, 2003, Raleigh, NC.
74. Chepete\*, H. J. and **H. Xin**. 2001. Heat and moisture production of poultry and their housing systems – A literature review. Proc. of the 6<sup>th</sup> International Livestock Environment Symposium, May 21-23, 2001, Louisville, Kentucky, pp319-335. LCCN 2001090005, St. Joseph, MI: ASAE.
75. Puma\*, M. C., **H. Xin**, R. S. Gates, and D. U. Ahn. 2001. Effects of drinking water temperature on laying hens subjected to warm cyclic environmental conditions. Proc. of the 6<sup>th</sup> International Livestock Environment Symposium, May 21-23, 2001, Louisville, Kentucky, pp235-243. LCCN 2001090005, St. Joseph, MI: ASAE.
76. Yanagi\*, T. Jr, **H. Xin**, and R. S. Gates. 2001. Measurement and control system for studying animal-environment interactions. Proc. of the World Congress of Computers in Agriculture and Natural Resources, September 19-21, 2001, Iquassu Falls, Brazil. St. Joseph, MI: ASAE.
77. **Xin, H.** and B. Shao. 2001. Real-time assessment of swine thermal comfort by computer vision. Proc. of the World Congress of Computers in Agriculture and Natural Resources, September 19-21, 2001, Iquassu Falls, Brazil. St. Joseph, MI: ASAE.
78. **Xin, H.**, I. L. Berry, G. T. Tabler, and T. A. Costello. 2001. Heat and moisture production of broiler chickens in commercial housing conditions. Proc. of the 6<sup>th</sup> International Livestock Environment Symposium, May 21-23, 2001, Louisville, Kentucky, pp309-318. LCCN 2001090005, St. Joseph, MI: ASAE.

79. **Xin, H.** and M. C. Puma. 2001. Cooling caged laying hens in high-rise house by fogging inlet air. Proc. of the 6<sup>th</sup> International Livestock Environment Symposium, May 21-23, 2001, Louisville, Kentucky, pp244-249. LCCN 2001090005, St. Joseph, MI: ASAE.
80. Yanagi\*, T. Jr., G. S. Damasceno, V. H. Teixeira, and **H. Xin**. 2001. Prediction of black globe humidity index in poultry buildings. Proc. of the 6<sup>th</sup> International Livestock Environment Symposium, May 21-23, 2001, Louisville, Kentucky, pp482-489. LCCN 2001090005, St. Joseph, MI: ASAE.
81. Zhang, Q. and **H. Xin**. 2000. Effects of creep heat type and locatuion on its usage by piglets in farrowing crates. Proc. of the First International Conference on Swine Housing, October 9-11, 2000, Des Moines, IA, pp365-374. LCCN 00-134445, St. Joseph, MI: ASAE.
82. **Xin, H.** and Lorimor. 1998. Nutrient profile and production volume of manure from high-rise housed layers. In: Proceedings of the 1998 Midwest Poultry Federation Convention, March 17-19, 1998. St. Paul, MN.
83. Han\*, T. and **H. Xin**. 1997. Performance and energetics of neonatal chicks as influenced by intermittent "in-transit" lighting regimens. Proc. of the 5<sup>th</sup> International Livestock Environment Symposium, May 29-31, 1997, Minneapolis, MN, pp948-953.
84. Harmon, J.D., **H. Xin**, and J. Shao. 1997. Thermal needs of SEW pigs. Proc. of the 5<sup>th</sup> International Livestock Environment Symposium, May 29-31, 1997, Minneapolis, MN, pp482-488
85. **Xin, H.** and K. Lee. 1997. Physiological responses of chicks to post-hatch nutritional conditions. Proc. of the 5<sup>th</sup> International Livestock Environment Symposium, May 29-31, 1997, Minneapolis, MN, pp954-958.
86. Shao\*, J., **H. Xin**, and J.D. Harmon. 1997. Image analysis of swine behavior to determine their thermal comfort. Proc. of the 5<sup>th</sup> International Livestock Environment Symposium, May 29-31, 1997, Minneapolis, MN, pp468-475.
87. Tanaka\*, A., **H. Xin**, and T. Osterhaus. 1997. Air flow rates of chick transport containers as influenced by container structure and stacking configuration. Proc. of the 5<sup>th</sup> International Livestock Environment Symposium, May 29-31, 1997, Minneapolis, MN, pp130-137.
88. Zhou\*, H., **H. Xin**, and D.S. Bundy. 1997. Heat lamp needs of neonatal pigs. Proc. of the 5<sup>th</sup> International Livestock Environment Symposium, May 29-31, 1997, Minneapolis, MN, pp489-495.
89. **Xin, H.** 1996. An automated data acquisition system for field animal environment research. In: Proc. of the International Conference on Agricultural and Bioenvironmental Engineering held in Beijing, China, August 15-19, 1996, ppIII-10~18.
90. **Xin, H.** 1996. Responses of neonatal chicks to post-hatch environment. In: Proc. of the International Conference on Agricultural and Bioenvironmental Engineering held in Beijing, China, August 15-19, 1996, ppIII-19~26.
91. Harmon, J.D., R. Zhang, and **H. Xin**. 1994. Human health concerns in livestock and poultry housing. In: Proc. of 1994 National Poultry Waste Management Symposium held at Atlanta, Georgia, (Eds) P.H. Patterson and J.B. Blake, pp31-42.
92. DeShazer, J.A., M.J. Milanuk, D.L. Watt, **H. Xin**, B. Vansteelant, and R.C. Ewan. 1988. NCCISWINE: The environment and housing component. In: Proc. of the 3<sup>rd</sup> International Livestock Environment Symposium, May 25-27, 1988, Toronto, ON, Canada, pp203-210.
93. **Xin, H.**, J.A. DeShazer, and D.W. Leger. 1988. Swine vocalization under selected husbandry practices. In: Proc. of the 3<sup>rd</sup> International Livestock Environment Symposium, May 25-27, 1988, Toronto, Ontario, Canada, pp336-342.

#### Invited Articles, Lectures, and Presentations

1. **Xin, H.** and M. Ibarburu. 2018. Evolution of the U.S. egg industry. An invited presentation at the 13<sup>th</sup> Rendez-vous avicole AQINAC (Annual Poultry Conference), Nov. 14, 2018, The Saint-Hyacinthe Convention Centre, Quebec, Canada

2. **Xin, H.** 2018. Automated measurements of farm animal physiological and behavioral responses. An invited presentation at the 4<sup>th</sup> International Workshop on Precision Animal Environmental Control, Nov. 6-8, 2018, UNICAMP, Campinas, Brazil
3. **Xin, H., Y. Zhao, and L. Chai,** 2018. Field evaluation of an electrostatic air filtration system for reducing incoming PM of a henhouse. An invited presentation at the 4<sup>th</sup> International Workshop on Precision Animal Environmental Control, Nov. 6-8, 2018, UNICAMP, Campinas, Brazil
4. **Xin, H.** 2018. Cage-free research update. An invited presentation at the Iowa Poultry Association Fall Festival Educational Session, Sept 20, 2018, West Des Moines Marriott Hotel, Iowa, USA
5. **Xin, H.** 2018. Cage-free research update. An invited presentation at the Iowa Poultry Association Fall Festival Educational Session, Sept 20, 2018, West Des Moines Marriott Hotel, Iowa, USA
6. **Xin, H.** 2018. The changing egg industry. An invited presentation at the National Symposium on Animal Environment and Precision Animal Husbandry held at Northeast Agricultural University, Sept 3-5, 2018, Harbin, China.
7. **Xin, H.** 2018. The U.S. egg industry. An invited lecture to the Chongqing Academy of Animal Sciences, July 16, 2018, Rongchang, Chongqing, China.
8. **Xin, H.** 2018. Poultry housing and environment control. An invited lecture to the Chongqing Academy of Animal Sciences, July 16, 2018, Rongchang, Chongqing, China.
9. Current and emerging issues facing the U.S. egg industry. An invited presentation to the American Egg Board Food Technology Advisory Council, AEB Headquarters Office, May 9-10, 2018, Chicago, IL, USA.
10. **Xin, H., J. Oliveira, D. Eckard, and C. Rowles.** 2018. Field findings of partial vs. full litter access in aviary hen housing. An invited presentation at the 10<sup>th</sup> Anniversary Egg Industry Issues Forum, April 17-18, 2018; Scottsdale, AZ, USA
11. **Xin, H.** 2018. The Egg Industry Center – *Research Update*. An invited presentation at the Egg Farmers of Canada 53<sup>rd</sup> Annual Meeting, March 27-28, 2018, Niagara Falls, ON, Canada.
12. **Xin, H.** 2018. Impact of partial vs. full litter access in aviary hen housing. An invited presentation at Joint Meeting of the United Egg Producers Scientific Advisory Committee and UEP Producers Animal Welfare Committee, Jan 31, 2018, The Westin Hotel, Atlanta, GA, USA
13. **Xin, H.** 2017. American egg industry at a crossroad. An invited presentation at the Foundation for Agricultural Research (FFAR) Sustainable Livestock Production Convening Event, Dec. 4, 2017, The National Academies Building, Washington, D.C., USA
14. **Xin, H.** 2017. Ventilation for broiler and layer housing. An invited presentation at the Third International Workshop on Precision Animal Environment Control, November 6-9, 2017; UNICAMP, Campinas, Brazil.
15. **Xin, H.** 2017. Behavioral and performance responses of pullets and layers to fluorescent and poultry-specific LED lighting. An invited presentation at the Third International Workshop on Precision Animal Environment Control, November 6-9, 2017; UNICAMP, Campinas, Brazil.
16. **Xin, H.** 2017. Technology will advance animal wellbeing. An invited presentation at the 7<sup>th</sup> Annual Symposium on Current Issues and Advances in Food Animal, August 3, 2017, University of Arkansas, Fayetteville, AR, USA.
17. **Xin, H.** 2017. Animal welfare and egg production sustainability. An invited keynote presentation at the 54<sup>th</sup> Brazilian Society of Animal Science Annual Meeting, July 24-28, 2017, Foz de Iguacu, Brazil
18. **Xin, H.** 2017. Towards precision livestock farming. An invited presentation to the Plant Animal Facility Systems Distinguished Lecture at the 2017 ASABE Annual International Meeting, July 16-19, 2017, Spokane, WA, USA
19. **Xin, H.** 2017. American egg industry at a crossroads. An invited presentation at the 2017 Urban Ag Academy Conference, The Gateway Hotel and Conference Center, July 13, 2017, Ames, IA, USA

20. **Xin, H.** 2017. Housing and environment control for egg production. An invited presentation at the 2017 Hy-Line International Technical School, West Des Moines Sheraton Hotel, June 12-15, 2017, West Des Moines, IA, USA
21. **Xin, H.** 2017. Direction of cage-free egg production. An invited presentation to the American Egg Board Food Technology Advisory Council meeting, May 10-11, 2017, Chicago, IL, USA
22. Lawrence, J.D., **H. Xin**, and M. Ibarburu. 2017. Economic impact of HPAI outbreak in Iowa. An invited presentation at the USDA-APHIS Field Reimbursement Specialists Training Workshop, March 23, 2017, National Animal Disease Center, Ames, IA, USA (Xin delivered the talk).
23. **Xin, H.** and Y. Zhao. 2017. Ventilation shutdown to control HPAI disease spread. An invited presentation at the USDA-APHIS Field Reimbursement Specialists Training Workshop, March 23, 2017, National Animal Disease Center, Ames, IA, USA.
24. **Xin, H.** 2017. A holistic evaluation of three egg production systems—*conventional cage, enriched colony and aviary cage-free*. A plenary presentation at the 10<sup>th</sup> International Congress of AVEM 2017, March 7-9, 2017, Queretaro, Mexico.
25. **Xin, H.**, K. Liu, H. Ma, and P. Settar. 2017. Behavioral and production responses of pullets and layers to LED vs. CFL light. A plenary presentation at the 10<sup>th</sup> International Congress of AVEM 2017, March 7-9, 2017, Queretaro, Mexico.
26. **Xin, H.**, Y. Zhao, E. Takle, D. Schmitt, and L. Chai. 2017. Measure, model and mitigate airborne transmission of avian influenza virus. A plenary presentation at the 10<sup>th</sup> International Congress of AVEM 2016, March 7-9, 2017, Queretaro, Mexico.
27. **Xin, H.** 2017. An overview of the egg industry evolution. An invited presentation at the USDA Agricultural Outlook Forum “A New Horizon”, Feb. 23-24, 2017, Washington D.C., USA
28. **Xin, H.** 2016. Poultry housing systems. A lecture presentation to the TSM 327 class, Nov. 28, 2016, Ames, IA, USA
29. **Xin, H.** 2016. Egg production systems: *pros and cons*. An invited presentation at the SusAg Graduate Program Colloquium, Nov. 16, 2016, Ames, IA, USA
30. **Xin, H.** 2016. Laying hen housing systems: *pros and cons*. An invited presentation at the Second International Workshop on Precision Environment Control, Nov. 7-11, 2016, UNICAMP, Brazil.
31. **Xin, H.** 2016. Measure, model and mitigate airborne transmission of avian influenza virus. An invited seminar at Wageningen University, Oct. 21, 2016, Wageningen, The Netherlands.
32. **Xin, H.** 2016. Poultry production systems: Part II – laying hens. A guest lecture presentation to the AnSci223 class, Oct. 5, 2016, Ames, IA, USA.
33. **Xin, H.** 2016. Poultry production systems: Part I – meat birds. A guest lecture presentation to the AnSci223 class, Oct. 3, 2016, Ames, IA, USA.
34. **Xin, H.** 2016. Developing trend of global layer industry. A plenary presentation at the 25<sup>th</sup> World Poultry Congress (WPC2016) – Symposium on Egg Production, Sept. 6-9, 2016, Beijing, China.
35. **Xin, H.** 2016. Environmental challenges and opportunities with cage-free hen housing system, an invited presentation at the 25<sup>th</sup> World Poultry Congress, Sept. 6-9, 2016, Beijing, China.
36. **Xin, H.** 2016. Trade-offs of different hen housing systems. A presentation at an Industry Forum on Egg Production Systems hosted by Beijing DQY Company, Sept. 24, 2016, Beijing, China.
37. Stinn, J.P. and **H. Xin**. 2016. Heat and moisture production rates of a modern U.S. swine breeding-gestation-farrowing facility. An invited presentation at the Plant, Animal and Facility Systems Distinguished Lecture Series held during the ASABE 2016 Annual International Meeting, July 17-20, 2016; Orlando, FL, USA.
38. **Xin, H.**, M. Ibarburu, and L. Vold. 2016. The US egg industry during and after 2015 HPAI outbreak. An invited presentation at the NE-1442 multi-state project meeting, August 8-11, 2016, University of Bern, Switzerland.
39. **Xin, H.** 2016. Automated measurements of farm animal behavioral and physiological responses. A presentation at the First International Symposium on Environment Control for Sustainable Animal Production, June 7-10, 2016, Federal University of Viçosa, Brazil.

40. **Xin, H.** and M. Ibarburu. 2016. The U.S. egg industry after 2015 HPAI outbreak. A presentation to the American Egg Board Food Technology Advisory Council, May 5, 2016, Chicago, IL, USA
41. **Xin, H.**, Y. Sato, and A. Wolc. State of the science on HPAI research. A presentation at the 2016 Egg Industry Center's Annual Egg Industry Issues Forum, April 20-21, 2016, Chicago, IL, USA
42. **Xin, H.** and Y. Zhao. 2016. HPAI studies and ventilation shutdown. A presentation to Joint State and Federal Field Veterinarian Staff, March 30, 2016, Des Moines, IA, USA.
43. **Xin, H.** 2016. Poultry housing systems. A guest lecture presentation to the AnSci223 class, March 23, 2016, Ames, IA, USA.
44. **Xin, H.** 2016. Hen housing systems and 2015 HPAI in the US. A plenary presentation at the Annual Meeting of the National Pasta Association, March 14-15, 2016, Naples, Florida, USA
45. **Xin, H.** 2016. Update on HPAI research. A presentation to the Industry Program Committee at the American Egg Board Meeting, March 10-11, 2016, Napa, California, USA
46. **Xin, H.** 2016. Environment and egg production. A keynote presentation at the 9<sup>th</sup> International Congress of AVEM2016, February 24-25, 2016, Queretaro, Mexico.
47. **Xin, H.** 2016. The 2015 HPAI outbreaks in the United States. A presentation to international delegations visiting Hy-Line International, Jan 22, 2016, West Des Moines, Iowa, USA
48. **Xin, H.** and M. Ibarburu. 2016. U.S. egg industry, statistics and prices. A presentation to international delegations visiting Hy-Line Int'l, Jan 22, 2016, West Des Moines, Iowa, USA
49. **Xin, H.**, Y. Zhao and E.S. Takle. 2015. Assessing potential airborne transmission of HPAI virus in Iowa. An invited presentation at the Iowa Turkey Federation 2015 Annual Convention held 9 December 2015, West Des Moines Marriott Hotel, Iowa, USA
50. **Xin, H.** 2015. U.S. poultry production systems. A guest lecture presentation to the TSM327 class, Nov. 4, 2015, Ames, IA, USA.
51. **Xin, H.** 2015. Environmental control technologies for livestock production. An invited presentation at the Workshop on Comprehensive Nutrient Management Plan held Oct. 26-27, 2015, Zhangye City, Gansu Province, China.
52. **Xin, H.** and Y. Zhao. 2015. Modeling of ventilation shutdown of layer houses. An invited presentation at the Iowa Egg Industry Symposium, 1 October, 2015, Ames, Iowa, USA
53. **Xin, H.** and Y. Zhao. 2015. Modeling of ventilation shutdown of layer houses. A keynote presentation at the International Egg Commission 2015 Global Leadership Conference, Sept 20-24, 2015, Berlin, Germany.
54. **Xin, H.** 2015. U.S. poultry production systems. A guest lecture presentation to the SusAg515 class, Sept. 1, 2015, Ames, IA, USA.
55. **Xin, H.** 2015. Comprehensive Nutrient Management Plan (CNMP) – *Air Quality*. A presentation at the CNMP Training Workshop held at the Chinese Academy of Agricultural Sciences, March 24-25, 2015; Beijing, China.
56. **Xin, H.** 2015. State of the U.S. egg industry. A graduate seminar presentation at the Chinese Academy of Agricultural Sciences, March 25, 2015, Beijing, China.
57. **Xin, H.** 2015. Managing air in poultry housing. An invited presentation at the Annual Atlantic Poultry Conference, February 11-13, 2015, Greenwich, Nova Scotia, Canada.
58. **Xin, H.** 2015. Advancement of the U.S. egg industry over the past 50 years. An invited presentation at the US Poultry Animal Agriculture Sustainability Summit, January 27, 2015; Atlanta, GA, USA.
59. **Xin, H.** 2015. State of the U.S. egg industry. An invited presentation at the Ames Morning Rotary Club, January 21, 2015; Ames, Iowa, USA.
60. **Xin, H.** 2014. Environmental impact of three laying-hen housing systems. An invited presentation at the 2014 Fall ABE Extension In-service Training, September 24, 2014; Iowa State University, Ames, Iowa, USA.
61. **Xin, H.** 2014. Research on animal environment and behavior. An invited presentation at the Workshop on Animal Environment and Welfare held Sept 13-14, 2014, Harbin, China.
62. **Xin, H.** 2014. Monitoring air emissions of animal production systems. A keynote presentation at an International Symposium on Animal Manure Management and Environmental Control

- sponsored by the Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Science, June 27-28, 2014, Beijing, China.
63. **Xin, H.** 2014. Environmental control for egg production. A keynote presentation at the Hy-Line International Bi-annual Technical School, June 9-13, 2014; Sheraton Hotel, West Des Moines, Iowa, USA (~120 international attendees).
  64. **Xin, H.** 2014. Egg production and energy use. 2014. A webinar presentation to the USDA-NRCS On-Farm Energy Quality Assurance Program, April 23, 2014.
  65. **Xin, H., N. Pelletier, M. Ibarburu.** 2014. U.S. egg industry environmental footprint in 1960 and 2010. Presentation to the “Think Tank on Animal Agriculture” Meeting, April 21, 2014; Ames, Iowa, USA.
  66. **Xin, H., N. Pelletier, M. Ibarburu.** 2014. U.S. egg industry environmental footprint in 1960 and 2010. Presentation at the 49<sup>th</sup> Egg Farmer of Ontario Annual Conference, March 25, 2014; Toronto, Canada.
  67. **Xin, H., N. Pelletier, M. Ibarburu.** 2014. Comparison of the U.S. egg industry environmental footprint in 1960 and 2010. Keynote speech at the Symposium on Poultry Industry Sustainability organized by the Science and Information Centre for Sustainable Poultry Industry [Wissenschafts- und Informationszentrum Nachhaltige Geflügelwirtschaft (WING)], February 27, 2014; Vechta, Germany.
  68. **Xin, H., M. Ibarburu, and N. Pelletier.** 2014. What can we learn from the observed improvement in the U.S. egg industry’s environmental footprint? A keynote speech at the IPPE Symposium “Egg and the World Food Challenges”, Jan 29, 2014; Atlanta, GA, USA.
  69. **Xin, H.** 2013. Swine environmental control and mortality disposal options. An invited presentation for the China Ministry of Agriculture Training Workshop on Swine Production, December 19-21, 2013; Beijing, China.
  70. **Xin, H.** 2013. An overview of U.S. poultry housing systems. A lecture to TSM327 class, November 18, 2013; Iowa State University, Ames, IA, USA.
  71. **Xin, H.** 2013. Environmental control for poultry production. An invited seminar presentation in the College of Animal Science at Agricultural University of Hebei, October 23, 2013; Baoding, Hebei, China.
  72. **Xin, H., M.D. Hayes, Y. Zhao, M. Ibarburu, S. Millman.** 2013. On aviary hen housing. An invited plenary presentation at the International Symposium on Animal Environment and Welfare, Oct 20-22, 2013; Rongchang, Chongqing, China.
  73. **Xin, H.** 2013. Environmental footprint of the U.S. egg industry. A plenary presentation at the United Egg Producers Annual Meeting, Oct 9-11, 2013, Ashville, NC, USA.
  74. **Xin, H.** 2013. U.S. egg industry and the Egg Industry Center. A guest lecture to AnSci 501 (Graduate Seminar), Sept 30, 2013; Iowa State University, Ames, IA, USA.
  75. **Xin, H.** 2013. Environmental control for poultry production. An invited plenary presentation at the 16<sup>th</sup> China National Poultry Science Symposium, May 13-15, 2013; Yangzhou, China.
  76. **Xin, H.** 2013. Systems and protocols for monitoring AFO air emissions. An invited presentation at the Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, May 21, 2013; Beijing, China.
  77. **Xin, H. and J. P. Stinn.** 2013. Gaseous emissions, heat and moisture production, and heat mat vs. heat lamp comparison in a modern breeding, gestation and farrowing swine facility. An invited presentation at the Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, May 21, 2013; Beijing, China.
  78. **Xin, H., N. Pelletier, M. Ibarburu.** 2013. Dramatic advancement of the U.S. egg industry over the past 50 years. An invited presentation at the 2013 Egg Industry Center Annual Egg Industry Issues Forum, April 16-17, 2013, St. Louis, MO, USA.
  79. **Xin, H.** 2013. Animal heat exchange pathways and cooling options. An invited presentation at the Heat Stress Symposium held at Iowa State University, April 4-5, 2013, Ames, Iowa, USA

80. **Xin, H.** 2013. Environmental impact of three hen housing systems. An invited presentation at the Midwest Poultry Federation Convention Educational Session – Simmering Issues, March 14, 2013, St Paul, MN, USA.
81. **Xin, H.** 2013. Advancement of U.S. egg industry over the past 50 years. An invited presentation at the Chinese Academy of Agricultural Science – Institute of Animal Science, Jan 22, 2013, Beijing, China.
82. **Xin, H.** 2013. Environmental footprint of the egg – Dramatic progress over the past 50 years. An invited presentation at the Future of U.S. Egg Industry Symposium held during the International Poultry Expo, Jan 31, 2013, Atlanta, GA, USA.
83. **Xin, H.** 2012. State and R&D opportunities of U.S. egg industry and the role of Egg Industry Center. A keynote presentation at the Joint Conference of Chinese Association of Animal Science and Veterinary Medicine and Chinese Society of Agricultural Engineers on Eco-environment and Sustainable Livestock Production, Nov 2-5, 2012, Beijing, China.
84. **Xin, H.** 2012. Fundamentals of thermal environment and animal responses. A lecture to the graduate-level class “Environmental Physiology”, Nov 6, 2012, China Agricultural University, Beijing, China.
85. **Xin, H.** 2012. Animal indirect calorimeter – theory and applications. A lecture to the graduate-level class “Environmental Physiology”, Nov 6, 2012, CAU, Beijing, China.
86. **Xin, H.** 2012. Animal housing ventilation systems and management. A lecture to the graduate-level class “Environmental Physiology”, Nov 7, 2012, CAU, Beijing, China.
87. **Xin, H.** 2012. An overview of U.S. poultry production systems. A presentation to the National Graduate Training Workshop, Nov 7, 2012, China Agricultural University, Beijing, China.
88. **Xin, H.** 2012. An overview of U.S. poultry production systems. A presentation to the National Graduate Training Workshop, Nov 7, 2012, China Agricultural University, Beijing, China.
89. **Xin, H.** 2012. A Comprehensive assessment of aviary laying-hen housing system in the Midwest. A presentation at the Iowa Poultry Association Fall Festival Educational Session, Sept 20, 2012, Okoboji, Iowa, USA.
90. **Xin, H., N. Pelletier, and M. Ibarburu.** 2012. Environmental footprint of the egg – dramatic progress over the past 50 years. A keynote presentation at the International Egg Commission 2012 London Conference, Sept 10-13, 2012, London, United Kingdom.
91. **Xin, H.** 2012. Trend and R&D opportunities of laying-hen housing systems. An invited keynote presentation at the XXIV World Poultry Congress, August 5-10, 2012, Salvador, Brazil.
92. **Xin, H.** 2012. An exciting time for China – US collaborations in sustainable agriculture. An invited keynote presentation at the China Exchange Session of the ASABE Annual International Meeting, July 29 – Aug 1, 2012, Dallas, Texas, USA
93. **Xin, H.** 2012. Toward standardization of data collection, analysis and presentation of AFO air emissions. An invited keynote presentation at the Ninth International Livestock Environment Symposium, July 9-12, 2012, Valencia, Spain.
94. **Xin, H.** 2012. Environmental management of laying-hen houses to improve egg Production. An invited presentation at the Hy-Line International Technical School, July 16-19, 2012, West Des Moines, Iowa, USA.
95. **Xin, H.** 2012. U.S. Egg Industry and the Egg Industry Center. A presentation to graduate students and faculty at the Agricultural University of Hebei, June 15, 2012, Baoding, China.
96. **Xin, H. and M. Ibarburu.** 2012. Toward sustainable development of egg industry and the role of Egg Industry Center. An invited presentation at the International Symposium on Egg Industry, June 18-19, 2012, Beijing, China.
97. **Xin, H.** 2012. A holistic view of egg production systems and implications for the US pasta industry. An invited presentation at the National Pasta Association Annual Meeting, March 26-27, 2012, Naples, FL, USA



98. **Xin, H.** 2011. A balanced approach to animal welfare issues to avoid unintended consequences. A keynote speech at the International Symposium on Health Environment and Animal Welfare, Oct 20-22, 2011; Rongchang/Chongqing, Sichuan Province, China.
99. **Xin, H.** 2011. Measurement and mitigation of air emissions from animal production facilities. An invited presentation for the Ensminger Outreach Program held on Oct 16, 2011 at the Institute of Animal Science, the Chinese Academy of Agricultural Sciences, Beijing, China.
100. **Xin, H.** 2011. Measurement and mitigation of air emissions from animal production facilities. An invited presentation for the Ensminger Outreach Program held on Oct 18, 2011 at Huanzhong Agricultural University, Wuhan, Hubei Province, China
101. **Xin, H.** 2011. U.S. egg industry and the Egg Industry Center. An invited presentation at the Anhui Academy of Agricultural Sciences, Oct 26, 2011, Hefei, Anhui Province, China
102. **Xin, H.** 2011. An overview of precision livestock farming. An invited presentation at the Chinese Academy of Agricultural Sciences – Feed Research Institute, Aug 2-3, 2011, Beijing China.
103. **Xin, H.** and R.T. Burns. 2011. Swine deep-pit barn fires: Understanding the causes. A presentation to the Agribusiness Association of Iowa Feed and Livestock Committee, July 20, 2011, Des Moines, Iowa, USA
104. **Xin, H.** 2011. Managing temperature and ventilation in fully automated hen houses to optimize egg production, Hy-Line International Technical Service Workshops, June 12-17, 2011, Columbia (Bogota, Cali and Bucaramanga, a total of about 450 people in attendance),
105. **Xin, H.** 2011. Ammonia emissions from poultry operations. Ammonia Emissions and Nitrogen Conservation Workshop organized by the Ohio State University Extension, May 1-2, 2011, Nationwide and Ohio Farm Bureau 4-H Center, Columbus, OH, USA
106. **Xin, H.** 2011. Overview of ammonia mitigation BMPs and BATs. Ammonia Emissions and Nitrogen Conservation Workshop organized by the Ohio State University Extension, May 1-2, 2011, Nationwide and Ohio Farm Bureau 4-H Center, Columbus, OH, USA
107. Pelletier, N., Ibarburu, M. and **H. Xin.** 2011. A life cycle assessment of supply chain greenhouse gas emissions for egg production and processing in Iowa. A presentation at the Third Annual Egg Industry Issues Forum, April 7, 2011, Columbus, OH, USA
108. **Xin, H.** 2011. U.S. egg industry and the Egg Industry Center. A Seminar for the ISU Veterinary Medicine Theriogenology Club, April 4, 2011, Ames, Iowa, USA
109. **Xin, H.** 2011. U.S. egg industry and the Egg Industry Center. A Seminar for the ISU AnSci Meat Science Class, March 2, 2011, Ames, Iowa, USA
110. **Xin, H.** 2011. Update of the Egg Industry Center and related program. Nebraska Poultry Industry Convention, Feb 23-25, 2011, Columbus, NE, USA
111. **Xin, H.** 2011. U.S. egg industry and the Egg Industry Center. A Seminar for the ISU Food Science Department, February 2, 2011, Ames, Iowa, USA
112. **Xin, H.** 2011. A holistic approach to assessing laying-hen production systems. ISU and University of Nebraska joint training in animal welfare, Jan 5-6, 2011, Ames, Iowa, USA
113. **Xin, H.** 2010. The past, present and future of U.S. egg industry. Presented at the Second Sino-US Workshop on Egg Production and Environmental Control, Oct 10-12, 2010, Shanghai, China
114. **Xin, H.** 2010. How to produce high-quality SCI journal articles. Presented at the Feed Research Institute of the Chinese Academy of Agricultural Sciences, Oct 14, 2010, Beijing, China
115. **Xin, H.** 2009. Cooling poultry in hot climates. Presented at the International Workshop on “*Animal Housing in Hot Climates*” organized by the CIGR Section II Working Group, Oct 22-25, 2009, Rongchang, Sichuan, China
116. **Xin, H.** 2009. Overview of air emission mitigation options for animal feeding operations. A special presentation to the USDA Agricultural Air Quality Task Force, September 17, 2009, Des Moines, Iowa, USA
117. **Xin, H.** 2009. U.S. egg production, environmental control and housing systems for egg production. Plenary presentation at the Sino-US Workshop on Egg Production, July 17, 2009, China Agricultural University, Beijing, China

118. **Xin, H.** 2009. Mitigating ammonia emissions from laying-hen houses through dietary manipulation. Plenary presentation at the Egg Industry Issues Forum sponsored by the Egg Industry Center, April 8, 2009, Des Moines, Iowa, USA
119. **Xin, H.** 2009. Egg Industry Center and Egg Processing Research at Iowa State University. Plenary presentation at the International Egg Commission Annual Conference, March 29-April 1, 2009, London, United Kingdom
120. **Xin, H.** 2009. Cooling poultry in tropical climates. Ensminger International Conference, February 7-14, 2009, San Jose, Costa Rica
121. **Xin, H.** 2008. Overview of air emission remediation technologies. National Poultry Waste Management Symposium, October 21-23, 2008, Des Moines, IA, USA
122. **Xin, H.** 2008. Turkey air emissions. A presentation at the Iowa Turkey Federation Annual Turkey-Day Conference, December 2-4, 2008, Des Moines, IA, USA
123. **Xin, H.** 2008. Quantification and mitigation of air emissions from broiler, turkey and laying hen facilities. Midwest Poultry Federation Convention, March 19-20, 2008, St. Paul, MN, USA
124. **Xin, H.** 2008. Monitoring of air emissions from Midwest turkey barns. National Turkey Federation Annual Convention, February 10-12, 2008, San Diego, CA, USA
125. **Xin, H.** 2007. Improving air quality by managing ammonia and humidity. Pennsylvania Poultry Sales and Service Conference, September 18-20, 2007, Lancaster, PA, USA
126. **Xin, H.** 2007. Ammonia emissions from pullet and layer facilities: Present and future. Poultry Sales and Service Conference, September 18-20, 2007, Lancaster, PA, USA
127. **Xin, H.** 2007. Update on turkey barn air emissions monitoring. Turkey Research Review/APV Symposium, September 27, 2007, Holiday Inn & Convention Center, Willmar, MN, USA
128. **Xin, H.** 2007. State of air emissions for U.S. egg production operations. Invited plenary talk at the International Egg Commission Annual Conference, March 25-27, 2007, London, UK
129. **Xin, H.** 2007. Research update on measurement and mitigation of air emissions from egg operations. Invited talk at the Midwest Poultry Federation Convention, March 13-15, 2007, St Paul, MN, USA
130. **Xin, H., H. Li, and R.T. Burns.** 2006. Strategies to reduce air emissions in layer facilities. Invited talk at the National Poultry Waste Management Symposium, Oct. 24-25, 2006, Springdale, AR, USA
131. **Xin, H.** 2006. UEP initiative toward mitigating air emissions. Invited talk at the National Poultry Waste Management Symposium, Oct. 24-25, 2006, Springdale, AR, USA
132. **Xin, H.** 2006. Testing for poultry air emissions. Invited talk by U.S. Poultry & Egg Association at the International Poultry Expo Educational Workshop, January 2006, Atlanta, GA, USA
133. **Cook, R.N. and H. Xin.** 2004. Effects of cage stocking density on feeding behaviors of group-housed laying hens. Proc of the Iowa Egg Industry Symposium, pp41-47. Iowa State University, Ames, Iowa, USA
134. **Xin, H.** 2004. Air emissions form egg operations – current state and future needs. Presentation at the United Egg Producers Annual Convention, Oct 20-22, 2004, New Orleans, LA, USA
135. **Xin, H.** 2004. Ammonia emission form laying hen house in Iowa. Presentation to a joint meeting of the United Egg Producers and United Egg Board Executive Committees, Jan 26-27, 2004, Atlanta, GA, USA
136. **Xin, H.** 2002. Quantification of ammonia emissions from U.S. poultry houses. Invited presentation at a special seminar on “Air Pollutants and Noise in Animal Production”, September 10-11, 2002, UNICAMP, Brazil
137. **Xin, H.** 2001. Sino-US collaboration to develop aerosols emission inventory and reduction techniques for concentrated animal feeding operations. In: Proceedings of the Agro-environment and Compost Demonstration – Seminar on Sino-US Collaboration in Agriculture, sponsored by the Department of International Cooperation, MOA, PRC and Foreign Agriculture Service, USDA, Nov. 5-7, 2001, Beijing, China, pp29-32.

138. **Xin, H.**, J.D. Harmon, D.H. Harris, R.C. Ewan, and M.L. Gramer. 1999. Effects of post-weaning nutritional regimens on PIC Isowean pigs. In: Proceedings of the American Association of Swine Practitioners Annual International Conference, Feb 27 – March 3, 1999, Adam’s Mark Hotel, St. Louis, MO, USA
139. **Xin, H.** 1998. Ventilation to control poultry house indoor air quality. An International Symposium on Environment and Air Quality of Poultry Production sponsored by the Brazilian Agricultural Research Corporation – EMBRAPA and Brazilian National Center for Research on Swine and Poultry – CNPSA, Oct. 27-30, 1998, Concordia, Brazil
140. **Xin, H.** 1998. Assessing swine thermal stress via neural network analysis of their behavioral images coupled with thermography. An International Symposium on Recent Advances in Assessing Heat Stress of Domestic Animals sponsored by the American Society of Animal Science (ASAS), July 27-29, 1998, Denver, CO, USA
141. **Xin, H.**, J. Shao, and J. Hu. 1998. Image analysis of swine postural behavior. Measuring Behavior '98 - An International Conference on Measurement of Animal Behavior, held on August 19-22, 1998, Groningen, The Netherlands
142. **Xin, H.** 1997. Too hot or too cold? Ask the pigs. *ASAE Resource magazine* (1): 7-8. (Feature article invited by the ASAE).
143. **Xin, H.** 1997. Lecture series on livestock environment control: principles, state-of-the-art technologies, and case studies. The Chinese Academy of Agricultural Sciences, September 6 - 13, 1997, Beijing, China
144. **Xin, H.** and J. Shao. 1997. Application of machine vision to swine environmental control. IEEE/ASME International Conference on Advanced Intelligent Mechatronics, June 16-20, 1997, Waseda University, Japan
145. **Xin, H.** 1996. Automated data acquisition system for field animal environmental research. The 1<sup>st</sup> International Conference on Agricultural and Biological Environmental Engineering, Aug. 15-19, 1996, Beijing, China
146. **Xin, H.** 1996. Responses of neonatal chicks to post-hatch holding environment. The 1<sup>st</sup> International Conference on Agricultural and Biological Environmental Engineering, Aug. 15-19, 1996, Beijing, China
147. **Xin, H.** 1996. Principles of Poultry House Ventilation. 1996 Iowa Poultry Symposium, March 28, 1996, Scheman Continuing Education Center, Iowa State University, Ames, Iowa, USA
148. **Xin, H.** 1995. A computerized measurement and data acquisition system for field poultry research. The 4<sup>th</sup> Latin America Conference on Agromatics, April 24-28, 1995, the Institute of Technology of Costa Rica, San Carlos, Costa Rica
149. **Xin, H.** 1995. Air transport of day-old chicks. Livestock Export Workshop sponsored by USDA Agricultural Marketing Service, October 24-25, 1995, Ithaca, New York, USA

**National & International Professional Conference Papers/Presentations:** 280+

**Extension Publications and Popular Press Articles Derived from Research**

1. Xin, H. 2016. Opportunities and challenges of going cage-free. An invited “Viewpoint” article to Poultry Times, July 6, 2016. [http://www.poultrytimes.com/poultry\\_today/article\\_1fb7e224-43a6-11e6-b8d7-c7420f870aacc.html](http://www.poultrytimes.com/poultry_today/article_1fb7e224-43a6-11e6-b8d7-c7420f870aacc.html)
2. Stinn, J.P., T.A. Shepherd, and **H. Xin**. 2014. Optimizing tunnel ventilation systems for summer conditions. A.S. Leaflet-R2895. Animal Industry Report, ISU Extension, Ames, IA.
3. Zhao, Y. and **H. Xin**. 2013. Ammonia concentrations and emissions of aviary hen houses. A.S. Leaflet-R2802. Animal Industry Report, ISU Extension, Ames, IA.
4. Zhao, Y. and **H. Xin**. 2013. Roof insulation in laying-hen houses to ease summer heat stress. A.S. Leaflet-R2803. Animal Industry Report, ISU Extension, Ames, IA.
5. Harmon, J.D., D. Petersen, and **H. Xin**. 2012. Conserving energy by using localized heating in swine housing - Farm Energy. ISU Extension Publication PM 2089V, Ames, Iowa.

6. Jenkins, J.D., R.L. Parsons, M.D. Hayes, **H. Xin**, S. Millman. 2012. Litter use in an aviary laying hen housing system. A.S. Leaflet-R2720. Animal Industry Report, ISU Extension, Ames, IA.
7. **Xin, H.**, H. Li, R.T. Burns, J. Kliebenstein, M. Ibarburu, S.A. Roberts, K. Bregendahl. 2011 Mitigating ammonia emissions from high-rise hen houses through dietary manipulation. A.S. Leaflet 11-67, Animal Industry Report, ISU Extension, Ames, IA.
8. **Xin, H.**, H. Li, R.S. Gates, and R.T. Burns. 2010. Methodologies and protocols for analysis of raw data to minimize uncertainty of resultant emissions estimation. A white paper written for the USDA Agricultural Air Quality Task Force Workshop on Livestock and Poultry Air Emissions Standardization held Sept 27-28, 2010, Raleigh, NC.
9. **Xin, H.**, H. Li, R.T. Burns, S.A. Roberts, S. Li, K. Bregendahl, J. B. Kliebenstein. 2009. Mitigating ammonia emissions from laying-hen houses through dietary manipulation. Proceedings of the Egg Industry Issues Forum hosted by Egg Industry Center, Ames, Iowa, held on April 8, 2009, Des Moines, Iowa, pp48-58.
10. Burns, R.T., R. Swestka, **H. Xin**, et al. 2008. Development of a wireless sensor network to quantify spatial and temporal H<sub>2</sub>S concentrations in swine houses (A Progress Report) Animal Industry Report. A.S. Leaflet R2436. ISU Extension, Ames, IA.
11. Li, H., **H. Xin**, and R.T. Burns. 2008. Ammonia and PM emissions from a tom turkey barn in Iowa. Animal Industry Report. A.S. Leaflet R2449. ISU Extension, Ames, IA.
12. Li, H. **H. Xin**, R.T. Burns, S.A. Roberts, K. Bregendahl. 2008. Effects of dietary modification on laying hens in high-rise houses: Part I – ammonia, hydrogen sulfide and carbon dioxide gaseous emissions. Animal Industry Report. A.S. Leaflet R2450. ISU Extension, Ames, IA.
13. Roberts, S.A. H., Li, **H. Xin**, R.T. Burns, and K. Bregendahl. 2008. Effects of dietary modification on laying hens in high-rise houses: Part II – hen production performance. Animal Industry Report. A.S. Leaflet R2451. ISU, Ames, IA.
14. Davis, J.D., **H. Xin**, and R. McDonald. 2005. Creep temperature distributions of incandescent heat lamps. A.S. Leaflet R2152. ISU Extension, Ames, IA.
15. Roberts, S. **H. Xin**, B. Kerr, J. Russell, K. Bregendahl. 2005. Adding fiber to the diet of laying hens reduces ammonia emissions. Proc. of the Iowa Egg Industry Symposium, ISU Extension, Ames, Iowa, pp 29-37.
16. **Xin, H.**, H. Li, and Y. Liang. 2005. Update on ammonia emission mitigation for laying hen facilities. Proc. of the Iowa Egg Industry Symposium, Iowa State University Extension, Ames, Iowa, pp 38-46.
17. **Xin, H.**, H. Li, Y. Liang, and J. Richardson. 2005. Update on ammonia emission mitigation for egg facilities. A.S. Leaflet. Leaflet R2135. ISU Extension, Ames, IA.
18. Xin, H. 2005. Instruments for measuring concentrations and emission rates of gases and particulates from animal feeding operations. PM 1990, ISU Extension, Ames, IA
19. Cook, R.N. and **H. Xin**. 2004. Effects of cage stocking density on feeding behaviors of group-housed laying hens. Proc of the Iowa Egg Industry Symposium, Iowa State University, pp41-47.
20. Cook, R.N. and **H. Xin**. 2004. Effects of cage stocking density on feeding behaviors of group-housed laying hens. College of Agriculture Research Report, ASL # 516, Iowa State University.
21. Liang, Y., **H. Xin**, and H. Li. 2004. Dietary manipulation to reduce ammonia emission from high-rise layer houses. College of Agriculture Research Report, ASL # 517, Iowa State University.
22. Liang, Y., **H. Xin**, H. Li, and E. F. Wheeler. 2004. Ammonia emissions from layer houses. College of Agriculture Research Report, ASL # 518, Iowa State University.
23. Liang, Y. and **H. Xin**. 2004. Performance of Single Point Monitor in measuring ammonia and hydrogen sulfide gases. College of Agriculture Research Report, ASL#519, Iowa State University.
24. Li, H., **H. Xin**, and Y. Liang. 2004. Indirect Measurement of Building Ventilation Rate for Manure-belt Laying Hen House Using CO<sub>2</sub> Balance. College of Agriculture Research Report, ASL # 520, Iowa State University.
25. **Xin, H.**, Y. Liang, R.S. Gates, and E. F. Wheeler. 2002. Measurement of ammonia emissions from laying hen houses. Proceedings of the Iowa Poultry Industry Symposium held in Scheman Continuation Education Center on November 12, 2002, Ames, Iowa. Pp 53-58.

26. **Xin, H.** 2000. Cooling laying hens by low-pressure sprinkling or high-pressure fogging. Proceedings of the Iowa Poultry Symposium held in Scheman Continuation Education Center on February 17, 2000, Ames, Iowa. Pp 43-47.
27. Researcher offers study on cooling poultry houses. *Poultry Times*, March 20, 2000: 16.
28. **Xin, H.** 2000. Sprinkling and fogging can help cool laying hens. *Poultry Times*, April 17: 3 & 13.
29. **Xin, H.** 1999. Nutrient profile, manure production of layers. *Poultry Times – Supplement*. April 19, 1999: 2A.
30. Keeping wean-to-finish trouble free. *Pork '99/July*: 25.
31. **Xin, H.**, J.D. Harmon, R.C. Ewan, D.L. Harris, and M.L. Gramer. 1999. Transporting isowean pigs – Part I: nutritional perspective. *Swine Research Report*. ISU Extension, AS 642: 150-156, Ames, Iowa.
32. **Xin, H.**, Q. Zhang, M. Puma, J.D. Harmon, D.L. Harris, and M.L. Gramer. 1999. Transporting isowean pigs – Part II: thermal environment perspective. *Swine Research Report*. ISU Extension, AS 642: 157-164, Ames, Iowa.
33. **Xin, H.**, and Q. Zhang. 1999. Surface temperature of creep heat mat as affected by piglet usage. *Swine Research Report*. ISU Extension, AS 642: 143-149, Ames, Iowa.
34. Ye, W. and **H. Xin**. 1999. Resting behavior indexes for thermal comfort assessment of young pigs. *Swine Research Report*. ISU Extension, AS 642: 134-142, Ames, Iowa.
35. Nutrients aid chick growth in overseas shipments. 1999. *Poultry Times*, July 26: 16.
36. High-rise layer house manure volume and nutrient control. 1998. *Egg Industry*, August 1998: 10.
37. Iowa researchers find disparity in state manure estimates. 1998. *Poultry Times*, Sept 7, 1998:12
38. **Xin, H.** 1998. Surface temperature distribution of commercial heat mats for swine creep heating. *Swine Research Report*. ISU Extension, AS 640: 115-120, Ames, Iowa.
39. **Xin, H.** 1998. Old litter brooding for broilers needs proper ventilation. *Poultry Times*, October 19.
40. **Xin, H.** 1998. Cold weather ventilation guidelines for young turkeys. Year End 1998 Edition of *Turkey Talk*, the Official Publication of the Iowa Turkey Federation, Ames, Iowa.
41. **Xin, H.** 1998. Efficacy of sprinkling on heat stress alleviation and dust reduction in layer houses. A demonstration project report to Farnegg Products, Humboldt, IA and CATD.
42. Harmon, J.D., T.J. Baas, S.J. Hoff, and **H. Xin**. 1998. Case study comparison of three styles of swine facilities. *Swine Research Report*. ISU Extension, AS 640: 133-136, Ames, Iowa.
43. Energy savings in swine production – Iowa Energy Success Story. 1998. *Watt Savers*: 2-7.
44. Porcine computerized comfort. 1998. *Visions Winter 1998*: 7.
45. **Xin, H.** and H. Zhou. 1997. Responses of piglets to heat lamps with variable vs. constant wattage output and clear vs. red radiant rays. *Swine Research Report*. ISU Extension AS-638:53-56. Ames, Iowa.
46. **Xin, H.** and J.D. Harmon. 1997. Heat stress index and alleviation measures for layers, turkeys, swine, and cattle. ABE Extension (<http://www.ae.iastate.edu/livestoc.htm>), ISU, Ames, Iowa.
47. Computer would measure pigs' comfort. 1997. *Kearney (Neb) Daily Hub*. July 16, 1997.
48. Computer helps keep pigs comfy. 1997. *Capper's*. September 9, 1997.
49. It's a pig's life. 1997. *The Harold Journal*, Logan, Utah.
50. Little pigs, are you comfortable. 1997. *Waukesha Freeman*. July 15, 1997.
51. Little pigs, are you comfortable. 1997. *Boone County Ag Life*. July 8, 1997.
52. Wallowing in comfort. 1997. *Waterloo-Cedar Falls Courier*. July 7, 1997.
53. **Xin, H.** 1996. Principles of Poultry House Ventilation. Proceedings of 1996 Iowa Poultry Symposium. College of Veterinary Medicine. Iowa State University, Ames, Iowa, pp5-18.
54. Harmon, J.D. and **H. Xin**. 1996. Thermal performance of a hoop structure for finishing swine. *Swine Research Report*. ISU Extension AS-634: 104-106. Ames, Iowa.
55. Harmon, J.D., **H. Xin**, and J. Shao. 1996. Evaluation of the thermal needs of the early weaned pig. *Swine Research Report*. ISU Extension AS-634: 87-91. Ames, Iowa.

56. Hoff, S.J., J.D. Harmon, **H. Xin**, and L. Dong. 1996. Treating ventilation exhaust air for odor control. *Swine Research Report*. ISU Extension AS-634: 111-116. Ames, Iowa.
57. Shao, J., **H. Xin**, and J.D. Harmon. 1996. Neural network analysis of postural behavior of young swine to determine their thermal comfort. *Swine Research Report*. ISU Extension AS-634: 125-128. Ames, Iowa.
58. **Xin, H.**, H. Zhou, and D.S. Bundy. 1996. Heat lamp usage by neonatal piglets. *Swine Research Report*. ISU Extension AS-634: 117-124. Ames, Iowa.
59. **Xin, H.**, H. Zhou, and D.S. Bundy. 1995. Comparison of 250W vs. 175W radiant heat lamps for swine farrowing operation. *Swine Research Report*. ISU Extension AS-633: 129-131. Ames, IA.
60. Harmon, J.D. and **H. Xin**. 1995. Environmental guidelines for confinement swine housing. Pm-1586a. Iowa State University, Ames, Iowa.
61. Harmon, J.D. and **H. Xin**. 1995. Choosing fans for livestock and poultry ventilation. Pm-1587. Iowa State University, Ames, Iowa.
62. **Xin, H.** and V.J. McFadden. 1995. Tunnel ventilation to alleviate animal heat stress. Pm-1606. Iowa State University, Ames, Iowa.
63. Harmon, J.D. and **H. Xin**. 1994. Health hazards in swine confinement housing: How bad is bad? AEN-156. Iowa State University, Ames, Iowa.
64. Harmon, J.D., R. Zhang, and **H. Xin**. 1994. Human health concerns in livestock and poultry housing. AEN-157. Iowa State University, Ames, Iowa.
65. **Xin, H.** and I.L. Berry. 1993. Broiler research verification for energy efficiency and optimum production-summary of 1991, 1992 & 1993 test results. Univ. of Arkansas, Fayetteville, AR.

#### **Other General Audience Publications**

More than 100 project reports submitted to funding agencies.

**Technology Transfer**

*Industrial Licensing:*

- Method to alleviate long-journey transport stress and mortality of chicks (ISURF # 02089)
- Innovative chick shipping container (ISURF # 02019)

*Intellectual Property Disclosure:*

- Behavior-Based Interactive Environmental Controller for Swine (ISURF #02716)

**CONTRACTS AND GRANTS (1994-present)**

Principal investigator (PI) or Co-PI of **\$23,695,150** contracts and grants in competitive research, extension and education programs. Listed below are collaborating colleagues at ISU and other institutions.

<b>Name</b>	<b>Position</b>	<b>Department/Affiliation</b>
Ahn Dong U.	Professor	AnSci
Beck, Mary M.	Professor and Dept. Head	Mississippi State Univ.
Benson, Eric	Professor	University of Delaware
Bregendahl, Kristjan	Assistant Professor	AnSci (now ADM)
Brown-Brandl, Tami	Agricultural Engineer	USDA-ARS-MARC
Burns, Robert T.	Associate Dean and Professor	ABE (now at U of TN)
Dixon, Philip M.	University Professor	Statistics
Dong, Hongmin	Professor and Director General	CAAS, Beijing, China
Gates, Richard S.	Professor	University of Illinois
Halbur, Patrick G.	Professor and Dept Chair	Vet Med
Harmon, Jay D.	Professor	ABE
Harris, Dilbert (Hank) L.	Professor (retired)	AnSci
Heber, Albert J.	Professor	Purdue University
Hoff, Steven J.	Professor	ABE
Ibarburu, Maro	Associate Scientist	Egg Industry Center
Kanwar, Ramesh	Distinguished Professor	ABE
Kerr, Brian	Research Leader	USDA-ARS
Kliebenstein, Jim	Professor (retired)	Economics
Koziel, Jacek	Associate Professor	ABE
Koelkebeck, Ken	Professor	University of Illinois
Li, Hong	Assistant Professor	University of Delaware
Mench, Joy	Professor (retired)	UC-Davis
Lorimor, Jeffery C.	Associate Professor (retired)	ABE
Mickelson, Steve	Professor & Chair	ABE
Millman, Suzanne	Associate Professor	Vet. Diag. & Prod. Ani. Med.
Noll, Sally	Professor	University of Minnesota
Patience, John	Professor	AnSci
Persia, Michael E.	Assistant Professor	AnSci (now VPI)
Powers, Wendy	Professor	AnSci (now UC-Davis)
Patterson, Paul	Professor	The Penn State University
Ramirez, Brett	Assistant Professor	ABE
Richard, Tom	Professor	ABE (now PSU)
Reynnells, Richard D.	National Program Leader (retired)	USDA, Washington D.C.
Robin, Paul	Senior Researcher	INRA UMR SAS, France
Sato, Yuko	Assistant Professor	Vet. Diag. & Prod. Ani. Med.
Sell, Jerry L.	Distinguished Professor (retired)	AnSci
Stewart, Brian	Professor	ABE
Swanson, Janice	Department Chair and Professor	Michigan State University
Tao, Yang	Professor	University of Maryland
Tang, Lie	Associate Professor	ABE
Trampel, Darrell W.	Professor (deceased)	Vet. Diag. & Prod Ani. Med.
Venkitanarayanan, Kumar	Professor	University of Connecticut
Wang, Tong	Professor	Food Sci. & Human Nutrition



## Collaborating colleagues at ISU and other institutions (cont'd).

Name	Position	Department/Affiliation
Wesley, Irene	Research Scientist (retired)	Nat'l Animal Disease Center
Wheeler, Eileen F.	Professor	The Penn State University
Yoon, K.J.	Professor	Vet. Diag. & Prod. Ani. Med.
Zhang, Qiang	Professor	University of Manitoba, Canada
Zhang, Ruihong	Professor	UC-Davis
Zhao, Lingying	Professor	The Ohio State University

**Abbreviation of Funding Agencies:**

6-SCAWM:	6-State Consortium on Animal Waste Management
AEB:	American Egg Board
AFRDI:	Agri-Food Research and Development Initiative and Manitoba Hydro
ASHRAE:	American Society of Heating, Refrigerating, and Air Conditioning Engineers
BFE:	Bureau of Foreign Experts, China
CAAS:	Chinese Academy of Agricultural Sciences
CATD:	Center for Advanced Technology Development
CFI:	Center for Food Integrity
CIRAS	Center for Industry Research Assistance Service
EFC:	Egg Farmers of Canada
FIPSE-DOE:	Funds for Improvement of Post-Secondary Education, US Department of Education
HLI:	Heartland Lysine, Inc., Chicago, IL
Hy-Line	Hy-Line International
ICF:	Iowa Cage Free, Johnston, Iowa
ICPB:	Iowa Corn Promotion Board
IEC:	Iowa Egg Council
ILHAC:	Iowa Livestock Health Advisory Council
IPPA:	Iowa Pork Producers Association
IPRT:	Institute for Physical Research and Technology
ISPB:	Iowa Soybean Promotion Board
ISU-COE:	ISU College of Engineering Seed Grant
ISU-DAIRG:	ISU Dean of Agriculture's International Research Grants
ISU-SPRIG:	ISU Special Research Initiation Grant
ITF/ ITMC:	Iowa Turkey Federation/Iowa Turkey Marketing Council
MAAS:	Manitoba Association of Agricultural Societies
MPC:	Midwest Poultry Consortium
MPRP:	Midwest Poultry Research Program
MOA:	Ministry of Agriculture, China
NE-127:	Multi-state Research Project "Biophysical Models for Poultry Production Systems"
NII:	Novus International, Inc.
NPB:	National Pork Board
NPPC:	National Pork Producers Council
PIC:	Pig Improvement Company
RSCHE:	Russian State Commission of Higher Education
UEA:	United Egg Allied
UEP:	United Egg Producers
USDA-ARS-MARC:	U.S. Department of Agriculture Research Service Meat Animal Research Center
USDA-FAS:	U.S. Department of Agriculture Foreign Agricultural Service
US EPA:	U.S. Environmental Protection Agency
USPEA:	U.S. Poultry and Egg Association
USDA-NIFA:	USDA National Institute of Food and Agriculture
USDA-NRI:	USDA National Research Initiative Competitive Program

Updated: January 2, 2019

Xin Curriculum Vitae

Page 38

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
Air quality/environmental evaluation and development of improved management strategies for a novel cage-free layer facility	ICF/CIRAS	Ramirez	Xin	02/01/18 – 01/31/19	\$84,000
AEB and EIC partnership to provide monthly industry reports, economic analysis and information synthesis for the U.S. egg industry	AEB	Xin	Ibarburu	01/01/18 – 12/31/18	\$107,600
Evaluating behavioral responses of poultry to ultraviolet light via preference test	Once Innovations	Xin	Liu, Sato	02/01/17 – 08/31/17	\$74,400
Enhancing the health and well-being of preweaning piglets	USDA-NIFA	Xin	Brown-Brandl, Stinn, Vallet, Butters-Johnson	02/16/16 – 02/15/18	\$500,000
Comprehensive evaluation of a programmable LED light vs. traditional CFL light for egg production (Phase II)	Hy-Line and CIRAS	Xin	Wang, Liu	03/01/16 – 12/31/16	\$80,000
Airborne transmission of highly pathogenic avian influenza virus in the poultry industry and the role of dust as a carrier	USDA-NIFA	Xin	Y. Zhao, Yoon	09/01/15 – 08/31/17	\$100,000
Research on avian influenza outbreaks	EFC	Xin		06/01/15 – 05/31/18	\$384,615 (\$500,000 Canadian \$)
Understand, mitigate and prevent HPAI outbreaks	AEB	Xin	Y. Zhao, Takle	09/01/15 – 08/31/17	\$120,000
Egg Industry Center economic analysis and statistical reports	AEB	Xin	Ibarburu	01/01/13 – 12/31/16	\$312,741
Comprehensive evaluation of a programmable LED light vs. traditional CFL light for egg production (Phase I)	Hy-Line and CIRAS	Xin	Liu, Wang	03/01/15 – 12/31/15	\$65,000
Electrostatic precipitation for air cleaning of particulate matter (PM) emissions at animal production facilities	USDA-NIFA	L. Zhao	Zhu, Xin, Lee	01/01/16 – 12/31/18	\$499,953
An innovative system to improve environment and productivity of aviary hen housing	USDA-NIFA	Xin	Y. Zhao, Wang, Millman, Soupier	12/15/14 – 12/14/17	\$496,176
Comparison of environmental footprint of U.S. eggs vs. other plant and animal sources	AEB	Xin	Ibarburu, Pelletier, Wang	02/25/14 – 02/24/15	\$75,048
Evaluation of LED lighting in aviary hen housing	IPRT and ICF	Xin	Wang, Y. Zhao	07/01/13 – 06/30/14	\$50,449
Evaluation of transportation conditions on performance of weaned and feeder pigs	NPB	Harmon	Xin, Hoff, Baas	07/01/13 – 06/30/14	\$47,196
Quantification of greenhouse gas emissions from a Midwestern swine breeding/farrowing/gestation facility	IPPA	Xin	Burns, Patience	08/01/12 – 03/01/14	\$86,999
An examination of argon gas for on-farm anesthesia and euthanasia of livestock	USDA-NIFA	Millman	Xin et al.	10/01/12 – 09/30/15	\$483,464
Comparing heat lamp vs. heat mat for farrowing crate heating	IPPA	Xin	Stinn	08/01/12 – 12/31/13	\$16,914

Updated: January 2, 2019

Xin Curriculum Vitae

Page 39

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
A comparative assessment of environmental footprint of the U.S. egg production supply chains between 1960 and 2010	AEB, USPEA, UEA	Xin	Ibarburu, Pelletier, Westergard	08/06/12 – 08/05/13	\$120,000
Assessment of alternative production systems for laying hens to safeguard animal welfare and sustainable egg supply	USDA-NIFA	Xin	Li, Tang, Millman, Ibarburu-Blanc, Brehm-Stecher, et al.	04/15/11 – 04/14/14	\$700,000
Sustainable egg production: animal welfare, human health, environmental and economic aspects	CFI (through UC-Davis)	Swanson, Mench, Xin, Jones	~ 20 scientists at MSU, UCD and USDA-ARS	10/01/10 – 09/30/14	\$6,000,000 Xin's share: \$1,023,388
Quantitative electroencephalography as an indicator of broiler and layer chicken welfare status during exposure to various stressful conditions	USDA-NIFA	Benson (U of DE)	Xin, Alphin (UD), Johnson (UPenn), Persia	10/01/10 – 09/30/12	\$238,500
Sustaining Iowa pork production and air quality	IPPA	Xin	Colletti	09/01/10 – 08/31/13	\$57,000
Development of monitoring methods for quantifying greenhouse gas emissions reduction through use of biogas digesters for livestock manures in China	US EPA	Dong	Zhu, Xin	10/01/10 – 09/30/13	\$372,750
Reducing egg-borne outbreaks of Salmonella Enteritidis by integrating research and extension	USDA-NIFA	Venkitanarayanan	Darre, Xin, Curtiss, Patterson	09/01/10 – 08/31/14	\$598,551 Xin's share: \$51,881
Donation of National Air Emissions Monitoring Study (NAEMS) equipment to Egg Industry Center (Gift in Kind)	AEB	Xin		07/01/10	\$ 596,945
Quantification of greenhouse gas emissions from a Midwestern swine breeding/farrowing /gestation facility	IPPA	Xin	Burns, Patience	08/01/10 – 07/31/12	\$135,474
Midwest Poultry Research Program	USDA-NIFA Special Grant	Xin	Li, Ibarburu, Persia, Millman, Brehm-Stecher	08/01/10 – 07/31/11	\$438,345
A comprehensive assessment of aviary laying-hen housing system for egg production in the Midwest (supp. funding)	IEC	Xin	Li, Ibarburu, Millman	04/01/10 – 08/31/11	\$30,000
Sponsorship of Egg Industry Issues Forum	AEB	Xin		03/01/10 – 09/01/10	\$30,000
Cash match funding for the USDA NRCS CIG Project – Part 2	UEP	Xin	Li	01/01/10 – 08/31/10	\$50,000
Characterizing the carbon footprint of U.S. egg production using life cycle assessment	AEB	Xin	Ibarburu, Pelletier	01/01/10 – 12/31/10	\$46,485
Effects of long-term supplementation of layer diets with high concentrations of cholecalciferol on egg yolk Vitamin D concentration, egg quality, hen performance and hen health	AEB & IEC	Persia	Wang, Xin, Lamont, Beitz	01/01/10 – 12/31/11	\$119,103

Updated: January 2, 2019

Xin Curriculum Vitae

Page 40

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
Ammonia emissions of pullets and laying hens as affected by stocking density – Yr 2	IEC	Xin	Li, Mendes	07/01/09 – 06/30/10	\$46,132
Evaluation of different diets on ammonia emission and production performance of laying hens	IEC	Xin	Chepete, Li	07/01/09 – 06/30/10	\$43,670
Impacts of feeding DDGS to swine: aerial emissions and potential management strategies	IPPA	Burns	Xin	07/01/09 – 10/31/10	\$107,347
Midwest Poultry Research Program	USDA-CSREES Special Grant	Xin	Wang, Reitmeier	08/01/09 – 07/31/10	\$439,107
Midwest Poultry Research Program	USDA-CSREES Special Grant	Xin	Ahn	09/01/08 – 08/31/09	\$389,947
Updating heat and moisture production rates of modern swine and their housing systems	ASHRAE	Brown-Brandl	Xin	04/01/09 – 05/30/12	\$180,000 Xin's share: \$64,441
Ammonia emissions of pullets and laying hens as affected by stocking density	IEC	Xin	Li, Mendes	07/01/08 – 06/30/09	\$43,419
Assessing hen response to ammonia and thermal comfort combinations via preference test	IEC	Xin	Li, Hayes	07/01/08 – 06/30/09	\$49,033
Hydrogen sulfide spatial distribution and worker exposure in swine houses	IPPA	Burns	Keren, Xin, Hoff	05/01/08 – 04/30/09	\$49,715
An automated feed intake and body weight monitoring system for individual turkeys raised in flocks	Hybrid Turkeys (ON, Canada)	Tang	Xin	01/01/08 – 06/30/09	\$189,761
Feeding DDGS and other altered diets to egg laying hens to demonstrate economically viable reductions in ammonia emissions – a United Egg Producers endeavor with university collaborators	USDA-NRCS-CIG (Flow-through UEP)	Xin	Gregory, Burns, Gates Bregendahl, Kliebenstein, Wheeler, Patterson	10/01/07 – 03/31/10	\$812,998 Xin's share: \$432,030
Cash match funding for the USDA NRCS CIG Project	UEP	Xin	Burns, Bregendahl, Kliebenstein	10/01/07 – 03/31/10	\$100,000
Evaluating the effect of dietary corn DDGS on microbial populations in the intestine of the laying hen	IEC	Xin	Roberts, Bregendahl, Trampel	07/01/07 – 06/30/08	\$43,558
Determining ammonia and particulate matter emissions from Midwest turkey grow-out buildings	USDA-NRI	Xin	Burns, Jacobson, Harmon, Hoff, Noll	03/01/07 – 02/28/09	\$499,933

Updated: January 2, 2019

Xin Curriculum Vitae

Page 41

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
Determining ammonia and particulate matter emissions from Midwest turkey houses	Iowa Turkey Federation	Xin	Burns, Harmon, Hoff, Li	07/01/07 – 02/28/08	\$15,000
Development and testing of a hydrogen sulfide detection system for use in swine housing	NPB	Burns	Xin, Hoff, Moody, Muhlbauer	03/01/07 – 02/28/08	\$48,389
Field verification of ammonia emission mitigation strategies for layer houses	USPEA	Xin	Burns, Wheeler, Patterson, Gates	03/01/07 – 02/28/08	\$70,436
Reference procedures to measure polluting emissions from livestock buildings and storage to air	ADEME (French Environment and Energy Agency)	Robin	Xin et al. (14 international institutions)	01/01/07 – 02/28/09	€1,040,741 (\$1,352,963) Xin's share: €34,222
Development of a producer-oriented portable tool for measurement of ammonia emission from high-rise house or manure storage	IEC	Xin		07/01/06 – 06/30/07	\$15,167
Effect of dietary corn DDGS on ammonia emission and egg production parameters from laying hens: an industry-scale study	Dakota Gold Marketing	Bregendahl	Xin, Roberts	01/01/07 – 12/31/08	\$40,000
Laying hen manure characteristics and air emissions as affected by genetic strains	MPRP & Hy-Line	Xin	Arthur, Burns	03/01/06 – 02/28/07	\$27,160
Field verification of dietary manipulation on ammonia emission and hen performance in high-rise layer houses	EcoCal Products & IEC	Xin	Burns, Bregendahl	01/01/06 – 06/30/07	\$150,000
Air quality for laying hens in cage high-rise, cage manure-belt, and floor aviary housing systems	IEC	Trampel	Xin	01/01/06 – 12/31/06	\$16,255
Partial funding to support acquisition of a thermal desorption system for AFO air quality research	IEC	Koziel	Xin	07/01/06 – 12/31/06	\$10,000
Comparative evaluation of a new heat lamp fixture and controller	Retrolite of America, Inc.	Xin		12/01/05 – 12/31/05	\$5,800
A systematic evaluation of laying hen housing schemes intended to improve bird welfare	IEC	Xin	Green	10/01/05 – 09/30/07	\$50,840
Developing and validating a process-based ammonia emission model for confinement animal feeding operations	USDA-NRI	R. Zhang	Xin, Fadel (UCD), Ogejo (VPI) & Heber	01/01/06 – 12/31/07	\$496,643 Xin's share: \$100,000
Total suspended particulate, PM10, PM2.5, hydrogen sulfide and hydrocarbon national consent agreement emissions determination from broiler production systems	Tyson Foods	Burns	Xin, Gates, Hoff	10/01/05 – 09/30/07	\$648,231

Updated: January 2, 2019

Xin Curriculum Vitae

Page 42

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
Characterization and mitigation of ammonia and odor emissions from laying hen manure storage and composting	Midwest Poultry Consortium	Xin	Wang, Koziel, Koelkebeck	04/1/05 – 03/31/06	\$53,859
Measurement of ammonia emission rate from broiler production houses	Tyson Foods	Burns	Xin	03/28/05 – 09/28/06	\$399,525
Mitigating ammonia emissions from egg production facilities	Iowa Egg Council	Xin		12/1/04 – 11/30/07	\$100,000
Mitigation of ammonia emissions from layer manure storage	US PEA	Xin	Wang, Liang,	10/01/04 – 09/30/05	\$54,579
Mitigation of ammonia emissions from layer operations by bio/chemical treatment of manure	ISU-AES	Xin	Burns, Hoff, Harmon, Koziel, Wang	10/01/04 – 09/30/05	\$55,000
Development of an improved process-based ammonia model for agricultural sources	Lake Michigan Air Directors Consortium	Gail Tonnesen, UCR/ISSRC	R. Zhang, Xin, et al.	07/01/04 – 03/31/05	\$250,000 Xin's share: \$30,000
Effects of stack surface to volume ratio and air exchange rate on ammonia Emission of Laying Hen Manure Storage	IEC & IPRT	Xin	Richard, Kerr	03/01/04 – 02/28/05	\$44,339
Measurement and mitigation of odor and air emissions from concentrated animal feeding operations	USDA	Kanwar	Hoff, Xin, Harmon	06/01/04 – 09/30/07	\$500,731
Effects of beak-trimming and feed form on turkey poult feeding behavior and growth	USPEA	Noll	Xin	06/01/04 – 05/31/05	\$44,609 Xin's share: \$14,985
Use of bedded hoop structures as an alternative swine housing system to improve environmental soundness and sustainability of water resources	USDA-FAS	Harmon	Xin, Dong	07/01/04 – 06/30/07	\$45,000
Biosystems and Agricultural Engineering Training – Consortium for sustainable plant and animal production systems	FIPSE-DOE	Gates	Xin	09/01/03 – 08/31/08	\$207,000 Xin's share: \$108,000
Reduction of ammonia, odorous volatile organic compounds, and nitrogen excretion by manipulation of crude protein and fermentable fiber levels in laying-hen diets	MPF & NII	Bregendahl	Xin, Russell, Kerr	03/01/04 – 02/28/05	\$51,739
ABE Air Quality Initiative – development of sampling system for downwind emission measurement	IPPA	Hoff	Xin, Bundy, Harmon	07/01/03 – 06/30/04	\$100,000
Determining dynamic CO <sub>2</sub> release profiles of CO <sub>2</sub> Pak™	CO <sub>2</sub> Technology & CATD	Xin	Wang	01/01/03 – 03/31/03	\$18,090

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
Lab evaluation and field verification of Single Point Monitors (SPM's) for measuring aerial ammonia and hydrogen sulfide associated with swine operations	NPB	Xin	Hoff, Richard, Kerr	01/01/03 – 06/30/04	\$80,532
Direct measurement of dietary and management strategy impacts on ammonia volatilization	IPPA	Powers	Lorimor, Xin	07/01/02 – 06/30/03	\$25,500
Reducing ammonia emissions from poultry houses by enhanced manure and diet management	USDA – IFAFS Program	Gates	Xin, Wheeler	10/01/01 – 09/30/03	\$873,754 Xin's share: \$227,960
Improving measurement of emissions from poultry houses	6-SCAWM	Xin	Heber	10/01/01 – 09/30/02	\$163,344 Xin's share: \$67,625
Establishment of baseline data on aerial ammonia concentration and emission rate in Iowa pullet and layer houses	IEC & CATD	Xin	Gates	05/01/01 – 04/30/02	\$53,170
Optimizing partial surface wetting to cool caged layers	USPEA	Xin	Gates, Dixon	07/01/01 – 06/30/02	\$52,279
Poultry environment research (gift)	HLI	Xin		2001	\$15,000
Cooling cage laying hens by partial surface wetting	USPEA	Xin	Gates, Dixon, Beck	07/01/00 – 06/30/01	\$24,000
Evaluation of drinking water temperature on laying hen performance	IEC	Xin	Ahn	04/01/00 – 07/31/00	\$5,000
Training of a Brazilian scholar (Yanagi, Jr.) in poultry environment control	The CAPES Foundation of Brazil	Xin		06/16/00 – 08/06/01	\$8,300
Quantification of feeding and drinking behaviors of poultry for enhanced animal well-being	USDA-NRI	Gates	Xin	09/01/00 – 08/31/01	\$150,709
Minimizing ammonia loss to the atmosphere from high-rise layer facilities	IEC	Lorimor	Xin	06/01/00 – 05/31/01	\$29,050
Use of infrared imaging (IRI) to improve detection of disease in pigs	ILHAC	Halbur	Xin	04/01/00 – 03/31/01	\$19,050
Water quality: Reducing environmental contamination with an emphasis on animal production facilities	USDA Emerging Markets	Reynnells	Brubaker, Xin	10/01/00 – 09/30/01	\$50,000
Effects of heat lamp usage on performance of piglets shortly after birth	AFRDI	Zhang	Xin	01/01/00 – 12/31/01	\$48,000
Updating heat and moisture production rates of poultry and their housing systems	ASHEAE	Xin		04/01/99 – 03/31/01	\$124,572

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
Evaluation and demonstration of livestock waste pollution reduction strategies and practices	USDA-FAS	Xin	Lorimor, Dong	02/01/99 – 01/31/02	\$30,000
Effects of fluctuating temperatures on PIC Isowean pigs	PIC	Xin	Ewan, Harmon, Harris	01/01/99 – 05/31/99	\$28,576
Development of a real time behavior-based swine comfort controller	NPPC	Xin		07/01/99 – 06/30/00	\$18,500
Infrared imaging for on-line, non-contact doneness inspection of chicken meat	USDA-NRI	Tao	Xin	10/01/99 – 03/31/02	\$125,000
Economic evaluation of wean-to-finish production systems	IPPA	Baas	Harmon, Xin	04/01/99 – 03/31/00	\$23,260
Performance evaluation of heat mats in swine farrowing facilities	MAAS	Zhang (UM, Canada)	Xin	09/01/98 – 08/31/99	\$20,800
Environmental impact of the use of poultry manure for agriculture production	IEC, Leopold Center	Kanwar	Lorimor, Xin	07/01/98 – 06/31/04	\$145,100
Environment control for livestock and poultry production	MOA, BFE	Dong	Xin	01/01/98 – 12/31/05	\$150,000+
A novel environmental controller to maximize swine thermal comfort	CATD	Xin		04/01/98 – 12/31/98	\$11,000
Responses of PIC isowean pigs to simulated overseas transportation conditions	PIC	Xin	Ewan, Harmon, Harris	01/01/98 – 05/31/98	\$25,586
Evaluation of high-pressure fogging and low-pressure sprinkling systems for heat stress relief and aerosols suppression in high-rise caged layer houses	CATD and Farmegg Products, Inc	Xin		04/01/98 – 06/30/99	\$33,492
Quantification of postural behavior as thermal comfort indicator to pigs	NPPC	Xin		07/01/98 – 06/30/99	\$18,500
Development and application of an instrumentation system to measure feeding and drinking behavior of poultry as influenced by environment and nutrition interactions	HLI	Xin	Gates	04/01/98 – 03/31/00	\$78,650
Biophysical models for poultry production system	NE127	Xin		10/01/98 – 06/30/05	\$62,000
Image analysis of swine postural behavior to improve thermal comfort	IPPA	Xin	Udpa	07/01/97 – 06/30/98	\$18,000



Updated: January 2, 2019

Xin Curriculum Vitae

Page 45

**Funded Research Grants/Contracts (in chronological order):**

Project Title	Grantor	PI	Co-PI	Period	Amount
Reciprocal visit by Dr. Hongmin Dong of CAAS for training in swine & poultry environment	ISU-DAIRG	Xin		01/01/98 – 08/31/98	\$1,500
Heat and moisture production of tom turkeys during brooding-growth period	ITF	Xin	Sell	07/01/97 – 12/31/97	\$4,729
Efficacy of Novus 1027™ as an in-transit nourishment for chicks	NII	Xin	Sell	01/01/97 – 06/30/97	\$11,303
Development of an energy conservation education program for Iowa's livestock and poultry industry	Iowa Energy Center	Harmon	Hoff, Xin	07/01/97 – 06/30/99	\$45,074
Alleviating in-transit chick mortality and weight loss via supply of pre-shipment nourishment and improved microenvironment	USPEA	Xin	Sell	05/01/97 – 04/30/98	\$44,179
An innovative method to alleviate stress and subsequent mortality of breeder chicks for long-journey overseas shipments	USPEA	Xin	Sell	05/01/96 – 04/30/97	\$40,268
Determination of high-rise layer house manure volume and nutrient content	USPEA	Xin	Lorimor	01/01/97 – 12/31/97	\$39,215
Economic evaluation of finishing facilities and development of a decision-aid energy estimator program for the swine industry	Iowa Pork Industry Center	Harmon	Hoff, Xin	04/01/96 – 03/31/97	\$13,400
A novel environmental controller to maximize swine thermal comfort	ISU-SPRIG	Xin	Udpa	01/01/97 – 12/31/97	\$7,886
Environment control for livestock and poultry production	MOA, BFE	Dong	Xin	01/01/95 – 12/31/97	\$50,000+
Dietary acid-base treatment on heat stress and the biochemical parameters of turkey breast muscle	ITF	Ahn	Sell, Xin	07/01/96 – 12/31/96	\$2,400
Development of LIFE (Livestock Industry, Facilities and Environment) Ed. Series	ISU – Office of VP for Extension	Glanville	Harmon, Lorimor, Xin	09/01/96 – 08/31/97	\$70,000
Energy savings in swine production through use of energy efficient lighting and heat lamps	Iowa Energy Center	Xin	Bundy	07/01/94 – 06/30/98	\$159,754
Procurement of a state-of-the-art infrared thermal imaging camera	Iowa Energy Center	Xin		07/97	\$11,000
Alleviating long-journey chick stress and subsequent mortality via improved design and microenvironment of transport containers	Hy-Line International	Xin		07/01/94 – 06/30/96	\$31,957
An innovative chick shipping container	CATD	Xin		09/01/95 – 03/31/96	\$14,142
Training of a Russian scholar in animal production systems	RSCHE	Xin		01/05/95 – 12/09/95	\$19,743

Updated: January 2, 2019

Xin Curriculum Vitae

Page 46

***Funded Research Grants/Contracts (in chronological order):***

<b>Project Title</b>	<b>Grantor</b>	<b>PI</b>	<b>Co-PI</b>	<b>Period</b>	<b>Amount</b>
Biophysical models for poultry production system	NE127	Xin		10/01/94 – 09/30/98	\$25,000
Development of an animal environment research laboratory (gift)	Agri-Tech, Inc.	Xin		1994	\$5,040
Responses of poultry to environmental control schemes in cold climates	ISU-COE	Xin		01/17/94 – 05/31/94	\$4,000
Monitoring turkey house air quality in southeast Iowa	ITMC	Xin	Owings, Trampel	05/01/94 – 04/30/95	\$2,000

## ADVISING/MENTORING/HOSTING OF STUDENTS/POST-DOCS/VISITING PROFESSORS

Name	Degree	Thesis Title or Area of Training	Support <sup>s</sup>	Start	Finish
Acevedo, Ricardo	M.S.	Use of dynamic emission chamber to quantify emissions from high-rise layer houses	G	Aug 08	Aug 10
Chepete, Justin <sup>@</sup>	M.S.	Evaluation of intermittent partial surface wetting to relieve laying hens of heat stress	S/G	Jun 97	May 99
Cook, Rachel <sup>1+,%</sup>	M.S.	Effect of cage stocking density on feeding behavior of laying hens	C/G	Aug 03	June 05
Ehr, Isa	M.S. (co-adv)	Production and health responses of poultry to dietary omega-3 fatty acids supplementation	G	Jan 13	Aug 17
Han, Tao	M.S.	Performance and energetics of neonatal chicks as influenced by in-transit lighting	G	Jun 95	May 97
Hu, Jianing	M.S.	Automatic image selection and segmentation of swine thermal comfort behavior	G	Aug 96	Dec 97
Lee, Kichang <sup>*</sup>	M.S.	Characterizing physiological and energetic responses of young chicks to stress relief measures for long-distance air transport	G	Jan 95	May 96
Long, Hongqian	M.S.	Evaluation of LED vs. fluorescent lighting in aviary hen houses	CSC/G	Sept 13	Sept 14
Mendes, Luciano	M.S.	Ammonia emissions of pullets and laying hens as affected by stocking density	G	Aug 08	Aug 10
Ning, Xiaopeng	M.S.	Characterizing ammonia emission dynamics of poultry	G	Aug 06	Dec 08
Pepple, Laura	M.S.	Impact of feeding DDGS to swine: emissions and potential management strategies	G	Aug 09	May 11
Persyn, Kelly <sup>%</sup>	M.S.	Feeding behaviors of pullets and laying hens with or with beak-trimming	C/G	Aug 01	May 03
Yang, Peilin <sup>&amp;</sup>	M.S.	Nitrogen loss from laying hen manure in high-rise layer houses	G	Jun 97	Dec 99
Wilco J.M. Verhoijssen	M.S. (visiting)	Development of an automated monitoring system for quantification of poultry behaviors	S/G	Aug 14	Dec 14
Ye, Wenyu	M.S.	Quantifying thermal comfort behavior of young pigs using thermography	G	Jan 98	Aug 99
Andersen, Heidi	Ph.D. (visiting)	Automatic climate control of swine houses	S	Sept 05	Dec 05
Chepete, Justin H. <sup>***</sup>	Ph.D.	Determination of heat and moisture production rates of modern poultry and housing systems	G	Aug 99	May 02
Davis, Jeremiah <sup>++,%</sup>	Ph.D.	Monitoring cattle locomotion and ingestion behavior via remote sensing	C/G	Jan 04	Jun 07
Green, Angela <sup>%</sup>	Ph.D.	A systematic evaluation of laying-hen housing systems for improved hen welfare	NSF Fellow/G	Aug 04	Jan 08

## ADVISING/MENTORING/HOSTING OF STUDENTS/POST-DOCS/VISITING PROFESSORS

Name	Degree/ Position	Thesis Title or Area of Training	Support <sup>s</sup>	Start	Finish
Hayes, Morgan <sup>§</sup>	Ph.D.	Alternative housing systems for laying hens	G	Aug 08	May 12
Leonard, Suzanne	Ph.D.	Enhancing the health and well-being of pre-weaning piglets and sows	G	May 16	
Li, Hong <sup>++</sup>	Ph.D.	Ammonia emissions from manure belt laying hen houses and manure storage	G	Aug 02	May 06
Liu, Kai <sup>§</sup>	Ph.D.	Alternative housing and lighting for pullets and laying hens	CSC/G	Aug 12	Dec 17
Ma, He	Ph.D.	Responses of poultry to lighting intensity	CSC/G	Oct 12	Dec 14
Nakarmi, Akash	Ph.D.	Automated quantification of group-housed laying behaviors (co-advisor with Dr. Tang)	G	Oct 09	May 13
Roberts, Stacey	Ph.D.	Mitigation of ammonia emissions from laying hen houses via dietary manipulation	G	Aug 06	Aug 09
Severo, J. Abreu	Ph.D.	Measurement and mitigation of gaseous and particulate emissions from poultry houses	G	Aug 06	Resigned
Shao, Bin	Ph.D.	Development and evaluation of a behavior-based swine environment controller	G	Jan 98	Dec 03
Shao, Junqing <sup>**</sup>	Ph.D.	Quantification of thermal needs of young pigs by image analysis of postural behavior	D/G	Aug 94	Dec 97
Stinn, John <sup>%%</sup>	Ph.D.	Greenhouse gas emissions from breeding, gestation and farrowing swine facilities	G	Aug 10	Aug 14
Oliveira, Jofran	Ph.D.	Behaviors and performance of laying hens as affected by resource and management in alternative housing	S/G	Aug 15	
Tao, Xiuping	Ph.D.	Responses of market-size broilers to acute thermal challenge and surface cooling	G	Aug 01	Jun 02
Wang, Kailao	Ph.D.	Automatically tracking behaviors of individual birds in group settings	CSC/G	Oct 17	
Wang, Yu	Ph.D.	Quantifying and enhancing ventilation performance in cage-free hen housing	CSC/G	Oct 17	
Yanagi, Tadayuki	Ph.D.	Optimization of direct surface evaporative cooling for laying hens	S/0.35G	Jun 00	Feb 02
Zhou, Hongsen <sup>*</sup>	Ph.D.	Behavior-based assessment of thermal needs of piglets from birth to weaning	G	Aug 94	May 98
Li, Hong	Associate Scientist	Quantification and mitigation of air emissions for animal feeding operations	G	Aug 07	Nov 10
Shepherd, Tim	Assistant Scientist	Quantification and mitigation of air emissions for animal feeding operations	G	Nov 10	Aug 14
Zhao, Yang	Assistant Scientist	Measurement of aerial emissions from laying-hen housing systems	G	Jul 15	Dec 16

Updated: January 2, 2019

Xin Curriculum Vitae

Page 49

## ADVISING/MENTORING/HOSTING OF STUDENTS/POST-DOCS/VISITING PROFESSORS

Name	Degree/ Position	Thesis Title or Area of Training	Support <sup>s</sup>	Start	Finish
Chai, Lilong	Post-doc	Mitigation of air emissions from alternative hen housing systems	G	Oct 15	July 18
Li, Hong	Post-doc	Quantification and mitigation of air emissions from poultry production facilities	G	May 06	Jul 07
Li, Shuhai	Post-doc	Mitigation of air emissions from poultry houses and manure storage	G	Sept 08	Aug 09
Li, Xiwei	Post-doc	Optimizing heating systems for swine production	G	Nov 97	Feb 98
Liang, Yi	Post-doc	Measurement of ammonia emissions from poultry houses	G	Jun 02	July 05
Puma, M.C.	Post-doc	Poultry housing and ingestion behavior	G	Jul 97	June 01
Rahman, S.	Post-doc	Quantification and mitigation of air emissions from poultry houses	G	Mar 06	Jan 07
Tanaka, Akihiro	Post-doc	Improvement of thermal and nutritional conditions during long-distance shipment of day-old breeder chicks	G	Aug 95	Sept 96
Zhao, Yang	Post-doc	Measurement of aerial emissions from laying-hen housing systems	G	Jun 11	Jun 15
Mohd-Ali, Rudy	Research Associate	Measurement of ammonia emission from poultry housing systems	G	Oct 01	Mar 02
Abe, Yoshiyuki	Senior Researcher	Air quality and heat stress relief engineering for livestock production	PDL	Nov 13	Nov 14
Atilgan, Atilgan	Visiting Prof.	Air quality related to animal production operation	PDL	Jan 11	April 11
Atilgan, Atilgan	Visiting Prof.	Means to quantify gaseous and PM concentrations and emissions of animal production facilities	PDL	Aug 14	Jul 15
Chen, Yongxing	Visiting Researcher	Quantification of air emissions from animal production facilities	G	July 11	Dec 11
Chepete, Justin H.	Visiting Prof.	Measurement, modeling and mitigation of air emissions from poultry operations	G	July 09	June 10
Dong, Baocheng	Visiting Researcher	Quantification of air emissions from animal production facilities	G	July 11	Aug 12
Dong, Hongmin	Visiting Prof.	Environment control for livestock and poultry production	0.50PDL 0.50G	Mar 98	Dec 98
Gates, Richard S.	Visiting Prof.	Ingestion behavior of poultry as influenced by nutrition and thermal modifications	0.5PDL 0.5G	Aug 00	July 01
Grebennik, D.V.	Visiting Researcher	Poultry production systems and technologies	G	Jan 95	Dec 95

## ADVISING/MENTORING/HOSTING OF STUDENTS/POST-DOCS/VISITING PROFESSORS

Name	Degree/ Position	Thesis Title or Area of Training	Support <sup>s</sup>	Start	Finish
He, Jincheng	Visiting Professor	Quantification of animal behaviors through image analysis and wireless sensing	PDL	Oct 13	Oct 14
Ikeguchi, Atsuo	Visiting Researcher	Suppression of aerosols and reduction of heat stress in layer house by misting	G	Apr 98	Oct 98
Lao, Fengdan	Visiting Professor	Quantification of animal behaviors and health status through image analysis	PDL	Aug 14	July 15
Li, Lihua	Visiting Professor	Assessment of poultry behaviors in alternative hen housing systems	PDL	Feb 15	Feb 16
Rossnegal, Alyssa A.	Co-op Researcher	Quantification of ammonia emission from poultry housing systems	G	May 03	Dec 03
Severo, J. C. Abreu	Visiting Researcher	Alternative methods for measuring gaseous emissions from animal production facilities	G	Feb 06	July 06
Tanaka, Akihiro	Visiting Researcher	Quantification of ammonia emission from poultry production facilities	G	Dec 01	June 02
Tang, Xiangfang	Visiting Researcher	Bioenergetics, air quality and animal-environment interactions	G	April 10	Sept 10
Yi, Bao	Visiting Researcher	Animal environment and well-being	G	Jan 18	Jan 19
Zhang, Qiang	Visiting Prof.	Bioenergetics and environmental physiology	0.8PDL 0.2G	Aug 98	Jul 99
Zhao, Deling	Visiting Prof	Animal environment and air quality	PDL	Sept 12	Aug 13
Zheng, Weichao	Visiting Researcher	Air quality in animal housing	CSC	June 12	Oct 12
Zhu, Zhiping	Visiting Researcher	Measurement and mitigation of air emissions from animal housing	G	Jan 06	Sept 06

- § S = Scholarship; G = Research Grant (½ RA for grads, full time for post-docs); D = Dept. RA support; C = College RA award; PDL = Professional Development Leave supported by scholar's home institute, CSC = China Scholarship Council
- + Recipient of the ABE Howard Johnson Outstanding MS Student in Agricultural Engineering Award (2005) and ISU Miller Fellowship (2003-2005); Winner of the ASAE MS Graduate Student Research Award competition (2005)
- ++ Recipient of Rev P.T. Taiganides Award for Outstanding Ph.D. Students in Agricultural Engineering
- @ Recipient of the ABE Howard Johnson Outstanding MS Student in Agricultural Engineering Award (1999)
- \* Co-recipient of an ASAE Superior Paper Award (1997)
- \*\* Recipient of 1997 Rev P.T. Taiganides Award for Outstanding Ph.D. Students in Agricultural Engineering; and 1997 Mid-Central ASAE Outstanding Graduate Student of the Year Award.
- \*\*\* Recipient of 2001 "All but Dissertation Award" from the ISU Graduate College; and 2002 Rev P.T. Taiganides Award for Outstanding Ph.D. Students in Agricultural Engineering. Resumed faculty position at the University of Botswana.
- & Co-advisor with Dr. Jeff Lorimor
- ♣ Co-recipient of ASAE Superior Paper Award (2000)
- % Recipient of Henry Giese Structures and Environment Fellowship
- %% Recipient of Henry Giese Structures and Environment Fellowship (three times); Recipient of ISU 2013 Brown Graduate Student Fellowship (\$10,000); Recipient of ISU 2013 Outstanding Graduate Research Award; Recipient of 2013 Rev P.T. Taiganides Award for Outstanding Ph.D. Students in Agricultural Engineering; Recipient of 2013 ASABE Iowa Section Outstanding PhD Graduate Student Award
- § Recipient of Iowa State University Outstanding Graduate Research Award; Recipient of 2017 ASABE Iowa Section Outstanding PhD Graduate Student Award

**Current employment/positions of some former advisees:**

- 1) Dr. Yoshiyuki Abe (Visiting Researcher, 2013-2014), Senior Researcher, Agriculture Forestry and Fisheries Research Council, Ministry of Agriculture Forestry and Fisheries, Tokyo, Japan
- 2) Dr. Atilgan Atilgan (Visiting Researcher, 2011 & 2014-2015), Professor and Head, Department of Agricultural Structures and Irrigation, Suleyman Demirel University, Turkey
- 3) Dr. Justin H. Chepete (M.S., 1999; PhD, 2002), Professor and Head, Department of Agricultural and Biosystems Engineering, Botswana University of Agriculture, Gaborone, Botswana
- 4) Dr. Lilong Chai (Postdoc, 2015–2018). Assistant Professor, Department of Poultry Science, University of Georgia, Athens, GA (starting Aug 1, 2018)
- 5) Dr. Yonxing Chen (PhD – joint training, 2012), Assistant Professor, Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agri. Sciences (CAAS), Beijing, China
- 6) Dr. Jeremiah Davis (PhD, 2007), Associate Professor of Agricultural and Biological Engineering and Associate Director of National Poultry Technology Center, Auburn University, AL
- 7) Dr. Hongmin Dong (Visiting Researcher, 1998), Professor and Deputy Director General, Institute of Environment and Sustainable Development in Agriculture, CAAS, Beijing, China
- 8) Dr. Angela Green (PhD, 2008), Associate Professor, Department of Agricultural and Biological Engineering, University of Illinois, Urbana-Champaign, IL
- 9) Dr. Morgan Hayes (PhD, 2012), Assistant professor, Department of Biosystems and Agricultural Engineering, University of Kentucky, Lexington, KY
- 10) Dr. Atsuo Ikeguchi (Visiting Researcher, 1999), Professor of Bioresource Engineering, Utsunomiya University, Tochigi, Japan
- 11) Dr. Kichang Lee (MS, 1996), Research Scientist, Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA
- 12) Dr. Fengdan Lao (Visiting Researcher, 2014-2015), Associate Professor, China Agricultural University, Beijing, China
- 13) Dr. Hong Li (PhD, 2006), Associate Professor, Department of Food and Animal Sciences, University of Delaware, Newark, DE
- 14) Dr. Luciano Mendes (MS, 2010), French Nat'l Institute for Agricultural Research, Clermont-Ferrand Area, France
- 15) Dr. Xiaopeng Ning (MS, 2008), Assistant Professor, Industrial and Management Systems Engineering, West Virginia University, WV
- 16) Dr. Shuhai Li (Postdoc, 2008–2009), Associate Professor, Nanjing Agricultural University, China
- 17) Dr. Yi Liang (Postdoc, 2002–2005), Associate Professor, Department of Biological and Agricultural Engineering, University of Arkansas, Fayetteville, AR
- 18) Dr. Shafiqur Rahman (Postdoc, 2006–2007), Associate Professor, Department of Agricultural and Biological Engineering, North Dakota State University, Fargo, ND
- 19) Dr. Stacey Roberts (PhD, 2009), Poultry Nutritionist, Provimi, Brookville, OH
- 20) Dr. Bin Shao (PhD, 2003), Software Development Engineer, Motorola Company, Chicago, IL
- 21) Dr. John P. Stinn (PhD, 2014), Environmental Services Manager, Iowa Select Farms (the largest swine company in Iowa and ranks 4<sup>th</sup> largest swine company in the US), Iowa Falls, IA
- 22) Dr. Akihiro Tanaka (Post-doc, 2001–2002), Chief Researcher, National Agriculture Research Center for Kyushu and Okinawa Regions, Kyushu, Japan
- 23) Dr. Xiuping Tao (PhD – sandwich program, 2002), Professor, Institute of Environment and Sustainable Development in Agriculture, CAAS, Beijing, China
- 24) Dr. Tadayuki Yanagi, Jr. (PhD – sandwich program, 2002), Professor, Department of Engineering, Associate Provost for Graduate Education, Universidade Federal de Lavras, Lavras, MG, Brazil
- 25) Dr. Yang Zhao (Post-doc/Assistant Scientist, 2011–2016), Assistant Professor, Department of Biological and Agricultural Engineering, Mississippi State University, MS
- 26) Dr. Zhiping Zhu (PhD – sandwich program, 2006), Professor, Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, Beijing, China

**EXTENSION/OUTREACH PROGRAMS****a. Leadership with the Egg Industry Center (2008 – present)**

The Egg Industry Center (EIC, <http://www.eggindustrycenter.org>) was established in 2008, located at Iowa State University. The mission of EIC is *to add value to the egg industry by facilitating research and learning for egg producers, processors and consumers through national and international collaboration*. Dr. Xin has been serving as director of EIC since its inception. EIC is also staffed with a Program Manager-Business Manager, a Communications Specialist and a part-time Office Assistant. A 15-member Advisory Board that consists of egg producers, allied industry representatives, government officials, and academic scientists/administrators provides consultation and guidance about development of the EIC program priorities. EIC had set a goal to establish a \$10 million endowment (private funding) to support its research programs. To date, \$6.1 million has been raised. EIC has been serving the egg industry, academia, government and the general public by:

- Conducting issue-oriented research projects (e.g., highly pathogenic avian influenza or HPAI, hen housing systems, carbon footprint analysis of egg production and processing) and timely dissemination of the research finding;
- Being a research-based clearinghouse for the industry, academia and the general public regarding egg production, procession and consumption;
- Providing up-to-date industry statistics and economic analysis/forecasting. Today, the EIC's monthly reports of egg industry statistics and economic analyses are reaching over 1,250 recipients worldwide.
- Providing Weekly Media Updates on topics germane to egg production, processing and utilization.
- Holding annual egg industry issues forums at various geographical locations in the country (Des Moines, IA; Chicago, IL; Columbus, OH; Denver, CO; St Louis, MO; Indianapolis, IN) to address current and emerging issues that affect the egg industry and the consumers.
- Funding research/extension/educational efforts to address current and emerging issues. To date EIC has either jointly or solely funded a number of multi-state, multi-disciplinary projects concerning impact of alternative hen housing systems, environmental footprint assessment of egg production, and egg safety associated with various housing types.
- Developing/facilitating national and international partnerships and collaborations to address issues that are commonly facing the egg industry, e.g., American Egg Board (AEB), United Egg Producers (UEP), and International Egg Commission (IEC).

The EIC extension/educational deliverables are distributed to more than 1,250 national and international recipients covering egg producers (>90% U.S. egg producers) and companies, allied industries (breeder, equipment), government agencies, and researchers and extension personnel in academia. Although EIC is physically located at ISU, its programs and activities are national and international in nature.

**b. Leadership of ABE Extension Program in Serving the Poultry Industry (with official extension appointment from Dec 1993 to March 2017)**

Dr. Xin led ABE departmental extension program in serving the state, regional and national poultry industry. He had conducted the following extension/outreach programs.

- Providing leadership at the national level in addressing environmental (air quality) issues facing the egg industry. For instance, Dr. Xin has been serving as the chair of the United Egg Producers Environmental Scientific Panel (ESP) since 2004 (UEP represents over 90% of the U.S. egg producers). The missions of ESP are a) to serve as the clearinghouse for the egg industry regarding environmental issues related to egg production and state of science on environmental research; and b) to explore practical means and make recommendations on best management practices to improve indoor air quality and mitigate air emissions of egg production facilities. The 14-member ESP consists of leading university researchers (Iowa State University, Pennsylvania State University, Purdue University, University of Illinois, The Ohio State University), allied industry representatives, producer representatives, and government agency (USDA). As a result of the ESP's collective effort, a USDA-CIG project completed in 2010 in Iowa and Pennsylvania demonstrated that use of dietary manipulation is a viable means to mitigate ammonia (major noxious gas in



- poultry houses) emissions and improve manure nutrient contents for laying-hen houses. The mitigation technology has been adopted by egg producers.
- Conducting educational programs on issues of animal (particularly poultry) production air quality, environmental control and production sustainability via invited and participatory presentations at local, regional, national and international extension workshops and symposia.
  - Providing technical consultation to animal (poultry in particular) producers and allied industries regarding engineering and management issues related to animal production.
  - Serving on board of directors or advisory councils for commodity groups (e.g., Iowa Egg Council, Iowa Poultry Association, Iowa Turkey Federation, United Egg Producers, American Egg Board, National Pork Producers Council) and governmental agencies (USDA)
  - Integrating emerging animal industry issues into applied research/demonstration projects, which have led to timely, research-based solution or information, therefore significant impacts on the livestock and poultry industries at state and national levels. Examples of such integrated projects include:
    - Quantification and mitigation of air emissions from poultry production operations
    - Improving the quality and efficiency of shipping poultry and swine breeder stocks worldwide
    - Devising cost-effective methods for combating summer heat stress in commercial laying hen houses
    - Establishing research-based data on manure nutrient production from laying hen facilities, which have been adopted in the state (IDNR) guidelines for developing manure management plans.
    - Improving energy efficiency of creep heating and microenvironment in the swine farrowing operation
    - Helping an Iowa-based swine equipment manufacturing company to improve design and quality of heat mat for creep heating
    - Assisting equipment manufacturers in developing heat mat and controllers for swine creep heating
    - Field demonstration of dietary manipulation to reduce ammonia emissions while maintaining or enhancing production efficiency for laying-hen operations
  - Developing and maintaining strong partnerships/network with state and national commodity groups, inter-state institutional and governmental agencies to enhance outreach programs
  - Supporting agricultural engineering field specialists, as needed, in carrying out their extension programs. The support is in the form of annual in-serve training, collaboration on field demonstration projects, and answering technical questions.
  - Producing/contributing to over 60 extension publications, media reports and popular press articles

## SERVICE

### a. University, College and Departmental Committees

- ISU New Poultry Research and Teaching Facility Planning Committee (Chair, 2017–2019)
- University Conflict of Interest Management Committee (2016–2019)
- University Distinguished Professor Nominations Review Committee (2016–2018)
- Search Committee for the ISU Vice President for Research (Sept–Dec 2013)
- University Graduate Faculty Term Membership Review Committee (2003–2006)
- College of Agriculture and Life Sciences (CALS) Air Quality Issue Team (2003–present)
- CALS Avian Influenza Issue Team (2006–2010)
- CALS Distinguished Professor Screening Committee (2015)
- CALS Diversity Committee (1997–2001; 2009–2010; 2010–2011)
- CALS Promotion and Tenure Advisory Committee (2003–2006)
- CALS New ISU Poultry Farm Planning Committee (Chair, 2017–)
- College of Engineering Committee on Research Strategy (2012–2015)
- College of Engineering Honors and Awards Committee (2007–2010)
- College of Engineering Promotion and Tenure Committee (2007–2010, 2012-subbing)
- College of Engineering Graduate Education Task Force Committee (2003–2005)

- College of Engineering Research Award Committee (1998–2002; 2011–2014)
- College of Engineering Honors and Awards Committee (2004–2007; 2007–2010)
- ABE ad-hoc faculty search committees
- ABE Awards Committee (2016)
- ABE Department Research Council (2016–)
- ABE Agricultural Engineering Research Center (AERC) Committee (2000–2001)
- ABE Animal Production Systems Engineering Focus Group Leader (2003–2009)
- ABE Awards and Publicity Committee, Chair (2007–2008)
- ABE Chair Advisory Committee (2004–2009)
- ABE CSREES Academic Review Executive Committee (2003–2004)
- ABE Diversity Committee (2009–2010; 2010–2011), Chair (2009–2010)
- ABE Director of Graduate Education (DOGE) (2003–2005)
- ABE Graduate Programs Committee (1994–2008; Chair, 2003–2005; 2012–2013; 2013–2014; 2014–2015; 2015–2016; 2016–2017)
- ABE-IEdT ad-hoc merger committee (2003–2004)
- ABE New Building Feasibility Study and Planning Committee (2004–2012)
- ABE International Programs Committee (1997–2003; 2010–2011; 2011–2012; VC 2011–2013; 2013–2014; 2014–2015)
- ABE junior faculty mentor (Dr. Stuart Birell, 1998–2001; Dr. Jacek Koziel, 2004–2006; Dr. Kurt Rosentrater, 2011–2015)
- Faculty mentor for Dr. Yuko Sato, assistant professor of VDPAM, CVM (2015–)
- ABE Professional Development and Awards Committee (1997–2008, Chair 2004–2005)
- ABE Promotion and Tenure Review Committee (1995–1996; Chair 2003–2004; 2005–2006; 2010–2011; 2011–2012; 2014–2015)
- ABE Space Advisory Committee, Chair (2011–2013)
- AnSci Animal Industry Report, Editor on Poultry Section (2010–present)
- AnSci Poultry Nutrition Faculty Search Committee (2009)
- AnSci Poultry Nutrition Faculty Search Committee (2014)
- GPSA (Grad Program in Sustainable Ag) Admissions Committee (2000–2005)
- VDPAM Poultry Faculty Search Committees (2015, 2017)

**b. Professional/Government/Commodity Organizations**

- World Wildlife Fund (WWF) and the Rockefeller Foundation Protein Research Group (2018–)
- Member of Advisory Panel for World Wildlife Fund Study on Canadian Egg Sustainability (2017)
- Member of Advisory Panel for World Wildlife Fund Study on U.S. Egg Sustainability (2017)
- Invited member of the Assessment Committee for a Precision Livestock Farming faculty search at the Catholic University of Leuven, Belgium, appointed by the KU Leuven Academic Board (2016)
- Overseas Chair, Board of Directors for the International Research Center for Animal Environment and Welfare (IRCAEW) headquartered at Chongqing Academy of Animal Sciences, Chongqing, China (2012–2016; 2016–2020)
- Co-chair of the International Symposium on Animal Environment and Welfare sponsored by the International Research Center for Animal Environment and Welfare ([www.ircaew.org](http://www.ircaew.org)), Oct. 22–24, 2011; Oct. 19–22, 2013; Oct. 23–26, 2015; Oct. 23–26, 2017; Chongqing, China
- Co-chair of the First Asian Precision Livestock Farm Conference (1<sup>st</sup> PLF-Asia) sponsored by the International Research Center for Animal Environment and Welfare, China Agricultural University, September 9–11, Beijing, China
- An invited member of 24-member United Egg Producers Strategic Planning Committee (2017)
- Member of the UEP Scientific Advisory Committee on Animal Welfare (2012–present)
- Member of the United Egg Producers Ammonia Task Force (2013–present)

- Member of the National Pork Producers Council Air Science Committee (2011–present)
- Member of the American Egg Board Science Advisory Committee on Production (2010–present)
- Ex-officio Board Member of the Iowa Egg Council (2008–present)
- Ex-officio Board Member of the Iowa Turkey Federation (2008–2010)
- Chair of United Egg Producers Environmental Scientific Panel on Air Emissions (2004–present)
- Director of Egg Industry Center located at Iowa State University (2008–present)
- Member of the USDA Agricultural Air Quality Task Force (AAQTF) (2008–2015, three terms)
- Member of the USDA-NRI Air Quality Program Review Panel (2007)

***ASABE (American Society of Agricultural and Biological Engineers)***

- Member of E-05/3 Digitalization Strategy Committee (2018–)
- Planning Committee for the 10<sup>th</sup> International Livestock Environment Symposium (2016–2018)
- Planning Committee for the 9<sup>th</sup> ILES (2010–2012)
- Program Chair of the 8<sup>th</sup> ILES (2006–2008)
- Planning Committee Member and Local Host Co-chair for 7<sup>th</sup> ILES (2003–2005)
- Program Chair of the Structures and Environment (SE) Division (2002–2005)
- Associate Editor of SE Division (1994–2004; 2009–2011)
- SE Representative of the Meetings Council (2003–2006)
- Publications Council - SE Representative (1999–2002)
- P-511 Refereed Publications, SE Liaison (1996–1999)
- SE-04 Paper Awards (Chair, 1996–1997; Vice Chair, 1995–1996; Secretary, 1994–1995)
- SE-301 Environmental Physiology (Chair:1996–1997; Vice Chair:1995–1996; Sec:1994–1995)
- SE-302 Environment of Animal Structures (Chair: 1998–1999; Vice Chair:1997–1998; Sec: 1996)
- SE-405 Poultry Housing Systems (Chair, 2001; Vice Chair, 2000; Secretary, 1999–2000)
- P-511 Refereed Publications, SE Liaison (1996–1999)
- Coordinator for numerous technical sessions at the annual international meetings.

***ASHRAE (American Society of Heating, Refrigerating and Air-conditioning Engineers)***

- Chair of TC 2.2 Handbook Committee (2000–2003)

***CIGR (International Commission of Agricultural Engineers)***

- Co-chair of the International Symposium on Environment, Health and Animal Welfare, Oct. 19–22, 2011, Chongqing/Rongchang, Sichuan, China
- Organizing Committee member and Proceedings Co-chair of CIGR Section II Working Group Workshop on “*Animal Housing in Hot Climates*”, Oct 22–25, 2009, Chongqing, China
- Editorial Board Member for CIGR e-Journal (2000–present)

***Association of Overseas Chinese Agricultural, Biological and Food Engineers***

- Member of Board of Directors (2001–2005); Vice President (2002–2003)

***Regional Research Project: NE127 - Biophysical Models for Poultry Production Systems***

- Chair (1998–99; 2005–2006); Senior Executive Officer (1997–98; 2004–2005); Junior Executive Officer (1996–97; 2003–2004)
- Co-Chair of committee for project renewal for the period of Oct 1999 to Sept 2004

***Manuscript and Proposal Review:***

- Regular reviewer of ASABE, ASHRAE, CSAE (Canadian Society of Agricultural Engineers), CIGR, Poultry Science, Applied Poultry Research, Animal Science, World Poultry Science, and USDA-ARS technical papers, averaging 8 to 10 papers per year.
- Ad-hoc reviewer of research proposals for USDA Small Business Innovation Research (SBIR) program, National Research Initiative (NRI) program, BARD, international research institutes or agencies, domestic foundations, universities, and industry companies.

**c. Graduate Program Committee Member**

<b>Name</b>	<b>Degree Sought</b>	<b>Department</b>	<b>Period</b>
Davies, Simmon	Ph.D.	ABE	June '96 – July '97
Green, J.J.	M.S.	AnSci	Aug '09 – July '11
Hansen, Hannah	M.S.	FSHN	Aug '13 – May '15
Heubner, Minda	M.S.	ABE	Aug '02 – Aug '04
Johnson, Jay	Ph.D.	AnSci	Jul '10 – May '14
Kang, Juhyon	M.S.	FSHN	Aug '10 – Dec '12
Kang, Juhyon	Ph.D.	FSHN	Jan '13 – July 2015
Liu, Lei	M.S.	FSHN	June '96 – May '99
Lo, Miranda	M.S.	ABE	Jan '05 – May '06
Roberts, Stacey	M.S.	AnSci	Aug '04 – May '06
Ramirez, Brett	Ph.D.	ABE	Aug '14 – Dec '17
Sweska, Randy	M.S.	ABE	Jan '09 – May '10
Wu, Wei	M.S.	AnSci	Aug '04 – June '06
Yang, Peilin	Ph.D.	ABE	Jan '00 – July '02
Yu, Naiwen	Ph.D.	ABE	Jan '95 – Dec '98

## INTERNATIONAL PROGRAMS AND ACCOMPLISHMENTS

Dr. Xin has been actively engaged in fostering and conducting collaborations with leading international institutions, capacity building, and creating opportunities for graduate students and faculty to get connected with international peers. These activities have contributed to enhancing the global impacts of Iowa State University. Listed below are a few examples of such international activities and impacts.

### Academic Collaborations and Capacity Building with International Institutions

- Since 1996 Dr. Xin has been conducting academic collaborations and capacity building with the Chinese Academy of Agricultural Sciences (CAAS) and China Agricultural University (CAU) in the areas of air quality, animal production systems, environmental control, and animal welfare. The collaborations have been in the forms of conducting educational workshops/symposia at CAAS and CAU, exchange of faculty, joint training of CAAS and CAU graduate students – especially PhD students (in Beijing and at ISU), joint research projects funded by USDA-Foreign Agricultural Service, China Ministry of Agriculture, and China Ministry of Science and Technology, and technical publications in international journals. A special accomplishment of the collaboration with CAAS is the establishment of a China-US Agro-environmental Center of Excellence (CUACE) based at CAAS in Beijing since 2002. The first of its kind in China, the center has been serving as the clearinghouse and think-tank for developing national policies and plans on environmental issues and sustainable animal production in China. Working closely with Professor Hongmin Dong, Director of the center and Deputy Director General of the institute, Dr. Xin was instrumental to the development and implementation of the center’s mission and goals. An example of the collaborative endeavors is the project on “Evaluation of Greenhouse Gas Emissions Reduction through Use of Biogas Digesters for Swine Manure” jointly funded by the U.S. EPA (Global Methane-to-Market Program) and China Ministry of Agriculture. Since 1996 Dr. Xin has been holding the title of Honorary Professor of CAAS and CAU. He has been serving on the Scientific Advisory Committee of the CAU Key Laboratory on Agricultural Structures and Environment. To date, Dr. Xin has participated in/contributed to advising of more than 30 graduate students at CAAS and CAU. A formal MOU between CAU and ISU was signed at CAU in 2015 by ISU President Steven Leath and CAU President Ke Bingsheng. Dr. Xin facilitated the MOU signing process.
- Since 1998 Dr. Xin has been conducting academic collaborations and capacity building with two Brazilian universities, Federal University of Viçosa (UFV) and the Federal University of Lavras (UFL) in the areas of animal production environment and animal welfare. In addition, over the past 10+ years Dr. Xin has expanded the academic engagement with the University of Campinas. Once again, the collaborations take the forms of educational workshops at UFV and UFL, reciprocal visits of faculty, joint training of Brazilian undergraduate and graduate students (in Brazil and at ISU), joint research and educational projects funded by US and Brazilian agencies, and joint publications. Between 2002 and 2012, Dr. Xin served as co-advisor or committee member for more than 10 graduate students at UFV through a Sandwich Program. During the period of 2004-2008, through a competitive grant funded by the US Department of Education (FIPSE) and the Brazilian CAPES Foundation, a US-Brazil Educational Consortium was established to train U.S. and Brazilian undergraduate students in agricultural and biosystems engineering, and Dr. Xin served as the ISU project director (in collaboration with University of Kentucky). Through the consortium project, 14 ISU undergraduate students studied at UFV and 14 Brazilian students studied at ISU for one semester. During the project period, Dr. Xin engaged the exchange Brazilian undergraduate students in research projects in his lab. The feedbacks from both ISU and Brazilian students were extremely positive. Subsequently a new FIPSE-CAPES project was awarded (2009), allowing the successful academic exchange/collaborations to continue.
- In 2011 Dr. Xin, together with Dr. Max Rothschild (Distinguished Professor of Animal Science), co-led the ISU Ensminger Exchange Program Team (6 members) to China, where the team conducted academic changes in Beijing (Chinese Academy of Agricultural Sciences – Institute of Animal Science) and Huazhong Agricultural University (Wuhan City). The exchange program enhanced the existing academic collaborations and planted seed for future, long-term academic cooperation/collaboration, particularly among young scientists from both sides.

- In October 2011, at the invitation of the Chongqing Academy of Animal Sciences (China), Dr. Xin played a key role in establishing the International Research Center for Animal Environment and Welfare headquartered in Chongqing ([www.ircawe.org](http://www.ircawe.org)). The purposes of the Center are: First, utilize research capabilities and resources of Chinese and international scientists and institutions, synthesize successful experience and proven management practices, and apply new technologies from various countries to advance the knowledge and technologies in animal environment and welfare worldwide. Second, provide a platform for global networking and exchange to advance animal environment research, improve animal health and welfare, production efficiency and product quality, and ultimately improve the quality of life for mankind. The current 20 participating institutions are: China Agricultural University, Chongqing Academy of Animal Sciences, Northeastern Agricultural University, Nanjing Agricultural University, South China Agricultural University, Iowa State University, Purdue University, University of Illinois, University of Missouri, University of Tennessee, The Ohio State University, North Carolina State University, University of Manitoba (Canada), University of Southern Queensland (Australia), Wageningen University (The Netherlands), Aarhus University (Denmark), Catholic University of Leuven (Belgium), University of Campinas (Brazil), University of Milan (Italy), and Josip Juraj Strossmayer University of Osijek (Croatia). More institutions are expected to join the Center. Dr. Xin was appointed as the Overseas Co-chair of the inaugural BOD, along with Dr. Baoming Li of CAU as the Chinese Co-chair for a 4-year term. In 2016 Dr. Xin was reappointed for another 4-year term as the Overseas Co-chair. Since 2011, every odd-number year, an International Symposium on Animal Environment and Welfare has been held in October (2011/2013/2015/2017/2019), and every even-number year a smaller-scale workshop has been held (2012/2014/2016/2018). Working with the local hosts, Dr. Xin has been responsible for organizing and coordinating the symposia and workshops.
- Since the late 90's Dr. Xin has been collaborating with Professor Daniel Berckmans at the Catholic University of Leuven (KUL), Belgium in quantification and modeling of physiological, energetic and behavioral responses of animals to biophysical factors, and recently on precision livestock farming (PLF). Students and faculty exchanges between ISU and KUL have taken place; and special symposia have been held. During the period 2011-2015, Dr. Xin served as a foreign advisor on the EU-PLF Project (€6 million) led by Professor Berckmans.
- From 2000 to 2013, Dr. Xin collaborated with Professor Christopher Wathes of the United Kingdom, first at Silsoe Research Institute (prior to 2006) and later at the Royal Veterinary College of University of London (2006-2013), in the areas of physiological and behavioral responses of animals to multiple thermal and gaseous stressors. One of Dr. Xin's former PhD students (Angela Green who is now on faculty at University of Illinois Urbana-Champaign) spent six months (Jan–June 2005) at SRI conducting animal welfare research. Reciprocal visits by Drs. Wathes and Xin were made and joint technical publications produced. Professor Wathes retired in 2013, and sadly passed away in 2016.
- During the period of 2006-2010 Dr. Xin was the U.S. member of an international research team (14 institutions), funded by the French Environment and Energy Agency (Dr. Paul Robin, France, Project Director), to develop international reference methods for measuring air emissions from livestock and poultry production systems. The reference methods have been disseminated to researchers and professionals worldwide for determining air emissions from animal production systems, so that the results are more comparable from country to country.
- Dr. Xin has conducted collaborative research with the National Institute of Animal Industry of Japan (Dr. Atsuo Ikeguchi, now professor at Utsunomiya University) in indoor air quality and welfare of poultry and swine as affected by biophysical factors. Reciprocal visits by Drs. Ikeguchi (6 months) and Xin (1 month) were conducted and journal articles have been published. At the recommendation of Dr. Ikeguchi and Dr. Tanaka (Dr. Xin's former post-doc, now Chief Researcher at NARO, Japan), Dr. Yoshiyuki Abe, Senior Researcher at National Agriculture and Food Research Organization (NARO, Japan) – Institute of Livestock and Grassland Science conducted research in Dr. Xin's lab (Nov 2013 – Nov 2014).

**International Reputation and Honors**

- Since 1994 Dr. Xin has delivered more than 70 invited talks at overseas international conferences or symposia in Belgium, Brazil, Canada, China, Columbia, Costa Rica, Denmark, France, Germany, Italy, Japan, Mexico, Spain, The Netherlands, and United Kingdom.
- Dr. Xin has hosted/mentored international visiting scientists/scholars/delegates from Africa, Australia, Belgium, Botswana, Brazil, Canada, China, Denmark, Germany, Greece, Japan, Korea, Morocco, Russia, The Netherlands, Turkey, United Kingdom, and Vietnam.
- Invited member of the Assessment Committee for a Precision Livestock Farming (PLF) faculty search at the Catholic University of Leuven, Belgium, appointed by the KU Leuven Academic Board (2016)
- Appointed as a founding member of the Global Expert Group on Avian Influenza, International Egg Commission (2015–)
- Appointed as a founding member of the Global Roundtable for Sustainable Egg Production, International Egg Commission (2015–)
- Invited to serve on the Scientific Advisory Committee for the Science and Information Centre for Sustainable Poultry Industry [Wissenschafts-und Informationszentrum Nachhaltige Geflügelwirtschaft (WING)], Raum, Germany (2013–present)
- Appointed to Overseas Co-chair of the Board of Directors for the International Research Center for Animal Environment and Welfare headquartered at the Chongqing Academy of Animal Sciences, Rongchang, Chongqing, China (2012–2016; 2016-2020)
- Appointed to the Scientific Advisory Committee for the Key Laboratory of Energy Conservation and Waste Management of Agricultural Structures, Ministry of Agriculture, China (2012–2017)
- Appointed to the Scientific Advisory Committee of the State Key Laboratory in Animal Nutrition (SKLAN), the Chinese Academy of Agricultural Sciences, Beijing, China (2011–2015)
- Appointed to the Scientific Advisory Committee for the Key Laboratory on Agricultural Structures and Environment at China Agricultural University, Beijing, China (2008–2011; 2011–2016)
- Invited Member of the Foreign Scientific Advisory Committee on an European Precision Livestock Farming Project (2013–2016, €5,000,000)
- External examiner of PhD dissertation and defense exam for University of Kwazulu-Natal, South Africa (2009), Catholic University of Leuven, Belgium (2015, 2017), and Wageningen University, The Netherlands (2016)
- Co-chair of the 2019 International Symposium on Animal Environment and Welfare (ISAE2019) sponsored by the International Research Center for Animal Environment and Welfare (IRCAEW), Oct 21-23, 2019; Chongqing, China
- Co-chair of ISAE2017 sponsored by IRCAEW, Oct 23-26, 2017; Chongqing, China
- Co-chair of ISAE2015 sponsored by IRCAEW, Oct 23-25, 2015; Chongqing, China
- Co-chair of ISAE2013 sponsored by IRCAEW, Oct 20-22, 2013; Chongqing, China
- Co-chair of ISAE2011 sponsored by IRCAEW, Oct 22-24, 2011; Chongqing, China
- Keynote speech on “*The changing egg industry*” at National Symposium on Animal Environment and Precision Animal Husbandry, Sept 3-5, 2018, Harbin, China
- Keynote speech on “*Modeling of ventilation shutdown in layer houses*” at the International Egg Commission 2015 Global Leadership Conference, 20-24 September, 2015, Berlin, Germany
- Keynote speech on “*Environmental control for poultry production*” at the 16<sup>th</sup> China National Poultry Science Symposium, May 13-15, 2013; Yangzhou, China
- Keynote speech on “*State and R&D opportunities of U.S. egg industry and the role of Egg Industry Center*” at the Joint Conference of Chinese Association of Animal Science and Veterinary Medicine and Chinese Society of Agricultural Engineers on Eco-environment and Sustainable Livestock Production, Nov 2-5, 2012, Beijing, China
- Keynote speech on “*Environmental footprint of the egg – dramatic progress over the past 50 years*” at the 2012 International Egg Commission Annual Conference held in London, UK, Sept 10-13, 2012.

- Keynote speech on “*Trend and R&D Opportunities of Laying-Hen Housing Systems*” at the XXIV World’s Poultry Congress, August 5-9, 2012, Salvador, Brazil
- Keynote speech on “*Toward standardization of data collection, analysis and presentation of AFO air emissions*” at the Ninth International Livestock Environment Symposium, July 9-12, 2012, Valencia, Spain
- Member of Planning Committee for the Ninth International Livestock and Environment Symposium (ILES IX), July 8-12, 2012, Valencia, Spain
- Keynote speaker on “*Toward sustainable development of egg industry and the role of Egg Industry Center*” at the International Symposium on Egg Industry, June 18-19, 2012, Beijing, China
- Member of the Organizing Committee for the World Poultry Congress XXV, September 5-9, 2016, Beijing, China
- Keynote speaker on “*A balance approach to animal welfare issues to avoid unintended consequences*” at the International Symposium on Health Environment and Animal Welfare co-sponsored by CIGR and China Agricultural University, October 20-22, 2011, Chongqing, China
- Invited to “Mission 2050 Think Tank, Net Zero: *Emissions, Water & Energy*” Forum sponsored by the Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph (2009)
- Member of Organizing Committee and Proceedings Co-chair of the CIGR-Section II Working Group Symposium “*Animal Housing in Hot Climates*”, Oct 22-25, 2009, Chongqing, China
- Program Chair of the Eighth International Livestock and Environment Symposium (ILES VIII), Sept 1-4, 2008, Iguassu Falls, Brazil
- Guest Professor, Zhejiang University (2010–present)
- Adjunct Professor of China Agricultural University (2008–present)
- Co-chair of Local Host Committee for the Seventh International Livestock and Environment Symposium (ILES VII), May 18-21, 2005, Beijing, China
- Honorary Scientist of the Rural Development Administration of the Republic of Korea (2004–2006)
- Honorary Professor of the Chinese Academy of Agricultural Sciences, Beijing China (1998–present)
- Honorary Professor of China Agricultural University (1996–present)
- Research Award for Foreign Expert, Ministry of Agriculture, Forestry and Fisheries, Japan (2000)

#### **OTHER SIGNIFICANT CONTRIBUTIONS**

##### **Courses Taught or Guest-lectured** (*Dr. Xin has no official teaching appointment*)

- AnSci501 – *Graduate Seminar* (guest lectures on U.S. egg industry, 2010-2015)
- AnSci233 – *Poultry Production* (guest lectures, spring & fall 2016 & 2017, spring 2018)
- AE/TSM601 – *Seminar* (co-taught with Dr. Ramesh Kanwar), fall 2007, fall 2008
- AE572 – *Design of Environmental Systems for Ag Structures* (taught half), spring 1999
- AE214 – *Environmental Engineering for Grain and Animal Systems* (guest lectures)
- AST474/TSM327 – *Livestock Housing Systems* (guest lectures, every fall semester since 2009)
- AE409 – *Engineering Quantification of Biological Processes* (guest lectures)
- SusAg515 – *Integrated Crop and Livestock Production Systems* (guest lecture – fall 2015)
- Engineering Honors Students Workshops (summer 2001)
- Mentoring of PIPELINE programs honor students (summer 2001)

##### **Research and Instruction Laboratories Developed**

- Livestock Environment and Animal Physiology Research Laboratory I (LEAP I) (1994)
- Livestock Environment and Animal Physiology Research Laboratory II (LEAP II) (2000)
- Bio-imaging and Measurement Laboratory (2000)
- Four mobile laboratories for measurement of air emissions from animal feeding operations (2005–2011)
- Layer Housing and Behavior Research Laboratory (2015)



**Dr. Hongwei Xin**  
**Position Description**



## Dean of AgResearch – UT Institute of Agriculture

### General Description:

The Dean of The University of Tennessee AgResearch is administratively responsible to the Chancellor of the Institute of Agriculture. The Dean works collaboratively with the administrative leadership team of the Institute, which includes Deans of the College of Agricultural Sciences and Natural Resources, UT Extension, and the College of Veterinary Medicine, to fulfill the Institute's research, teaching, and outreach objectives. The Dean of AgResearch is responsible for administration of agricultural and natural resource research programs within the Institute of Agriculture, including 10 research and education centers located across the state.

### Duties and Responsibilities:

Primary responsibilities of the Dean are to:

- Provide visionary leadership, administration, and advocacy, and executing a vision consistent with other University and UTIA strategic directions and with the land grant mission
- Demonstrate an understanding of and appreciation for the land grant mission, and provide support to all land grant mission areas within the Institute
- Promote innovative ideas in research programs and initiatives that meet local, national, and global needs
- Demonstrate an ambitious approach to science and promote excellence in the field
- Recruit and retain well-qualified faculty and staff
- Provide physical and financial oversight of campus and field research facilities
- Support faculty in pursuing extramural awards, contracts and gifts
- Provide oversight and budgetary responsibility for the UTIA Office of Sponsored Programs
- Establish and enhance relations with key partners including federal and state agencies, private industry, and foundations, and strengthen partnerships with UT Knoxville and other institutions within the UT System, Tennessee State University, and the Oak Ridge National Laboratory
- Provide oversight for the UTIA Compliance Officer and work closely with the UT Knoxville Office of Research on matters of institutional compliance

- Lead AgResearch to a position of national prominence in agricultural and natural resource-related research and advance scholarly excellence in all land grant mission areas

## QUALIFICATIONS

### Education:

Candidates must have an earned doctorate in agriculture science, natural resources or closely related field, with evidence of a scholarly record to qualify for tenure as a full professor in a University of Tennessee Institute of Agriculture academic department.

### Experience:

Candidates must have demonstrated leadership skills and abilities. Candidates must possess an outstanding record of research and other academic accomplishments and demonstrate a broad understanding of agricultural production systems, natural resources, and the environment. Preference will be given to candidates that have experience in administering higher education agricultural research programs, including oversight of budgets, personnel and facilities.

### Skills

The Dean will have significant knowledge and understanding of higher education. Specific skills include:

- Progressive administrative experience including knowledge of, appreciation for, and commitment to the philosophy and programs of land grant institutions
- Excellent oral and written communication skills and outstanding listening skills
- Ability to communicate with a variety of stakeholders including industry partners, agribusiness producers, Extension agents, federal agencies and other diverse audiences
- Commitment to quality and integrity
- Ability to inspire and effectively manage faculty and staff and lead the land grant research programs at the University of Tennessee
- Knowledge of emerging technologies
- Budget administration experience and experience supervising personnel
- A track record of achievement in the areas of equal employment opportunity and affirmative action and a demonstrated commitment to promoting and fostering diversity
- Ability to create and maintain effective partnerships and working relationships both internally and among external stakeholders

- Ability to strengthen the research and education centers to ensure they remain on the cutting edge, providing relevant research and solutions in support of farmers, producers and other industry partners across the state
- Transparency in decision-making and accountability for resource management
- Recognition of, and appreciation, for local, regional and state needs and rural economic development
- Success in working with a team and effectively leading direct reports
- Strong commitment to support graduate student education
- Ability to travel frequently

Applications should include a letter of application, curriculum vitae, and names and contact information for five professional references. Nominations are encouraged and may be sent via e-mail to Ms. Ashlie Czyz using the contact information below. Applications and nominations will be accepted until the position is filled, and review of applicants will begin on August 1, 2018. Interested candidates should submit application packets to Ms. Czyz at the following address.

Ashlie Czyz  
Director of HR Programs and Executive Recruiter  
The University of Tennessee System  
826 Andy Holt Tower  
1331 Circle Park Drive  
Knoxville, TN 37966  
[aczyz@tennessee.edu](mailto:aczyz@tennessee.edu)

*All qualified applicants will receive equal consideration for employment and admission without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, genetic information, veteran status, and parental status. In accordance with the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, the University of Tennessee affirmatively states that it does not discriminate on the basis of race, sex, or disability in its education programs and activities, and this policy extends to employment by the university. Inquiries and charges of violation of Title VI (race, color, and national origin), Title IX (sex), Section 504 (disability), the ADA (disability), the Age Discrimination in Employment Act (age), sexual orientation, or veteran status should be directed to the Office of Equity and Diversity, 1840 Melrose Avenue, Knoxville, TN 37996-3560, telephone 865-974-2498. Requests for accommodation of a disability should be directed to the ADA Coordinator at the Office of Equity and Diversity.*

**Dr. Hongwei Xin  
Offer Letter**





Office of the Chancellor

101 Morgan Hall  
2621 Morgan Circle  
Knoxville, TN 37996-4505  
office: 865-974-7342  
fax: 865-974-8781

4

November 5, 2018

Dr. Hongwei Xin  
3037 Bayberry Road  
Ames, Iowa 50014

Dear Dr. Xin:

It is my pleasure to offer you the position of Dean, AgResearch at the University of Tennessee Institute of Agriculture effective May 16, 2019, subject to the terms and conditions outlined in this letter. Your appointment is on a 12-month basis and your full-time services are required during the summer months as well as the academic year.

Your initial base salary as Dean will be \$22,916.67 per month (annualized salary of \$275,000). The position of Dean is without tenure, without a definite term, and at the will of the Chancellor. In accordance with the University's Policies Governing Academic Freedom, Responsibility, and Tenure, the President will seek consideration of you for tenure upon initial appointment as a full professor in a full-time faculty appointment without compensation as long as you are serving in the Dean position. Your tenure will reside in the Department of Biosystems Engineering and Soil Science. Upon conclusion of your appointment as Dean, voluntarily or involuntarily, if you continue employment with the University, your appointment would revert to a full-time, tenured faculty appointment based on a 12-month appointment at an annual salary that is in accordance with the University's then-current Policy on Setting Faculty Salaries Upon Conclusion of Administrative Appointments.

A one-time moving allowance of \$21,500 (less applicable taxes) will be provided to facilitate your relocation, in accordance with University of Tennessee policies and procedures.

While you serve as Dean, the Chancellor will review your performance annually and conduct a five-year comprehensive performance review. I look forward to working with you in this role, and supporting you as you advance AgResearch and serve as a member of the Institute of Agriculture leadership team.

Sincerely,

Tim L. Cross  
Chancellor

Hongwei Xin

Date

*This offer is contingent upon successful completion of a background check. If you have not already done so, you must execute the University's background check Authorization Form. If the University decides that the results of your background check are not satisfactory, this offer may be rescinded or your employment may be terminated. Misrepresentation of academic credentials is a Class A misdemeanor in Tennessee. A person commits the offense of misrepresentation of academic credentials who, knowing that the statement is false and with the intent to secure employment at or admission to an institution of higher education in Tennessee, represents, orally or in writing, that such person has successfully completed the required course work for and has been awarded one or more degrees or diplomas in a particular field or specialty from an accredited institution of higher education.*

**Dr. Hongwei Xin**  
**Confirmation of Curriculum Vita**

Dr. Xin's curriculum vita includes a lengthy list of professional accomplishments. With an appointment that has been focused primarily on research throughout his career, scholarly publications are the typical outcome that is verifiable. A Google scholar profile was reviewed for Dr. Xin, and a random sample of journal articles were verified as published with Dr. Xin listed as an author or co-author. A list of his 20 most frequently cited articles is attached.



**Dr. Hongwei Xin, Assistant  
Dean for Research,  
Director, Distinguished &  
Endowed Professor**

College of Agriculture and Life Sciences,  
Iowa State University  
; Egg Industry Center

Animal environment  
Air Quality  
Animal Behavior  
Animal Housing Systems  
AMR-Consortium

**GET MY OWN PROFILE**

	All	Since 2014
Citations	6428	2970
h-index	41	28
i10-index	174	94

4

TITLE	CITED BY	YEAR
<a href="#">Fan assessment numeration system (FANS) design and calibration specifications</a> RS Gates, KD Casey, H Xin, EF Wheeler, JD Simmons Transactions of the ASAE 47 (5), 1709	197	2004
<a href="#">Ammonia emissions from US laying hen houses in Iowa and Pennsylvania</a> Y Liang, H Xin, EF Wheeler, RS Gates, H Li, JS Zajackowski, PA Topper, ... Transactions of the ASAE 48 (5), 1927-1941	168	2005
<a href="#">Ammonia emissions from twelve US broiler chicken houses</a> EF Wheeler, KD Casey, RS Gates, H Xin, JL Zajackowski, PA Topper, ... Transactions of the ASABE 49 (5), 1495-1512	160	2006
<a href="#">A literature review of swine heat production</a> TM Brown-Brandl, JA Nienaber, H Xin, RS Gates Transactions of the ASAE 47 (1), 259	129	2004
<a href="#">A literature review of swine heat production</a> TM Brown-Brandl, JA Nienaber, H Xin, RS Gates Transactions of the ASAE 47 (1), 259	129	2004
<a href="#">A real-time computer vision assessment and control of thermal comfort for group-housed pigs</a> B Shao, H Xin Computers and electronics in agriculture 62 (1), 15-21	126	2008
<a href="#">Environmental impacts and sustainability of egg production systems</a> H Xin, RS Gates, AR Green, FM Mitloehner, PA Moore, CM Wathes Poultry Science 90 (1), 263-277	122	2011
<a href="#">Effects of dietary fiber and reduced crude protein on nitrogen balance and egg production in laying hens</a> SA Roberts, H Xin, BJ Kerr, JR Russell, K Bregendahl Poultry science 86 (8), 1716-1725	106	2007



TITLE	CITED BY	YEAR
<b>A new telemetry system for measuring core body temperature in livestock and poultry</b> TM Brown-Brandl, T Yanagi, H Xin, RS Gates, RA Bucklin, GS Ross Applied engineering in agriculture 19 (5), 583	101	2003
<b>Physicochemical properties and bactericidal efficiency of neutral and acidic electrolyzed water under different storage conditions</b> X Cui, Y Shang, Z Shi, H Xin, W Cao Journal of Food Engineering 91 (4), 582-586	100	2009
<b>Acute synergistic effects of air temperature, humidity, and velocity on homeostasis of market-size broilers</b> X Tao, H Xin Transactions of the ASAE 46 (2), 491	95	2003
<b>Effects of dietary fiber and reduced crude protein on ammonia emission from laying-hen manure</b> SA Roberts, H Xin, BJ Kerr, JR Russell, K Bregendahl Poultry Science 86 (8), 1625-1632	92	2007
<b>Effects of dietary fiber and reduced crude protein on ammonia emission from laying-hen manure</b> SA Roberts, H Xin, BJ Kerr, JR Russell, K Bregendahl Poultry Science 86 (8), 1625-1632	92	2007
<b>US broiler housing ammonia emissions inventory</b> RS Gates, KD Casey, EF Wheeler, H Xin, AJ Pescatore Atmospheric Environment 42 (14), 3342-3350	87	2008
<b>Field sampling method for quantifying volatile sulfur compounds from animal feeding operations</b> S Trabue, K Scoggin, F Mitloehner, H Li, R Burns, H Xin Atmospheric Environment 42 (14), 3332-3341	84	2008
<b>Method for measuring ammonia emissions from poultry houses</b> RS Gates, H Xin, KD Casey, Y Liang, EF Wheeler Journal of applied poultry research 14 (3), 622-634	77	2005
<b>Evaluation of zeolite for control of odorants emissions from simulated poultry manure storage</b> L Cai, JA Koziel, Y Liang, AT Nguyen, H Xin Journal of environmental quality 36 (1), 184-193	73	2007
<b>Comparison of direct vs. indirect ventilation rate determinations in layer barns using manure belts</b> H Li, H Xin, Y Liang, RS Gates, EF Wheeler, AJ Heber Transactions of the ASAE 48 (1), 367-372	65	2005
<b>Ammonia emissions from US poultry houses: Part I—Measurement</b>	64	2003

TITLE	CITED BY	YEAR
<a href="#">system and techniques</a> H Xin, Y Liang, A Tanaka, RS Gates, EF Wheeler, KD Casey, AJ Heber, ... Air Pollution from Agricultural Operations-III, 106		
<a href="#">Field sampling method for quantifying odorants in humid environments</a> SL Trabue, KD Scoggin, H Li, R Burns, H Xin Environmental science & technology 42 (10), 3745-3750	61	2008

**Dr. Hongwei Xin**  
**Confirmation of Tenure and Employment**



Office of the Chancellor

101 Morgan Hall  
2621 Morgan Circle  
Knoxville, TN 37996-4505  
office: 865-974-7342  
fax: 865-974-8781

4

January 4, 2019

Ms. Brenda Behling  
Director of Academic Policy and Personnel  
Iowa State University  
1550 Bearshear Hall  
Ames, IA 50011

Dear Ms. Behling:

The University of Tennessee Institute of Agriculture has extended an offer of employment to Dr. Hongwei Xin, Assistant Dean in the College of Agriculture and Life Sciences. This letter is to confirm Dr. Xin's employment and tenure status at Iowa State University. Your response to the questions below is requested. Please let me know if you have any questions or concerns.

Sincerely,

Tim L. Cross  
Chancellor

- 1. Dr. Hongwei Xin is currently an employee of Iowa State University.  Yes  No
- 2. Dr. Hongwei Xin has been granted tenure at Iowa State University.  Yes  No

*Brenda Behling* 1/9/19 (Date)  
Brenda Behling  
Director of Academic Policy and Personnel

**Dr. Hongwei Xin  
Position Summary**

Date search was initiated: April 19, 2018

Number of applicants: 20

From the applicant pool, three finalists were invited to on-campus interviews. The search committee provided a recommendation that all three candidates were acceptable, with strengths and weaknesses noted for each. Dr. Hongwei Xin was contacted and invited to make a follow-up visit, and indicated that his spouse was also a faculty member.



Office of the Chancellor

101 Morgan Hall  
2621 Morgan Circle  
Knoxville, TN 37996-4505  
office: 865-974-7342  
fax: 865-974-8781

4

April 19, 2018

TO:           Caula Beyl, Co-Chair (CASNR)  
              Robert Burns, Co-Chair (UT Extension)  
              Nourredine Abdoulmoumine (BESS)  
              Ashlie Cxyz (UT Human Resources)  
              Cody Fust (AgResearch Technical Staff)  
              Debbie Hampstead (Office of Sponsored Programs)  
              Kim Jensen (Ag. & Resource Economics)  
              Bruce LaMattina (UTK Office of Research)  
              Deb Miller (FWF, CVM)  
              Tyson Raper (Plant Sciences)  
              Carrera Romanini (AgResearch Dean's Office)  
              Rhedona Rose (Tennessee Farm Bureau)  
              DeWayne Shoemaker (Entomology and Plant Pathology)  
              Kevin Thompson (Middle TN REC)  
              Johnny Verell (Producer)  
              Brynn Voy (Animal Science)

FROM:       Tim Cross       

Dear Co-workers,

This letter is to request your service on the search committee for the Dean of AgResearch. Dr. Caula Beyl and Dr. Robert Burns have agreed to co-chair this committee.

Ms. Ashlie Cxyz will provide support to the committee through our Human Resources offices. This is an upper level search.

If you have a possible interest in applying for this position, please let me know so that we may find a suitable replacement for the committee.

This position is a critical member of our UTIA administrative team, and all committee members will be asked to actively contact and nominate individuals to ensure that we develop a robust pool of diverse, well-qualified applicants.

Thank you for serving on this important committee. I look forward to working with you to identify the next Dean of AgResearch.

cc:       UTIA Executive Committee  
          Committee member's supervisor

**Dr. Hongwei Xin  
Documentation of Salary  
Iowa State University**

The Des Moines Register maintains a publicly accessible database of Iowa State University salaries. In 2017, (the most recent data available), Dr. Hongwei Xin received \$282,030.74 in salary.





MISUMI Quality Components - Get Fast Shipping & Better Pricing. Empowering Engineers  
MISUMI USA

VISIT SITE



REGISTER INVESTIGATIONS  
DATACENTRAL SPORTS

NEWS CATEGORIES: Education Government Business Public safety General interest Iowa facts and figures

## Database: State of Iowa employee salaries

The Des Moines Register maintains the database of state employees based on electronic files used for the annual printing of the state salary book. The salary information is based on fiscal year periods dating back to fiscal year 2006. The "July Salary" column indicates the employee's base salary; annual salary may include bonuses.

NOTE: Some data is truncated. Also, some employees show up multiple times in instances where they are listed under more than one department. Inaccuracies in the data should be referred to the Iowa Department of Administrative Services, the source of the state salary book.

Source: Iowa Department of Administrative Services. Updated: January 8, 2018.

Community Based Corrections officers and State Fair Board members are not included in this release of public data. A status of "TERMINATED" does not indicate that the employee was fired, only that the person no longer works in that position.

Employee

[more »](#) [clear](#) [search](#)

Page 1 of 20 1 2 3 4 5 6 ... 20 »

EMPLOYEE	DEPARTMENT	POSITION	COUNTY	SEX	JULY SALARY	TRAVEL, ETC	FY SALARY	FY
XIN, HONGWEI	Iowa State University	Asst Dean	STORY	M	\$191,990.00	\$22,990.62	\$282,030.74	2017
WANG, XINWEI	Iowa State University	Prof	STORY	M	\$128,158.00	\$22,316.24	\$163,685.39	2017
CUI, HUXING	University of Iowa	Assistant Professor	JOHNSON	M	\$100,340.00	\$6,133.26	\$96,689.00	2017
LIU WENXIN	Natural Resources, Department of	Environmental Engineer S	POLK	F	3,741.60 BW	\$2,418.42	\$95,605.60	2017





# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

5

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>UTIA/UTK Policies and Procedures Governing Application for Tenure before the Sixth Year of the Probationary Period</u></b>
Type:	Action
Presenter:	David Manderscheid, Provost and Senior Vice Chancellor, UTK

### BACKGROUND

On March 23, 2018, the Board of Trustees approved a revision to the tenure policy requiring a six-year probationary period for all tenure-track faculty at all campuses but allowing a faculty member to request early consideration for tenure after serving at least one year of the probationary period. The policy revision further requires each campus to adopt policies and procedures to govern early application for tenure and the consequences of a candidate's failure to receive tenure upon early application.

In adopting this revision, the Board directed the campuses to submit their policies and procedures for approval no later than the last regular Board meeting of 2018, which was held on November 2. Because of miscommunication and misunderstanding within the Provost's office due to leadership transitions, necessary revisions to the UTIA/UTK Faculty Handbook to include the required early tenure policies and procedures were not submitted to the Faculty Senate for review and were not ready for submission to the Board for approval at the November 2 meeting. The Board approved an extension of time to allow the UTIA/UTK procedures to be submitted for approval at the March 1 meeting of the Board.

### SUMMARY

The UTIA/UTK\* policies and procedures are included in the meeting materials and key points are summarized below:

- A candidate wishing to receive early consideration for tenure must receive the approval of the chief academic officer, based upon the recommendation of the department head and dean, before submitting an early application for tenure.
- A candidate who applies early for tenure and is not granted tenure may reapply for tenure only one additional time.



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

5

The President recommends approval of the proposed UTIA/UTK policies and procedures governing application for tenure before the sixth year of the probationary period.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution in the meeting materials to approve the UTIA/UTK Policies and Procedures Governing Application for Tenure before the Sixth Year of the Probationary Period.**

---

\* The UT Institute of Agriculture and UT Knoxville share a common Faculty Handbook.



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
UTIA/UTK Policies and Procedures Governing Application for Tenure  
before the Sixth Year of the Probationary Period

Resolved: The Board of Trustees approves the UTIA/UTK policies and procedures governing application for tenure before the sixth year of the probationary period as presented in the meeting materials, which shall be attached to this Resolution after adoption.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.

KEY: ~~Strikethrough~~: Existing Faculty Handbook copy to be deleted  
Underlined blue copy: New Faculty Handbook copy for approval

### 3.0 BOARD OF TRUSTEES POLICY

...

This chapter concerns the academic status of tenure-track and tenured faculty. In the ~~normal~~ typical case, a faculty career begins with appointment as a tenure-track assistant professor with a probationary ~~for a~~ period of ~~up to~~ six years. The probationary faculty member will apply for tenure during the sixth year, and if tenure is not granted, the faculty member will be permitted to serve a seventh year as a terminal year. ~~during which the faculty member is evaluated for tenure and promotion to associate professor~~ Faculty may apply for early consideration for tenure, may have their probationary period extended, or may petition for a suspension of one or more years of the probationary period. ~~to extend the tenure review period beyond six years for reasons related to the faculty member's care giving responsibilities as described in the pertinent sections of this chapter of the handbook, below; in 6.4.2, Chapter 6.41 and the Knoxville Faculty and Family Care Policy. Requests for extensions should be made prior to the final year of review.~~ Tenured associate professors may be promoted to full professor after at least five years at the rank of associate. All faculty members are expected to achieve a sufficient level of accomplishment in teaching, research / scholarship / creative activity, and service to merit promotion to full professor. Throughout this career path, all faculty members have annual reviews and appropriate reviews for promotion and tenure.

\* \* \*

#### 3.11.3 Probationary Period

##### 3.11.3.1 Length of the Probationary Period

A tenure-track faculty member must serve a probationary period prior to being considered for tenure. ~~The probationary period at the University of Tennessee, Knoxville, shall be no less than one and no more than seven academic years; however, for good cause, the president, upon the recommendation of the chancellor, may approve a probationary period of less than one academic year. If a faculty member has served in a tenure-track appointment at another institution, his or her total probationary service may extend beyond seven years. (For example, a person who has served five years elsewhere may be given a four-year probationary period at UTK. Except as provided below with respect to extensions for good cause, the probationary period at UTK will not exceed seven years.) The original appointment letter shall state the length of the faculty member's probationary period and the academic year in which he or she must be considered for tenure if he or she has met the minimum eligibility requirements for consideration. The stipulation in the original appointment letter of the length of the probationary period and the year of mandatory tenure consideration does not guarantee retention until that time.~~

Except as otherwise provided in Board policy, the probationary period will be six years. The faculty member will apply for tenure during the sixth year, and if tenure is not granted, the faculty member will be permitted to serve a seventh year as a terminal year. If a faculty member begins employment after July 1 and before January 1, the remaining term of the faculty member's initial

appointment will count as the first year of the probationary period, so that what is treated as the first year of a faculty member's probationary period will not be shorter than six months. The provision of a probationary period and any statement in an appointment letter or otherwise regarding the probationary period and the year of mandatory tenure consideration do not guarantee retention of the faculty member for the full probationary period.

A faculty member may request an early consideration for tenure before the sixth year of his or her probationary period but no sooner than the next regular tenure cycle after completion of the first year of the probationary period. The request for early consideration is initiated in the department that will be the locus of tenure, if tenure is granted, after discussion with the department head. If the department head approves, the head will write a memo to the dean, justifying the request and asking for approval. Upon review of the request, the dean will indicate approval or disapproval in a letter to the chief academic officer. For colleges without departments, the request begins with the dean. The chief academic officer will review the request and make the final determination whether early consideration is warranted, based on a review of the applicant's credentials and all applicable criteria. If the chief academic officer denies the request, the faculty member cannot apply for early consideration. The decision of the chief academic officer is final and not appealable to the chancellor.

A faculty member whose application for early consideration is denied will be permitted to reapply one additional time. If the initial application is submitted before the fifth year of the probationary period, the applicant cannot reapply until one full academic year after the unsuccessful attempt. If the initial application is submitted in the fifth year, the reapplication must be submitted at the beginning of the sixth year of the probationary period. New external letters of assessment are required for a reapplication. If tenure is not granted upon reapplication, the faculty member will be permitted to serve one year after the reapplication is denied as a terminal year.



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>UTIA/UTK Procedures for Enhanced Tenure-Track Review</u></b>
Type:	Action
Presenter:	David Manderscheid, Provost and Senior Vice Chancellor, UTK

6

### BACKGROUND

On March 23, 2018, the Board of Trustees approved a revision of the tenure policy to require an enhanced review of tenure-track faculty members during the third or fourth year of the six-year probationary period. The policy revision includes certain procedural requirements for the enhanced review and also requires each campus to adopt further procedures, including the required contents of the materials to be reviewed.

In adopting this revision, the Board directed the campuses to submit their procedures for approval no later than the last regular Board meeting of 2018, which was held on November 2. Because of miscommunication and misunderstanding within the Provost's office due to leadership transitions, necessary revisions to the UTIA/UTK Faculty Handbook to include the enhanced tenure-track review procedures were not submitted to the Faculty Senate for review and were not ready for submission to the Board for approval at the November 2 meeting. The Board approved an extension of time to allow the UTIA/UTK procedures to be submitted for approval at the March 1 meeting of the Board.

### SUMMARY

UTIA/UTK\* propose procedures to incorporate and supplement the minimum requirements of the Board's policy for an enhanced review during the third or fourth year of the probationary period. UTIA/UTK already had such a process in place as part of its annual retention review process, set forth in the Manual for Faculty Evaluation. The UTIA/UTK proposed procedures migrate those provisions from the Manual for Faculty Evaluation to the Faculty Handbook and revise them to conform to the Board's tenure policy. The UTIA/UTK procedures are included in the meeting materials and key points are summarized below:



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- Enhanced tenure-track review is made a special case of UTIA/UTK's annual retention review process, to take place in the third or fourth year.
- The Manual for Faculty Evaluation procedures for the annual retention review are inserted into the Faculty Handbook.
- The annual retention review procedures for the year of enhanced review are conformed to Board policy requirements.
- The enhanced tenure-track review procedures specify the materials to be reviewed, the process for preparing a report, and the appeal process.

The President recommends approval of the proposed UTIA/UTK procedures for enhanced tenure-track review.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution in the meeting materials to approve the UTIA/UTK procedures for enhanced tenure-track review.**

---

\* The UT Institute of Agriculture and UT Knoxville share a common Faculty Handbook.



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
UTIA/UTK Procedures for Enhanced Tenure-Track Review

Resolved: The Board of Trustees approves the UTIA/UTK procedures for enhanced tenure-track review as presented in the meeting materials, which shall be attached to this Resolution after adoption.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.



KEY: ~~Strikethrough~~: Existing Faculty Handbook copy to be deleted  
Underlined blue copy: New Faculty Handbook copy for approval

#### 3.11.3.4 Annual Retention Review

An annual retention review of tenure-track faculty is conducted by the department head in consultation with the tenured faculty during the fall semester (and at The University of Tennessee, Knoxville and the University of Tennessee Space Institute, coincident with the annual performance and planning review process described in Section 3.8.1). The regular and thorough assessment of tenure-track faculty is an important step in the professional development of those faculty members. The annual retention review process is designed to ensure that a tenure-track faculty member receives clear and timely feedback from the tenured faculty and the department head about his or her contribution to the department, development, and prospects for advancement. Accordingly, the tenured faculty plays an important role in the retention process and is responsible for providing the faculty member with a clear, thoughtful, and professional consideration of both (a) the faculty member's ability to sustain a level of activity that comports with the department's expectations for faculty members at the rank of the faculty member under review and (b) the faculty member's progress toward promotion and tenure in the context of the *Faculty Handbook*, ~~the *Manual for Faculty Evaluation*~~, his or her appointment, and departmental bylaws. ~~More information about annual retention reviews and procedures for annual retention reviews is contained in the *Manual for Faculty Evaluation*.~~

##### a. Departmental Procedures for the Retention Review

(1). Schedule: Each tenure-track faculty member will first be reviewed in the fall of his or her second year of appointment and in each subsequent year of the probationary period leading up to (but not including) the year of tenure consideration. Each tenure-track faculty member will undergo an Enhanced Tenure-Track review (ETTR) in the academic year following the midpoint in his or her probationary period (typically, the faculty member's fourth year of employment), as stipulated in section 3.11.3.5, below. ~~Departmental bylaws shall provide for specific criteria for annual retention reviews of faculty, consistent with the standards and procedures set forth in this Section 3.11.3.4 and the *Manual for Faculty Evaluation* and any criteria established by the department's college.~~

(2). Mentor: Working with the probationary faculty member, the department head assigns a faculty mentor or a mentoring committee for each tenure-track faculty member. The mentor should be a senior member of the same department or another unit, who can serve as a model and as a source of information for the tenure-track faculty member. Department heads should not serve as mentors for faculty within their own departments. The mentor or mentoring committee may participate in the annual retention review in a manner to be determined in collegiate and/or departmental bylaws.

(3). Preparation for Retention Review: Except in the year of the ETTR, the faculty member prepares and submits to the department head (for distribution to the tenured faculty) a written summary of his or her accomplishments in

teaching, research / scholarship / creative activity, and service for the previous academic year in accordance with departmental bylaws. The department head requests this summary in writing from each tenure-track faculty member on behalf of the tenured faculty at least two weeks before it is needed for the review. The Faculty Activity Report submitted to the department head for the APPR may serve as the summary required under this paragraph. Faculty members may be required or permitted to submit other materials in accordance with collegiate and/or departmental bylaws. The department head will make the materials prepared and submitted in accordance with this paragraph 3.11.3.4a(3) available to the tenured faculty in advance of the meeting on retention.

(4). Review by the tenured faculty. The tenured faculty will review the summary submitted by the faculty member and solicit input from the faculty member's mentor or mentoring committee. The tenured faculty then will construct a narrative in accord with 3.11.3.4a(3), above. The review and narrative should specifically address (among other things) the faculty member's establishment and development of teaching methods and tools, program of disciplinary research / scholarship / creative activity, and record of institutional, disciplinary, and professional service, as well as progress toward promotion (where applicable) and tenure. The tenured faculty's review and narrative will rely on and include documented and substantiated information available to the tenured faculty at the time of the review and will not be based on rumor or speculation.

(5). The vote of the tenured faculty. The tenured faculty will take a formal anonymous retention vote and will write a report to the department head that will contain the tally of the anonymous vote; a list of the participating tenured faculty members; suggestions for enhancing the faculty member's progress toward the grant of tenure; and the majority and minority report, if applicable. In the years before any enhanced retention review, this vote will focus primarily (but not exclusively) on the tenure-track faculty member's ability to sustain a level of teaching, research / scholarship / creative activity, and service that comports with the unit's expectations for faculty members at the rank of the faculty member under review. Beginning in the year in which the tenure-track faculty member is subject to ETTR, the tenured faculty's vote will focus primarily (and increasingly, in succeeding years) on the tenure-track faculty member's ability to meet the requirements for tenure in the department, college, campus, and University. The tenured faculty will share the report with the faculty member and the department head.

(6). The department head's review. The department head conducts an independent retention review based upon the faculty member's written summary, the written narrative and vote of the tenured faculty, and a scheduled meeting with the faculty member. In conducting his or her independent retention review, the department head also may have other consultations with the tenured faculty as needed.

(a) If the retention decision is positive, the department head will convey the outcome to the faculty member in writing and in a timely manner. The department head will also advise the faculty member as to the time remaining in the probationary period and as to how the quality of his or her performance is likely to be assessed by the tenured faculty and the

head in the context of tenure consideration. The department head will ensure that the written report includes express guidance to the faculty member on ways to improve performance.

(b) If the retention review results in a recommendation by the department head not to retain the tenure-track faculty member, the department head includes in the report specific reasons for that decision.

(7). Dissemination of the Retention Review Report. The department head will provide to the faculty member a copy of the finalized Retention Review Report, including the department head's retention report and recommendation. The department head will furnish to the tenured faculty a copy of the department head's retention report and recommendation.

(8). Dissenting statements. Any member of the tenured faculty may submit a dissenting statement to the department head. A copy of the dissenting statement will be furnished to the faculty member under review. The dissenting statement will be attached to the Retention Review Report.

(9). Faculty member's review and response to the Retention Review Report. The faculty member reviews the Retention Review Report. The faculty member's signature indicates that she or he has read the entire evaluation, but the signature does not necessarily imply agreement with its findings. The faculty member under review has the right to submit a written response to the vote and narrative of the tenured faculty, to the report and recommendation of the department head, and/or to any dissenting statements. The faculty member will be allowed 14 calendar days from the date of receipt from the head of the finalized Retention Review Report and its complete set of attachments to submit any written response. If no response is received after 14 calendar days of the date of receipt, the faculty member relinquishes the right to respond. For good cause, and upon approval by the chief academic officer, the response time may be extended once for an additional 14 days.

#### b. Dean's Review of the Retention Review Report

(1) The dean's review and recommendation. The dean makes an independent review and recommendation on retention after reviewing the Retention Review Report. The dean will prepare a statement summarizing his or her recommendation when it differs from that of the department head or tenured faculty or stating any other concerns the dean might wish to record, as appropriate.

(2) Transmission of the dean's recommendation and statement. The dean will indicate his or her recommendation for retention or non-retention on the Retention Review Report, attach his or her statement, if any, and forward the Retention Review Report with its complete set of attachments to the chief academic officer. The dean will send a copy of his or her recommendation and statement, if any, to the department head and the faculty member.

(3) Faculty member's and department head's right to respond. The faculty member and / or the department head have the right to submit to the chief

academic officer a written response to the dean's retention recommendation or any accompanying statement. Any response by the faculty member should be copied to the dean and the department head. Similarly, any response by the department head should be copied to the dean and the faculty member. The faculty member and the department head will be allowed 14 calendar days from the date of receipt of the dean's recommendation to submit any written response. If no response is received after 14 calendar days from the date of receipt, the faculty member or department head, as applicable, relinquishes the right to respond.

#### c. Chief Academic Officer's Review of Recommendations for Retention

(1) The chief academic officer's review. The chief academic officer will review the retention recommendation, make the final decision on retention, and indicate his or her decision on retention on the Retention Review Report. The chief academic officer sends a copy of the fully executed Retention Review Report to the faculty member with copies to the dean and department head.

(2) Notification in cases of non-retention. If the chief academic officer decides that the faculty member will not be retained, he or she will give the faculty member written notice of non-renewal in accordance with the notice requirements described in Section 3.11.3.3 above. The faculty member is entitled to a statement in writing of the reasons for the non-renewal decision. This statement, together with any subsequent correspondence concerning the reasons, is a part of the official record.

#### 3.11.3.5 Enhanced Tenure-Track Review (ETTR)

For each tenure-track faculty member, the department and department head will conduct an enhanced review to assess and inform the faculty member of his or her progress toward the grant of tenure during the third or fourth year of the probationary period (with the year to be determined in the department head's sole discretion).

For the ETTR, the faculty member will, with the guidance and counsel of the department head, prepare and submit to the department head (for distribution to the tenured faculty) a file on her or his cumulative performance, reflecting her or his degree of progress in satisfying the requirements for tenure in teaching, research / scholarship / creative activity, and service. The file (which will be prepared by the faculty member as a preliminary draft of the faculty member's file in support of a tenure dossier) will contain: the faculty member's Faculty Activity Reports for each previous APPR, computer-tabulated teaching evaluations, and annual retention reports compiled during the faculty member's probationary period; copies of research / scholarship / creative activity published or otherwise completed during the probationary period; teaching materials; evidence of research / scholarship / creative activity work in progress; a statement prepared by the faculty member describing other research / scholarship / creative activity in progress but not included in the file; a summary of service to the department, college, University, and other relevant constituencies; and any other materials that the department head requests or the faculty member desires to make available to the tenured faculty.

The tenured departmental faculty will confer regarding the faculty member's performance and will then write a report to the department head that will contain a list of the participating tenured faculty members; suggestions for enhancing the faculty member's progress toward the grant of

tenure; the majority and minority report, if applicable; and the summary anonymous vote on whether the faculty member is progressing satisfactorily toward the grant of tenure. The department head will present and discuss the tenured faculty's report, as well as his or her own written assessment, with the faculty member. Copies of the ETTR documents will be given to the faculty member. A favorable ETTR does not commit the tenured departmental faculty, the department, or the college to a subsequent recommendation for the grant of tenure.

#### 3.11.3.6 Right to Appeal

The faculty member may appeal the outcome of the retention review or the ETTR under the general appeals procedures outlined in Chapter 5 of the *Faculty Handbook*. According to Board Policies Governing Academic Freedom, Responsibility, and Tenure, the final decision on an appeal of the outcome of a retention review or ETTR lies with the chancellor and is not appealable to the president.



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>Revisions to the UTHSC Faculty Handbook on Peer Review of Teaching</u></b>
Type:	Action
Presenter:	Lori Gonzalez, Vice Chancellor for Academic, Faculty and Student Affairs, UT Health Science Center

### BACKGROUND

On March 23, 2018, the Board of Trustees revised Appendix A of the Board tenure policy to require that campus procedures for consideration of a candidate for tenure include, among other things, peer review of teaching for a candidate whose duties include teaching. On June 22, 2018, the Board approved revisions to the UTHSC Faculty Handbook to incorporate the requirement of peer review of teaching, and UTHSC now requests approval of additional revisions related to this subject.

### SUMMARY

UTHSC proposes procedures regarding peer review of teaching that will help to standardize the peer review process across the six UTHSC Colleges. The proposed faculty handbook revisions are included in the meeting materials and key points are summarized below:

- Tenure-track faculty members are required to undergo a minimum of two peer reviews of teaching before they are considered for the grant of tenure.
- There will be a requirement for a formal improvement plan for any faculty member whose teaching needs improvement as indicated by a peer review of teaching.
- Each college is encouraged to require peer review of teaching for faculty members other than tenure-track faculty members, including all faculty members undergoing promotion, post-tenure review, or other enhanced reviews.



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- Each college is required to establish procedures by which a department chair may request peer review of a particular faculty member when there is an indication that there is an issue with the faculty member's teaching performance.

The President recommends approval of the proposed UTHSC Faculty Handbook revisions on peer review of teaching.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution in the meeting materials to approve the proposed revisions to the UTHSC Faculty Handbook on peer review of teaching.**



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Revisions to the UTHSC Faculty Handbook on Peer Review of Teaching

Resolved: The Board of Trustees approves the proposed revisions to the UTHSC Faculty Handbook on peer review of teaching as presented in the meeting materials, which shall be attached to this Resolution after adoption.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.





Office of the Chancellor  
62 South Dunlap Street  
Memphis, TN 38163  
T (901) 448-4796  
F (901) 448-7750

Memphis  
Knoxville  
Chattanooga  
Nashville

MEMORANDUM

TO: Linda C. Martin, Vice President for Academic Affairs and Student Success

FR: Steve J. Schwab, Chancellor

A handwritten signature in black ink, appearing to read 'Steve J. Schwab', written over the 'FR:' line.

DATE: February 1, 2019

RE: UTHSC Faculty Handbook Revision for the February/March 2019 Board of Trustees Meeting

Following the adoption of the changes to the Board of Trustee's Policies Governing Academic Freedom, Responsibility, and Tenure (BT0006, Version 7) on March 23, 2018, UTHSC revised our Faculty Handbook to incorporate the requirements for the tenure review process. Specifically with regard to peer review of teaching, we inserted the minimal statement that peer review of teaching is required for all tenure candidates who will be reviewed in the tenure review cycle ending June 2020 and beyond.

Working collaboratively with the Faculty Senate, we have developed additional specifications to the peer review of teaching. These additional provisions include:

1. A statement of the importance of effective teaching; programs to develop, expand, and update faculty teaching skills; and peer review of teaching performance
2. A specific requirement for a minimum of two peer reviews of teaching for tenure track faculty members
3. Required elements of peer review of teaching, including observation of teaching as well as other activities related to the assessment of teaching
4. Directions for submission of the peer review of teaching and, if improvement is indicated, the requirement for development of a formal improvement plan
5. Requirements for the development of college-specific plans to be developed in a collaborative process between faculty members and college administrators, with explicit items to be addressed, and plans sent to the chief academic officer for review and approval
6. The option for college plans to require peer review of teaching of other faculty members, including all faculty members or those undergoing promotion, post-tenure review, or other enhanced reviews
7. Options for faculty members to request peer review of their own teaching at any time, as well as for department chairs to request peer review of teaching when, in their judgement, such a review is warranted
8. The mechanism for a faculty member to appeal the application of peer review of teaching

In a specially called meeting on January 29, 2019, the UTHSC Faculty Senate voted unanimously in favor of this document.

**Enclosed is a copy of the document with track changes to indicate location of the new language. We propose that this be inserted into the UTHSC Faculty Handbook in Section 4.11.2.2: Peer Review of Teaching.**

**I recommend that the proposed document be submitted to the Board of Trustees for their review and approval.**

Within a department the number and nature of required letters should be uniformly applied to every faculty member.

#### 4.11.2.2 Peer Review of Teaching

Effective teaching supports the core mission of education at UTHSC. Appropriate evaluations of teaching effectiveness include, but are not limited to, those identified in Section 6.7.1 and Appendix J in the UTHSC Faculty Handbook. Programs to develop, expand and update faculty teaching skills and peer review of teaching performance are important mechanisms for enhancing the quality of faculty members' teaching, as well as for assessing and evaluating faculty members' performance in preparation for considerations of awarding tenure, promotion, or for other enhanced reviews.

Peer review of teaching is required for all tenure candidates. This requirement applies to tenure candidates who will be reviewed in the tenure review cycle ending June 2020. A minimum of two peer reviews of teaching in the faculty member's primary teaching setting are required for every tenure track faculty member, typically during the second and fourth years of the probationary period (with the setting, representative of the faculty member's teaching responsibilities, to be determined by the department chair in consultation with the faculty member). The peer review required for tenure track faculty members must include observation of teaching, irrespective of the subject being taught, the mode of course delivery (i.e., face-to-face, online, hybrid), and the instructional method (i.e., lecture, lab, seminar, research, clinical, independent study), as well as the other activities related to the assessment of teaching (e.g., teaching materials, syllabi, assessment methods, and learning outcomes). The peer review assessment should be submitted as part of the faculty member's next annual review. Should the initial peer review of teaching indicate the need for improvement, a formal improvement plan must be developed as part of the next annual review.

College plans for achieving the above faculty development and accountability goals must be submitted to the chief academic officer for review and approval. The approved plan shall be included in the college bylaws. The plan should be developed through a collaborative process between faculty members and administrators and should address the materials to be reviewed, the selection, training and role of the peer reviewers, the communication and use of the peer review assessment, minimum requirements for peer review reports, the selection of faculty members for peer review of teaching, and other relevant items. Colleges may elect to require peer review of teaching for faculty members to be considered for promotion, post-tenure review, or other enhanced reviews. The college plan should include information on when peer review of teaching will be an option or required beyond the requirement for tenure track faculty.

In addition to peer review of teaching prescribed in college plans, a faculty member may request that the department chair initiate a peer review of his or her own teaching at any time. The department chair may also request that peer review of teaching be conducted based on a determination that there is an issue with the faculty member's teaching performance; in such a case, the department chair shall provide a written rationale for additional peer review to the faculty member and the dean. The dean will make the final determination.

Any faculty member who feels aggrieved by the peer review of teaching as applied to him or her may appeal through the provisions of Section 7.

#### 4.12 Locus of Tenure

*Source Document: August 2018 UTHSC Faculty Handbook - last edited to insert Peer Review of Teaching Language 1/31/19*





# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>Revisions to the UTHSC Faculty Handbook on Relationships with Students</u></b>
Type:	Action
Presenter:	Lori Gonzalez, Vice Chancellor for Academic, Faculty and Student Affairs, UT Health Science Center

8

### BACKGROUND

1. The current UTHSC Faculty Handbook addresses faculty-student relationships in a general way, but does not contain any detail regarding the propriety of amorous or sexual relationships between faculty members and students.
2. Recognizing the trust and respect essential to the faculty-student relationship and UTHSC's educational mission, and the potential for an amorous or sexual relationship between a faculty member and a student to result in an abuse of power by the faculty member because of the inherently unequal status of the persons involved in the relationship, the UTHSC administration and faculty have worked together to clarify the faculty-student relationship in order to optimize the learning environment for students.
3. The proposed UTHSC Faculty Handbook provisions regarding faculty members' relationships with students are modeled on similar provisions in the UTIA/UTK Faculty Handbook that have been approved by the Board of Trustees.

### SUMMARY

UTHSC proposes to add provisions to the UTHSC Faculty Handbook governing faculty members' amorous or sexual relationships with students. The proposed revisions are included in the meeting materials and key points are summarized below:

- Specific prohibited relationships are identified and described.
- Reporting requirements regarding prohibited relationships are imposed.



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- Disciplinary sanctions and/or administrative actions that can be imposed on a faculty member for engaging in a prohibited relationship are identified.

The President recommends approval of the proposed UTHSC Faculty Handbook revisions on relationships with students.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution in the meeting materials to approve the proposed revisions to the UTHSC Faculty Handbook on relationships with students.**



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Revisions to the UTHSC Faculty Handbook on Relationships with Students

Resolved: The Board of Trustees approves the proposed revisions to the UTHSC Faculty Handbook on relationships with students as presented in the meeting materials, which shall be attached to this Resolution after adoption.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.



Office of the Chancellor  
62 South Dunlap Street  
Memphis, TN 38163  
T (901) 448-4796  
F (901) 448-7750

Memphis  
Knoxville  
Chattanooga  
Nashville

MEMORANDUM

TO: Linda C. Martin, Vice President for Academic Affairs and Student Success

FR: Steve J. Schwab, Chancellor

A handwritten signature in black ink, appearing to be 'MS', written over the 'FR:' line.

DATE: January 17, 2019

RE: UTHSC Faculty Handbook Revision for the February/March 2019 Board of Trustees Meeting

The UTHSC Faculty Handbook addressed faculty-student relationships in a general way, but omitted a more complete discussion of prohibited relationships between a faculty member and a student, requirements for reporting violations of prohibited relationships, and the disciplinary sanctions and/or administrative actions that could be imposed if prohibited relationships occurred. The UTHSC faculty and administration have developed a document to address this omission: *3.8.7 Relationships with Students*.

Our work benefited from that done by the UT Knoxville faculty and administration. As we developed the document for UTHSC, we drew from the narrative on pp. 12-14 of the 2016 UTK Faculty Handbook at <http://provost.utk.edu/wp-content/uploads/sites/10/2016/10/Faculty-Handbook-2016.pdf>.

The UTHSC Faculty Senate voted to approve this document at their January 8, 2019 meeting.

Enclosed is a copy of the document. We propose that this be inserted into the UTHSC Faculty Handbook as Section 3.8.7.

I recommend that the proposed document be submitted to the Board of Trustees for their review and approval.

*For Faculty Handbook*

*Approved by UTHSC Faculty Senate 1/8/2019*

### **3.8.7 Relationships with Students**

#### **3.8.7.1 Definitions**

This policy applies to all faculty as defined in Section 6 of the *Faculty Handbook*, whether employed full-time or part-time, whether paid or unpaid. For the purpose of this policy, "relationship" includes any amorous or sexual conduct, whether occurring one time, occasionally, or regularly. Colleges, departments, offices, or other units may impose more restrictive policies governing relationships with students, which shall take precedence over this policy except to the extent such policies violate any Board of Trustees policy or conflict with law. The term "student" is broadly defined to include undergraduate, graduate and professional students, as well as other trainees.

#### **3.8.7.2 Purpose**

The purpose of this policy is to preserve the trust and respect that are essential to the faculty-student relationship and the instructional mission of the University of Tennessee Health Science Center. Trust and respect are diminished when a person in a position of authority abuses - or appears to abuse - his or her power. Faculty members are in positions of authority and exercise power over students in many ways, whether in giving praise or criticism, evaluating academic or clinical work, evaluating research, making recommendations for further studies or future employment, or in many other subtle expressions of authority over students. An amorous or sexual relationship with a student greatly increases the potential for a faculty member's abuse of power because of the inherently unequal status of the persons involved in the relationship. Even in cases where such a relationship begins with the mutual consent of the participating persons, it can result in exploitation of the student or the creation of a hostile learning or work environment for the student. Other students and employees may also be adversely affected by the amorous or sexual relationship because the faculty member is positioned to favor or advance one student's interest at the expense of others. In all such cases, the trust and respect essential to the university's instructional mission are diminished.

#### **3.8.7.3 Prohibited Relationships**

Amorous or sexual relationships between a faculty member and a student are prohibited when the faculty member has professional authority over, or responsibility for, the student. This professional authority or responsibility encompasses both instructional and non-instructional contexts as defined below:

1. *Relationships in the Instructional Context.* A faculty member shall not have an amorous or sexual relationship (consensual or otherwise) with a student who is simultaneously enrolled in a course being taught by the faculty member or whose academic or work performance is subject to supervision or evaluation by the faculty member. The instructional context includes but is not limited to teaching in the classroom, direct instruction in didactic, experiential and laboratory settings, as well as academic advising, mentoring, tutoring, or participating in student committees.



For Faculty Handbook

Approved by UTHSC Faculty Senate 1/8/2019

2. *Relationships outside the Instructional Context.* Outside the instructional context, a faculty member shall not take any action or make any decision that may reward or penalize a student with whom he or she has, or has had, an amorous or sexual relationship. Faculty members must be especially cautious to avoid taking any action that rewards or penalizes the student, or influences others responsible for taking such action.

A faculty member violates this policy by engaging in an amorous or sexual relationship with a student over whom he or she has authority or professional responsibility, even when both parties have consented (or appear to have consented) to the relationship or conduct. Relationships that do not fall under the prohibition in 3.8.7.3, above, even if they appear to be consensual, are strongly discouraged. Voluntary consent by a student to an amorous or sexual relationship with a faculty member is inherently suspect, given the fundamentally asymmetrical nature of the relationship. Furthermore, conduct that begins as consensual can become non-consensual at any time. Even when both parties initially consent to particular conduct, past consent does not preclude a finding of sexual harassment if the conduct was unwelcome or if later conduct was unwelcome. Moreover, conduct that is *consensual* for purposes of criminal statutes, may be nonetheless *unwelcome* and therefore may constitute a violation of the University's policy prohibiting Sexual Harassment and Other Discriminatory Harassment (HR0280), Equal Employment Opportunity (HR0220) or UTHSC's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation.

#### **3.8.7.4 Reporting Violations of the Policy**

Faculty members who have knowledge of a possible violation of this policy are encouraged to report that concern to the Office of Equity and Diversity (OED) for review or investigation. Certain conduct described in this policy may also trigger a mandatory reporting obligation: (a) if the involved student is a minor; (b) if the conduct appears to violate UTHSC's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation; or (c) if reporting is otherwise required by law or University policy. In the case of uncertainty about the reporting obligation, OED officials may be consulted without providing personally identifiable information (only if they are a confidential resource) in order to clarify the reporting obligation, or to get more information about how OED might handle a possible violation of this policy. Otherwise, all mandatory reporters/responsible employees are required to disclose all details with the Title IX Coordinator or Deputy Title IX Coordinators as required by University policy. If a report is found to have been intentionally false or made maliciously without regard for truth, the reporter may be subject to disciplinary action, in keeping with UTHSC's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation. This does not apply to reports made in Good Faith (as defined by UTHSC's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation).

#### **3.8.7.5 Disciplinary Sanctions**

When a faculty member is found to have violated this policy, an appropriate sanction, up to and including termination, may be imposed pursuant to the disciplinary procedures applicable to

*For Faculty Handbook*

*Approved by UTHSC Faculty Senate 1/8/2019*

faculty (Board policies, this Faculty Handbook, and HR policies). Disciplinary sanctions may be appealed through any applicable appeal procedures (e.g., Faculty Handbook, Section 7 and Section 8.4).

### **3.8.7.6 Administrative Actions**

Before - or in addition to - any disciplinary sanctions, University officials may take administrative actions (in consultation with the Chief Academic Officer) for any of the following or similar reasons: to ensure the safety of any person; to protect the integrity of an academic course or other program; to end or prevent a hostile learning or work environment; to end or prevent retaliatory conduct; or for any other reason required to comply with state or federal law. Administrative actions may include (but are not limited to): temporary administrative leave pending investigation of an alleged violation of this policy; temporary reassignment of courses; temporary reassignment of research projects; or temporary removal from campus. If there is an appeal process for an administrative action, the faculty member may appeal the action, but the administrative action will not be held in abeyance during the appeal.

### **3.8.7.7 Retaliation Prohibited**

Retaliation is prohibited against any person who reports possible violation of this policy or related policies. Retaliation is also prohibited against any person who participates in an OED investigation. Faculty members who have reason to suspect that the prohibition against retaliation has been violated or are the objects of retaliation themselves are directed to contact the OED.



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<u>New Academic Program - M.S. in Data Analytics at UTC</u>
Type:	Action
Presenter:	Steve Angle, Chancellor, UTC

9

The Gary W. Rollins College of Business (RCOB) and the College of Engineering and Computer Science (CECS) at UTC propose to offer a collaborative Master of Science program in Data Analytics. Data Analytics is a broad discipline with many applications; it focuses on the collection, management, quality control, and interpretation of large sets of data. The program will serve working professionals in southeast Tennessee, including those who seek to upgrade their skills, recent graduates of the RCOB and CECS, graduates of other related programs, and graduates of other universities and international students. The proposed program is a high priority for UTC because it seeks to develop highly skilled personnel in the extremely important and growing field of data analytics. Moreover, the program responds to expressed demand by regional employers and potential students. Finally, there is a continuing and expanding community need for a well-trained and highly skilled labor force that possesses the skills to turn big data into the actionable intelligence increasingly required and relied on by businesses, nonprofit organizations, and government agencies.

An abbreviated version of the full proposal submitted to the Tennessee Higher Education Commission is included in the meeting materials. Key parts of the proposal (with reference to proposal pagination) include:

- Feasibility study and needs assessment, pages 5-8
- External consultant's findings, pages 58-71
- External consultant's recommendation and suggestions, pages 72-73
- Funding and financial projections, pages 55-59 and 62-65

The proposed program has the full support of the UTC administration, UT system administration, and THEC.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution presented in the meeting materials to approve the proposed M.S. in Data Analytics at The University of Tennessee at Chattanooga.**



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
New Academic Program – M.S. in Data Analytics at  
The University of Tennessee at Chattanooga

Resolved: The Board of Trustees approves the creation of a new academic program at The University of Tennessee at Chattanooga offering the degree of Master of Science in Data Analytics, effective Fall Semester 2019.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.



# Master of Science in Data Analytics



**Gary W. Rollins College of Business  
&  
College of Engineering and Computer Science**



## MS in Data Analytics

- **What is Data Analytics?**
  - Collect, manage, & interpret massive data sets
  - Extract patterns & guide decisions with algorithms & computation
- **Purpose of Program**
  - Clear demand in Chattanooga & region
  - Essential for technology-driven industries, start-up to established enterprises
- **Uniqueness**
  - Only joint program in TN, led by colleges of Business & Computer Science
  - Launches as face-to-face, grows to include distance learning mode
- **Audience**
  - Local: Industry employees, recent undergraduates, regional population
  - International: Leverage recent UTC gains in international student recruitment



Open jobs asking for analytics skills in 2015

**2.3M**

Forecast of population with analytics skills by 2018

**2.9M**

Notes: US data only.

Source: Burning Glass Technologies analysis of 20.9 million US job postings from 2015. McKinsey Global Institute, Big Data: The next frontier for innovation, competition, and productivity (June 2011).



## Strategic Alignment

- **THEC Master Plan Recommendations**

- Increasing educational attainment, degree production, and economic development
  - ✓ Widens pipeline of Data Analytics professionals for Tennessee businesses
- Aligning postsecondary outputs and outcomes with economic needs
  - ✓ Local employers and market analysis demonstrate demand
- Optimizing online education
  - ✓ Program builds toward 100% distance degree

- **UTC Strategic Plan**

- Goal 1C: Expand graduate programs that align with workforce needs
  - ✓ Program will directly address workforce demand in region
- Goal 1D: Expand virtual course delivery methods
  - ✓ Program builds toward 100% distance degree
- Goal 3D: Align all resources with high priority programs and endeavors
  - ✓ Full support at all levels within UTC
- Goal 4C: Expand partnerships for international students at UTC
  - ✓ Recruitment of international students taught by diverse faculty





## Demand – Statewide and Locally

- 2017 THEC Academic Supply & Occupational Demand: *Those trained in [...] **business analysis** have many employment opportunities statewide. As Tennessee’s economy grows [...], **individuals who earn credentials in these fields will be invaluable resources...***
- BCBST: “We look forward to hiring and working alongside the graduates of this program...”
- Unum: “We believe this [degree program] will be of value to us, the businesses in our region and beyond.”
- TVA: “The Data Analytics program addresses a growing need...”
- No other TN degree combines Business & Computer Science





# Projected Enrollment & Graduates

	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	15	20	24	24	24
Full-time	5	5	6	6	6
Part-time	10	15	18	18	18
Graduates	-	-	14	15	15



## Projected Program Revenues & Costs

	Year 1	Year 2	Year 3	Year 4	Year 5
Costs	\$295,294	\$247,477	\$430,095	\$441,942	\$454,144
Revenue	\$115,335	\$219,771	\$348,723	\$485,214	\$551,695

9

- Higher cost in Year 1 due to one-time \$54,000 expenditure for equipment, library materials, and travel
- Higher costs in Year 3 due to new faculty hires
- Revenue includes only tuition and fees for students, assumes in-state

**The University of Tennessee at Chattanooga**

---

**New Program Proposal for the Initiation of a  
Master of Science in Data Analytics**

---

Submitted by:

The University of Tennessee at Chattanooga

Gary W. Rollins College of Business and  
College of Engineering and Computer Science

A NEW PROGRAM LEADING TO THE DEGREE OF:

Master of Science in Data Analytics

Title of Degree as on Diploma: Master of Science in Data Analytics

52.1301

CIP/THEC Code

MSDA

Formal Degree Abbreviation

Mater of Science in Data Analytics

Degree Designation on Student's Transcript

August 2019

Proposed Starting Date

Academic Program Liaison:

Name Sherry Marlow Ormsby

Position/Title Director of Measurement and Evaluation

Address 615 McCallie Ave, 205 Hooper Hall, Dept 4654, Chattanooga, TN 37403

Phone 423-425-5944

Email sherry-marlow@utc.edu

## TABLE OF CONTENTS

<b>Introduction and Rationale .....</b>	<b>4</b>
Feasibility Study/Need .....	5
Program Alignment to State Master Plan and Institutional Mission.....	8
UTC Strategic Plan.....	9
<b>Curriculum .....</b>	<b>12</b>
Learning Outcome.....	16
Course Requirements .....	16
Program Requirements.....	17
Current Courses and Existing Programs .....	17
New Courses Needed .....	18
Distance Learning .....	20
<b>Academic Standards .....</b>	<b>23</b>
Admission Standards.....	23
Application Procedure.....	25
Retention Standards.....	27
Graduation Standards .....	30
<b>Diversity .....</b>	<b>32</b>
<b>Program Enrollment and Graduates.....</b>	<b>33</b>
<b>Administrative Structure.....</b>	<b>34</b>
<b>Faculty Resources.....</b>	<b>35</b>
Current Faculty.....	35
Anticipated Faculty .....	37
<b>Library and Information Technology Resources.....</b>	<b>38</b>
Overview .....	38
Personnel, Budget, and Facilities .....	38
Library Collections and Access Services 2016-2017.....	39
Research and Instructional Services 2016-2017 .....	41
Library Technology and Spaces .....	42
Recommendation of Additional Resources.....	43
Computing Resources, SimCenter, University of Tennessee Chattanooga (UTC).....	44
Support Resources.....	46

Additional Support Needed..... 47

**Facilities and Equipment..... 49**

Existing Facilities and Equipment..... 49

Additional Facilities and Equipment..... 49

**Marketing and Recruitment..... 50**

Marketing Timeline..... 52

Geographic Landscape ..... 52

**Assessment and Evaluation of the MSDA Program ..... 54**

**Accreditation..... 55**

**Funding ..... 56**

**References ..... 60**

**Appendices ..... 61**

Appendix A: Chancellor Letter of Support ..... 61

Appendix B: THEC Financial Projection Form..... 62

Appendix C: Needs Assessment ..... 66

Appendix D: Community Letters of Support ..... 78

Appendix E: Course Syllabi..... 84

Appendix F: Faculty Vita.....158

Appendix G: Administrative Officials Vita.....227

**The University of Tennessee**  
**New Academic Program Proposal**  
**Unit: Chattanooga**  
**Academic Program: Master of Science in Data Analytics**  
**Date: July 17, 2018**

## INTRODUCTION AND RATIONALE

The Gary W. Rollins College of Business (RCOB) and the College of Engineering and Computer Science (CECS) at UTC are proposing to offer a collaborative Master of Science program in Data Analytics (MSDA). Data Analytics is a broad discipline with many applications; it focuses on the collection, management, quality control, and interpretation of large sets of data. Contemporary Data Analytics employs advanced mathematical, computing, and algorithmic operations to process massive amounts of raw data, extract meaningful patterns, and make recommendations. Enterprises large and small, long-standing and start-up, for-profit, governmental, and non-profit perceive strategic opportunity in the availability of big data. Efforts to monetize data proliferate, and observers forecast significant continuing growth. Thus, Data Analytics is a rapidly growing field that requires well-trained and skilled workers. The proposed program will help address the shortage of professionals in this growing field.

The proposed collaborative MS in Data Analytics program incorporates an innovative approach to providing a pipeline of professionals to fuel a regional economy that more and more relies on innovation for growth. The proposed program will align three existing graduate courses (currently offered for RCOB's certificate program in data analytics) and include four new courses (three developed by College of Engineering and Computer Science faculty and one developed by Rollins College of Business faculty). These seven courses will serve as the core curriculum for the proposed program. Students will have the option of engaging in additional work in either a business or a computer science concentration. The Rollins College of Business will develop an internship experience and a practicum project course for students pursuing the business concentration; students in the computer science concentration will complete a project or thesis. Existing courses in RCOB and CECS will be used as elective courses for both concentrations. The new program is designed to meet employer demands while opening well-paying jobs to its graduates (see needs assessment report in Appendix C).

The MS Data Analytics program is designed to serve working professionals in Southeast Tennessee, including those who are seeking to upgrade their skills, recent graduates of the RCOB and CECS, graduates of other related programs, and graduates of other universities and international students. A 2017 Forbes article predicts a \$203 billion-dollar big data analytics market [1]. Many other similar studies indicate growing demand for data analytics professionals and a lack of available graduates to fill positions. Further, a regional and local demand exists for analysts and "big data" trained professionals. For example, the Chattanooga *GIG City* initiative, powered by high-speed internet service to all residents and businesses, is expected to increase the demand for highly further

trained data science professionals in the local area. In addition, area businesses such as Blue Cross Blue Shield of Tennessee (BCBST), Unum, US Express, Electric Power Board (EPB), and the Tennessee Valley Authority (TVA) have expressed interests in such professionals.

The needs assessment (see the attached study in Appendix C) revealed significant employer demand and community support, along with sufficient and growing student interest in the proposed program. These findings strongly affirm the connection between the program and UTC's vision and mission and its commitment to robust community growth. It finds that UTC's adoption of a collaborative approach involving business and computer science is attractive to employers and students and distinguishes the proposed program from other data analytics graduate degree programs in the region.

The proposed program is high priority for UTC since the program seeks to develop highly skilled personnel in the extremely important and growing area, of data analytics. Further, the program responds to expressed demand by regional employers and potential students. There is continuing, and expanding community need for a well-trained and highly skilled labor force that possesses the skills to turn big data into the actionable intelligence increasingly required and relied on by businesses, nonprofit organizations, and government agencies. This program, built on the successful analytics related programs and initiatives at UTC, includes identifying and hiring qualified and experienced faculty, and engaging with local and regional stakeholders to help define and determine how UTC resources in various units might best be configured to produce graduates that contribute to a thriving, healthy, and inclusive community.

## **Feasibility Study/Need**

The global business community has identified a growing need for professionals with data analytics and big data management skills, as well as an increasing shortage of professionals in the field. [1]. Informal discussions with executives of companies in the Chattanooga area also indicate growing demand for professionals locally. Universities around the country are building and filling programs to meet demand.

According to IBM, the number of jobs for all US data professionals will increase by 364,000 by 2020[2]. According to the same report, data analyst jobs are among the most challenging to fill. Employers are willing to pay premium salaries for professionals with expertise in these areas; successful applicants earn a median starting salary of \$80,265, almost \$9,000 higher than graduates in other similar fields do. According to a recent McKinsey & Company research report [3], 'the biggest barriers companies face in extracting value from data and analytics are organizational; many struggle to incorporate data-driven insights into day-to-day business processes. Another challenge is attracting and retaining the right talent—not only data scientists but business translators who combine data savvy with industry and functional expertise'. The proposed UTC MSDA program is specifically designed to meet this intersection of need.

The University commissioned a needs assessment and market analysis of the proposed data analytics program; findings of this study are highlighted here regarding student interest, local and regional need, and employer interest. The full report is attached in Appendix C.

### Student Interest

Student interest is gauged by a deep review of UTC's plans for recruitment, focus groups, and interviews of potential students and current and recent students in related fields. Program designers project that students will be drawn from three discrete areas: potential students currently in the workforce who see value in the degree, current undergraduates who wish to enroll in the program following graduation, and international students. Interviews and focus groups with students, potential employers, and UTC faculty and staff indicate that there is significant interest from potential students in each of these areas. Additionally:

Larger firms in the Chattanooga area recognize the importance of the degree to their ongoing success and are willing to provide tuition assistance to employees who wish to upgrade their skills and earning potential by pursuing an advanced data analytics degree.

Discussions with data analytics certificate holders and recent graduates suggest that the program will draw many students who pursued the certificate. The new MS in Data Analytics will similarly attract undergraduates in business, engineering, and related fields.

Finally, UTC has invested significantly in recruiting international students to the campus, including into programs in business and engineering. Both university officials and international students suggest that, given sufficient marketing abroad, the new program will attract interested students.

### Local and Regional Need/Demand

The 21<sup>st</sup> Century has brought significant change to the Chattanooga area; a once declining low-wage industrial city has been supplanted by what the Ewing Marion Kauffman Foundation describes as an "entrepreneurial ecosystem." This ecosystem also supports significant activity in insurance and high-tech manufacturing. As one employer declared in an interview for the needs assessment, "there are no unemployed data analysts." Anecdotal evidence of regional demand is buttressed by analyses from the state that speak to the need for those trained in data analysis:

The state reports that... "Those trained in banking and finance, administrative support, and business analysis have many employment opportunities statewide. As Tennessee's economy grows and more industries choose to enter and operate in the state, individuals who earn credentials in these fields will be invaluable resources to both new and existing businesses."

In 2015, in the state, there were 860 openings for Business Analysts (a field that encompasses data analysts), with only 86 completers (a ten percent fill rate). See the Tennessee Higher Education Commission. Academic Supply and Occupational Demand in Tennessee: Workforce Needs and Degree Production, Annual Report<sup>1</sup>.

---

<sup>1</sup> <https://www.tn.gov/thec/research/redirect-research/supply-and-demand-report.html>



The number of jobs available in the Chattanooga region for those with degrees in the area of Data Analytics was around 358. This number is steadily increasing, as the number of jobs increased by approximately 30% from the previous year and there are predicted to be around 460 jobs available by 2028. Along with demand for individuals who hold degrees in this area, the earnings associated with these jobs are also on the rise. From January 2017 to November 2018, there were 613 unique job postings related to Data Analytics within this region. Industries with job postings included health and medical insurance carriers, government, holding companies, and management and consulting services. This information was taken from EMSI (EMSI. Datatun 2018.4).

MTSU has a Master of Science program in Information Systems and offers a concentration in Business Intelligence & Analytics. The program has four required information systems courses such as System Development, Database Management, Applied Business Analytics, and project. Three of the above four courses are traditional information system courses. There is only one required analytics course in the program. The concentration requires three additional courses: Business Intelligence, Data Mining and Big Data & Analytics. The proposed program at UT Chattanooga is a joint program with computer science and is a comprehensive full master program focused on Data Analytics. It has important courses like machine learning, data visualization, advanced data mining that are not included in other programs. In total, it has seven required data analytics related courses.

### Employer Need/Demand

Interviews with employers reveal:

While larger employers fill some jobs with graduates from other programs, there is a need for more data analysts, which they believe will need to be filled by local sources. UTC does not yet have a program that provides them with the employees they require. Every employer interviewed encouraged UTC to develop this program.

Need is not limited to larger manufacturers and insurance companies. Smaller firms, including those in transportation and health, spoke about the transformation of their businesses to “data-dependent enterprises.” Dependence is not just for more data, but also for the ability to understand, manage, explain, and make decisions based on data.

Investors in start-up firms emphasized that the firms’ need for reliable and sophisticated data analysis is critical and continuing. Individuals will be employed by the firms themselves and by accounting and consulting firms.

In addition to for-profit enterprises, respondents point to an increasing need for data analysts in the public sector, including but not limited to public safety, health, and education. Despite its continuing economic transformation, inequality in Chattanooga and Hamilton County is high, and the public sector requires thoughtful and visionary advice about the nature of programmatic interventions and resource allocation.

### Future Sustainable Need

---

Statewide, management of companies and enterprises is projected to grow at 6.2 percent during the period 2014-2024, from 38,000 to 69,000 jobs, closely behind that of a much less rewarding occupation (home health care) which is projected to grow at 6.4 percent in the same period. See TN Department of Labor and Workforce Development, Labor Market Information Section, Tennessee Employment Projections 2014 to 2024<sup>2</sup>

Existing programs offered at public and private Tennessee institutions are listed as part of the Needs Assessment in Appendix C. The Haslam College of Business at UTK offers the only similar program in the state, but with a different emphasis. The program produces a relatively small number of graduates, which falls short of the demand for skilled professionals in this area. The proposed program is unique since it seeks to combine high-end technical skills with business knowledge to achieve the best results for companies in the Chattanooga area, as well as regionally and nationally. Another important aspect of the program is the opportunity to gain applied knowledge through an internship/practicum project/thesis that will be completed under close supervision of faculty members. This close working relationship of students and faculty members is also expected to result in collaborative research, thus supporting the research mission of UTC. Additionally, the program will fill the need of Chattanooga area students and companies that are currently not being addressed.

### **Program Alignment to State Master Plan and Institutional Mission**

The University of Tennessee at Chattanooga drives excellence by actively engaging students, faculty, and staff; embracing diversity and inclusion; inspiring positive change; and enriching and sustaining our community. In fulfilling its mission, UTC is dedicated to five core value statements: Students are the primary reason we exist as an institution; We live integrity, civility, and honesty; We relentlessly pursue excellence; We embrace diversity and inclusion; Creativity, inquiry, and scholarship are our culture.

In support of the Institutional Mission, the UTC strategic plan is guided by a pledge handed down from generation to generation — “We shall achieve.” This simple yet bold statement tells the world what to expect from the UTC campus. Much emphasis is placed, appropriately so, on the achievement element of this phrase. Equally important, however, is the subject “we” – the notion that we can do more by working together than by working separately. In a word, partnerships.

The proposed program addresses the UTC goal of transforming lives by offering students the opportunities to develop highly rewarding careers in high demand areas of data analytics. It will nurture and empower student creativity by applying data analysis and mining techniques to discover interesting trends and develop insights into highly competitive business environments. The program will seek to recruit a diverse student body with a good mix of local and international students. This will help emphasize inclusion as a path to excellence and societal change. The group practicum projects with diverse teams of students will help students understand the real-world working environments, which will contribute to their long-term success.

<sup>2</sup> [https://www.jobs4tn.gov/admin/gsipub/htmlarea/uploads/LMI/Publications/Tennessee\\_7-25\\_2014-2024\\_Overview\\_update\\_for\\_website\\_\(REUPDATE\)2016\\_0727.pdf](https://www.jobs4tn.gov/admin/gsipub/htmlarea/uploads/LMI/Publications/Tennessee_7-25_2014-2024_Overview_update_for_website_(REUPDATE)2016_0727.pdf)

The proposed program grows out of the UTC's strategic plan, aligns with local and regional development strategies, and incorporates best practices. The program is part of an ongoing response to community demand; it provides UTC with an opportunity to fill a gap in the region's educational offerings while continuing to interact with industry, and, in so doing, assume a larger role in the civic infrastructure.

## UTC Strategic Plan

The main strategic goals of UTC are:

- Goal 1 is to transform lives through meaningful learning experiences for students.
- Goal 2 is to inspire, nurture, and empower scholarship, creativity, discovery, innovation, and entrepreneurial initiatives for students.
- Goal 3 is to ensure stewardship of resources through strategic alignment and investments.
- Goal 4 is to embrace diversity and inclusion as a path to excellence and societal change within the university's surrounding community.

The proposed program addresses the first UTC goal of transforming lives by offering opportunities to develop highly rewarding careers in high demand area of data analytics. It will nurture and empower creativity by applying data analysis and mining techniques to discover interesting trends and develop insights into highly competitive business environments (goal #2). The proposed program ensures stewardship of limited resources by repositioning and fine-tuning existing courses in the Rollins College of Business and College of Engineering and Computer Science and leveraging existing relationships with area companies (goal #3). The program will recruit a diverse student body with a good mix of local and international students, which will help emphasize inclusion as a path to excellence and societal change. The group practicum projects with diverse teams of students will help students understand the real-world working environments, which will contribute to their long-term success (goal #4).

Further, the implementation of the MSDA at UTC strongly supports the Tennessee State Master Plan (<https://www.tn.gov/thec/article/statewide-master-plan>). Specifically, as part of the Drive to 55 initiative, graduates from the MSDA will contribute to the target number of postsecondary degrees awarded annually in the state. We have a robust online course delivery infrastructure for future course offerings in the MSDA to afford greater flexibility for students. This degree program will result in programs and community partnerships that may positively impact the economy through local and regional job placements and improved worker productivity.

Partnerships vary from across-college partnerships (this proposed program is a good example of the partnership between RCOB and the CECS) to partnerships with local corporations, the City of Chattanooga, Chattanooga Chamber of Commerce, and the Chattanooga Police Department (CPD). In the data analytics arena, we currently partner with multiple businesses and agencies: TVA engages faculty and student research, provides guest speakers, supports student class projects and hosts interns; BCBST provides guest speakers and supports student class projects and internships; projects

or internships also have been housed at EPB, VW, UNUM, CPD, Vision Hospitality Group, and Learning Blade. Faculty intentionally align course curriculum with community-based participatory research to provide students with opportunities for experiential learning to merge theory and practice. The proposed MSDA curriculum includes this important element in the internship, practicum project or thesis (3-6 credit hours), in which a student or team of students will work under the close guidance of a faculty member on projects using real-world data provided by partner companies or important public data. This experience will allow students to apply the knowledge learned in the program to real-life situations and enhance employment opportunities for graduates of the program. This close working relationship of students and faculty members is expected to result in collaborative research, thus supporting the research mission of UTC.

Moreover, the aligned departmental missions are to provide quality educational programs that produce *academically-prepared and business-world ready men and women* for a competitive global environment and who will contribute to their fields and society through excellence in academics, applied research, and innovation. The proposed program seeks to produce “problem solvers” who are fully prepared to engage in the business environment. It is not directed at developing data scientists, but rather will inculcate sufficient technical facility to leverage business knowledge. In doing so, it will enable graduates to bridge gaps – to look at and select data, and analyze and explain them. These graduates will have sufficient technical understanding and business skills to communicate with computer scientists while supporting management in decision-making. Our approach is to adopt best practices for data analytics programs. Developers of highly regarded data analytics programs observe, “More than accumulating a command of analytic tools, (they) require a fundamental understanding of analytics methods and business principles to accompany their expertise in computing and database systems.”[5] By combining expertise from the Rollins College of Business with that of the College of Engineering and Computer Science, the program adopts the view of observers that “(u)nlocking the value of data requires a diverse, multidisciplinary approach to problem-solving, combining data science and analytical skills with functional and industry expertise, creativity, and leadership.” [6].

The proposed MSDA program focuses on combining high-quality expertise in computer science, with business analytic skills so that massive volumes of data may be visualized and analyzed to reveal emerging business trends. It will also focus on application of advanced data mining techniques to predict events important to the organization. The graduates of this innovative program will bridge gaps between accomplished business executives and the technological expertise that can help organizations derive value from data.

Additionally, the proposed program focuses on bringing together high-quality expertise in computer science, such as machine learning, and modern programming techniques, such as python and R. The program also incorporates business knowledge and practical ways of collecting, managing, and visualizing massive volumes of data that may be analyzed using commercial software packages, such as SAS, to reveal developing business trends and derive value for the organization. It will also focus on application of advanced data mining techniques to predict events important to the organization. The graduates of this innovative program will serve as a bridge between the business executives and technology experts to help organizations derive value from their data.

The expected learning outcomes are that students will:

- Understand the issues related to the management of Big Data and apply Big Data analysis in real-life business problems.
- Learn ways of collecting and analyzing data from different data sources such as databases, flat files, websites, weblogs, blogs, and videos.
- Learn the design and use of analytical databases through SQL queries.
- Demonstrate ability to perform effective data visualization and exploration by using state-of-the-art programming languages and tools, such as Python, R, Tableau, and D3.
- Ability to develop appropriate machine learning models for real-world problems, optimize the models learned and report on the expected accuracy that can be achieved by applying the models.
- Provide the theoretical and practical understanding of the key methods of data preparation, reduction, and exploration that form the heart of analytics techniques for business decision making.
- Develop understanding of advanced data analytics and mining techniques to transform large and complex data into actionable information for the organization.
- Gain practical experience in applying knowledge and skills acquired throughout the program by an internship and/or practicum project. As an alternative gain research experience and skills through the thesis.

## CURRICULUM

The curriculum for the MS Data Analytics program has been developed collaboratively between the Rollins College of Business and College of Engineering and Computer Science, though the program will reside in the Rollins College of Business. The curriculum is adequately structured to meet the stated objectives of the academic program and reflects the appropriate breadth, depth, theory, and practice for the discipline and the level of the degree. The curriculum, described in Table 1, is compatible with AACSB accreditation. Table 2 provides an overview of the curriculum map with course learning outcomes aligned with the course requirements.

Table 1. Proposed Curriculum: MS in Data Analytics

	Courses	Credit hours
Foundation Courses (for students who do not have computing and statistics background).  All required background modules must be completed before more than six hours of MSDA courses are completed.	<p><b>MGT 5835 <i>Quantitative Decision Analysis for Business</i></b>: The course covers quantitative and statistical decision models for business decision making. Topics covered in depth include Decision Analysis, Regression Modeling, Linear Programming, Transportation and network modeling, Forecasting, Inventory Management, Statistical Quality Control, Project Management, and Simulation modeling techniques and concepts, and their applications for managerial decision-making. All topics will be presented using a computer spreadsheet modeling approach. Prerequisite: A grade of C or better in Introductory Statistics (MATH 2100 at UTC) or Business Statistics I (MGT 2110 at UTC) or successful completion of UTC's MBA business statistics module. Differential Course Fee will be assessed.</p> <p><b>CPSC 5000 <i>Fundamentals of Computer Science</i></b>: A foundation course presenting an introduction to computer science concepts and computer software development using a higher-level language. Algorithms, flowcharting, programming, and documentation of numerical and non-numerical problems. Introduction to computer science terminology and concepts such as computer hardware and computer application areas. Programming style using abstract data structures, top-down design, and debugging and testing of large programs. Emphasis on algorithm development. List processing. Recursion. (Stacks, trees, searching, and sorting). Prerequisite: MATH 1910/1911 and 1920/1921, or equivalents. Differential Course Fee will be assessed.</p>	6
Core Required Courses	<p><b>CPSC 5175 <i>Programming Languages for Business Data Analytics (NEW)</i></b>: This course introduces students to the fundamental computing skills via a variety of programming languages for effective data analysis. Through this course, the student will learn several business/statistical programming languages (Python, R). Develop programs to read data, write functions, make informative graphics, and apply modern statistical methods to complex data sets. Prerequisite: CPSC 5000 or department head approval. Differential Course Fee will be assessed.</p> <p><b>MGT 5140 - <i>Databases and Data Warehouses</i></b>: The course covers both operational and analytical databases and provides knowledge integral to being a successful data analyst in today's business environment. The fundamental concepts related to operational databases include conceptual design (entity relationship diagram), logical design (normalization) and physical schema. The analytical data warehouse topics include star schema design for data warehouses and data marts. Extract, transform, and load (ETL) is also covered as a technique that ties operational data and data warehouses. The course discusses several database management systems and uses SQL to create and query databases and data warehouses. Prerequisite: CPSC 5000 or department head approval. Differential Course Fee will be assessed.</p>	21

	<p><b>CPSC 5185 Data Visualization for Business (NEW):</b> This course covers development of effective visualization to facilitate the understanding of complex organizational data. Topics include human perception &amp; attention, visualization software &amp; toolkits, visualization techniques for spatial data, geospatial data, time-oriented data, multivariate data, trees, graphs, networks, maps, and text. Evaluate good design practices for visualization. Review cutting-edge research in data visualization. Prerequisite: CPSC 5175 Programming Languages for Business Data Analytics or department head approval. Differential Course Fee will be assessed.</p> <p><b>MGT 5190: Data Mining and Analytics:</b> This course focuses on hands-on learning of how to use analytical techniques and data mining algorithms to support business decision making. It focuses on the essential exploratory and visualization techniques to maximize insight into a dataset, uncover the underlying structure and determine optimal factor setting. It incorporates extensive use of data, quantitative analysis, statistical and predictive models, and fact-based management to drive decisions and actions. This class uses a real-life data project. Prerequisite: MGT 5835 Quantitative Decision Analysis for Business and CPSC 5000 Fundamentals of Computer Science or department head approval. Differential Course Fee will be assessed.</p> <p><b>CPSC 5195 Machine Learning for Business (NEW):</b> Machine learning uses interdisciplinary techniques such as statistics, linear algebra, optimization, and computer science to create automated systems that can sift through large volumes of data at high speed to make predictions or decisions without human intervention. Machine learning as a field is now incredibly pervasive, with applications in business, government and nonprofit. This class will familiarize students with a broad cross-section of models and algorithms for machine learning and prepare students for commercial application of machine learning techniques using cloud computing platforms such as Amazon Web Service and Google Cloud Platform. Prerequisite: CPSC 5175 Programming Languages for Business Data Analytics and MGT 5835 Quantitative Decision Analysis for Business or department head approval. Differential Course Fee will be assessed.</p> <p><b>MGT 5120 Big Data Management &amp; Analytics (NEW):</b> This course covers the core concepts behind big data problems, applications, and systems. It introduces one of the most common frameworks, Hadoop, that has made big data analysis easier and more accessible. Topics include a discussion of the Big Data landscape, examples of real-world big data problems, architectural components and programming models used for structured and unstructured big data analysis, HDFS file system, MapReduce, YARN, PIG, HIVE, NOSQL, and other Big Data programming techniques or platforms. Prerequisite: MGT 5140 - Databases and Data Warehouses or department head approval. Differential Course Fee will be assessed.</p> <p><b>MGT 5200: Advanced Data Analytics:</b> This course covers advanced topics related to data analytics. It focuses on practical applications of advanced data mining and machine learning algorithms. Operationalization of analytics in organizations. A major part of the course will focus on analysis of textual data from the web, blogs, and social media. Natural language processing and text mining algorithms. The focus of this course is hands-on learning of how to use statistical and algorithm-based techniques to solve business problems. The course uses real-life data project. Prerequisite: MGT 5190: Data Mining and Analytics: or department head approval. Differential Course Fee will be assessed.</p>	
<p>Business Concentration</p>	<p><b><u>Choose 3 or 4 courses from following depending on Internship and project selected</u></b></p> <p><b>MGT 5180 Prescriptive Analytics:</b> This course provides students with a comprehensive overview of the theory and practice of prescriptive analytics, which involves large-scale optimization models and provides operational benefits to organization. Prescriptive</p>	<p>9/12</p>

	<p>analytics can be used to identify the best possible action to take given resource constraints and organizational objectives. The techniques include mathematical programming, simulation, and large-scale optimizations. The course also explores the practical challenges encountered in implementing real-life application models such as planning, scheduling, resource allocation, supply chain management, logistics, and marketing. Students will learn the fundamental ideas behind optimization technology, utilize this knowledge to build solvers and transform a given optimization problem into actionable business intelligence. This course complements descriptive and predictive analytics and connects data-driven approaches with their optimum decision-making counterpart. Pre-requisites: MGT 5810, PMBA 5810, MGT 5140, PMBA 5140, or department head approval. Differential Course Fee will be assessed.</p> <p><b>ACC 5855 Accounting for Managers:</b> The purpose of this course is to provide students with a thorough exposure to the basic elements of financial and managerial accounting from a manager's perspective. Emphasis is placed on the application of accounting information both from an external user's perspective and for internal decision making. Contemporary topics that might affect the use of accounting information are surveyed, including an in-depth discussion of current events in business and financial news. The course draws upon the collective business experiences of the participants during classroom discussions that demonstrate the application of key concepts. Prerequisite: A grade of C or better in Financial Accounting (ACC 2010 at UTC) or successful completion of UTC's MBA accounting module or department head approval. Differential Course Fee will be assessed.</p> <p><b>MGT 5250 - Organizational Behavior and Leadership:</b> An examination of the theoretical and research foundations that explain behavior within the context of organizations. The focus will be on how organizational behavior theory is translated into practice such that students will acquire the knowledge and skills necessary to become an effective manager. Differential Course Fee will be assessed.</p> <p><b>ECON 5015 Economics for Managers:</b> Economics for Managers uses real-world issues and examples to illustrate how economic principles impact business decisions. Emphases on agency and contract theory, managerial behavioral economics, game theory, and pricing are especially valuable to decision making by managers. In this course, cases use actual data to illustrate the use of basic economic models to solve managerial and economic problems. Prerequisite: A grade of C or better in Macroeconomics &amp; Microeconomics (ECON 1010 &amp; ECON 1020 at UTC) or successful completion of UTC's MBA economics module or department head approval. Differential Course Fee will be assessed.</p> <p><b>FIN 5820 Financial Management:</b> The goal of this course is to acquaint students with the primary concepts and techniques of financial analysis. The course will build upon the skills obtained in accounting and economics and use those skills for making decisions regarding a firm's use of capital toward the goal of maximizing the value of the firm. It is assumed that all students are familiar with financial statements and basic statistical and economic principles. The first part of the course will develop the tools used in modern financial analysis, including financial statement analysis and valuation techniques. Latter portions will apply these tools to decision-making for long-term (capital budgeting and cost of capital) financial management for both large and small firms. Prerequisites: 1) Grade of C or better in Macroeconomics &amp; Microeconomics (ECON 1010 &amp; ECON 1020 at UTC) or successful completion of UTC's MBA economics module, 2) Grade of C or better in Financial Accounting (ACC 2010 at UTC) or successful completion of UTC's MBA accounting module, 3) A grade of C or better in Introductory Statistics (MATH 2100 at UTC) or Business Statistics I (MGT 2110 at</p>	
--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--



	<p>UTC) or successful completion of UTC’s MBA business statistics module or department head approval. Differential Course Fee will be assessed.</p> <p><b><i>MKT 5860 Marketing Management:</i></b> The goal of this course is to provide a decision-oriented overview of marketing management. This course focuses on the management challenge of designing and implementing marketing strategies that maximize customer satisfaction and firm profitability. A grade of C or better in Macroeconomics &amp; Microeconomics (ECON 1010 &amp; ECON 1020 at UTC) or successful completion of UTC’s MBA economics module or department head approval. Differential Course Fee will be assessed.</p>	
<p>Computer Science Concentration</p>	<p><b><u>Choose three courses if the thesis option is to be selected. Otherwise, take four courses.</u></b></p> <p><b><i>CPSC 5020 - Computing Systems:</i></b> A foundation course presenting the material covered in Digital Logic and Introduction to Computer Hardware (3700) and Introduction to Operating Systems (2800) at an accelerated rate. Prerequisite: CPSC 5000 or equivalent. Differential Course Fee will be assessed.</p> <p><b><i>CPSC 5010 - Structuring Programs and Data:</i></b> A foundation course presenting the material covered in Data Structures (3200) and Software Design and Development (2100) at an accelerated rate. Prerequisites: CPSC 5000 and MATH 3030 or equivalents. Differential Course Fee will be assessed.</p> <p><b><i>CPSC 5130 - Cloud Computing:</i></b> Cover advanced web technologies, distributed computing models, and technologies, Infrastructure-as-a-service (IaaS), Software as a Service (SaaS), Platform-as-a-service (PaaS), virtualization, parallelization, security/privacy, and current challenges. Standard letter grade. Differential Course Fee will be assessed.</p> <p><b><i>CPSC 5160 - Structured Data Exchange:</i></b> Survey of XML and the applications of XML. Coverage includes the XML document structure, Document Type Definitions, Extensible Stylesheet Language, how DTDs and XML schemas can be used to frame data and connect XML documents and the information they access, and data connection objects. The languages and implementation tools may vary to meet current development trends. CPSC 4140 or 5140 and CPSC 5150 or permission of instructor. Differential Course Fee will be assessed.</p> <p><b><i>CPSC 5610 - Advanced Information Security Management:</i></b> The study of management in information security, including planning, policy, and protection. Areas covered include advanced topics in planning for security, information security policy, developing security programs, access control, cryptography, risk management, information security administration, and incident handling and response. Both commercial practices and federal government policies for classified information will be explored. Differential Course Fee will be assessed.</p>	<p>9/12</p>
<p>Thesis/Practicum Project/Internship</p>	<p><b><i>MGT 5920r (3 Credit) Internship (NEW)</i></b> (Can be repeated up to two times): A supervised work experience designed to strengthen the student’s technical competencies in the areas of accounting, finance, management, marketing or entrepreneurship as well as gain experience in the application of concepts in these areas in the real world. The internship should represent significant work and will be jointly supervised by a faculty member from UTC and a company representative. Prerequisites: department head and program director approval. Differential Course Fee will be assessed.</p> <p><b><i>MGT 5940r (3 credit) Practicum Project (NEW)</i></b> (Can be repeated up to two times): The student can work on a significant practicum project provided by a company to gain</p>	<p>3/6</p>

	<p>real-life experience. The project will be closely supervised by a UTC faculty member and should represent significant work of value to the organization. A group of two to three students may be involved in a large project. Prerequisites: department head and program director approval. Differential Course Fee will be assessed.</p> <p><b>CPSC 5900 (3 credit) Project:</b> A detailed study and formal report of a computer science topic normally performed during the last term of work toward the degree. Prerequisite: approval of the Computer Science Graduate Coordinator. Differential Course Fee will be assessed.</p> <p><b>CPSC9999r Thesis (6 credits)</b> The development of a project of thesis magnitude and quality. Department and library copies of thesis required. Oral defense required. Must register for the course until the thesis is completed. Prerequisite: approval of major adviser and Computer Science Graduate Coordinator. Differential Course Fee will be assessed.</p>	
Total Credits		36

Table 2. Curriculum Map: Map of Learning Outcomes to Course Requirements

Learning Outcome	Course Requirements
Understand the issues related to the management of Big Data and apply Big Data analysis in real-life business problems.	MGT 5120: Big Data Management & Analytics; MGT 5200: Advanced Data Analytics.
Learn ways of collecting and analyzing data from different data sources such as databases, flat files, websites, weblogs, blogs, and videos.	MGT 5200: Advanced Data Analytics; CPSC 5175: Programming Languages for Business Data Analytics.
Learn the design and use of analytical databases through SQL queries.	MGT 5140: Databases and Data Warehouses.
Demonstrate ability to perform effective data visualization and exploration by using state-of-the-art programming languages and tools, such as Python, R, Tableau, and D3.	CPSC 5175: Programming Languages for Business Data Analytics; CPSC 5185: Data Visualization for Business.
Be able to develop appropriate machine learning models for real-world problems, optimize the models learned, and report on the expected accuracy that can be achieved by applying the models.	CPSC 5195: Machine Learning for Business
Provide the theoretical and practical understanding of the key methods of data preparation, reduction, and exploration that form the heart of analytics techniques for business decision making.	MGT 5190: Data Mining and Analytics
Develop understanding of advanced data analytics and mining techniques to transform large and complex data into actionable information for the organization.	MGT 5200: Advanced Data Analytics
Gain practical experience in applying knowledge and skills acquired throughout the program by an internship and/or practicum project. As an alternative gain research experience and skills through the thesis.	MGT 5920r (3 Credit) Internship; MGT 5940r (3 Credit) Practicum Project; CPSC 5900 (3 Credit) Project; CPSC5999r Thesis (6 credits)

Gain understanding of ethical implications of collecting and securing data in databases, developing visualization of data, mining the data for information, and ethical implications of developing machine learning algorithms that make important decisions.	MGT 5140, CPSC 5185, MGT 5190, CPSC 5195, MGT 5120, MGT 5200
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------

## Program Requirements

The minimum number of SCH overall is 36, and the required curriculum, including course prefixes and numbers, titles, and SCH are outlined in Table 1 above and include special requirements, such as theses and internships.

## Current Courses and Existing Programs

Following is a list of current courses and existing institutional programs, which will give strength to the proposed program.

Below, is a list of current courses that provide strength to the proposed program:

- MGT 5835: Quantitative Decision Analysis for Business
- CPSC 5000: Fundamentals of Computer Science
- MGT 5140: Databases and Data Warehouses
- MGT 5190: Data Mining and Analytics
- MGT 5200: Advanced Data Analytics
- MGT 5180: Prescriptive Analytics
- ACC 5855: Accounting for Managers
- MGT 5250: Organizational Behavior and Leadership
- ECON 5015: Economics for Managers
- FIN 5820: Financial Management
- MKT 5860: Marketing Management
- CPSC 5020: Computing Systems
- CPSC 5010: Structuring Programs and Data
- CPSC 5130: Cloud Computing:
- CPSC 5160: Structured Data Exchange
- CPSC 5610: Advanced Information Security Management
- CPSC 5900 Project
- CPSC5999r Thesis

It is worth noting here that UTC is developing legal templates and documentation to protect the university and partners in IP, data privacy, and other legal areas related to the program. These templates should be in completed by summer 2019.

There is also an institutional program that will give strength to the proposed program:

*Business Analytics Graduate Certificate Program*

Offered by Rollins College of Business, co-sponsored by SAS and began in fall 2013 certificate program is designed to meet the demand of businesses for data-savvy professionals, now and in the future. This program helps marketers, business analysts, accountants, financial analysts, executives, small business owners, and other non-IT professionals effectively analyze business data through the hands-on use of modeling and other techniques using popular software tools such as spreadsheets and SAS. Tables 3 and 4 demonstrate course enrollment and completion data for last six semesters, respectively.

Table 3. Business Analytic Certificate Enrollments

BUSINESS ANALYTIC CERTIFICATE ENROLLMENTS						
	FA15	SP16	FA16	SP17	FA17	SP18
Total Enrollment	27	22	28	20	19	22

Table 4. Business Analytic Certificate Graduates

BUSINESS ANALYTIC CERTIFICATE GRADUATION STATS					
	FA13-SU14	FA14-SU15	FA15-SU16	FA16-SU17	FA17-SU18*
Total Graduates	6	18	15	10	7

\*Includes SP & SU 18 Grad Candidates

## New Courses Needed

➤ ***CPSC 5175 Programming Languages for Business Data Analytics: (3 Credit)***

*Catalog Description:*

This course introduces students to the fundamental computing skills via a variety of programming languages for effective data analysis. Through this course, the student will learn several business/statistical programming languages (Python, R). Develop programs to read data, write functions, make informative graphics, and apply modern statistical methods to complex data sets. Prerequisite: CPSC 5000 or department head approval.

➤ ***CPSC 5185 Data Visualization for Business: (3 Credit)***

*Catalog Description:*

This course covers development of effective visualization to facilitate the understanding of complex organizational data. Topics include human perception & attention, visualization software & toolkits, visualization techniques for spatial data, geospatial data, time-oriented data, multivariate data, trees, graphs, networks, maps, and text. Evaluate good design practices for visualization. Review cutting-edge research in data visualization. Prerequisite: CPSC 5175 Programming Languages for Business Data Analytics.

➤ ***CPSC 5195 Machine Learning for Business: (3 Credits)***

*Catalog Description:*

Machine learning uses interdisciplinary techniques such as statistics, linear algebra, optimization, and computer science to create automated systems that can sift through large volumes of data at high speed to make predictions or decisions without human intervention. Machine learning as a field is now incredibly pervasive, with applications in business, government and nonprofit. This class will familiarize students with a broad cross-section of models and algorithms for machine learning, and prepare students for commercial application of machine learning techniques using cloud computing platforms such as Amazon Web Service and Google Cloud Platform. Prerequisite: CPSC 5175 Programming Languages for Business Data Analytics.

➤ ***MGT 5120 Big Data Management & Analytics: (3 Credits)***

*Catalog Description:*

This course covers the core concepts behind big data problems, applications, and systems. It introduces one of the most common frameworks, Hadoop, that has made big data analysis easier and more accessible. Topics include a discussion of the Big Data landscape, examples of the real world big data problems, architectural components and programming models used for structured and unstructured big data analysis, HDFS file system, MapReduce, YARN, PIG, HIVE, NOSQL, and other Big Data programming techniques or platforms. Prerequisite: MGT 5140 - Databases and Data Warehouses.

➤ ***MGT 5940r Practicum Project (Can be repeated up to two times): (3 credit)***

*Catalog Description:*

The student can work on a significant practicum project provided by a company to gain real-life experience. The project will be closely supervised by a UTC faculty member and should represent significant work of value to the organization. A group of two to three students may be involved in a large project. Prerequisite: Approval by Program Director.

➤ ***MGT 5920r (3 Credit) Internship (Can be repeated up to two times):***

*Catalog Description:*

A supervised work experience designed to strengthen the student's technical competencies in the areas of accounting, finance, management, marketing, or entrepreneurship as well as gain experience in the application of concepts in these areas in the real world. The internship should represent significant work and will be jointly supervised by a faculty member from

UTC and a company representative. Prerequisites: department head approval. Differential Course Fee will be assessed. Prerequisite: Approval by Program Director.

## Distance Learning

Initially, the program will be offered in a face-to-face mode and scheduled in the afternoons and evenings to accommodate students who are employed. We hope to offer distance-learning options within three years of the program beginning. Initially, select courses will be offered as both face-to-face and distance learning options. Depending on the market demand and faculty resources available, within a five-year period, the goal is to offer a version of the full program in distance learning mode.

We anticipate transitioning part of the program to an online format as soon as possible. The core courses (MGT 5140, MFT 5190, and MGT 5200) will move to online first as an online version of these courses is already offered. Next, we will transition the core courses in computer science to an online offering.

There are no budgetary indications needed to move this program to an online degree program. UTC's Walker Center for Teaching and Learning has resources for this process. In the unexpected event that funding becomes necessary for the process, RCOB has sufficient faculty development funds. RCOB is also currently searching for an in-house instructional designer who could assist with this process. The search for the person is progressing well and an appointment is expected to be made soon. This position is for the entire RCOB and could certainly be utilized for the MS Data Analytics program.

### Course Syllabi

Course syllabi are included in Appendix E.

Table 5. Sample Course of Study (Full-time Student)

<i>Semester</i>	<i>Course #</i>	<i>Course Name</i>	<i>Credit Hours</i>
Summer	<i>MGT 5835</i>	<i>Quantitative Decision Analysis for Business</i>	3
	<i>CPSC 5000</i>	<i>Fundamentals of Computer Science</i>	3
Fall	<i>CPSC 5175</i>	<i>Programming Languages for Business Data Analytics:</i>	3
	<i>MGT 5140</i>	<i>Databases and Data Warehouses:</i>	3
	<i>MGT 5190:</i>	<i>Data Mining and Analytics:</i>	3
		Elective Course 1	3
Spring	<i>CPSC 5185</i>	<i>Data Visualization for Business:</i>	3
	<i>CPSC 5195</i>	<i>Machine Learning for Business:</i>	3
	<i>MGT 5120</i>	<i>Big Data Management &amp; Analytics:</i>	3
	<i>MGT 5200:</i>	<i>Advanced Data Analytics:</i>	3

Summer	<i>MGT5920r or MGT 5940r or CPSC 5900 Or CPSC5999r</i>	<i>Internship or Practicum project or Project or Thesis</i>	3 to 6 credits
Fall		<i>Elective course 2</i>	3
		<i>Elective course 3</i>	3
		<i>Elective course 4 or continue work on project/Thesis</i>	3
		<b>TOTAL</b>	36

Table 6. Sample Course of Study (Part-time Student; some may progress more quickly or slowly)

<i>Semester</i>	<i>Course #</i>	<i>Course Name</i>	<i>Credit Hours</i>
Summer	<i>MGT 5835</i>	<i>Quantitative Decision Analysis for Business</i>	3
	<i>CPSC 5000</i>	<i>Fundamentals of Computer Science</i>	3
Fall	<i>CPSC 5175</i>	<i>Programming Languages for Business Data Analytics:</i>	3
	<i>MGT 5140</i>	<i>Databases and Data Warehouses:</i>	3
Spring	<i>CPSC 5185</i>	<i>Data Visualization for Business:</i>	3
	<i>MGT 5120</i>	<i>Big Data Management &amp; Analytics:</i>	3
Summer	<i>MGT5920r or MGT 5940r or CPSC 5900 Or CPSC5999r</i>	<i>Internship or Practicum Project or Project or Thesis</i>	3 to 6 credits
Fall	<i>MGT 5190:</i>	<i>Data Mining and Analytics:</i>	3
		<i>Elective Course 1</i>	3
Spring	<i>CPSC 5195</i>	<i>Machine Learning for Business:</i>	3
	<i>MGT 5200:</i>	<i>Advanced Data Analytics:</i>	3
Fall		<i>Elective course 2</i>	3
		<i>Elective course 3</i>	3
Spring		<i>Elective course 4 or continue work on project/Thesis</i>	3

		<b>TOTAL</b>	36
--	--	--------------	----

As shown in Tables 5 and 6, the internship/practicum or project/thesis (all are options that can be used as a capstone) will start from summer of the first year. This will ensure that students have good background to complete the project. The program will ensure student engagement by assigning a dedicated faculty advisor who will regularly meet with students.

There is a specific process that students will use to select each practicum, project, or thesis. Students will first decide whether they want to complete a thesis, internship, or practicum project.

- For a thesis, students will select a faculty advisor whose interest matches with theirs. The faculty advisor will be responsible for ensuring the quality of work. The program director will be in the loop to ensure uniform quality.
- For an internship, will be generated by the Decosimo Student Success Center. The company offering internship will interview students, and student and company will select the best match. Program director will assign a faculty advisor based on the area of internship.

For a practicum, the business partners will propose projects. The program director will match appropriate team of students with the project and will assign a faculty advisor. The program director will ensure that expectations are equitable across all three options based on a number of credits selected.



## ACADEMIC STANDARDS

### Admission Standards

Consideration for admission to the MS Data Analytics program is based on the following:

#### Bachelor's Degree

Students must have earned a bachelor's degree from a regionally accredited college or university (any major is acceptable) or foreign equivalent and be in good academic standing at the last institution attended.

*GPA:* To be considered for regular admission, applicants must meet one of the following requirements from a regionally accredited institution or foreign equivalent. All GPAs are based on a 4-point scale and are cumulative including all undergraduate courses completed; the last two years of undergraduate coursework are equivalent to approximately 60-70 semester hours or 90-100 quarter hours.

2.70 minimum GPA for all undergraduate work taken for the baccalaureate degree or

3.00 GPA for the last two years of undergraduate academic coursework or

3.00 GPA for 30 or more semester hours undergraduate credit **after** earning the first bachelor's degree or

2.70 GPA for the last two years of undergraduate coursework **and** a 3.00 GPA on fewer than 24 hours graduate coursework or

3.00 GPA for **24 or more** graduate hours or

An earned master's degree or higher-level degree with at least a 3.00 GPA.

*Official Graduate Exam:* Applicants must complete either the GMAT or GRE unless a waiver is granted. GMAT or GRE scores more than five years old cannot be considered. The graduate examination score will be considered as an important input into the overall profile of the students.

*GMAT/GRE Waiver Request:* GMAT/GRE waiver requests will be considered for applicants who meet one of the waiver criteria listed below. Applicants will make the waiver request via the program application by selecting the waiver option they believe they meet. Meeting the below criteria does not guarantee a GMAT/GRE waiver. To be considered, applicants must have earned:

Previous graduate degree or higher with a 3.0 cumulative GPA or higher; OR,

3.25 cumulative undergraduate GPA plus five years of professional work experience; OR,

UTC undergraduate Business or computer science major with a minimum of 3.20 GPA in upper-level courses of their major. 3000- and 4000-level courses are considered upper level.

UTC's MBA program allows for business majors from other AACSB-accredited institutions to apply for this waiver, and that allowance will apply to the MSDA program as well.

Note: Admissions criteria described above are minimum requirements for consideration and do not guarantee acceptance into the program. The admission decision will be made by the admissions office based on the available capacity and overall profile of the applicant.

### International Students

The University wishes to encourage qualified graduate applicants from other countries. Accordingly, The University of Tennessee at Chattanooga will accept as equivalent in level, structure, scope, and intent the new European degrees, adopted under the Bologna Process.

The University will also consider three-year bachelor's degrees earned in Division I and II institutions in India and accredited by the National Assessment and Accreditation Council (NAAC) as comparable to four-year U.S. bachelor's degrees. UTC will consider other three-year degrees on a case-by-case basis.

Students whose native language is not English are required to provide official scores on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). An official TOEFL score of 550 or above is required. (A score of 213 or above on the computer-based test, or a score of 79 or above on the Internet-based test, is considered equivalent to a score of 550 or above on the paper-based test). IELTS scores must be 6.0 or higher. Applicants may ask The Graduate School for an exemption from the TOEFL or IELTS requirement if they: 1) have received a degree from a regionally accredited institution in the United States (or a similarly accredited institution in a country/region where the predominant spoken language is English) within the last two years, or 2) have worked full time in the United States or a predominantly English-speaking country/ region for at least two of the preceding four years. Applicants who wish to apply for such an exemption should check with The Graduate School office for appropriate instructions and/or forms.

Evidence of financial resources sufficient to provide adequate support (as determined by the University) during the applicant's period of residence as a student.

International students may be required to take an English proficiency examination after arriving at the University and must complete all English courses recommended as a result of his/her score on this test or the TOEFL/IELTS.

Applicant must submit:

Clear copy of current passport showing photo and expiration date.

Official copies of all US college/university transcripts. Foreign transcripts must be evaluated by one of the following methods:

World Education Services ICAP course-by-course evaluation [www.wes.org](http://www.wes.org) WES will submit official copies of transcripts to UTC.

Josef Silny & Associates [www.jsilney.com](http://www.jsilney.com) plus official copies of transcripts in the native language and English.

Educational Credential Evaluators [www.ece.org](http://www.ece.org) plus official copies of transcripts in native language and English.

All international students are required to have health insurance.

All materials must be received by The Graduate School office approximately three months prior to the semester in which the applicant hopes to enroll, i.e., May 15 for fall semester admission, October 15 for spring semester admission and February 15 for summer semester admission. An accepted applicant will receive a certificate of acceptance and an I-20 form, which must be shown to the consular officer of the United States to whom the student applies for a student visa. By fee payment, each international student must purchase health insurance through UTC.

### UTC Undergraduate Students Eligible for Graduate Credit

Students who are within 30 semester hours of completing requirements for the bachelor's degree in Business or computer science at The University of Tennessee at Chattanooga may apply for admission to the program and take graduate courses if they have an overall grade point average of 3.00 or higher and are recommended by the head of his or her major department. Subject to the approval of the Dean of the Graduate School, students may earn up to nine *semester hours* of graduate credit prior to completing the bachelor's degree. These graduate hours do not count toward completion of an undergraduate degree. Approval must be obtained each semester by completing the special application form, which is available from The Graduate School web site. The approved application must be submitted to the Registration Office at the time of registration.

## **Application Procedure**

The Graduate School accepts applications at any time; however, to ensure adequate time for consideration, the completed online application, Graduate Management Admissions (GMAT) test score or alternatively a Graduate Record Exam (GRE) test score, and any other supporting credentials should be received by the Graduate School no later than two months prior to the beginning of the term for which admission is desired. To complete your application, you must submit the following:

- A. Application: complete *both* parts of the online application: 1) UTC Graduate School application, 2) MS Data Analytics program application.
- B. Official Transcripts: Submit official transcripts from each college or university attended (even those from whom transfer credits were earned) to UTC's Graduate School. To expedite the receipt of official transcripts, UTC recommends the use of an electronic transcript submission service such as Parchment or National Student Clearinghouse. If mailing official transcripts, they must be mailed directly from the institution to:

The Graduate School  
University of Tennessee at Chattanooga  
Department 5305

615 McCallie Avenue  
Chattanooga, TN 37403

- C. Application Fee: Pay a \$35 one-time, non-refundable application fee (\$40 for international student applications). This fee is paid when completing the online application.
- D. GMAT or GRE: Take the Graduate Management Admissions Test (GMAT) or Graduate Record Examination (GRE) and report the scores to UTC. Your scores will be reported electronically to UTC if you select UTC as a recipient. UTC's Institution number is 1831.
- E. Statement of purpose/intent: Maximum of a two-page statement of purpose for doing the MS DA program and goals of the applicant should be submitted with the application.
- F. Resume/curriculum vitae
- G. International Students: International student applicants (not U.S. born or naturalized citizens) have additional application requirements detailed in the International Student Application Guide on the UTC International Student Services Office web site.

Since there will be a mix of part-time and full-time students, we will admit students on a rolling basis. We expect that most students will begin the program in the fall semester. For fall admission, we will encourage them to apply early and will make the first set of decisions by April 1. If there is space in the program, additional students will be admitted by early summer.

### Transfer Credit

Six semester hours of courses completed at other universities for graduate credit may be considered to satisfy MS Data Analytics degree program requirements at UTC. Only courses with a grade of B or better and that are taken in the last five years at accredited universities can be considered for transfer credit. A transferred course generally must form a logical part of the MS DA program to be approved.

Those who request transfer credit must be prepared to provide the university catalog in effect at the time at which the courses were completed as well as any other supporting information to the Director of Program and the Dean of the Graduate School. For additional requirements, see "Transfer Credit" under "**Academic Policies for Graduate Students**" in the UTC Graduate Catalog.

### Program of Study

Students must submit a Program of Study during the first semester of graduate coursework. The Program of Study consists of all core courses and any electives and establishes the courses the student must take for partial fulfillment of the degree requirements. The Program of Study form must include all core courses and electives, if known at the time, the student will take.

## Retention Standards

A student admitted to graduate study must maintain a 3.0 grade point average on all courses taken for graduate credit. Additionally, MSDA program students must not earn three or more grades of C or below in graduate level courses. In the event the student fails to meet this standard, one of the following actions will be taken.

### Probation

A student will be placed on academic probation whenever the grade point average falls below a 3.0 on courses completed for graduate credit. (See discussion under Dismissal.) By the end of the next two terms of enrollment (counting the entire summer session as one term), students must raise their institutional cumulative GPA to 3.0 or higher. Students will be academically dismissed if they fail to achieve this institutional cumulative GPA within the two-semester probation OR if they fail to achieve a 3.0 or higher for either probationary semester.

### Academic Dismissal

Students admitted to graduate study must maintain a 3.0 institutional cumulative grade point average (GPA) in all courses taken for graduate credit. A student will be dismissed if he or she earns a semester GPA below 3.0 while on academic probation for low institutional cumulative GPA. In addition, MS DA program students who earn three or more grades of C or below in graduate level courses will be dismissed from the program. The program director and dean of The Graduate School will make decisions regarding continuation. A graduate student may also be dismissed for a grade of NC, D, or F in any course. Any, or a combination of these, constitutes sufficient basis for dismissal of a student at the discretion of the degree program and the Graduate School.

Dismissed students may appeal to the program director and Dean of the Graduate School for readmission. Upon readmission, students may resume graduate study on probation with the same continuation standards.

We can provide appointments with students via phone or Zoom sessions if they do not reside in the Chattanooga area.

### Program Dismissal for Reasons other than Individual Course Grades

#### *Failure to Make Timely Progress*

A student may also be dismissed should the program director find that the student has failed to complete degree requirements in a timely manner, received an excessive number of I, NC, or NP course evaluations. The time limit for completing the program is six years.

The Graduate School has adopted a Statement of Professional Fitness regarding a student's ethical and professional skills/behavior responsibilities. If after an informal preliminary investigation, it is determined that a student's conduct violates the professional fitness code of The Graduate School or the MS DA program, any of the following actions may be recommended by program director:

- A formal reprimand

- Additional coursework
- Personal counseling
- Additional supervision
- Formal probation
- Dismissal from the program

When a student is dismissed from a graduate program for reasons other than grades, the student is also dismissed from the Graduate School. If the dismissal is upheld at the completion of the appeal process, current and future enrollments will be canceled. Students who have been dismissed from the Graduate School may re-apply for admission.

#### *Ethical Violations*

A student may also be dismissed should the program faculty find that the student's behavior directly violates the ethical code of conduct governing members of the professional organization for the program's discipline, or whose personal conduct leads the faculty to conclude that the student is unfit to assume a role as a professional in the discipline. A majority vote of the program faculty will serve as basis for dismissal if the student violates the guidelines for ethical conduct.

A student may also be dismissed for cause if found to have violated UTC's code of conduct. Refer to the Student Handbook for a review of these expectations.

All students conducting research with human participants or animal subjects must comply with the policies and procedures of the University's Institutional Review Board or the Animal Review Board. Violation of these regulations shall be considered a violation of ethical behavior.

#### *Failure to Achieve Professional Skills/Behavior/Fitness*

A student, regardless of academic performance, may be dismissed should he or she fail to demonstrate mastery of essential professional behaviors, which include those skills essential for work in the profession. These skills shall be defined by each graduate degree program. A majority vote of the program faculty will serve as the basis for dismissal if the student fails to demonstrate proficiency of professional achievement.

#### *Program Dismissal Procedure*

A recommendation for dismissal can be made by a majority vote of the graduate faculty of the program. If a student earns a semester GPA below 3.0 while on academic probation for low institutional cumulative GPA, fails to achieve professional skills/behavior/fitness, or violates the ethical code of conduct governing members of the professional organization for the program's discipline. Such recommendation shall be made in writing to the Program Director.

Before communicating with the student, the Program Director will consult with the academic Dean of the Rollins College of Business, College of Engineering and Computer Science, and the Dean of The Graduate School. Other university administrators may be consulted, as necessary. Upon the

concurrence of the academic deans and the dean of The Graduate School (and others if consulted) with the decision to dismiss, the head or director shall provide written notification of dismissal to the student. Notification must occur within five working days of the consultation with the academic dean and the dean of the Graduate School. Such notice shall inform the student of the right to appeal and specific procedures to be followed.

The student may continue to attend classes during the appeal process or register for subsequent semesters unless the student's presence poses a continuing threat to persons or property, an ongoing risk of disrupting the academic process, or health/safety concerns, which will be determined on a case-by-case basis. The program director and instructors will outline specifically what the student must do to be allowed to continue to attend classes, internships. Any such determination shall be included as part of the Program Director's written notification to the student. If the student does not comply with the requirements outlined in this written notification, the student may be immediately removed and may not attend classes while his/her appeal is in process.

### *Student Appeal Procedure*

Following written notification of dismissal from the program, the student has the right to appeal. Students who wish to appeal their dismissal should contact the UTC Graduate School office for the necessary forms and to review the procedures of the appeal. A written appeal, including a documented rationale for the basis of the appeal, must be submitted to the Program Director within five working days. In all cases, the program faculty shall be presumed to have taken appropriate action, and the student appealing shall have the burden of proof to the contrary.

- Step 1. Within five working days of receipt of the student's written appeal, the program director will meet with the student and review the student's written appeal with him/her in person. If the student declines such a meeting, the director will proceed to Step 2.
- Step 2. Within five working days of the meeting described in Step 1, the department program director (in consultation with the deans of the Rollins College of Business and College of Engineering and Computer Science) will notify and confirm in writing to the student the results of this appeal. The director will also notify the dean of The Graduate School regarding the results of this appeal. Copies of this notification will be sent to the program faculty.
- Step 3. If the student is not satisfied with the decision of the Program Director, he or she may appeal this decision to the Graduate Council Appeals Committee (the Chair of the Graduate Council and three members of the Council). Such appeal must be made within five working days of notification of the director's decision.
- Step 4. Within five working days of receiving the student's written appeal, the Graduate Council Appeals Committee will meet to hear the student's appeal. The Chair of the Graduate Council shall preside over this hearing as a non-voting chair. The student may bring such materials and/or witnesses as necessary to support his or her position. The Program Director and/or a representative(s) of the program faculty may also attend this hearing to explain the reason(s) for the dismissal and answer questions. After hearing, the dean of The Graduate School will notify and confirm in writing to the student the results of this appeal. The graduate

dean will also notify the college deans and the director, who will, in turn, notify the program faculty.

- Step 5. If the student remains unsatisfied with this decision, he or she may appeal in writing to the Chancellor of the University. Such a request must be made within five working days of notification from the dean of The Graduate School. The dean of The Graduate School shall forward all pertinent information to the Chancellor with a recommendation. The Chancellor's decision shall be made within ten working days and shall be considered final.

### Faculty Appeal

The faculty member of record for the appeal may appeal an overturn of his/her recommendation to the next higher administrative official in the chain of command or to the Chancellor if the appeal was overturned at the Chancellor level.

Note: A student who is dismissed from his or her program of study for reasons other than grades, and whose appeal for readmission to that program is denied through the above process but who is in good academic standing, may apply for admission to another graduate program(s) at the University. Admission to such other graduate program is not guaranteed and is subject to that program's specific procedures and requirements.

### **Graduation Standards**

In order to be eligible for degree conferral, the candidate must have completed all coursework as specified on the approved Application for Admission to Candidacy form, with no course with a grade below C presented for the degree and with a minimum average of B on each of the following: a) all coursework taken for graduate credit at UTC; b) all coursework transferred to UTC for graduate credit and; c) all coursework completed to fulfill the program approved on the Application for Admission to Candidacy.

### Admission to Candidacy

Admission to the MS DA degree program allows the student to demonstrate ability but does not guarantee the right to continue toward a degree unless he or she is admitted to candidacy. Each degree-seeking graduate student must complete by the Graduate School's stated deadlines the semester before his/her anticipated graduation: 1) an online graduation application in MyMocsNet & 2) a graduation audit form.

Candidacy: formal recognition of graduate students who have completed the majority of their coursework, comprehensive examinations (if applicable), and/or are within one semester of completing their academic program. Each student's Program of Study and Graduation Audit are reviewed by Graduate School staff to determine whether the student meets all University graduation requirements.

To be eligible for admission to candidacy, the student must have a cumulative 3.0 GPA or better on all courses taken for graduate credit up to that point and a 3.0 institutional cumulative GPA in all graduate coursework to be eligible for degree conferral. The student should have completed



prerequisite and designated courses as required by the MS DA program and no grade below a C. Professional and ethical fitness may also be a factor in granting candidacy.

### Program of Study

Each degree-seeking graduate student must complete and file a Program of Study (form GS #101) by the end of the first semester of enrollment in graduate coursework except where otherwise noted for specific graduate degree programs. All information requested must be provided before the Program of Study<sup>3</sup> will be accepted and approved by the Graduate School. (Program of Study requirement approved by Graduate Council spring 2011)

The courses listed on the Program of Study must be thoughtfully considered, as they dictate the academic courses necessary for partial fulfillment of the degree requirements. Students in conjunction with their advisors must pay special attention to include those courses required by the degree program.

### Graduation Application & Graduation Audit Form

Students complete the graduation application online through MyMocsNet. A Graduation Audit form may be obtained on-line<sup>4</sup>. Students should refer to the “Admission to Candidacy” section under “Academic Policies for Graduate Students” in the UTC Graduate Catalog for additional information regarding admission to candidacy. The Graduation Audit form must be approved by the Director of MS DA Program and the Dean of the Graduate School.

On the graduation audit form, any changes in the core courses listed in the student’s Program of Study and all electives completed and those that the student plans to complete to fulfill requirements for the degree must be listed. The graduation audit form, signed by the student, reviewed and signed by the major adviser and approved by the coordinator of the graduate program, must be submitted to The Graduate School office and approved by the dean of The Graduate School by the Graduate School’s stated deadlines at least one semester prior to the date on which the degree is anticipated. It is the approved Program of Study and Graduation Audit forms as well as the online graduation application that will constitute the student’s graduation requirements. A student who fails to do the following by the Graduate School’s stated deadlines will not be guaranteed consideration for graduation: 1) apply to graduate through MyMocsNet & 2) submit a graduation audit form.

### Graduation

In order to be eligible for degree conferral, the candidate must have completed all coursework as specified on the approved Program of Study and Graduation Audit forms, with no course with a grade below C presented for the degree and with a minimum average of B on each of the following: a) all coursework taken for graduate credit at UTC; b) all coursework transferred to UTC for graduate credit and; c) all coursework completed to fulfill the program approved on the Program of Study & Graduation Audit forms.

<sup>3</sup> <https://www.utc.edu/graduate-school/pdfs/prgofstudy101ver23-21-11fwa.pdf>.

<sup>4</sup> [www.utc.edu/GraduateSchool/CurrentStudentForms](http://www.utc.edu/GraduateSchool/CurrentStudentForms)

## DIVERSITY

UTC is currently one of the more racially/ethnically diverse campuses within the University of Tennessee system, with 23.5% of the student population being racially/ethnically diverse<sup>5</sup>. One of the unique characteristics of the Chattanooga region is its diverse population and significant growth potential, which cut across socio-economic status and racial/ethnic diversity. Hence, one conscientious goal of the MSDA program is to actively seek a diverse student body. This same goal exists for the complement of faculty—that they too reflect the diversity of the communities we propose to serve. The faculty composition within the Rollins College of Business and College of Engineering and Computer Science is quite diverse and currently representative of persons from an African-American heritage, Asian heritage, women, and older individuals (>65 years).

The proposed MSDA program will be initially offered in format of face-to-face but will soon be expanded to mixed and online format to accommodate a variety of students with special needs and/or schedules (e.g., gainfully employed students and those with physical disabilities). Additionally, all the courses in the program will be offered in evening to accommodate part-time students. To further enhance diversity efforts as well as secure additional resources to sustain the program and extend its reach, program leadership will pursue extramural funding opportunities. Of particular relevance are funding opportunities through the businesses, foundations, and workforce development grants from organizations like National Science Foundation. Special attention will be paid to the recruitment and training of individuals, including non-traditional students and veterans, from educationally or economically disadvantaged backgrounds. The program will also focus on recruiting qualified international students.

---

<sup>5</sup> <http://www.utc.edu/planning-evaluation-institutional-research/pdfs/factbook/cds-2015-2016-04192016.pdf>

## PROGRAM ENROLLMENT AND GRADUATES

The MS Data Analytics program is designed to serve working professionals in Southeast Tennessee, including those who are seeking to upgrade their skills, recent graduates of the RCOB and CECS, graduates of other related programs, and international students. A 2017 Forbes article predicts a \$203 billion-dollar big data analytics market [1]. Many other similar studies indicate growing demand for data analytics professionals and a lack of available graduates to fill positions. Further, a regional and local demand exists for analysts and “big data” trained professionals. For example, the Chattanooga *GIG City* initiative, powered by high-speed internet service to all residents and businesses, is expected to further increase the demand for highly trained data science professionals in the local area. In addition, area businesses such as Blue Cross Blue Shield of Tennessee (BCBST), Unum, US Express, Electric Power Board (EPB), and the Tennessee Valley Authority (TVA) have expressed interests in such professionals.

Based on the available resources, the program is expected to enroll about 15 high quality local, regional, and international students in the first year. The program is expected to start with a relatively small cohort and attract additional students as word spreads about program success in terms of placement and better paying jobs. Most courses will be offered in the evening to facilitate enrollment of working professionals. The five-year projections of full time and part time students are provided below. These projections are based on our best estimate and needs assessment study completed by Kronley and Associate (See Appendix C).

Table 7. Student Enrollments (Used for THEC Financial Projections)

<b>MS in Data Analytics Student Enrollment and Revenue Projections</b>					
	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	15	20	24	24	24
Part Time	10	15	18	18	18
Full Time with GA Positions	4	4	4	4	4
Full Time without GA Positions	1	1	2	2	2
Graduates	--	--	14	15	15

## ADMINISTRATIVE STRUCTURE

For administration purposes, the program will be housed in The Rollins College of Business. A faculty program director from the Rollins College of Business will be appointed who will be responsible for overall administration of the program to include the following: recruiting students, working with faculty to ensure that all the courses in the program are coordinated, providing guidance, assisting in student placement activities, and helping build connections with area businesses. In addition, a steering committee consisting of faculty from Rollins College of Business and College of Engineering and Computer Science will be constituted to periodically review the program to determine if any changes are required, help handle exceptional situations and other matters related to the program.

The organizational structure from the Provost down to the program level includes the Provost, Dean, Department Head, and Program Director. CVs for administrative officials are provided in Appendix G.

A business advisory committee consisting of relevant business leaders from the area and regional organizations will be constituted to provide advice on the direction of the program, help build business connections and help with projects, internships, and placement of students. The committee will consist of members from community partner companies such as Chief Information Officers, Chief Digital Officers, Vice Presidents, or Directors of Analytics. The business advisory committee will meet at least two times a year and will serve as an important resource for the program.

## FACULTY RESOURCES

### Current Faculty

A number of tenured, tenure track and faculty of practice in the Rollins College of Business and the College of Engineering and Computer Science will be involved in teaching core and elective courses in the program and supervise internships, practicum projects, projects, and theses (Table 8). These faculty have expertise in data analytics, computer science, business, and other related areas.

Table 8. Current Faculty

<i>Faculty Name (Last, First)</i>	<i>College</i>	<i>Academic Qualifications</i>	<i>Years of Teach. Exper.</i>	<i>Ability to Teach MS DA Courses</i>	<i>Status at UTC</i>
Jain, Hemant	RCOB	Ph.D. Lehigh University. M. Tech. Indian Institute of Technology. BS Indore University, India	36	MGT 5140: Databases and Data Warehouses MGT 5190: Data Mining and Analytics MGT 5200: Advanced Data Analytics MGT 5120: Big Data Management & Analytics. MGT 5940r Practicum Project MGT 5920r (3 Credit) Internship	Tenured
Asllani, Beni	RCOB	Ph.D. University of Nebraska Lincoln, MIS MA University of Nebraska Lincoln, International Management BS University of Tirana-Albania, Industrial Economics	16	MGT 5140: Databases and Data Warehouses MGT 5120: Big Data Management & Analytics. MGT 5940r Practicum Project MGT 5920r (3 Credit) Internship	Tenured
Aghakhani, Navid	RCOB	Ph.D. University of Colorado Denver, Information Systems MS University Malaya, Information Systems BS Shahid beheshti University, Computer Engineering	4	MGT 5190: Data Mining and Analytics MGT 5200: Advanced Data Analytics MGT 5120: Big Data Management & Analytics. MGT 5940r Practicum Project MGT 5920r (3 Credit) Internship	Tenure- track
McNamara, Kelly	RCOB	Ph.D. University of Georgia Business Administration (Management Information Systems) University of Georgia MA Applied Mathematical Sciences: Management Science & Information Technology State University of New York at Plattsburgh BA Mathematics and Physics	18	MGT 5140: Databases and Data Warehouses MGT 5120: Big Data Management & Analytics. MGT 5940r Practicum Project MGT 5920r (3 Credit) Internship	Asso. Prof of Practice

Dileepan, Parthasarati	RCOB	Ph.D. University of Houston, Management Science BS University of Madras, Mechanical Engineering	33	MGT 5835: Quantitative Decision Analysis for Business MGT 5180: Prescriptive Analytics MGT 5940r Practicum Project MGT 5920r (3 Credit) Internship	Tenured
Ahmadi, Mo	RCOB	Ph.D. North Texas State University, Management MBA Nicholls State University, Management and Quantitative Methods BS Mississippi State University, Mechanical Engineering	39	MGT 5835: Quantitative Decision Analysis for Business MGT 5180: Prescriptive Analytics	Tenured
Owens, Michael	RCOB	MBA Loyola College of Maryland BS University of Tennessee, Chattanooga	10	ACC 5855: Accounting for Managers	
Allen, Rich	RCOB	Ph.D. University of Pittsburgh, Management BS The Pennsylvania State University, Business Logistics	20	MGT 5250: Organizational Behavior and Leadership	Tenured
Alam, Md	RCOB	Ph.D. Southern Illinois University Carbondale MS The Australian National University BS University of Chittagong, Bangladesh	13	ECON 5015: Economics for Managers	Tenure-track
Long, Michael	RCOB	Ph.D. The University of Kentucky MS The University of Kentucky BS The University of North Carolina at Charlotte	35	FIN 5820: Financial Management	Tenured
Ozturk, Ayse	RCOB	Ph.D. in Marketing Georgia State University MS in Managerial Sciences Georgia State University MS in Marketing Georgia State University BS Business Administration Galatasaray University	4	MKT 5860: Marketing Management	Tenure-track
Sartipi, Mina	CECS	Ph.D., Georgia Institute of Technology, MS Georgia Institute of Technology, BS. Sharif Univ. of Technology	12	CPSC 5000: Fundamentals of Computer Science CPSC 5010: Structuring Programs and Data CPSC 5900: Project	Tenured
Wu, Dalei	CECS	Ph.D. University of Nebraska-Lincoln ME Shandong University, China BS Shandong University, China	4	CPSC 5185 Data Visualization for Business CPSC 5160: Structured Data Exchange CPSC 5900: Project	Tenure-track

Liang, Yu	CECS	Ph.D., Computer Science, Chinese Academy of Sciences; Ph.D., Applied Math, University of Ulster MS Beijing Polytechnic University	5	CPSC 5195 Machine Learning for Business: CPSC 5130: Cloud Computing CPSC5999r: Thesis CPSC5999r: Thesis	Tenured
Kizza, Joseph M.	CECS	Ph.D. University of Nebraska-Lincoln, NE. ME. California State University, Sacramento, CA. MA. University of Toledo, OH	28	CPSC 5175 Programming Languages for Business Data Analytics: CPSC 5020: Computing Systems CPSC 5610: Advanced Information Security Management CPSC 5900: Project CPSC5999r: Thesis	Tenured
Yang, Li	CECS	Ph.D. Florida International University MS. Florida International University	13	CPSC 5610: Advanced Information Security Management CPSC5999r: Thesis CPSC5999r: Thesis	Tenured
New Faculty – First Year	CECS			CPSC 5000: Fundamentals of Computer Science CPSC 5010: Structuring Programs and Data CPSC 5900: Project	
New Faculty -3 <sup>rd</sup> year	RCOB			MGT 5140: Databases and Data Warehouses MGT 5190: Data Mining and Analytics MGT 5200: Advanced Data Analytics MGT 5120: Big Data Management & Analytics. MGT 5940r Practicum Project MGT 5920r (3 Credit) Internship	

### Anticipated Faculty

The following faculty positions will be added during the next five years for the initiation of the program, as indicated by year of anticipated need.

- One additional computer science faculty in first year of program implementation
- One additional business faculty member on third year of program

## LIBRARY AND INFORMATION TECHNOLOGY RESOURCES

### Overview

The following is a review of library resources and services for the proposed Master of Science in Data Analytics at the University of Tennessee at Chattanooga. Because of the cross-disciplinary nature of data analytics, this review focuses on resources and services available to both the Rollins College of Business and the College of Engineering and Computer Science during the 2016-2017 academic year.

The mission of the UTC Library<sup>6</sup> is to support the teaching and research of faculty and students of the University of Tennessee at Chattanooga through the development of collections and services to promote and enhance the university's curriculum and research endeavors.

### Personnel, Budget, and Facilities

The Library has 21 faculty librarians, 14 staff specialists, and over 700 hours of student help to support the UTC community. The Library's current personnel are sufficient to support the new program in Data Analytics.

The total library budget for 2017 was approximately \$4.1 million. UTC opened a new library facility in January 2015. This new 184,725 square foot facility is open 125 hours per week during the academic semester and combines traditional library services like reference, research assistance, and circulation with cutting edge amenities like the Studio featuring recording space, high-spec computing hardware and software, 3D modeling and printing, and video/audio equipment circulation. Furthermore, the library now houses important student and faculty service points including, The Center for Advisement, The Writing and Communication Center, and Walker Center for Teaching and Learning. The new library also boasts 37 group study rooms, practice presentation rooms, 8 conference rooms, and a computer lounge with access to 142 Windows and 36 Macintosh computers. Finally, the library houses unique and historical book and manuscript collections, University Archives, and the permanent University art collection within a climate controlled state-of-the-art Special Collections facility. The New UTC Library page provides more detailed information on features of the library and services offered.

The Studio in Library has the following software installed, which should be sufficient for proposed program students. We can request additional software to be loaded if required.

- SAS
- Tableau Desktop
- Tableau Prep
- MySQL workbench
- SPSS
- STATA

---

<sup>6</sup> Information about the UTC Library is available at <http://www.utc.edu/library>



Students in the program will be required to have a laptop/PC of their own. The partnership with SAS provides access to free SAS software to students. Tableau has a free student access. We are also member of the Teradata University Alliance program, which provides free access to Teradata software and SAS visual analytics program. All big data software such as Hadoop, and other important software such as R and Python are open source that will provide free access. Thus, students will not need to pay for any software used in the program.

Software Program/Tool/Device	Source or Provider	Student Cost
Laptop required for individual use	Students can buy from any where	Varies
SAS	SAS Inc.	\$0
Tableau Desktop	Tableau Software	\$0
Tableau Prep	Tableau Software	\$0
MySQL Workbench	Oracle Corporation	\$0
SPSS	IBM	\$0
STATA	STATA Software	\$125 (for 6 month)

## Library Collections and Access Services 2016-2017

### Databases, Serials, and Ongoing Expenditures

As of July 1, 2017, the Library makes available 63,375 serial titles, including open access titles, through subscriptions to full-text resources, databases, journal packages, and individual journals. Of those, 17,878 are direct subscriptions in print and digital forms. The Library has identified 4,248 print and electronic journals that support data analytics. The Rollins College of Business and the College of Engineering and Computer Science are currently responsible for \$412,358 of the total \$1,316,861 spent toward ongoing serial and database subscriptions.

The majority of journal content is current and online via journal packages from publishers including IEEE, Association for Computing Machinery (ACM), Springer/Nature, Wiley, Taylor and Francis, Elsevier, Sage, and Oxford University Press. These packages provide access to online journal content across the many disciplines that relate to the study of data analytics. Titles available online with full text coverage include<sup>7</sup>, but are not limited to:

- *Advances in Data Analysis and Classification*
- *Big Data Quarterly, Journal of Big Data*
- *Big Data Research*
- *Business Intelligence Journal*
- *Computational Statistics and Data Analysis*
- *Data Mining and Knowledge Discovery*
- *Econometrica*
- *IEEE Transactions on Knowledge and Data Engineering*
- *Harvard Business Review*
- *IEEE Systems Journal*
- *IEEE Transactions on Big Data*
- *International Journal of Data Science and Analytics*
- *Intl Journal of Data Science and Analytics.*
- *International Journal of Data Warehousing and Mining*

<sup>7</sup> A comprehensive list of journals is available upon request.

- *Journal of Business and Economic Statistics*
- *Journal of Business Research*
- *Journal of Computational and Graphical Statistics*
- *Journal of Database Management*
- *Journal of Statistical Software*
- *Journal of the Royal Statistical Society, and Machine Learning*
- *MIS Quarterly,*
- *Operations Research*
- *Sig KDD Explorations*
- *Supply Chain Management Journal*
- *The Economist*
- *VLDB Journal, Artificial Intelligence*

A review of current UTC Library database subscriptions finds the following that support a degree in data analytics: ABI Inform Complete, Business Source Premier, IBISWorld, LexisNexis Academic, CCH OmniTax Library, MRI Mediamark Reporter, Business Market Research Collection, Value Line Research Center, Statista, Business Insight Essentials, Association for Computing Machinery Digital Library, Safari Tech Books Online, IEEE/IET Electronic Library, Web of Science, and SciTech Premium Collection. In addition, the Library makes available numerous multidisciplinary databases such as ProQuest Central, JSTOR, Academic OneFile, and Omnifile Complete to complement subject-specific resources.

### *Monographs, Audio-Visuals, and One-Time Expenditures*

As of July 1, 2017, the Library's print and electronic book collection consists of 594,619 unique titles. Of these, 42,490 fall within the subject classifications related to business, computer science, statistics, and mathematics, which are applicable to the study of data analytics. The Library's collection of physical and online streaming A/V consists of 110,853 unique titles, of which 758 are appropriate to the study of data analytics. Each year, a portion of the Library's materials budget is allocated to purchase books, audio-visual materials, and other one-time resources. The 2016-2017 Library allocation for one-time expenditures for the Rollins College of Business and the College of Engineering and Computer Science was a combined \$19,500.00 from a total amount of \$148,000.00 spent across all academic departments.

### *Interlibrary Loan and Course Reserve*

The Library offers interlibrary loan (ILL) and Document Delivery services at no cost to students and faculty who need to acquire materials that are not owned or accessible by the Library. Patrons can submit and track progress of requests, receive email notification of materials that have arrived, and obtain articles electronically through the electronic ILL management system, ILLiad. The Library also participates in a nationwide program, Rapid ILL, which expedites article delivery to the patron. In 2016-2017, 6,049 ILL borrowing requests were filled for the UTC community; of those, 755 were filled for faculty and students in the Rollins College of Business and College of Engineering and Computer Science.

The Library offers a well-utilized Course Reserve service for faculty and students allowing faculty to place high-demand materials on reserve to ensure they are available to students. Furthermore, a scanning service is available to faculty. The Library also provides a scanning service for faculty--ensuring high quality and accessible scans of materials related to research and courses.

### *Circulation of Physical Materials*

The Library has generous circulation policies and allows semester-long borrowing of monographs for students and yearlong borrowing for faculty members. In 2016-2017, monographs and audio-visual materials circulated 21,148 times. In addition, the Library circulates laptop computers, other tech equipment (cameras, calculators, digital recorders, external hard drives, and more), and group study rooms to patrons. Last year, these items circulated 84,086 times.

## **Research and Instructional Services 2016-2017**

### *Library Instructional Services*

The Library boasts a busy, well-respected, and growing instruction program that combines traditional information literacy and research skills instruction sessions with skills-based workshops on topics ranging from preparing powerful presentations to improving skills with Microsoft Office, Adobe, and statistical software. Course-specific instruction sessions are tailored specifically to a course and include information literacy and research skills tied to assignment objectives. Workshops; however, are often open to any UTC student, faculty, or staff member and are developed and taught by skilled Librarians and technology trainers from across the library including the Studio, Writing and Communication Center, and Special Collections.

In 2016-2017, librarians taught a total of 615 instruction sessions and workshops that reached 8,194 students across all academic disciplines. Of those 615 instruction sessions and workshops, 16 were conducted for the Rollins College of Business and the College of Engineering and Computer Science with 350 students having participated.

### *Research Services*

The Library offers research and information services at several service points throughout the library. The Information Desk is open 92 hours per week and assists students and faculty with traditional research, information, and basic computer needs. The Studio and the Writing and Communication Center provide targeted services associated with writing, presenting, and media creation (more information on these two services can be found below). Special Collections provides research assistance with rare books, manuscripts, and University archives. In addition to these physical service points, online reference services in the form of real-time instant messaging, email reference, and traditional telephone services are also available to students and faculty. In the year past, UTC librarians answered 14,026 reference questions.

In addition to traditional research and information services, one-on-one and group research consultations are also available to any student or faculty member seeking in-depth assistance with research, writing, presentations, software, and other assignments. In the 2016-2017 academic year, Librarians from Instruction, the Studio, the Writing and Communication Center, and Special Collections provided 2,464 individual research consultations.

### *Departmental Liaisons*

A Library Liaison program is in place where a librarian is assigned to each academic department to enhance communication, collection development, and general support. Librarians are matched with departments based on educational background, work experience, and subject expertise. Typical library liaison activities involve attending departmental meetings, distributing information about new services or resources, organizing one-time purchase requests, teaching classes, creating subject guides, meeting with students and faculty, and more. The Library currently splits liaison duties between three librarians to cover the Rollins College of Business and the College of Engineering and Computer Science. Lane Wilkinson focuses on Business, while Becky Nasadowski and Bo Baker work with Engineering and Computer Science respectively.

### Studio

The Studio is a workspace for innovative technology and media creation. Located on the third floor of the Library, the Studio provides access to 24 workstations (PC and Mac) loaded with specialized software including software pertinent to the study of data analytics: SAS, SPSS, ERSI-R, and Tableau. Additional software including, the Adobe Creative Suite, AutoDesk, SketchBook Pro, Solidworks, and Camtasia is also available.

Staffed by highly skilled Librarians and staff, the Studio provides one-on-one consultations, small group and course-specific instruction, curriculum development, and help at point-of-need. The Studio also provides access to audio/visual gear and accessories, prototyping hardware, and other peripherals for check out, as well as dedicated spaces for video, photographic, and audio production. In 2016-2017, 112 students from the Rollins College of Business and College of Engineering and Computer Science participated in workshops offered through the Studio.

### Writing and Communication Center

The Writing and Communication Center (WCC) is open to the entire UTC community and offers consultations on any type of writing, speech, or presentation, at any stage of the creation process. Services include, but are not limited brainstorming ideas for a research paper, writing a thesis statement, using correct in-text citations, assistance with resumes and cover letters, and assistance with presenting and public speaking. In 2016-2017, 160 consultations were provided to students in Rollins College of Business and the College of Engineering and Computer Science courses.

## **Library Technology and Spaces**

### Classrooms, Meeting Spaces, and Instructional/Learning Technologies

As previously mentioned, the UTC Library maintains a state of the art facility that provides students, faculty, and staff with access to 37 group study rooms, 2 practice presentation rooms, 8 conference rooms, a theater classroom, and 3 computer classrooms. Each room is equipped slightly differently, but all have access to overhead projection, podiums with Windows computers and HDMI cables for use with laptops, and white boards. All study rooms contain LCD monitors (HDMI and other cables are available for check out) and whiteboards to aid in group assignments and quiet study.

Classrooms contain desktop or laptop computers, presentation podiums, and built in speakers. Conference rooms are set up for hosting and attending online events. Outside of these reservable spaces, students, faculty, and staff have access to a computer lounge with 142 Windows and 36 Macintosh computers and the Studio where high-spec PC's and Macs are available. Printers, b&w and color, as well as scanners and micro format readers are available at various points throughout the Library. Additionally, students, faculty, and staff can check out Windows laptops, Chromebooks, high-end A/V equipment, scientific calculators, and an assortment of cables, chargers, and computer accessories at either the main checkout desk or the Studio.

All computers in the Library (including circulating laptops) are loaded with a variety of programs needed by students across the University<sup>8</sup>.

UTC students, faculty, and staff also have access to several important suites of software through the University of Tennessee System software distribution site. These include several programs that are pertinent to students seeking a degree in data analytics: MatLab, ESRI and R GIS Mapping Software, SPSS, Maplesoft, NVIVO QSR International, Provalis Research, and SAS.

Additional Library and Technological Acquisitions - MS Data Analytics

## Recommendation of Additional Resources

Data analytics is an emerging field that requires access to data in many formats across many disciplines, specialized software, and a technical infrastructure robust enough to process and store large files. Additional resources of \$3,000 have been budgeted for first year of the program (Appendix B).

Drawing on information gleaned from peers and other institutions offering master's degrees in data analytics, Table 9 lists suggested online resources of value to students and faculty in the field of data analytics, which will be considered, based on available additional funding. Information below includes: title, short description, potential cost (where known), and resource type of possible resources to be considered for addition. This list is not exhaustive, and other resources, not reviewed at this time, may be added.

Periodic review and recommendations for additional resources will be conducted by the Library in consultation with faculty from the Data Analytics program.

---

<sup>8</sup> A current list of software loaded on Library computers can be found here:  
<https://www.utc.edu/library/services/technology/computers-software.php>

Table 9. Recommended Additional Resources for Consideration

Resource	Resource Type	Yearly Cost	One Time /Recurring
<i>Data Planet</i> “Repository of over 35 billion data points from over 450 databases sourced from 70 public and private organizations. The datasets contained in Data-Planet are structured and homogenized to permit correlation of multiple, diverse indicators”	Dataset	\$8,030	Recurring
<i>Safari Tech Books Online Compete</i> “Access to more than 21,000 digital books and videos on topics ranging from programming to IT networking to project management to graphic design to business strategy. The content includes code snippets, certification preparation	E-book		
<i>Springer Nature Complete E-Books (Yearly)</i> Access to high-quality e-books in Computer Science, Engineering, Statistics, Mathematics, and Data Analytics/Data Mining—along with other STEM and subject areas. Springer books are DRM free and can be used as course adoption materials.	E-Book		Recurring
<i>Statistical Insights</i> “The Statistical Insight Collection spans millions of full-text reports and more than 1 million published tables on thousands of different topics. It provides fast and easy access to statistical information produced by U.S. federal agencies, states, private organizations, and major intergovernmental organizations. It also offers broad perspectives and insight on long-term national trends and implications paired with the ability to narrow results.”	Datasets		Recurring
<i>WRDS</i> “Wharton Research Data Services (WRDS) is the award-winning research platform and business intelligence tool for over 50,000 corporate, academic, government and nonprofit users at 400+ institutions in 30+ countries. WRDS provides the user with one location to access over 250 terabytes of data across multiple disciplines including Accounting, Banking, Economics, ESG, Finance, Healthcare, Insurance, Marketing, and Statistics.”	Data Sets		Recurring

### Computing Resources, SimCenter, University of Tennessee Chattanooga (UTC)

SimCenter is a research center for multidisciplinary research at UTC. SimCenter is both a research incubator for innovative concepts and laboratories, but also provides UTC’s core facility for High Performance Computing and Storage. The SimCenter facility includes faculty offices, student cubicles, a 1,500 square-foot computer room, a conference/meeting room accommodating 25 people,

an 80-seat auditorium, and two secure expandable suite of rooms dedicated to proprietary and/or classified research, a research library, and other workspace. The interior layout is designed to facilitate extensive interdisciplinary interactions among faculty and students, with student cubicles in large open spaces adjacent to faculty offices. Research team has access to the high-performance clusters there.

### Computational Resources at the SimCenter

#### *Computational Clusters<sup>9</sup>*

- *tennessine* – 924 CPU core/59,136 GPU core (33 node) diskless cluster (Dell)
- Two 14-core Intel Xeon E5-2680 v4 processors
- 128 GB RAM per node
- EDR InfiniBand (100 Gb/s) interconnect
- 1 Nvidia P100 GPU (16 GB) with 1792 double precision cores
- 400 GB SSD per node (pending installation)
- *papertape* – 640 core (40 node) diskless cluster (Dell)
- Two Eight-core Intel Xeon E5-2670 processors
- 32 GB RAM per node
- FDR InfiniBand interconnect (2:1 blocking)
- 21 TB of direct attached storage running Lustre 2.1
- *bigfrog* – 1300 core (325 node) diskless cluster (Dell)
- Dual-core Intel EM64T 3.0GHz Xeon processors
- 4 GB RAM per node
- Gigabit Ethernet interconnect (576 port Force10 E1200 switch)
- *qbert* – 192 core (12 node) cluster (Dell)
- Two eight-core Intel Xeon E5-2650v2 processors
- 32 GB RAM per node
- 10 Gigabit Ethernet interconnect
- 216 TB reconfigurable 10 Gigabit iSCSI storage
- Head node has 256 GB RAM, an NVIDIA K20 and Xeon Phi 5110P co-processors
- Currently configurable for data analytics type (hadoop) applications
- *bluetick* – 32 core compute server (IBM)
- Four eight-core IBM POWER7 3.55GHz processors
- 256 GB RAM
- *blueprint* – 32 core compute server (IBM)
- Four eight-core IBM POWER7 3.55GHz processors
- 128 GB RAM
- *cerberus* – 32 core compute server (Dell)
- Four eight-core Intel Xeon X7560 2.27 GHz processors
- 256 GB RAM
- Four Power9 IBM servers [pending purchase]

<sup>9</sup> For more information please see <https://www.utc.edu/simcenter/facilities.php>

- 4 Nvidia Volta GPUs
- 256GB each of main memory
- InfiniBand EDR interconnect
- *Infrastructure*
- 10 GbE network backbone
- Force10 E1200 director class switch for server room 1-10 GbE infrastructure
- 32 port Brocade Silksworm 3900 SAN switch (2GB/s)
- Dell R730 VMWARE cluster which runs all system critical services
- Three node cluster
- Highly redundant hardware
- Important services configured 'highly available' so they never crash
- Dynamic load balancing
- *Data Storage*
- Highly scalable DDN 14KX GPFS storage system
- 113 TB (10K SAS) of high speed, tier 1 storage
- 1 PB of high capacity, lower tier storage
- Connects to the HPC infrastructure at EDR InfiniBand speeds (100 Gb/s)
- Scalable up to over 1700 hard drives and 60 GB/s bandwidth
- Available (via NFS) to all desktops in the SimCenter
- Expandable Dell PowerVault LTO7 tape backup system
- LTO7 tape media can store between 6 and 15 TB (based on compression)
- Can backup/archive between 240 and 600 TB of data without expansion.

## Support Resources

The Rollins College of Business (RCOB) and the College of Engineering and Computer Science (CECS) both currently have graduate program office and Student Success Centers which oversees course selection and sequencing guidance, academic support, and workforce development opportunities by pairing students to professional and faculty advisors, connecting students to peer to peer tutoring opportunities, and leveraging strong partnerships between UTC, RCOB, CECS, and many local, regional, and national industries to arrange job/internship opportunities.

All of these facilities will be available to students in the MS Data Analytics program. Students enrolling in the MSDA program will be assigned a faculty advisor based on common specialties and interests where possible. Faculty advisors provide tailored career and academic guidance to ensure the students matriculate through the program. Students will also have access to the RCOB and CECS Professional Advisors, who are thoroughly knowledgeable about the curricula, internship opportunities, professional societies, etc., and help direct students to University of Tennessee at Chattanooga academic, professional, and social supports that match their needs. Additionally, all program faculty are available for any questions regarding career guidance and advice or problems that may arise at any time.



All computer and other technical support for faculty and staff offices, classrooms, and labs is provided by the Rollins College of Business and College of Engineering and Computer Science's own dedicated technical support staff. Students have access to the UTC Information Technology Division's help desk and related technical support services.

Students will have an online self-paced orientation that their professional advisor will require to be completed following admission to the program. Students will have access to this online orientation through an MS Data Analytics student organization in UTC's LMS, Canvas. In addition, an in-person orientation, which online students can join via videoconference, will be held prior to or during the first week of classes. Information about resources will be covered through both orientation and will be touched upon as well during the students' initial advising session, which can be done in person, as well as via phone, email, or videoconference (Zoom).

A recent reorganization of the UTC Rollins COB graduate staff as well as the addition of a graduate staff member will offer the manpower needed to provide timely and quality advising to the MS Data Analytics students. Students also will benefit from being assigned a faculty advisor in addition to their professional advisor to ensure an enhanced advising experience.

The UTC Rollins College of Business's Success Center has a career center that can provide students in the program a wide variety of career resources including resume review, interview preparation, & networking opportunities. In addition, the Rollins COB's Executive Education Office, as of October 2018, has expanded its services to include professional development for graduate students. This office, now the Rollins COB Executive Education & Graduate Professional Development Office, will roll out career development resources developed exclusively for its graduate students beginning spring 2019. Offerings will be designed based on graduate student need and will include an online career resource site for graduate students as well as access to a professional career coach.

Yearly orientation sessions will be held with MS program faculty and Decosimo Success Center staff to ensure students are aware of program updates, company projects, and new developments in the field. This approach will ensure that staff remains up-to-date on information related to the program. We also plan to invite advising staff from other universities to make presentations related to latest developments in data analytics career and opportunities for students. They will also meet with our staff initially to share best practices and strategies for program success.

### **Additional Support Needed**

A half time professional staff will be exclusively dedicated to the proposed program. The responsibilities of this person will include:

- Assist with program marketing.
- Respond to prospective student inquiries.
- Perform outreach (e.g. calls and/or personal emails) according to program's communication plan (in Radius) for prospective students, applicants, & admitted students.
- Manage application review and admission process for program.

- Work with program director and faculty committee on all facets of program.
- Manage internship & practicum process.
- Act as professional academic advisor to students by assisting students with the following:
  - Review new student's transcripts for program prerequisites. Monitor students to make sure that they have completed successfully program's foundation work.
  - Oversee the process of graduate students transferring graduate-level coursework into their programs.
  - Provide new students with orientation-related materials to help them prepare for and start graduate work and begin school at UTC.
  - Serve as the professional academic advisor by assisting students with preparing short-term and long-term academic course scheduling as well as overseeing the program's registration process.
  - Track and monitor the academic progress of all students, including specific groups such as those conditionally admitted and on academic probation.
  - Ensure that by stated deadlines students complete all necessary paperwork (e.g. programs of study and graduation audit forms) and apply for graduation as required by the UTC Graduate School and Records Office.
  - Manage program's petitioning process. Assist with and instruct students about graduate petitioning process (e.g. readmission, backdated withdrawal, candidacy extension, course substitution, transferring excess hours), pass along petitions to faculty committee for review, and to Graduate School for final processing. Keep related program records.

## Facilities and Equipment

### Existing Facilities and Equipment

Office space is currently available to house all MSDA program faculty. Office space is housed in RCOB, CECS, and SIM Center. In addition to office space, MSDA faculty, students, and staff have access to the computer equipped classrooms and computer labs in Rollins College of Business and College of Engineering and Computer Science. All classrooms are equipped with Internet and livestream capacity. In addition to these on-campus facilities available to the MSDA program, also included are the Interdisciplinary Geospatial Laboratory (GIS); the Sim Center computational laboratories; student health services; Activity and Recreational Center (ARC). CECS also offers an InfoSec (Information Security) Center located within the Department of Computer Science and Engineering with the mission to serve as a regional model for promoting excellence in information security education, assisting businesses, government agencies, education institutions and industry in their information security needs, and serving as the first point of call for any information security emergency.

### Additional Facilities and Equipment

In addition to the aforementioned facilities and equipment, a dedicated virtual server will be installed to allow storage and access to large data sets and allow students to run large programs.

## MARKETING AND RECRUITMENT

The University of Tennessee at Chattanooga is dedicated to establishing graduate programs that are aligned with industry needs. The proposed MSDA program is in direct response to the request we received from local and regional organizations to offer an advanced program in data analytics.

The program director will coordinate with the following to develop a strategic plan to recruit and admit students into the program:

- UTC Rollins College of Business - to provide overall administrative support for program marketing/recruitment
- UTC College of Engineering and Computer Science – to provide leads and help market the program to their undergraduate students and to their industry partners.
- UTC Provost’s office – to help market the program to UTC undergraduate students who may be interested in going for advanced degree.
- UTC Office of International Student & Scholar Services – to help recruit international students and provide support for their visa applications and other required paper work.
- UTC Admissions Office – to provide university-level admissions support
- UTC Bursar’s Office – to provide university-level support for prospective student tuition
- UTC Financial Aid Office – to provide university-level financial aid support
- RCOB and CECS Advisory Board– to provide marketing and recruitment resources to attract potential students from local and regional organizations.

Marketing staff at Rollins College of Business in consultation with the program director will prepare a detailed brochure describing the program and how it differs from other existing programs immediately after program approval by THEC; this information will also be added to the website. We will have a session to discuss recruitment strategies and differentiation from MS and MBA programs on a yearly basis with university recruiters.

Year-round marketing materials will include flyers, emails, articles in print, social media (Facebook, Twitter, etc.), and the university and college websites. Marketing for the program will occur year-round, with a targeted emphasis on UTC seniors, professionals working in local and regional organizations and international students specifically from high demand countries like India and China. The program director and/or program faculty will visit local and regional organizations to meet with prospective MSDA students. Marketing efforts will expand beyond local and regional partnerships through the following:

- Conferences/college fairs, etc. that will be used to market the program to colleges beyond Chattanooga.
- Visits by program director to high potential countries like India and China and possibly contracting services of professional recruitment organizations.

These marketing activities will help ensure a diverse student body.

## International Student Recruitment

The Office of International Student Services (OISS), under the UTC Center for Global Education, allocates over \$80,000 annually to recruit and retain new international students. OISS partners with more than 40 overseas recruiting agencies and OISS staff frequently attends international student recruitment fairs and events. UTC's recruitment ads are translated to Chinese, Vietnamese, Spanish, Korean, Japanese, Turkish, Thai, and Arabic, and potential international students can see them in their countries.

Moreover, OISS staff are trained and experienced in cross-cultural counseling and U.S. immigration regulations. OISS offers advisement, counseling, and advocacy services related to admissions processes, immigration issues, academic challenges, and personal difficulties for recruiting, retaining, and graduating qualified international students. OISS team acts as the first point of contact for international students who need guidance, but perhaps do not know who or where to go for help.

As of Fall 2018, 29 international students were enrolled in the Business and Computer Science Departments. Countries represented include China, Ecuador, Belgium, Belize, Canada, Finland, Spain, Uganda, Ukraine, India, Mexico, Germany, Tanzania, Colombia, Sudan, and Saudi Arabia. International student graduates from these departments total nine for the 2017-18 academic year. The tables below show the breakdown of the number of students from each area, including the number of graduates and undergraduates.

### Non-US Citizen\* Enrollment & Degrees Awarded for Business and Computer Science

Enrollment	2017		2018	
	<i>UG</i>	<i>GR</i>	<i>UG</i>	<i>GR</i>
Business	13	5	18	6
Computer Science	1	5	2	3

Degrees Awarded	2016-17		2017-18	
	<i>UG</i>	<i>GR</i>	<i>UG</i>	<i>GR</i>
Business	6	3	3	3
Computer Science	0	4	0	3

\*also excludes permanent residents

## Marketing Timeline

As Table 10 shows, the program marketing plan will adopt a scaled approach over 3 years.

Table 10. Marketing Timeline

Year	Activities
Year 1	Target marketing and recruitment efforts at UTC seniors. Local and regional organizations. International students mainly from India and China. Advertisement in local newspapers and TV and social media promotion. Visit area organizations.
Year 2	Expand primary market to new contacts across TN, Georgia and Alabama. Expand international efforts to other countries. Focus on placement of graduates.
Year 3	Expand marketing efforts to larger regional area. Explore online offerings. Focus on placement data and success and increase word to mouth promotion.

## Geographic Landscape

The Greater Chattanooga Metropolitan area, which includes three southeast Tennessee counties (Hamilton Marion, and Sequatchie) and three northwest Georgia counties (Catoosa, Dade, and Walker), is home to more than 550,000 people. Chattanooga, TN residents account for more than 1/5 of the total population. Chattanooga is ethnically diverse, with 34% African American, 2% Asian, 2% two or more races, and 5.4% Hispanic, according to the most recent Census estimates, and more than half of city residents are female (52%).

In addition to its longstanding monikers “Scenic City” and “Gateway to the South,” Chattanooga has come to be called “Gig City” for developing the world’s first citywide gigabit Internet services.

Over the past few years, Chattanooga has received numerous accolades, including:

- No. 1 City with Lowest Startup Cost 2016<sup>10</sup>
- 2nd Best Metro Growth among TN Cities – 2016<sup>11</sup>
- No. 2 Best City for Women-Owned Businesses – 2016<sup>12</sup>
- No. 4 Best Metro for Minority-owned Business – 2016<sup>13</sup>

<sup>10</sup> <https://smartasset.com/mortgage/the-cities-with-the-lowest-startup-costs-2016-edition>

<sup>11</sup> <http://www.timesfreepress.com/news/business/aroundregion/story/2016/apr/06/populatipops-chattanoogarea/359000>

<sup>12</sup> <https://wallethub.com/edu/best-places-for-women-owned-businesses/19254>

<sup>13</sup> <https://smartasset.com/investing/the-best-metro-areas-for-minority-owned-businesses>

- No. 4 in Logistics in the US – 2016<sup>14</sup>• No. 6 in the world for the EPB gigabit network relative to its price – 2016<sup>15</sup>
- A Top Emerging City for Global Trade – 2016<sup>16</sup>
- Outdoor Magazines “Best Town Ever” for its outdoor attractions – 2011 and 2015, the only city to ever win twice<sup>17</sup>

These features and recognition will be major selling points for national and international marketing efforts.

---

<sup>14</sup> [http://www.inboundlogistics.com/cms/article/logistics-hotspots-nine-that-shine/#.V\\_ahKsb5guw.linkedin](http://www.inboundlogistics.com/cms/article/logistics-hotspots-nine-that-shine/#.V_ahKsb5guw.linkedin)

<sup>15</sup> <http://www.timesfreepress.com/news/business/aroundregion/story/2016/aug/02/listtop-cities-broadband/379043>

<sup>16</sup> <http://www.globaltrademag.com/list/top-cities-global-trade-3>

<sup>17</sup> <https://www.outsideonline.com/2008701/weekend-plan-chattanooga>

## ASSESSMENT AND EVALUATION OF THE MSDA PROGRAM

The goals for the MSDA program are as follows:

- Admit and enroll projected number of new students per academic year
- Place all MSDA students in appropriate internships/projects/theses
- Graduate a minimum of 14 students per academic year beginning in year 3
- Successfully place all MSDA graduates in Data Analytics related positions
- Achieve a score of 'exceeds expectations' on the annual assessment of MSDA program quality among students

Every year, UTC program outcomes are assessed following SACCOG guidelines and standards and results are available to the UTC Office of Planning Evaluation & Institutional Research as well as the SACSCOC Liaison. In addition, like all graduate programs in the state of Tennessee, the MS DA program will also be assessed by THEC once every five-year cycle.

Institutional assessment processes include outcome development and assessment for each program. As part of this effort, programs adhere to a timeline established by the Office of Planning, Evaluation, and Institutional Research (OPEIR). Once assessment data are entered, OPEIR staff provide detailed feedback to each program. The expectation is for programs to have a plan for following up on assessment results in order to provide evidence of continuous improvement.



## ACCREDITATION

The Association to Advance Collegiate Schools of Business (AACSB) accredits the Rollins College of Business. The Master of Science in Data Analytics will be considered accredited by AACSB until it is reviewed by the AACSB Peer Review Team during the scheduled 2023/2024 Continuous Improvement Review. The following information will be submitted to AACSB as part of the review:

- A brief description of the employer or employment needs to be served by the program
- A brief description of the intended student market
- A description of the source(s) of faculty, technology, and facility support
- A description of the learning goals, how the goals are measured, and results that demonstrate achievement.

The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) accredit the University of Tennessee at Chattanooga. The MS Data Analytics new degree program will not require Substantive Change Notification, per SACSCOC policies.

## FUNDING

**Tennessee Higher Education Commission**

**Attachment B: THEC Financial Projections**

**University of Tennessee at Chattanooga**

**Master of Science in Data Analytics**

Seven-year projections are required for doctoral programs.

Five-year projections are required for baccalaureate and Master's degree programs

Three-year projections are required for associate degrees and undergraduate certificates.

Projections should include cost of living increases per year.

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>I. Expenditures</b>					
<b>A. One-time Expenditures</b>					
New/Renovated Space	\$-	\$-	\$-	\$-	\$-
Equipment <sup>1</sup>	45,000	-	-	-	-
Library <sup>2</sup>	3,000		-	-	-
Consultants	-	-	-	-	-
Travel <sup>3</sup>	6,000				
Other	-	-	-	-	-
<b>Sub-Total One-time</b>	\$54,000	\$-	\$-	\$-	\$-
<b>B. Recurring Expenditures</b>					
<b>Personnel</b>					
<b>Administration</b>					
Salary	\$-	\$-	\$-	\$-	\$-
Benefits	-	-	-	-	-
<b>Sub-Total Administration</b>	\$-	\$-	\$-	\$-	\$-

<b>Faculty</b>					
Salary <sup>4</sup>	\$90,000	\$92,700	\$220,481	\$227,095	\$233,908
Benefits	36,900	38,007	90,397	93,109	95,902
<b>Sub-Total Faculty</b>	\$126,900	\$130,707	\$310,878	\$320,205	\$329,811
<b>Support Staff</b>					
Salary <sup>5</sup>	\$16,000	\$16,480	\$16,974	\$17,484	\$18,008
Benefits	6,560	6,757	6,960	7,168	7,383
<b>Sub-Total Support Staff</b>	\$22,560	\$23,237	\$23,934	\$24,652	\$25,391
<b>Graduate Assistants</b>					
Salary <sup>6</sup>	\$35,200	\$35,200	\$35,200	\$35,200	\$35,200
Benefits	-	-	-	-	-
Tuition and Fees* (See Below)	46,134	47,518	48,944	50,412	51,924
<b>Sub-Total Graduate Assistants</b>	\$81,334	\$82,718	\$84,144	\$85,612	\$97,124
<b>Operating</b>					
Travel	\$5,000	5,150	5,305	5,464	5,628
Printing	4,000	4,120	4,244	4,371	4,502
Equipment	1,500	1,545	1,591	1,639	1,688
Other	-	-	-	-	-
<b>Sub-Total Operating</b>	\$10,500	\$10,815	\$11,139	\$11,474	\$11,818
<b>Total Recurring</b>	<b>\$241,294</b>	<b>\$247,477</b>	<b>\$430,095</b>	<b>\$441,942</b>	<b>\$454,144</b>
<b>TOTAL EXPENDITURES (A + B)</b>	<b>\$295,294</b>	<b>\$247,477</b>	<b>\$430,095</b>	<b>\$441,942</b>	<b>\$454,144</b>

<sup>1</sup> A new server and a computer lab (for computer science) is needed to support the program.

<sup>2</sup> Books and other scholastic materials.

<sup>3</sup> Travel for recruiting students.

<sup>4</sup> Two new lines are needed to support the program. One in computer science at \$90,000 starting in year 1 and one in business at \$125,000 starting in year 3.

<sup>5</sup> The program will need to cover half of an administrative support staff member.

<sup>6</sup> Four Graduate Assistantships are needed.

**\*If tuition and fees for Graduate Assistants are included, please provide the following information.**

Base Tuition and Fees Rate	\$11,533.50	\$11,879.51	\$12,235.89	\$12,602.97	\$12,981.06
Number of Graduate Assistants	4	4	4	4	4

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>II. Revenue</b>					
Tuition and Fees <sup>1</sup>	\$115,335	\$219,771	\$348,723	\$485,214	\$551,695
Institutional Reallocations <sup>2</sup>	129,959	27,706	81,372	(43,272)	(97,551)
Federal Grants <sup>3</sup>	-	-	-	-	-
Private Grants or Gifts <sup>4</sup>	50,000	-	-	-	-
Other <sup>5</sup>	-	-	-	-	-
<b>BALANCED BUDGET LINE</b>	<b>\$295,294</b>	<b>\$247,477</b>	<b>\$430,095</b>	<b>\$441,942</b>	<b>\$454,144</b>

**Notes:**

**(1) In what year is tuition and fee revenue expected to be generated and explain any differential fees. Tuition and fees include maintenance fees, out-of-state tuition, and any applicable earmarked fees for the program.**

**(2) Please identify the source(s) of the institutional reallocations, and grant matching requirements if applicable.**

**(3) Please provide the source(s) of the Federal Grant including the granting department and CFDA(Catalog of Federal Domestic Assistance) number.**

**(4) Please provide the name of the organization(s) or individual(s) providing grant(s) or gift(s).**

The University of Chattanooga (UC)  
Foundation has provided \$50,000 in startup  
funds.

**(5) Please provide information regarding other sources of the funding.**

## REFERENCES

- [1] Gil Press, “Six predictions for the \$203 Billion Big Data analytics market”, Forbes, January 20, 2017.
- [2] <https://www.forbes.com/sites/louiscolombus/2017/05/13/ibm-predicts-demand-for-data-scientists-will-soar-28-by-2020/#5b35a7537e3b> (accessed on 10/4/2017).
- [3] McKinsey Global Institute, ‘The age of analytics: competing in a data-driven world’, December 2016.
- [4] <http://www.mastersindatascience.org/schools/tennessee/> (accessed on 10/4/2017).
- [5] Melissa R. Bowers. MAPD maps out the future of analytics education. ORMS Today. August 2017.
- [6] PwC. Data Driven: What Students need to succeed in a rapidly changing business world. 2015. <https://www.pwc.com/us/en/faculty-resource/assets/pwc-data-driven-paper-feb2015.pdf>

## APPENDICES

### Appendix A: Chancellor Letter of Support

January 10, 2017

Mr. Mike Krause  
Executive Director  
Tennessee Higher Education Commission  
404 James Robertson Parkway, Suite, 1900  
Nashville, TN 37243

Dear Mr. Krause:

The University of Tennessee Chattanooga is requesting to add the Master of Science degree in Data Analytics, developed collaboratively between the College of Business and the College of Engineering & Computer Science. Under the leadership of Interim Provost Robert Dooley, Dean Daniel Pack and Interim Dean Michael Jones, Associate Dean Nesli Alp, distinguished professors Hemant Jain and Joseph Kizza, and a strategic group of faculty in the both Colleges, this program targets individuals who wish to develop advanced skills in the extremely important and growing area of data analytics. The MS Data Analytics program is designed to serve working professionals in Southeast Tennessee, including those who are seeking to upgrade their skills, recent graduates of the College of Business and CECS, graduates of other related programs, and international students.

The program aligns with the UTC institutional mission as "an engaged, metropolitan university." The city of Chattanooga, as well as this entire region, is an area in the midst of transformation with a strong economic and community base and an in-depth urban core. UTC values the community partnerships and connections and as such is committed to supporting the community through programs that make an impact, such as this data analytics degree. This collaborative program represents two areas of strength for UTC and will further support out strong ties with our community business partners, both local and regional. Graduates of this innovative program will serve as a bridge between the business executives and technology experts to help organizations derive value from their data.

The MS Data Analytics program also fully embraces the goals of the Complete College Tennessee Act by encouraging additional graduate degree completion in our region. The THEC Master Plan calls for institutions of higher education to increase degree production in order to meet economic and workforce needs here in Tennessee. Through this additional program, further partnerships will be enhanced, which will encourage even more collaboration with local businesses and organizations that directly impact the transformation of our community. I am a strong supporter of this program, and it will be a priority for the University, Colleges, and the community. Thank you for your consideration of this request.

Sincerely,

Steven R. Angle  
Chancellor

### Appendix B: THEC Financial Projection Form

Tennessee Higher Education Commission					
Attachment B: THEC Financial Projections					
University of Tennessee at Chattanooga					
Master of Science in Data Analytics					
Seven-year projections are required for doctoral programs.					
Five-year projections are required for baccalaureate and Master's degree programs					
Three-year projections are required for associate degrees and undergraduate certificates.					
Projections should include cost of living increases per year.					
	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>I. Expenditures</b>					
<b>A. One-time Expenditures</b>					
New/Renovated Space	\$ -	\$ -	\$ -	\$ -	\$ -
Equipment <sup>1</sup>	45,000	-	-	-	-
Library <sup>2</sup>	3,000		-	-	-
Consultants	-	-	-	-	-
Travel <sup>3</sup>	6,000				
Other	-	-	-	-	-
<b>Sub-Total One-time</b>	\$ 54,000	\$ -	\$ -	\$ -	\$ -
<b>B. Recurring Expenditures</b>					
<b>Personnel</b>					
<b>Administration</b>					
Salary	\$ -	\$ -	\$ -	\$ -	\$ -
Benefits	-	-	-	-	-



<b>Sub-Total Administration</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Faculty</b>					
Salary <sup>4</sup>	\$ 90,000	\$ 92,700	\$ 220,481	\$ 227,095	\$ 233,908
Benefits	36,900	38,007	90,397	93,109	95,902
<b>Sub-Total Faculty</b>	\$ 126,900	\$ 130,707	\$ 310,878	\$ 320,205	\$ 329,811
<b>Support Staff</b>					
Salary <sup>5</sup>	\$ 16,000	\$ 16,480	\$ 16,974	\$ 17,484	\$ 18,008
Benefits	6,560	6,757	6,960	7,168	7,383
<b>Sub-Total Support Staff</b>	\$ 22,560	\$ 23,237	\$ 23,934	\$ 24,652	\$ 25,391
<b>Graduate Assistants</b>					
Salary <sup>6</sup>	\$ 35,200	\$ 35,200	\$ 35,200	\$ 35,200	\$ 35,200
Benefits	-	-	-	-	-
Tuition and Fees* (See Below)	46,134	47,518	48,944	50,412	51,924
<b>Sub-Total Graduate Assistants</b>	\$ 81,334	\$ 82,718	\$ 84,144	\$ 85,612	\$ 87,124
<b>Operating</b>					
Travel	\$ 5,000	5,150	5,305	5,464	5,628
Printing	4,000	4,120	4,244	4,371	4,502
Equipment	1,500	1,545	1,591	1,639	1,688
Other	-	-	-	-	-
<b>Sub-Total Operating</b>	\$ 10,500	\$ 10,815	\$ 11,139	\$ 11,474	\$ 11,818
<b>Total Recurring</b>	\$ 241,294	\$ 247,477	\$ 430,095	\$ 441,942	\$ 454,144

<b>TOTAL EXPENDITURES (A + B)</b>	<b>\$ 295,294</b>	<b>\$ 247,477</b>	<b>\$ 430,095</b>	<b>\$ 441,942</b>	<b>\$ 454,144</b>
<sup>1</sup> A new server and a computer lab (for computer science) is needed to support the program.					
<sup>2</sup> Books and other scholastic materials.					
<sup>3</sup> Travel for recruiting students.					
<sup>4</sup> Two new lines are needed to support the program. One in computer science at \$90,000 starting in year 1 and one in business at \$125,000 starting in year 3.					
<sup>5</sup> The program will need to cover half of an administrative support staff member.					
<sup>6</sup> Four Graduate Assistantships are needed.					
<b>*If tuition and fees for Graduate Assistants are included, please provide the following information.</b>					
Base Tuition and Fees Rate	\$ 11,533.50	\$ 11,879.51	\$ 12,235.89	\$ 12,602.97	\$ 12,981.06
Number of Graduate Assistants	4	4	4	4	4
	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>II. Revenue</b>					
Tuition and Fees <sup>1</sup>	\$ 115,335	\$ 219,771	\$ 348,723	\$ 485,214	\$ 551,695
Institutional Reallocations <sup>2</sup>	129,959	27,706	81,372	(43,272)	(97,551)
Federal Grants <sup>3</sup>	-	-	-	-	-
Private Grants or Gifts <sup>4</sup>	50,000	-	-	-	-
Other <sup>5</sup>	-	-	-	-	-
<b>BALANCED BUDGET LINE</b>	<b>\$ 295,294</b>	<b>\$ 247,477</b>	<b>\$ 430,095</b>	<b>\$ 441,942</b>	<b>\$ 454,144</b>
<b>Notes:</b>					

<b>(1) In what year is tuition and fee revenue expected to be generated and explain any differential fees. Tuition and fees include maintenance fees, out-of-state tuition, and any applicable earmarked fees for the program.</b>					
Tuition and fee revenue is expected to be generated in the first year of the program. The figures for tuition and fees above includes the differential tuition fee of \$57/credit hour in the Colleges of Business and Engineering and Computer Science. It also includes the graduate program fee of \$50/credit hour in the College of Business, which is applied to the College of Business courses only. Each fee is illustrated with an annual 3% escalator.					
<b>(2) Please identify the source(s) of the institutional reallocations, and grant matching requirements if applicable.</b>					
<b>(3) Please provide the source(s) of the Federal Grant including the granting department and CFDA(Catalog of Federal Domestic Assistance) number.</b>					
<b>(4) Please provide the name of the organization(s) or individual(s) providing grant(s) or gift(s).</b>					
The University of Chattanooga (UC) Foundation has provided \$50,000 in start up funds.					
<b>(5) Please provide information regarding other sources of the funding.</b>					

## **Appendix C: Needs Assessment**

### **UNIVERSITY OF TENNESSEE AT CHATTANOOGA MASTER OF SCIENCE DEGREE IN DATA ANALYTICS**

#### **NEEDS ASSESSMENT**

Prepared by: Kronley & Associates November 2017

## TABLE OF CONTENTS

---

<b>Summary of Findings and the Recommendation</b>	<b>3</b>
Findings	3
The Recommendation	3
Some Suggestions	3
<b>Introduction</b>	<b>4</b>
<b>Methodology</b>	<b>6</b>
<b>Findings</b>	<b>7</b>
<b>Conclusion: Recommendation and Suggestions</b>	<b>21</b>
<b>Appendix A: MS in Data Analytics New Academic Program</b>	<b>23</b>
<b>Appendix B: Roster of Informants</b>	<b>24</b>

## SUMMARY OF FINDINGS AND THE RECOMMENDATION

---

### Findings

Data analytics, the process of examining large and varied data sets to support effective organizational decision-making, is a rapidly growing field that requires well-trained and skilled workers.

Universities responded to industry's need to manage and leverage big data by developing programs in data analytics; the number of and demand for these programs continues to grow.

UTC's proposed MS in Data Analytics grows out of the university's strategic plan, is aligned with local and regional development strategies, and incorporates best practices.

Employers in UTC's service area express a strong need for an MS in Data Analytics and a desire for UTC to develop such a program.

Student interviews and focus groups suggest sufficient current interest in the MS in Data Analytics; UTC's recruitment plan seeks over time to attract a wide and diverse pool of matriculants.

UTC's proposed MS in Data Analytics is distinctive and does not duplicate existing programs in its service area.

The proposed MS in Data Analytics program will not unduly burden the university and is sustainable, with potential to provide significant community and institutional benefit.

### The Recommendation

**Based on the needs assessment, the university should pursue further planning for and implementation of the MS in Data Analytics.**

#### Some Suggestions

*Collaborate continuously*

*Embed rigor, ensure flexibility*

*Promote robust employer involvement*

*Build a brand and market the program*

## INTRODUCTION

---

The University of Tennessee at Chattanooga (UTC) is exploring the development and implementation of a new collaborative academic program leading to a Master's of Science Degree (MS) in Data Analytics. The new MS is an effort of the Rollins College of Business (RCOB) and the College of Engineering and Computer Science (CE&CS). It responds to expressed demand by regional employers and potential students while anticipating continuing and growing community need for a well-trained and highly-skilled labor force that can, among other things, turn big data into the actionable intelligence that is increasingly required and relied on by a wide range of enterprises.

UTC has taken several steps to meet this need. These include developing data

analytics related programs at the institution, identifying and hiring qualified and experienced faculty, and engaging with local and regional stakeholders to help define and determine how its activities might best be configured to produce graduates that are recognized as contributors to a thriving, healthy, and inclusive community. Faculty from the collaborating colleges have developed a prospectus for the program, discussed salient aspects of it with colleagues and others at the university and in the community, revised the prospectus to incorporate diverse input, and sought to ensure that the final document substantially reflected critical perspectives.<sup>1</sup>

The result is a collaborative program, to be housed in the RCOB, which embraces a distinctive approach to the fast-growing field of data analytics. The new MS will draw on the expertise of faculty in business and computer science to produce graduates who combine knowledge of computer science in such areas as machine learning, data visualization, and modern programming with business knowledge. Graduates will be equipped to utilize advanced data-mining techniques to identify developing trends and contribute to predictions that will influence organizational decision-making. The program is designed to provide students with the practical skills and knowledge to thrive in a complex business environment. By serving as a much-needed bridge between the technical and business functions, holders of the MS in Data Analytics will add significant value to an enterprise.

The proposed program of study for the MS in Data Analytics is a 36-credit experience consisting of seven core courses, comprised of four new offerings (three developed by CE&CS, one by RCOB) and three existing ones now offered by RCOB in connection with a graduate certificate program in business analytics.<sup>2</sup> Once core courses are completed, a student will choose a concentration, following a computer science or business track; the concentrations will consist of electives currently available at the collaborating colleges. A capstone project, consisting of a practicum and/or an internship will be developed for business concentrators in the program. Students will include working professionals in the region who seek advancement in their careers, recognize the value of the new degree, and wish to enhance their skills; recent graduates of RCOB, CE&CS, along with others who hold undergraduate degrees in a STEM or social science field; and, international students. The program was initially designed as face-to-face; many of the courses are, however, available on-line. There is consequently opportunity to promote the program as a hybrid offering.

---

<sup>1</sup> Appendix A contains the Proposed Program of Study for the MS in Data Analytics.

<sup>2</sup> The program will also offer two noncredit "foundational courses," for students who lack sufficient computing and statistics training.

UTC's collaborative MS in Data Analytics incorporates an innovative approach to providing a pipeline of professionals to fuel a regional economy that more and more relies on innovation for growth. The new program is designed to meet employer demands while opening well-paying jobs to its graduates and, in doing so, reinforcing UTC's place among local organizations that cooperate closely to advance the overall quality of life in the Chattanooga/Hamilton County region.

Once the prospectus was developed and shared with various stakeholders, UTC determined to extend its consideration of the data analytics Master's degree by commissioning an independent and objective exploration that would culminate in a needs assessment. The university engaged Kronley & Associates, a consulting firm with significant experience in strategic planning and in advising educational systems and institutions at all levels, to conduct the needs assessment; the firm has previously undertaken similar assignments for UTC and in Tennessee.<sup>3</sup>

Previous needs assessments for UTC have typically provided findings and an overall recommendation about the feasibility of a proposed program. The current report includes these, and goes further. Program designers, along with other university stakeholders, recognized that developing the MS in Data Analytics, a program between collaborating colleges that requires ongoing sensitivity to the evolving requirements of potential students and employers, is a work in progress. Designers and stakeholders suggested that the exploration undertaken as part of the needs assessment might provide valuable insights to inform ongoing efforts to ensure that the program was aligned with institutional, community, student and employer interests. Kronley & Associates was asked to make additional suggestions, growing out of its investigation, which might inform the designers' continuing work.

The needs assessment surfaced significant employer demand and community support for, along with sufficient and growing student interest in, the new degree program. It strongly affirms the connection between the program and UTC's vision and mission and its commitment to robust community growth. It finds that UTC's adoption of a collaborative approach involving business and computer science is attractive to employers and students and distinguishes the proposed program from data analytics graduate degree programs in the region. Given the foregoing, the overall recommendation arising out of the needs assessment is that the university should proceed with developing the program. In addition to the data about need for a strong data analytics graduate program serving southeastern Tennessee and its environs, there was overwhelming community support for the program.

Endorsement of the effort, however, was accompanied by strong and widespread observations that success depends on more than the program's distinctive design. Implementation is critical, and continuing efforts to refine the program's design should address certain implementation questions.

The report that follows provides suggestions about some design and implementation issues. It begins by describing the methodology that was employed in the needs assessment and then presents findings, which are followed by an overall recommendation, which is accompanied by a few suggestions.

---

<sup>3</sup> For a fuller description of the firm and its work, see [www.kronley.com](http://www.kronley.com)



## METHODOLOGY

---

Kronley & Associates undertook a series of interconnected activities to inform the needs assessment. These include:

*Material review.* The firm reviewed websites, reports, documents and other materials on UTC, on the proposed MS in Data Analytics program at UTC, on data and business analytics programs generally and on programs in these areas situated at other universities. The firm also reviewed relevant information about the UTC service area, including but not limited to demographics, economic trends, employment, health, education, and information about employers' interests and needs. These reviews enabled the firm to determine, among other things, university interest, community need, the market for the proposed degree and any possible duplication of program at nearby institutions, and the institutional capacity to implement it successfully.

*Preliminary interviews and first-round key stakeholder discussions.* Kronley & Associates developed discrete protocols for and conducted confidential interviews with leading university administrators and the faculty members responsible for developing the MS in Data Analytics. The firm asked about their opinions of the new degree, their view of the collaborative approach, their perspectives about the community, employer needs, and student interest, their understandings of the academic and strategic value that the new program will add, and their views about impediments to implementation.

*Other confidential interviews.* UTC faculty and staff, with major input from the faculty member responsible for developing the program, identified key informants. Kronley & Associates developed protocols geared to the specific roles and interests of informants (including but not limited to administrators, faculty, students, alumni, and faculty at other institutions, potential employers, students, civic leaders, and others.) Thirty confidential interviews were conducted, mostly by telephone. Several informants were interviewed multiple times.

*Focus groups.* The firm conducted a focus group, pursuant to a protocol designed by Kronley & Associates, comprised of data analytics students, past, current and potential.<sup>4</sup>

*Sustainability assessment.* Relying on material review and interviews, the firm analyzed UTC's current plans for supporting and sustaining the proposed program.

---

<sup>4</sup> Appendix B lists informants from interviews and focus groups.

## FINDINGS

---

**Data analytics, the process of examining large and varied data sets to support effective organizational decision-making, is a rapidly growing field that requires well-trained and skilled workers.**

Enterprises large and small, long-standing and start-up, for-profit, governmental and non-profit perceive strategic opportunity in the availability of big data. Efforts to monetize data proliferate, and observers forecast significant continuing growth. Forbes recently predicted that the market for big data analytics will grow at about 56 percent, from \$130 billion to \$203 billion in the five-year period ending in 2020.<sup>5</sup>

Firms wishing to leverage big data are challenged by the need for employees with the capacity to transform data into a useful asset. Data analytics,<sup>6</sup> a shorthand reference to the overall process of managing larger and larger data sets, is a field that responds to this need, which embraces several related skills.

In 2011, McKinsey quantified the shortage of data scientists, individuals with “deep analytical skills,” as somewhere between 140,000 – 190,000 by 2018. A follow-up study released five years later argued that while data and analytics capabilities have advanced significantly, acquisition of talent remains a challenge, and that most companies are “capturing only a fraction of the value of data and analytics.” McKinsey suggested that the shortage of skilled staff extended substantially beyond data scientists to embrace “millions of people” to serve as translators for the work of data scientists to the rest of the organization.<sup>7</sup>

There is a growing belief that these translators and strategic enablers need business skills. “(I)t may be easier for domain experts, with deep knowledge of the business in which they are engaged and the requisite interpersonal skills, to obtain sufficient knowledge about data analysis to act as the translator for data scientists than for data scientists to gain enough knowledge about the domain, especially the language of that domain.”<sup>8</sup>

---

<sup>5</sup> Forbes. Gill Press. 6 Predictions for the \$203 Billion Big Data Analytics Market.

<https://www.forbes.com/sites/gilpress/2017/01/20/6-predictions-for-the-203-billion-big-data-analytics-market/#567ba5532083>

<sup>6</sup> Several descriptors are used – sometimes interchangeably -- to describe aspects of the multi-disciplinary field, or the entire field, that seeks to extract knowledge and insights from data. They include, among others, data analytics, business analytics, data analysis, business analysis, knowledge discovery, business intelligence, big data, data science, and informatics. See The Shape of Data. Different Names for Data Analysis. March 3, 2013.

<https://shapeofdata.wordpress.com/2013/03/03/different-names-for-data-analysis/>

These and other terms describe not only a process, they are also titles for various college and university programs that are often designed to reach similar goals. This report uses data analytics; it is the descriptor that UTC has chosen for its the new MS. UTC also offers an MS in Data Science in the College of Engineering, which is not designed to produce the translators and enablers (see Findings 1. D and 1.E) that are the focus of the proposed program; the existing and new degrees provide distinct pathways to careers in a burgeoning multidisciplinary field. <sup>7</sup> James Manyika, Chu, M., Brown, B., Bughin, J., Roxburgh, C., and Byers, A. H., “Big Data, The Next Frontier for

Innovation, Competition and Productivity.” McKinsey Global Institute. May 2011. Nicolaus Henke, Chui, M.,

Manyika, J., Saleh, T., Wiseman, B. and Sethupathy, G. “The Age on Analytics: Competing in a Data-Driven World. December 2016.

This and similar perceptions have led to the emergence of what some refer to as a “hybrid job,” one that blends sophisticated technological facility with business knowledge and skills. The need for this job has been recognized as “a boon and a challenge. These hybrid jobs are a classic example of technology driving job creation, and workers with the needed skills can command salaries comparable to those for positions with more advanced technical requirements. However, at the same time, these positions call for a set of skills that aren’t typically taught as a package. The training ecosystem preparing job seekers for these roles is relatively weak, and these roles do not typically align well with established higher education programs.”<sup>9</sup>

Emergence of hybrid jobs in data analysis is part of a general spike in demand for data science and analysts jobs. According to a *Burning Glass* report, released earlier this year:<sup>10</sup>

2,350,000 job openings demanded Data Science and Analytic (DSA) skills in 2015

By 2020, DSA job openings are projected to grow 15 percent

364,000 additional job listings projected in 2020

On average DSA jobs remain open five days longer than other statistical jobs.

Tennessee recognizes that it will require well-trained data analysts with a mix of business and communications skills to meet the challenges wrought by deep and continuing technological change. Earlier this year, the Tennessee Higher Education Commission remarked that “(a)s Tennessee’s economy grows and more industries choose to enter and operate in the state, individuals who earn credentials in these fields will be invaluable resources to both new and existing businesses.” In 2015, in the state, there were 860 openings for Business Analysts (a field that encompasses data analysts), with only 86 completers (a ten percent fill rate).<sup>11</sup>

In Tennessee, jobs in company and enterprise management are projected to grow at 6.2 percent during the period 2014-2024, from 38,000 to 69,000 jobs. This is among the top job growth rates projected for the state.<sup>12</sup>

<sup>8</sup> Chris Brady, Forde, M., Chadwick, S. <http://sloanreview.mit.edu/article/why-your-company-needs-data-translators>. May 2017.

<sup>9</sup> [http://burning-glass.com/wp-content/uploads/Blurring\\_Lines\\_Hybrid\\_Jobs\\_Report.pdf](http://burning-glass.com/wp-content/uploads/Blurring_Lines_Hybrid_Jobs_Report.pdf) 2015. See the discussions about higher education’s general response and the proposed UTC program in the sections that follow.

<sup>10</sup> <http://burning-glass.com/infographic-data-science-jobs-by-the-numbers/> May 18, 2017

<sup>11</sup> Tennessee Higher Education Commission. Academic Supply and Occupational Demand in Tennessee: Workforce Needs and Degree Production, Annual Report. January 15, 2017. [https://tn.gov/assets/entities/thec/attachments/Academic\\_Supply\\_Occupational\\_Demand\\_-\\_Final\\_Version.pdf](https://tn.gov/assets/entities/thec/attachments/Academic_Supply_Occupational_Demand_-_Final_Version.pdf) <sup>12</sup> See TN Department of Labor and Workforce Development, Labor Market Information Section, Tennessee Employment Projections 2014 to 2024 [https://www.jobs4tn.gov/admin/gsipub/htmlarea/uploads/LMI/Publications/Tennessee\\_7-25\\_2014-2024\\_Overview\\_update\\_for\\_website\\_\(REUPDATE\)2016\\_0727.pdf](https://www.jobs4tn.gov/admin/gsipub/htmlarea/uploads/LMI/Publications/Tennessee_7-25_2014-2024_Overview_update_for_website_(REUPDATE)2016_0727.pdf)

In interviews, employers in Chattanooga/Hamilton County reinforced the findings of national and state studies about the need for data analysts. One referred to data analytics as a “core competence,” which requires more than technical skills. Several emphasized that they viewed data analytics as essential to the economic viability of the state and the locality. Many noted that for the most part they had to go outside the state to find people to meet their requirements. Another, noting the positive job outlook for well-trained data analysts with business skills, commented that “there aren’t any unemployed ones.”

**Universities responded to industry’s need to manage and leverage big data by developing programs in data analytics; the number of and demand for these programs continues to grow.**

Data analytics seeks to turn big data into actionable intelligence. Analysts need a variety of skills and deploy a range of statistical and quantitative methods, computational tools, and predictive models, as well as knowledge of finance, business environments and economic trends, to make or influence data-driven decisions. Technical knowledge is required, but it is not sufficient – successful data analysts need business knowledge as well. Universities viewed this fast-growing need as an opportunity to enrich their offerings.

Many institutions of higher education developed data analytics programs; one estimate is that between 2007 and 2016, the total number of programs (from two-year through graduate degrees, embracing all forms of delivery) increased from five to 192.<sup>13</sup> Most of these programs were offered at public four-year institutions. At the same time, universities created and continue to develop graduate programs in analytics, primarily MS offerings in analytics, business analytics and data science. In doing so, they have implemented a mix of part-time, online and full-time formats. These programs bear different names: Statistics, Informatics, Business, Analytics/Intelligence, Data Science, Data Analytics/Analytics, Decision Sciences, Data Mining, Data Management, Big Data, Data Visualization, among others.<sup>14</sup>

Most of the graduate programs include standard foundation courses in analytics. Schools attempt to adjust the curriculum to ensure that technically-grounded students have some business exposure, often through industry projects or competitions.<sup>15</sup>

Despite the proliferation of data analytics programs, there is continuing demand for more of them. In April of this year, the Business Higher Education Forum (BHEF) released a report describing the need for universities to create data analytics programs. The study identified abundant jobs, in all industries, but especially in finance and insurance, information technology, and professional and technical services that require data science and data analytical skills. The report recognizes that there are two related job tracks today that require data analytics; one is for data scientists, which involves programming and applied data science, the other is for data-enabled jobs. Both require multidisciplinary exposure, there is a need for employees who can function across domains – who are business trained and who possess analytic skills.<sup>16</sup>

<sup>13</sup> Melissa R. Bowers. MAPD maps out the future of analytics education. ORMS Today. August 2017 <sup>14</sup> Tableau. State of Data Education in 2016, p.7. <https://www.tableau.com/data-education-2016> <sup>15</sup> <http://www.mastersindatascience.org/schools/top-masters-in-analytics/>

**UTC’s proposed MS in Data Analytics grows out of the university’s strategic plan, is aligned with local and regional development strategies, and incorporates best practices.**

In a previous needs assessment for UTC, we characterized it as a metropolitan university serving a varied population – including urban, suburban, and rural communities in three states, Tennessee, Georgia, and Alabama.<sup>17</sup> Metropolitan universities are inherently entrepreneurial; in meeting their missions they “shape and adapt their structures, policies, and practices to enhance their effectiveness as a key institution in the lives of the metropolitan region and its citizens.”<sup>18</sup> We noted that the university has sought competitive advantage while pursuing a variety of means to add value to student learning and community well-being, one of which is a commitment to nurture students through community connections.

The foregoing description remains valid today, with perhaps greater resonance. It is powerfully present in the university’s strategic plan, which opens by proclaiming UTC’s dedication to working with partners to harness capacities to find solutions that improve lives and build communities.<sup>19</sup> In describing itself, UTC is clear about two fundamental concerns, student success and community connections. As part of the latter, it wishes “to extend its reach further into Chattanooga’s high-tech entrepreneurial vision...”<sup>20</sup>

A key element of UTC’s value proposition is connecting to and leveraging Chattanooga/Hamilton County’s sense of place, which is now delineated by devotion to innovation and entrepreneurial activity. Much of this activity is powered by technology, and is increasingly dependent on a better-skilled workforce.

At one time, the Chattanooga region was regarded as “the Dynamo of Dixie,” known for an entrepreneurial spirit that promoted manufacturing and, later, insurance. The city was also distinguished by the presence of Coca Cola bottlers whose commitment to place led to the creation of significant private foundations, which continue to invest substantially in the community and help define its course.<sup>21</sup>

<sup>16</sup> Investing in America’s data science and analytics talent: The case for action. April 2017. BHEF and PwC. [www.bhef.com/sites/default/files/bhef\\_2017\\_investing\\_in\\_dsa.pdf](http://www.bhef.com/sites/default/files/bhef_2017_investing_in_dsa.pdf)

<sup>17</sup> Kronley & Associates. University of Tennessee at Chattanooga. Needs Assessment for a Master’s Degree in Public Health. February 2016.

<sup>18</sup> See, for example, the discussion on the website of the University of Arkansas at Little Rock, <http://ualr.edu/about/strategicplan/chancellor/ualr-today/2-what-kind-of-university/>.

<sup>19</sup> For more on the university’s commitment, see the strategic plan for UTC, with emphasis on Goals I, IA and II. <https://www.utc.edu/strategic-plan/resources/pdf/utc-strategic-plan.pdf>

<sup>20</sup> <https://alumnus.tennessee.edu/2016/ut-chattanooga-is-increasing-its-impact-on-the-region/>

<sup>21</sup> David Eichenthal and Windknecht, T. A Restoring Prosperity Case Study: Chattanooga, TN. Brookings Institute. September 17, 2008.

By 1990, however, the city was in deep decline, it had lost almost ten percent of its population during the 1960s and another ten percent between 1980 and 1990, much of it to white flight; only the annexation of certain nearby suburbs prevented it from losing additional residents. Decline had been apparent for some time. Manufacturing had, by 1969, caused the Environmental Protection Agency to designate Chattanooga as “America’s Dirtiest City.” Efforts to clean up the city led to further reductions in manufacturing jobs.<sup>22</sup>

Starting with efforts to reclaim the waterfront, Chattanooga reinvented itself. Its efforts have sparked a renaissance that has invited attention and emulation.<sup>23</sup>

Chattanooga’s comeback is apparent in, among other things: a reinvigorated downtown; the launch of an ultra-high-speed fiber-optic connection available to residents at a reasonable cost that transfers internet data at one gigabit per second (and has caused the city to be called “Gig City”); the development of the Enterprise Center and an innovation district geared to promoting entrepreneurship, located adjacent to UTC; and the rise of what has been called “entrepreneurial support organizations,” including several investment funds. At the same time, Chattanooga/Hamilton County serves as home to Blue Cross Blue Shield of Tennessee along with other insurers, including Unum. TVA and Volkswagen maintain a significant presence; all are among the community’s largest employers.<sup>24</sup>

Chattanooga’s ongoing transformation requires what one observer calls a heightened sense of place and “genuine, enthusiastic, collaboration.” Put differently, transformation and innovation are supported by an “ecosystem” of organizations that work together. These include government, private foundations, certain corporations, and the university.<sup>25, 26</sup>

UTC’s efforts to build “bridges beyond the classroom” is positively affecting how the community sees it. Respondents from the business and civic sector all told us that UTC has, over the last five years, become a recognized part of the entrepreneurial ecosystem, raising employer and civic expectations about its willingness and capacity to conceive and promote rigorous and robust academic experiences that will help develop the human capital the community needs. The Rollins College of Business is perceived as a significant player in this process; informants spoke highly of its current and continuing role in the region’s growth.

---

<sup>22</sup> Ibid.

<sup>23</sup> Bruce Katz. An Innovation District Grows in Chattanooga. Brookings Institute. September 29, 2015. <https://www.brookings.edu/blog/the-avenue/2015/09/29/an-innovation-district-grows-in-chattanooga/> <sup>24</sup> Ewing Marion Kauffman Foundation. ‘Little Town, Layered Ecosystem. A Case Study of Chattanooga.’

<http://www.kauffman.org/what-we-do/research/city-metro-and-regional-entrepreneurship/little-town-layered-ecosystem> 2/22/16.

<sup>25</sup> Ibid.

<sup>26</sup> We do not suggest that the city is without significant problems that require serious and systematic attention. High among them are public education, health, public safety, and income inequality. Strong commitments, embracing new approaches are required to deal with these ongoing critical issues. Informants for the most part recognize this urgency and note that the use of big data by governmental organizations to spur innovative solutions should be part of any comprehensive improvement strategies.

The introduction of an MS in Data Analytics is part of an ongoing response to community demand; it provides UTC with an opportunity to fill an empty space in the region's educational offerings while continuing to interact with industry, and, in so doing, assume a larger role in the civic infrastructure.<sup>27</sup>

The proposed UTC program seeks to produce “problem solvers.” It is not directed to developing data scientists, but rather will inculcate sufficient technical facility to leverage business knowledge. In doing so, it will enable graduates to bridge gaps – to look at and select data, and analyze and explain them. These graduates will have sufficient technical understanding and business skills to communicate with computer scientists while supporting management in decision-making.

UTC's approach adopts best practices for data analytics programs. Developers of highly-regarded data analytics programs observe that “more than accumulating a command of analytic tools, (they) require a fundamental understanding of analytics methods and business principles to accompany their expertise in computing and data base systems.”<sup>28</sup>

This requirement calls for an approach that draws on different disciplines. By combining expertise from the Rollins College of Business with that of the College of Engineering and Computer Science, UTC adopts the view of observers that “(u)nlocking the value of data requires a diverse, multidisciplinary approach to problem solving, combining data science and analytical skills with functional and industry expertise, creativity, and leadership.”<sup>29</sup>

**Employers in UTC's service area express a strong need for an MS in Data Analytics and a desire for UTC to develop such a program.**

Interviews with employers elicited their perceptions about the need for a graduate program in data analytics. Their views support the literature on the importance of data analytics and arise out of a widely-held realization that it is vitally important to understand and apply data in a business environment. The need to present and explain complex data to decision-makers and others was characterized by one informant as “getting downstream” in the business environment. The capacity of an enterprise to manage, interpret, present and explain data is viewed as “critical,” and essential to “meeting rapidly changing needs for the workforce and for employers.” Employers observed that they “have reams of data and will have much more, and need people to deal with it.” Interviewees expressed concern that they were “falling behind the curve”, and said that if UTC plans to develop a graduate degree in data analytics it “should proceed with sense of urgency.”

<sup>27</sup> Finding 4, below, speaks to employer interest in the proposed MS in Data Analytics.

<sup>28</sup> Melissa R. Bowers. MAPD maps out the future of analytics education. ORMS Today. August 2017 <sup>29</sup> PwC. Data Driven: What Students need to succeed in a rapidly changing business world. 2015. <https://www.pwc.com/us/en/faculty-resource/assets/pwc-data-driven-paper-feb2015.pdf>

Employers were unanimous in their desire for UTC to move ahead with the proposed collaborative effort between RCOB and CE&CS MS in Data Analytics; they regarded the combined approach as a pragmatic effort to produce individuals with requisite capacities. One emphasized that “we need more than nerds doing data.” Employers stressed that the program should be geared to producing individuals who “understand the business context,” and “who can communicate effectively.”

Informants suggested that graduates would be employed as analysts, project managers, data scientists, and strategists. They observed that the need for graduates with the MS in Data Analytics is not limited to larger manufacturers and insurance companies. Representatives of smaller companies, including those in transportation and health, spoke about the transformation of their businesses to “data-dependent enterprises,” which require the same analytic capacities as much larger organizations.

Investors in start-up firms emphasized that these firms’ need for reliable and sophisticated data analysis is critical and continuing. Individuals will be employed by the enterprises themselves and by the accounting and consulting firms that advise them.

In addition to for-profit enterprises, respondents point to an increasing need for data analysts in the public sector, including but not limited to public safety, cybersecurity, health and education.<sup>30</sup> Despite its continuing economic transformation, inequality in Chattanooga and Hamilton County is high, and the public sector requires thoughtful and visionary advice about the nature of programmatic interventions and resource allocation. One respondent observed that if Chattanooga is marketing itself as a unique place, it is important to direct resources to “improve the human condition, to make it a better place for everyone.” Evidence-based solutions are needed, and public employees who can manage data will be valuable organizational assets.

Employers expect UTC to play a significant role in addressing the demand for qualified employees; they view it as a pipeline for individuals with requisite skills. This expectation is consistent with UTC’s desire to play a leading role in the economic ecosystem, employers view UTC as beginning to “step up” to become the go-to place to meet changing workforce requirements. Every employer interviewed encouraged UTC to develop the MS in Data Analytics. They see its current efforts as not going far enough; in their view the certificate program offered by UTC does not have the depth to inculcate needed skills and meet employer needs.

While Chattanooga’s larger employers have filled some data analyst jobs with graduates of other programs,<sup>31</sup> they see a growing need for additional local capacity, which they believe can be met by UTC. UTC’s place in the community is a selling point for them; one large employer emphasized that “the value proposition for UTC is training and enabling students to get good jobs in Tennessee.” In urging UTC to move quickly, an interviewee remarked that the University “may be late to the (data analytics) party,” but that the implementation of a collaborative degree had the potential to differentiate the program from others and attract employers and students.

<sup>30</sup> In Chattanooga-Hamilton County, three of the eleven largest employers are city-county governmental organizations, two others are health organizations. <http://www.chattanoogaachamber.com/images/uploads/pdfs/MEL.pdf>

<sup>31</sup> See the discussion in Finding 6, below.



Employers and representatives of other academic programs agreed that it was difficult to predict the annual placement rate for graduates of any data analysis program; absorption depends upon need, which is influenced by several factors, including the overall state of the economy. Local employers projected growing and continuing need that the proposed program will help meet; when it comes to hands-on, business-world ready analytics graduates, one stated, “we can’t get enough of them.”

**Student interviews and focus groups suggest sufficient current interest in the MS in Data Analytics; UTC’s recruitment plan seeks over time to attract a wide and diverse pool of matriculants.**

In developing the MS in Data Analytics, UTC responded not only to employer demands and faculty interest, but also to student inquiries. Student awareness was stimulated by knowledge of a local job market that values an advanced degree in data analytics, preference for an academic experience that pools technical and business knowledge and skills, and a desire to combine classroom learning with real-world, problem-solving opportunities.

For many of these students, the business analytics certificate program does not go deep enough to meet their need. Business students interested in the MS desire immersion in more technical areas while maintaining a business focus; based on our interviews, this is what employers want as well.

Discussions with certificate holders, UTC data analytics undergraduates and MBA students surfaced significant interest in the proposed program; informants stated that, were the program available to them, they would have investigated it or pursued it. This suggests a market for students now in Chattanooga/Hamilton County.

UTC has developed a multi-pronged plan for recruiting students. Program designers and university administrators state that there are three distinct sources for matriculants: international students, professionals who wish to upgrade their skills and prospects, and current UTC undergraduates majoring in data analytics, business, or a STEM area.

We tested these assumptions with employers, students, other university-based stakeholders, representatives of other programs, and representatives of civic and community organizations. There was substantial agreement among these respondents that while UTC’s three foci are correct and strategic and augur success, each presents possible challenges:

*International students.* UTC is projecting significant increases in international students. It currently has 187<sup>32</sup> international students, 41 of whom are graduate students. It projects a total international student enrollment of 500 in about five years, 40 percent of whom (200) will be graduate students. The university has made significant investments in this area, hiring an experienced director of international programs, buttressing the staff in the international programs office, and enhancing housing and support services. Given this commitment, it is reasonable to expect growth over time in international student representation. This will require significant marketing efforts by the expanded and experienced international programs team, and our projections about international students in the MS assume a gradual start that gathers momentum over the years.

---

<sup>32</sup> Student data is for fall 2017 and was provided by UTC’s Office of Planning, Evaluation and Institutional Research.

Many international students are and will continue to be from India and China, with STEM backgrounds and interests in engineering and business. They are candidates for recruitment into the data analytics program. Informants report concerns about the domestic political climate in the United States, which may limit visas, students' need for additional supports, and lack of knowledge among potential students about UTC.

*Professionals in the workforce.* Employers are very enthusiastic about this group of potential candidates for the MS in Data Analytics; several reiterated characteristics that make them attractive: business knowledge and experience, ambition to advance in their careers while remaining in the Chattanooga region, and their eligibility for tuition assistance offered by several of the larger employers.

Employers expressed interest and in several cases excitement about this approach, and volunteered to encourage current employees to investigate the program. These and other informants also stressed that students now in the workforce will require targeted marketing (to them and to their companies) and will display a preference for flexible work and school schedules.

*Current undergraduates.* Representatives of other data analytics programs were positive about attracting these students; they encouraged UTC to establish an internal pipeline for them. Students were also interested, but saw seamless pursuit of graduate study as a trade-off with workforce participation immediately after earning a Bachelor's degree. Among undergraduate students today, 44 are currently majoring in the BS Business: Business Analytics program. In addition, the university counts 2,594 undergraduates majoring in STEM-related programs; 82 are mathematics majors. While choices will be individual, and UTC will need to target marketing to these students, there is a significant pool of undergraduates with potential interest in the program.

Recent undergraduates questioned one element of the proposed program – two foundational non-credit courses for students who lack technical preparation. They recommended that undergraduates who are interested in pursuing the MS be identified early and encouraged to undertake a course of study that will prepare them sufficiently for the technical demands of the degree.

UTC's identification of international students, professionals in the workforce, and undergraduates as sources of MS students is appropriate. Stakeholder estimates of the initial number of students enrolling and growth in the program over time varied, and ranged from 10 to 25 in the first year. Our discussions suggest that the MS may start with a relatively small cohort and attract additional students as word spreads and success – as measured by placement in better-paying jobs that utilize skills developed in the program – becomes apparent. Based on our discussions and current enrollment, the following range is a reasonable estimate of enrollment in the first four years:

**Projections of MS Data Analytics Matriculants in Enrollees in Initial Four-Year Period<sup>33</sup>**

Source	Year 1	Year 2	Year 3	Year 4	Total Range
International Students	2-4	3-6	6-8	7-12	18-30
Working Professionals	5-7	7-9	7-10	7-12	26-38
Undergraduates	4-6	5-8	6-8	7-10	22-32

**UTC's proposed MS in Data Analytics is distinctive and does not duplicate existing programs in its service area.**

We note above that data analytics graduate programs continue to proliferate throughout the United States. One informant, familiar with the landscape of such offerings and the interest of universities in creating them, remarked that “probably two more have been launched” during our one-hour discussion. UTC is not among the early developers of these programs,<sup>34</sup> and there are variously-named graduate degrees at Tennessee universities and higher education institutions in nearby states that train students to navigate today's data-dependent environment. UTC's program is, however, distinguished by a number of items. The first is its genesis, which responds directly to the interests and demands of students and employers in its service area. The second is its strong ties to community and economic development strategies in the Chattanooga/Hamilton County region. Finally, it is differentiated by its design as a collaboration among business and computer science, an attribute that reinforces its

<sup>33</sup> Projections assume program start-up in September 2018, which the program's principal designer views as feasible and desirable. In projecting initial enrollment, we relied not only on interviews but also on relevant student market data presented above in Finding 5. E. This describes the three areas from which the program will recruit students and notes some of the opportunities and challenges inherent in each. International students are a major focus of interest for the university; given that ramp-up in investment in recruitment is relatively recent, we project that it will take time to attract international students to a new program in a field where UTC does not yet have a significant presence. Similar constraints are present in recruiting undergraduates; in addition, UTC will need to devote time to ensuring a smooth pathway from undergraduate studies to the new MS and to develop a targeted and tested marketing strategy that among other things convinces potential students to forgo immediate entry into the job market. Analysis and discussions with employers suggest that targeting workforce professionals may initially yield the largest cohort of matriculants. Recruiting from this group will necessitate ongoing interaction with employers and representatives of other firms; here UTC can quickly leverage the strong reputation that the Rollins College of Business has with employers and in the community. Again, our analysis and projections see strong and growing student interest in the program accompanied by gradual increases in students over the first few years of implementation. The projections presented above are more conservative than those of the program's principal designer, but are consistent with those of other stakeholders whom we interviewed.

<sup>34</sup> See Finding 4. C.

other distinguishing features. UTC's proposed program seeks to leverage these distinctions and as such is designed to add value rather than duplicate existing efforts.

Program designers at UTC tracked data analytics and related programs in Tennessee; we looked at these and selected other offerings in nearby states (see below). We considered two major issues; one is duplication, the other, competition. In looking at duplication, our focus was on UTC's collaborative effort, and to what, if any, extent other institutions in the state presented similar offerings. Competition involves two elements – competition for students, and student competition for jobs, especially in Chattanooga/Hamilton County.

### Schools and Programs Offering Data Analytics and Related Programs in Tennessee

Institution	Type	Location	Distance (estimated)
<b>Austin Peay State University</b>	Professional Science Master's Degree in Predictive Analytics, offered by Department of Mathematics and Statistics, and  Professional Science Master's in Data Management, offered by Department of Computer Science and Information Technology. Each is a two-year online program	Clarksville	NA: online program
<b>Lipscomb University</b>	Master of Science in Data Science, offered by College of Computing and Technology, 30 credits	Nashville	133 miles
<b>Middle Tennessee State University</b>	Master of Science in Information Systems (Business Intelligence and Analytics Concentration), 30 credits, and  Master of Science in Professional Science (MS) with a concentration in Health Care Informatics, offered by College of Basic and Applied Science, 36 credits	Murfreesboro	104 miles
<b>Tennessee Technological University</b>	Professional Science Master's Degree in Environmental Informatics, offered by College of Interdisciplinary Studies, Hybrid program, 33 credits	Cookeville	99 miles
<b>University of Tennessee Knoxville</b>	Master of Science in Business Analytics, offered by Haslam College of Business, 38 credits.  Note: the university also offers a Ph. D in Analytics	Knoxville	115 miles
<b>University of Memphis</b>	Masters of Science in Bioinformatics, offered by College of Arts and Sciences, 37 credits.  Note: the university also offers graduate certificates in both Bioinformatics and Data Science	Memphis	330 miles

<b>Vanderbilt University</b>	Master of Science in Applied Clinical Informatics, offered by Department of Biomedical Informatics, 36 credits, and  Master of Science in Biomedical Informatics, offered by Department of Biomedical Informatics, 34 credits,  Note: the university also offers an MBA with a concentration in operations and analytics, geared to manufacturing	Nashville	134 miles
------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------	-----------

None of the foregoing programs offer the business/computer science blend that is at the core of UTC’s plans for data analytics. Of the seven institutions listed above, five focus on specialized experiences, relating to health, the environment or business intelligence. These programs are not designed to produce “border crossers,” whose bridge the divide between the business and technological elements of an organization. Put simply, there is no duplication between these programs and the proposed UTC program; they exist for

different reasons and they appeal to different students. Furthermore, based on our discussions with local employers, it does not seem reasonable to expect any significant competition between graduates of these programs and those of the UTC effort for jobs in the Chattanooga area.

The sixth institution is Lipscomb University, a private, Christian, liberal arts university in Nashville that offers the MS in Data Science through its College of Computing and Technology. This degree is designed to appeal to students with a more technical background. In addition, we do not see UTC and Lipscomb engaged in any serious competition for students; the UTC student base is primarily local and attracted to public universities.

The seventh Tennessee institution is the University of Tennessee Knoxville (UTK), the state’s flagship. UTK offers a Master’s in Business Analytics through its Haslam College of Business.<sup>35</sup> The program is highly respected by observers, and ranked among the top analytics programs.<sup>36</sup> Employers throughout Tennessee and the nation seek its graduates. The program has about 45 students; 38 credits earn the degree. Faculty state that the program is oriented more toward the technical than business; most students are STEM-trained. The primary focus of the program is teaching and preparing students for the workforce; significant attention is devoted to the capstone project – the program employs a retired executive to recruit business participation.

UTK program faculty members do not see much overlap with the UTC program. They do, however, note that the UTC effort will be seen simultaneously as possible competition for students and as a potential feeder for the UTK doctoral program. There is also, in this view, potential to leverage the two programs, possibly along with others in the state, to help create a larger regional environment or ecosystem for technology supported by data analysis. The Research Triangle in North Carolina, with three different but sometimes competing universities supporting a robust business sector, is an example. At the moment, however, there is no programmatic duplication between UTK and the proposed UTC effort. Moreover, Chattanooga/Hamilton County employers state that they require more data analytics graduates than are currently available.

There are, as noted above, several institutions outside the state that offer data analytics and similar programs.<sup>37</sup> Of these, two, located nearby in Georgia, are relevant to UTC's efforts. They are the Georgia Institute of Technology (Georgia Tech) in Atlanta and Kennesaw State University (KSU) in Kennesaw. Georgia Tech is 116 miles and Kennesaw 96 miles from UTC. Each program is highly ranked<sup>38</sup> and their graduates highly respected by Chattanooga/Hamilton County employers.

---

<sup>35</sup> UTK also offers a Ph.D. in Analytics

<sup>36</sup> See <http://www.valuecolleges.com/rankings/best-big-data-graduate-programs/> and <https://tfetimes.com/best-business-analytics-program-rankings/>, which respectively rate the UTK program as 34<sup>th</sup> and 22<sup>nd</sup> among similar offerings.

<sup>37</sup> In considering competition with out-of-state programs, UTC's commitment to place is instructive. Not only does the university seek to support enterprises in its locale, but its instruction is directed to nearby students. Of 1411 graduate students enrolled in fall 2017, 582 (41 percent) are from Hamilton County. Another 519 (37 percent) hail from other counties in Tennessee. Footnote 32 provides the source for graduate student enrollment data.

<sup>38</sup> See footnote 35.

KSU offers a graduate certificate in data management and analytics, the MS in applied statistics and a Ph.D. in Analytics and Data Science. We do not foresee competition for students between UTC and KSU, they are public universities that draw from different states. There are, however, two items worth noting. The first is that KSU graduates appeal to Tennessee employers; while the UTC and KSU programs seem geared to different students, there may eventually be competition among graduates for jobs. Second, and arguably more relevant, is that KSU is a regional university that has leveraged its location outside Atlanta to build a highly-regarded program that serves an expanding array of local and regional enterprises. In this sense, it is a model.

Georgia Tech offers a one-year (three-semester), 36-credit business analytics track in its Master's in Analytics program at the Scheller College of Business. It is billed as an interdisciplinary program that spans statistics, operations research, computing and business. Here, too, we do not see any competition in the near future for students between Georgia Tech and UTC. While Chattanooga/Hamilton County employers are aware of the Georgia Tech program, they do not expect to fill a significant number of jobs with its graduates, who prefer to stay in Atlanta or migrate to other regions of the country. The Georgia Tech program is worth exploring because of what it signifies. As a relatively new offering at a leading technical university which does not struggle to attract or place its graduate students, Georgia Tech's approach reinforces UTC's understanding that an inter- or multi-disciplinary approach to data analytics is on the cutting edge of efforts to "meet the growing demand for savvy professionals who can transform data into relevant insights for making better business decisions."<sup>39</sup>

**The proposed MS in Data Analytics program will not unduly burden the university and is sustainable, with potential to provide significant community and institutional benefit.**

Acquiring robust data analytics capacity is a priority for businesses of all types and sizes in Chattanooga and Hamilton County. UTC has developed a collaborative, multi-disciplinary initiative that responds also

to faculty and student interest. Given the extent of the demand, plans for the proposed program have attracted widespread support and encouragement for UTC to proceed.

The program is adequately staffed at start-up.<sup>40</sup> The faculty member from RCOB who led in program design has significant experience in developing a multi-disciplinary informatics program at a metropolitan university. He was recruited to UTC and awarded an endowed chair, a manifestation of UTC's commitment to the program, in large part because of this expertise. Four additional faculty members from RCOB have been identified to teach in the degree program and are in place. CE&CS faculty indicate that they believe an additional faculty member is required to staff the program; interviews

---

<sup>39</sup> <https://www.scheller.gatech.edu/news-events/latest-news/2014/articles/ms-analytics.html>

<sup>40</sup> This finding is drawn from interviews and discussions with university officials and program designers. The pro forma for the program was not available during our review.

indicate that a request for this line will be supported by the administration.<sup>41</sup> There is no requirement for additional space to house the program.<sup>42</sup>

There is general agreement that UTC has identified appropriate sources of students for the program. Key stakeholders from on and off the campus concur that the program will benefit from a gradual ramp-up, accompanied by ongoing marketing and outreach to business leaders and community influentials.

In a series of interviews, we suggested to UTC leaders that based on material review and discussions with representatives of other programs, data analytics is a dynamic field, which will morph as technology advances and employer needs shift in response. Programs must respond to these changes, and will require ongoing oversight and continued investment. Campus leaders, from the central administration to the deans of the collaborating colleges, emphasized their commitment to providing sufficient resources to ensure program success, to reviewing the program with input from business and the community, and to making midcourse adjustments as needed.

## CONCLUSION: RECOMMENDATION AND SUGGESTIONS

Findings from the needs assessment reveal that the proposed MS in Data Analytics at UTC grows out of and is consistent with its strategic plan. Designed as a collaborative effort, the program provides a distinctive pathway to the degree and will not duplicate offerings by other universities in the region. It will draw students who would not, but for the new program, pursue the degree.

There is existing faculty and student interest in and community support for the program. The program aligns with a widely-shared vision for the region's development, is directed toward employer needs, and fortifies UTC's role as a metropolitan university that is committed to entrepreneurial efforts to promote community well-being. We heard little opposition to the introduction of the degree; concerns expressed by some CE&CS faculty can and should be addressed through ongoing planning.

The proposed degree is cost-effective, and start-up will not require significant additional investment. At this writing, there is more downside risk present in not proceeding with the program than there is in moving ahead.

**Based on the needs assessment, we recommend that the university should pursue further planning for and implementation of the MS in Data Analytics.**

As discussed above, we were asked to supplement our recommendation with suggestions for ongoing planning and eventual implementation. We suggest that the planners consider the following:

<sup>41</sup> Some faculty from CE&CS have expressed concerns about the program, among them the need for more planning and some apprehension about the impact of the program on current offerings in CE&CS. Section 8, below, includes our suggestions about continued collaborative planning which, among other things, should address any potential adverse impact on student enrollment in existing CE&CS courses.

<sup>42</sup> See footnote 39, above.

*Collaborate continuously.* The MS in Data Analytics is distinctive because it is collaborative; this appeals to employers and students while avoiding duplication with other programs. Collaboration should be about more than design, however. It should enable faculty to identify, discuss and work together about issues that will arise. It will also provide UTC an opportunity to track the evolution of a collaborative program and deploy what it learns as it considers similar efforts.

Collaboration also embraces a chance to expand the program's reach. Several informants noted the possibilities of partnerships with other disciplines, including health and education.

*Embed rigor, ensure flexibility.* The MS in Data Analytics is in part a response to employer expectations – UTC should offer degrees that provide training for the workforce. Employers stressed that these expectations include rigorous subject matter and incorporate - depending on the track students follow - new technologies, programming skills and languages, as well as deep understanding of the business environment. Beyond this, employers emphasized the importance of “soft skills” and communications for all graduates.

Flexibility in the approach to design is important for potential students. The MS in Data Analytics was conceived initially as a face-to-face program; it will be easier for the program to attract and retain professionals in the workforce if there is an opportunity to study on-line. Hybrid delivery should be considered. At the same time, there may be an opportunity to attract more undergraduates to the MS by establishing a five-year pathway to earning a combined BA (BS)/MS.



*Promote robust employer involvement.* Regular and continuing employer involvement will add greatly to the quality and reputation of the program. RCOB and CE&CS should establish an advisory council consisting of businesses and public employers to assist in program review and development. Second, the program should develop and standardize a process to involve a range of employers in the capstone program; the experience of leading data analysis graduate programs suggests that this is essential for quality student experiences .

*Build a brand and market the program.* Informants from all sectors spoke to the importance of creating buzz about the program – for recruitment, for relationships with employers, and to promote UTC’s position as a civic asset. Central to the brand is the collaborative nature of the program and its strong connection to Chattanooga/Hamilton County’s adoption of innovation as a key to its future.

---



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date: March 1, 2019

Committee: Education, Research, and Service

Item: **New Academic Program - B.S. in Information Sciences at UTK**

Type: Action

Presenter: David Manderscheid, Provost and Senior Vice Chancellor, UTK

10

The College of Communication and Information at UTK proposes to offer a new Bachelor of Science degree in Information Sciences. As a profession, Information Sciences is grounded in the belief that expertise in all forms of information is necessary for progress in science, business, education, and culture. The proposed undergraduate degree will provide an innovative curriculum that offers instruction in the areas of information organization, user experience, usability, internet studies (i.e., web design, information architecture), and data management. The program will also provide research opportunities for students in alignment with the current undergraduate minor in Information Studies and Technology, Masters of Science in Information Sciences professional degree and interdisciplinary doctoral degree in Communication and Information. Through collaborations with partners such as Oak Ridge National Laboratory, Scripps Networks, and the UT Medical Center, it will be possible to enrich the curriculum, provide internship opportunities for students, and meet the need for creating a workforce in information sciences-related job opportunities.

An abbreviated version of the full proposal submitted to the Tennessee Higher Education Commission is included in the meeting materials. Funding for the new program is addressed at pages 39-44 of the proposal.

The proposed program has the full support of the UTK administration, UT system administration, and THEC.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution presented in the meeting materials to approve the proposed B.S. in Information Sciences at The University of Tennessee, Knoxville.**



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
New Academic Program – B.S. in Information Sciences at  
The University of Tennessee, Knoxville

Resolved: The Board of Trustees approves the creation of a new academic program at The University of Tennessee, Knoxville offering the degree of Bachelor of Science in Information Sciences, effective Fall Semester 2019.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.

# New Academic Program Proposal

School of Information Sciences,  
College of Communication and Information  
University of Tennessee Knoxville



THE UNIVERSITY OF  
TENNESSEE  
KNOXVILLE

# Degree

- Bachelor of Science in Information Sciences (BSIS) – Fall 2019
- First UG degree in information sciences in TN
- Aligns with initiatives of top-ranked peers
- Prepares students to approach information problems from humanist, social, scientific, and computational perspectives

# Program Details

- Two Concentrations:
  - Data, Information Management and Analytics
  - User Experience Design
- Online and F-2-F courses
- Approvals obtained by all internal faculty bodies

# Supporting Evidence

- Feasibility study: collected information from UG students, SIS faculty, and TN state job postings
- Strong support from students and potential employers (e.g., ORNL, ORAU, Google)
- BLS projects 13% growth in computer & information technology jobs from 2016-2026

# Degree Alignment & Potential

- Aligns with the state master plan
- Supports *Drive to 55* and the *CCTA 2010*
- Prepare graduates for in-demand careers
- Strong potential to attract new students to the university, including those from surrounding states



**The University of Tennessee at Knoxville**

---

---

**Proposal for the Initiation of a  
Bachelor Degree in Information Sciences (BSIS)**

---

---

10

**Submitted by:**

The University of Tennessee at Knoxville,  
College of Communication and Information,  
School of Information Sciences.

**A NEW PROGRAM LEADING TO THE DEGREE OF**

**Bachelor of Science in Information Sciences**

(Title of Degree as on Diploma)

**Information Sciences**

(Title of Major)

## Table of Contents

<i>Letter of Notification – Approved by THEC on June 26, 2018</i>	4
<b><i>CURRICULUM</i></b>	<b>14</b>
Program Requirements	14
Current Courses and Existing Programs	15
New Courses Needed	15
Distance Learning	22
Course Syllabi	22
<b><i>ACADEMIC STANDARDS</i></b>	<b>22</b>
Program Admission Standards	23
Program Retention Standards	23
Program Graduation Standards	23
<b><i>DIVERSITY</i></b>	<b>23</b>
<b><i>PROGRAM ENROLLMENT AND GRADUATES</i></b>	<b>24</b>
<b><i>ADMINISTRATIVE STRUCTURE</i></b>	<b>25</b>
<b><i>FACULTY RESOURCES</i></b>	<b>25</b>
Current Faculty	25
Anticipated Faculty	27
<b><i>LIBRARY AND INFORMATION TECHNOLOGY RESOURCES</i></b>	<b>28</b>
Library Resources	28
Technology Resources	32
<b><i>SUPPORT RESOURCES</i></b>	<b>33</b>
<b><i>FACILITIES AND EQUIPMENT</i></b>	<b>34</b>
Existing Facilities and Equipment	34
Additional Facilities	36
<b><i>MARKETING AND RECRUITMENT PLAN</i></b>	<b>36</b>
<b><i>ASSESSMENT AND EVALUATION</i></b>	<b>37</b>
Schedule for Program Assessment	37
Responsibility for Conducting Program Assessment	38
Use of Results	38
<b><i>ACCREDITATION</i></b>	<b>39</b>

<i>FUNDING</i> _____	39
<i>LIST OF APPENDICES</i> _____	41
Appendix A: THEC Financial Projection _____	42
Appendix B: Letters of Support _____	45
Appendix C: Curriculum Mapping _____	63
Appendix D: SIS Course Syllabi _____	83
Appendix E: SIS Faculty CVs _____	215

**List of Tables**

- Table 1. Requirements for Bachelor of Science in Information Sciences Major
- Table 2. Requirements for Bachelor of Science in Information Sciences Major – User Experience Design (UXD) Concentration
- Table 3. Requirements for Bachelor of Science in Information Sciences Major – Data, Information Management and Analytics Concentration
- Table 4. Estimated Headcounts for Enrolled Students and Graduates (AY 2019-20 to AY 2023-24)
- Table 5. SIS Full Time Faculty, Rank, Degree and Interest in Teaching, Mentoring and Research with UG Students
- Table 6. List of Library Physical Facilities and Their Availability to SIS Students and Faculty
- Table 7. Library and Information Science Collection
- Table 8. IT, Journalism collection and Datasets

## **Letter of Notification – Approved by THEC on June 26, 2018**

This letter seeks permission to develop a plan to offer an undergraduate degree program in the School of Information Sciences in the College of Communication and Information, University of Tennessee at Knoxville.

The proposed program will award the degree of **Bachelor of Science in Information Sciences with a major in Information Sciences**.

The CIP Code for the proposed program is **11.0401**.

The proposed implementation date for this major is **Fall 2019**.

The Academic Program Liaison (APL) for this program is

Linda C. Martin, Vice President  
Office of Academic Affairs and Student Success  
The University of Tennessee  
[lcmartin@tennessee.edu](mailto:lcmartin@tennessee.edu)

The institutional contact for this program is:

Diane Kelly, Professor and Director  
School of Information Sciences  
College of Communication and Information  
University of Tennessee, Knoxville  
1345 Circle Park Dr., Suite 451  
Knoxville, TN 37996-0341  
Telephone: 865-974-5882  
Email: [dianek@utk.edu](mailto:dianek@utk.edu)

### **The Purpose and Nature of the Program:**

The School of Information Sciences (SIS) offers a nationally ranked master's program in Information Sciences. Information Science, as a profession, is grounded in the belief that expertise in all forms of information is required for progress in science, business, education, and culture. This expertise must include understanding of the uses and users of information, the nature of information itself, as well as information technologies and their applications. Information professionals work in settings emerging from the growing information, technology and knowledge economy and contribute to the improvement of lives of people, communities and institutions. (Adapted from: <http://ischools.org/stories/ischool-movement/>).

The SIS Information Sciences program is one of UTK's successful online graduate programs. Also, SIS has a successful undergraduate minor in Information Sciences and Technology (IS&T). The proposed undergraduate degree program will provide an innovative curriculum that includes instruction in areas of growing importance, including information organization, user experience, usability, internet studies (web design, information architecture) and data management. It will also provide research opportunities for

students in alignment with the current Masters of Science in Information Sciences professional degree and interdisciplinary Doctoral Degree in Communication and Information. Collaboration with UT-partnering organizations with which CCI already has strong ties (such as Oak Ridge National Laboratory, Scripps Networks, and the UT Medical Center) will enrich the curriculum, provide internship opportunities for students, and meet the need for creating a workforce in information sciences related job opportunities.

### **Alignment with State Master Plan and Institutional Mission**

As the preeminent research-based, land-grant university in the state, UTK embodies the spirit of excellence in teaching, research, scholarship, creative activity, outreach, and engagement attained by the nation's finest public research institutions. UTK's Carnegie Classification is 'Research University' (very high research activity). Most undergraduates are full-time, and admission is selective with a fairly low transfer-in rate. Admission to graduate and professional programs is also competitive. Graduate offerings include master's, doctoral, and professional programs that focus both on research and practice. Nationally ranked programs, as well as our partnerships with Oak Ridge National Laboratory, are among UTK's unique characteristics.

The proposed undergraduate major is aligned with the primary mission of UTK, which is:

*To move forward the frontiers of human knowledge and enrich and elevate the citizens of the state of Tennessee, the nation, and the world. As the preeminent research-based, land-grant university in the state, UT embodies the spirit of excellence in teaching, research, scholarship, creative activity, outreach, and engagement attained by the nation's finest public research institutions.*

Through this program, UTK will be the first university in Tennessee to offer an undergraduate degree in information sciences. Thus, UTK is moving the frontiers of knowledge and enriching the lives of the citizens of the state, nation, and the world by offering new educational opportunities to students and adding needed expertise to the workforce of the state. The creation of this major is also aligned with Vol Vision 2020, UTK's strategic plan. Specifically, strategic priority #1, which is focused on undergraduate education, "Recruit, enrich, and graduate undergraduate students who are prepared to enter the global community as lifelong learners and authentic leaders." Again, as a unique degree offering, with in-demand career paths, the degree has the potential to attract new students to the university, including those from surrounding states. As an aside, Dr. Ross Todd, who was the external reviewer of this proposal, is from Rutgers University, which is listed in Vol Vision 2020 as one of the Top 25 target peers for UTK. Furthermore, the BSIS degree will include a number of online courses, which have been shown to help with retention and graduation rates, in particular, for non-traditional and part-time students who might have other significant responsibilities that prevent them from traveling, such as work and family.

The creation of the undergraduate major is aligned with one of the College of Communication and Information Top 3 Priorities, "Increase CCI undergraduate major enrollment and retention." Specifically, the College has a priority to work with the School of Information Sciences to develop an undergraduate major in information sciences. The development of an undergraduate major is also a key part of SIS's strategic plan.

The proposed Undergraduate degree program directly aligns with the 2015-2025 State Master Plan for Higher Education: <https://www.tn.gov/thec/article/statewide-master-plan> in the following ways:

1. "Drive to 55" is the principal tool at Tennessee's disposal for achieving the Governor's bold goal — that, in contrast to Tennessee's current postsecondary attainment rate of 38 percent, a decade from now 55 percent of the state's working-age population (ages 25-64) will have earned a college degree or other high-value postsecondary credential. This is the Drive to 55 itself.

- The newly proposed program will increase the number of postsecondary degrees in Tennessee by adding an attractive undergraduate program in a high demand discipline.
  - Our newly proposed degree program aligns with the postsecondary outputs and outcomes with current and future workforce and economic development needs of the state. For instance, as of October 2016, in the state of Tennessee ([www.jobs4tn.gov](http://www.jobs4tn.gov)), there are over 500 jobs with the following job titles/phrases in the job titles: User Experience, Information Architect, Information Coordinator, Information Security, Information Research, Information Management, and Information Consultant. In addition, as of October 2016, in the state of Tennessee ([www.jobs4tn.gov](http://www.jobs4tn.gov)), there are 111 jobs with the following job titles/phrases in the job titles: Informatics, Informatics Specialist, and Informatics Coordinator, Data Science, and Informatics Analyst.
  - Considering the lucrative job prospects after completing a B.S. in Information Sciences our newly proposed degree program will enhance the percentage of Tennesseans with a college degree.
  - Our newly proposed bachelor’s degree program will meet the information needs of businesses, government agencies, hospitals, schools, etc. for effective and efficient management of a variety of data and information (e.g., health, business, etc.) in different formats (e.g., text, graphics, multimedia, haptic, etc.).
  - Graduates of our newly proposed program will also be able to work on collaborative research projects at Oak Ridge National Laboratory and related programs, and technology transfer opportunities in Tennessee.
2. Complete College Tennessee Act of 2010: <http://www.tennessee.gov/thec/topic/complete-college-tn-act> In January 2010, the Tennessee Legislature passed the Complete College Tennessee Act (CCTA), a comprehensive reform agenda that seeks to transform public higher education through changes in academic, fiscal and administrative policies at the state and institutional level. At the center of these reforms is the need for more Tennesseans to be better educated and trained. Our newly proposed degree program does not belong to the “overly supplied” academic programs like journalism and broadcasting, fine arts, or engineering technology in Tennessee.
  3. Our newly proposed degree program is in line with the state’s new Public Agenda for higher education which establishes the direct link between the state’s economic development and its educational system.
  4. As per the “Academic Supply and Occupational Demand in Tennessee” report by the Tennessee Higher Education Commission (dated January 15, 2015), the most in-demand career paths include construction, transportation and logistics, medical professions, and banking and finance. (Source: [http://www.tennessee.gov/assets/entities/thec/attachments/LM2015\\_SupplyDemand\\_Combined\\_0120.pdf](http://www.tennessee.gov/assets/entities/thec/attachments/LM2015_SupplyDemand_Combined_0120.pdf)). Careers in transportation and logistics, medical and health industry, and banking and finance heavily rely on the management of data and information. Our newly proposed degree program will help the State of Tennessee meet the deficit of individuals trained to work in these areas.

## Feasibility Study

### *a. Student interest for the proposed academic program.*

A survey of current undergraduate students in the Information Science and Technology Minor indicated a very strong interest in the undergraduate major in Information Sciences. This survey was distributed to a total population of 299 students in January, 2017. There were 80 responses to the survey, resulting in a response rate of about 27%. More than sixty five percent of the responding students said they would be interested in taking more courses in the area and enrolling in such a program of study. Presented below are results from a few questions from the survey conducted to document student interest in an undergraduate major in Information Sciences.

*Q- If a BS in Information Sciences had been available when you were choosing your major at UT, how interested would you have been in this major?*

#	Answer	%
1	Very Interested	35.53%
2	Somewhat interested	31.58%
3	Not interested	32.89%
	Total	100%

*Q- If a BS in Information Sciences had been available when you were choosing your major at UT, how likely would you have been to select it?*

#	Answer	%
1	Very Likely	27.63%
2	Somewhat likely	25.00%
3	Unlikely	35.53%
4	Definitely not	11.84%
	Total	100%

When students answered the above questions in the survey, the only information to help them make a choice was the name of the program. No specific details of the curriculum, courses or job opportunities were shared with the students. With that information, more than 50% of the surveyed students said they would have selected the Information Sciences major. This is a very strong indication of student interest in the proposed program.

For the next question, students were given some possible concentrations in such a major and there was a positive response and level of interest in all the possible concentrations of the proposed program.

*Q- Suppose this major had been available to you, and had offered a choice of different areas of concentration. Indicate how interesting each concentration would have seemed to you:*

#	Question	Extremely interesting	Very interesting	Moderately interesting	Not interesting at all
1	Internet Studies	28.95%	18.42%	35.53%	17.11%
2	Data Management	29.33%	13.33%	25.33%	32.00%
3	Information Organization	28.00%	26.67%	33.33%	12.00%
4	Human Computer Interaction	19.74%	22.37%	36.84%	21.05%
5	Usability/User Experience	19.74%	17.11%	36.84%	26.32%

The growing enrollments in the undergraduate minor offered by the School of Information Sciences and the results of this survey demonstrate a strong interest in the proposed undergraduate major. This is in agreement with the experience of the undergraduate advisor at College of Communication and Information, Ms. Betty Bradley. In her letter of support for the program Ms. Bradley reinforces student interest in this area of study. With a combination of these factors, student interest in the proposed undergraduate major is well documented.

***b. Local and regional need/demand for the proposed academic program.***

In 2014, SIS invited Dr. Gary Marchionini, as an external consultant from University of North Carolina Chapel Hill, to assist with the development of a strategic plan for the School of Information Sciences. During his visit, Dr. Marchionini met with UTK Leadership, CCI Administrative Team and SIS faculty, staff and students. Based on all these interactions, Dr. Marchionini presented a final report and in his report, strongly recommended that SIS consider developing an undergraduate major. Following Dr. Marchionini's recommendation and building up on the success of the undergraduate minor, SIS is now interested in developing an undergraduate major that will address the need for technically skilled workers in the State of Tennessee.



The University of Tennessee Knoxville's School of Information Sciences recognizes a clear recent trend among iSchools:<sup>1</sup> the impact of information technology, digital initiatives, and the increasing complexity of the information environment and changes in information-seeking behavior, have been shifting the teaching and research agendas of schools of information studies. The introduction of undergraduate programs by schools that traditionally offered only graduate programs, is an increasingly prominent trend. The single largest area of change in the field has been an emphasis on information technology and large undergraduate majors. This trend has gone from virtually zero undergraduate majors eighteen years ago to several thousand students nationwide in 2015.

Beyond traditional markets, the National Research Council report, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economy Future* (2006), forecasted a need for more information scientists to manage the knowledge-intensive enterprises upon which the future U.S. economy will be based. Anticipating this trend, such programs currently exist at many of UTK's aspirational peer institutions and other research universities, including UNC Chapel Hill, Washington, Michigan, Pittsburgh, Florida State, Oklahoma, University of Wisconsin-Milwaukee, Rutgers, and South Carolina (See Table below). The success of these programs, as is demonstrated by the consistently increasing enrollment is indicative of the local regional need/demand for such programs across the nation. In the state of Tennessee, there is no such program that currently exists and therefore with this effort, the University of Tennessee Knoxville continues to make its contributions to the enhancement of the workforce of the state. The next section and Table 2 demonstrates the need for such a program in our local region by identifying the in-demand IT employment opportunities in the state of Tennessee.

**Table 1: Other U.S. Universities with Information Studies Undergraduate Programs (ALISE 2016 Stat Report for Fall 2015)**

University	Year Begun	Enrollments in Fall 2015	Degree	UG Programs
Arizona	n/a	379	Information Science and Art; Information Science and eSociety; Information Science and Technology	3
Florida State University	1996	442	Information Technology; Information Communication and Technology	2
Kentucky	2013	70	Information Communication Technology	1
Michigan	2008	149	Information Science	1

<sup>1</sup> The iSchools organization is a consortium of information schools dedicated to advancing the information field. The iSchools, a consortium of more than 80 information schools in universities on five continents, take it as a given that expertise in all forms of information is required for progress in science, business, health/medicine, education, and culture. While each individual iSchool has its own strengths and specializations, together they share a fundamental interest in the relationships between information, people, and technology.

North Carolina - Chapel Hill	2003	58	Information Science	1
Oklahoma	2005	31	Information Studies	1
Pittsburgh	1979	125	Information Science Bio Informatics	5
Rutgers	2001	600	Information Technology and Informatics	3
South Carolina	2008	27	Information Science	1
South Florida	1964	51	Information Studies	1
Syracuse	1989	737	Information Management and Technology	1
Washington	2001	355	Informatics	1
Wisconsin - Milwaukee	1998	474	Information Science and Technology	1

*c. Employer need/demand as demonstrated in a market analysis and future workforce projections during the first 5 years (undergraduate).*

Tennessee’s Labor Education Alignment Program (LEAP) ensures that post-secondary institutions are producing the skills and credentials that Tennessee employers actually need. The LEAP 2016 Occupation Analysis Report available from Tennessee Department of Economic and Community Development website (<http://www.tnecd.com/advantages/workforce-education>) is meant to aid in local, regional and state policy decision-making by clearly depicting in-demand occupations and highlighting opportunities to reduce education gaps. The report clearly demonstrates an opportunity of growth for Tennessee in the field of information technology and reveals that “Information technology (IT) occupations are in high demand across Tennessee and the nation. Currently, 51,250 people are employed in computer (IT) occupations in the state. Tennessee’s concentration of employment in these fields is 39 percent below the national average, however, there continues to be growth in employment. IT employment has increased 13.7 percent from 2010 to 2015. During 2015, there were 89,686 unique job postings for IT jobs in the state and 32,052 hires. Table 2 outlines IT occupations which have high employer demand in one or more Tennessee regions. In the table, an ‘X’ denotes high demand for an occupation in each individual region of Tennessee.”

**Table 2. In Demand Information Technology Occupations [Source: LEAP 2016 Occupation Analysis Report prepared by Center for Economic Research in Tennessee]**

IN-DEMAND IT OCCUPATIONS												
SOC Code	Occupation	East	Northwest	Southern Middle	Northern Middle	Greater Memphis	Southwest	Northeast	Southeast	Upper Cumberland	Number of Regions	Related Programs <sup>20</sup>
11-3021	Computer and Information Systems Managers				x						1	a, b, c
15-1121	Computer Systems Analysts		x	x	x	x	x			x	6	a, d
15-1131	Computer Programmers	x	x	x	x	x	x	x	x	x	9	b, c
15-1132	Software Developers, Applications	x		x	x	x		x	x	x	7	b, d, e
15-1133	Software Developers, Systems Software			x	x	x		x	x		5	b, d, e
15-1134	Web Developers	x			x	x					3	a, b, d, f, g
15-1141	Database Administrators				x	x					2	a, f
15-1142	Network and Computer Systems Administrators	x	x	x	x	x	x	x	x	x	9	a, f
15-1143	Computer Network Architects				x				x		2	a, b, d, f, g
15-1151	Computer User Support Specialists	x	x	x	x	x	x	x	x	x	9	b, f, g
15-1152	Computer Network Support Specialists							x			1	a, b, f, g
15-1199	Computer Occupations, All Other			x				x			2	b

10

The graduates of the proposed undergraduate major will be able to work in multiple occupation categories identified above. Our newly proposed degree program aligns with the postsecondary outputs and outcomes with the current and future workforce and economic development needs of the state. Below are some of the possible occupation categories for graduates of this program and available jobs in state of Tennessee. For instance, as of October 2016, in the state of Tennessee ([www.jobs4tn.gov](http://www.jobs4tn.gov)), there were over 500 jobs with the following job titles/phrases in the job titles: UX Information Architect, Information Coordinator, Information Security, Information Research, Information Management, and Information Consultant. In addition, as of October 2016, in the state of Tennessee, there are 111 jobs with the following job titles/phrases in the job titles: Informatics, Informatics Specialist, and Informatics Coordinator, Data Science, and Informatics Analyst.

The Tennessee Department of Labor and Workforce Development Occupational Projections (Long-term) for Information Technology Occupations in Tennessee in 2014-2024 show a consistent high annual growth in these occupations. Presented below is an Occupations Projections Table from the TN Department of Labor & Workforce Development, Labor Market Information to show the long term employment projections for these Occupations in Tennessee for the 2014-2024 projection period.

**Table 3. Occupations Projection Table Source: TN Department of Labor and Workforce Development, Div. of Emp Dec, LMI (Downloaded: 03/07/2017)**

<b>Occupation</b>	<b>Occupation Code</b>	<b>2014 Estimated Employment</b>	<b>2024 Projected Employment</b>	<b>Total 2014-2024 Employment Change</b>	<b>Annual Avg. Percent Change</b>	<b>Total Percent Change</b>
Computer and Information Systems Managers	113021	5,460	6,710	1,250	2.10%	22.90%
Information Security Analysts, Web Developers, and Computer Network Architects	151122	840	1,140	300	3.20%	36.40%
Computer and Information Research Scientists	151111	470	500	30	0.70%	6.90%

- d. Future sustainable need/demand as evidenced in letters from employers of increased need, preference for proposed degree, willingness to pay increased salaries for proposed degree, and that the demand for graduates is sustainable, i.e. exceeds beyond the three years of the program, if approved.*

**List of the external letters of support received (Attached as Appendix B page 42)**

1. Bob Conrad  
Library Director and Manager of the  
Scientific and Technical Information  
Program  
Oak Ridge National Laboratory  
Oak Ridge, TN  
865.574.4872  
conradre@ornl.gov
2. Bonnie C. Carroll  
Founder & CEO  
Information International Associates,  
Inc.  
104 Union Valley Road  
PO Box 4219  
Oak Ridge, TN 37831-4219  
865-481-0388  
[www.iiaweb.com](http://www.iiaweb.com)
3. Crystal Schrof  
Scientific and Program Services  
Manager  
Oak Ridge National Laboratory  
Oak Ridge TN 37831  
(865) 574-9228  
[schrofca@ornl.gov](mailto:schrofca@ornl.gov)
4. Mike Frame  
Deputy Director,  
Core Science Analysis, Synthesis &  
Libraries Program,  
U.S. Geological Survey
5. Meredith Goins  
Group Manager  
Research, Reviews and Evaluation  
Scientific Assessment and Workforce  
Development  
Oak Ridge Associated Universities
6. Tara Bergfeld  
Senior Legislative Research Analyst  
Comptroller of the Treasury  
Office of Research and Education  
Accountability  
505 Deaderick Street, Suite 1700  
Nashville, TN 37243  
p. 615-401-7885
7. David Bohan  
Chairman  
Bohan Advertising  
124 12<sup>th</sup> Ave. S.  
Nashville, TN 37203  
<https://www.bohanideas.com>
8. Dan Russell  
Senior Research Scientist  
Google Search Group  
Google, Inc.

**Program Costs and Revenues**

Program costs are outlined in the THEC financial projection form (Appendix A). Further details about funding are described on page 43 of this proposal. The funding section and the financial projection form have been updated to respond to comments from the external reviewer and THEC.

**Existing Programs Offered at Public and Private Tennessee Institutions**

Currently, there are no programs at the Bachelor's level that offer a degree in Information Sciences in State of Tennessee. (CIP code: 11.0401 - Bachelor of Science in Information Science.)

## CURRICULUM

The curriculum developed by the SIS faculty has been approved by the College of Communication and Information Faculty, UTK Undergraduate Council, and the UTK Faculty Senate.

The Program Learning Outcomes for the proposed BSIS degree are as follows. The student will:

- Demonstrate a combination of technical and professional skills for a variety of applications domains.
- Understand and explain the interdisciplinary, socio-technical, and humanistic perspectives in the application domain.
- Comply with the changing responsibilities of the information professional in a culturally diverse and networked global society.
- Assess and implement information technologies, systems, sources, and services that serve users effectively and efficiently.

The proposed curriculum, including the overall program learning outcomes and the specific student learning outcomes in all the courses, are reflected in SIS's mission to *"enrich, elevate, and transform the information professions, and communities, through outstanding research, education, and public service."* The graduates of the undergraduate program will enrich information science professions and will contribute to the workforce in the areas of User Experience Design, and Data, Information Management, and Analytics. For a complete mapping of the program learning objectives with all the information sciences courses please refer to Appendix C.

### *Program Requirements*

The Bachelor of Science in Information Sciences (BSIS) will consist of 120 total credit hours, as required for any bachelor's degree at the University of Tennessee Knoxville. Out of the total 120 credit hours, 30 hours will be Information Sciences courses, including five core courses and five elective courses. The BSIS is designed to prepare students to succeed in the broad field of Information Sciences by taking the five core courses. Each student will then also choose a concentration in the major, currently there are two specific concentrations proposed – one in Data, Information Management and Analytics and the other in User Experience Design. The students will also have an option to complete the bachelors with a General concentration, which will be a customized course plan not in either of the concentrations. Each student will be required to complete a capstone course, which will prepare them for their professional life in the field of Information Sciences.

The BSIS major will include some of the existing courses from the IST Minor and some new courses. All the current and new courses are listed below. (Please refer to Appendix D for the syllabi for each of these courses.)

The IST Minor housed at School of Information Sciences was implemented in 2006 and has been very successful since. The courses offered in the minor have consistently attracted students from across the university, from a range of disciplines including engineering, business, agriculture, etc. On average, nine to ten courses are offered every semester since the minor was started. Course enrollments have been growing and steady since 2008 onwards. On average, there are about 500 to 600 students enrolled in the undergraduate courses offered by the School of Information Sciences each year. These students are the source of the student interest survey presented in this letter of notification. The minor courses are taught via multiple delivery mechanisms, including online asynchronous and online synchronous and we plan to add face-to-face sections. Instructors for the IST minor include full time faculty from SIS, lecturers and doctoral students in the Information Sciences program. On an average, 30 to 35 students declare that they

will complete the six courses required for the IST Minor. These numbers are an average and have been steady without any marketing or advertising targeted for the minor. However, it is difficult to know the exact number of students who complete the minor because this is not documented at the university level. In an effort to streamline the programs offered by School of Information Sciences, and in anticipation of the approval of the proposed major, the SIS faculty has voted to change the name of the minor from Information Studies and Technology to Information Sciences. This change will be effective in Fall 2019.

### *Current Courses and Existing Programs*

INSC 102: Technologies for Information Retrieval

INSC 201: Foundations of Information Sciences (INSC Core Course in Table 1, 2, and 3 below)

INSC 210: Foundations of Information Technology (INSC Core Course in Table 1, 2, and 3 below)

INSC 310: Information Seeking: Resources & Strategies

INSC 311: User Centered Design (INSC Core Course in Table 1, 2, and 3 below)

INSC 330: Books and Related Materials for Children (will no longer be taught starting in Fall 2019)

INSC 450: Writing about Science and Medicine

INSC 493: Independent Project or Research (INSC Capstone Requirement in Table 1, 2 and 3 below)

INSC 495: Special Topics (INSC Capstone Requirement in Table 1, 2 and 3 below)

### *New Courses Needed*

**INSC 307 Internet and Society (3)** This course covers the architecture, design, and regulation of the Internet, including topics of intellectual property, privacy, security, censorship, e-commerce, and other information policies, laws, and ethics as well as related research on the societal implications of the Internet. (INSC Elective in Table 1, 2, and 3 below)

**INSC 360 Programming for Information Professionals (3)** This is a required course for Information Sciences majors. Introduction to object-oriented programming using Python with emphasis on data structures, in-built functions, user-defined variables, design, syntax, and control structures for processing and visualizing datasets. (INSC Core Course in Table 1, 2, and 3 below)

**INSC 380 Information Management for Information Professionals (3)** This is a required course for Information Sciences majors. Introduction to information management in organizations, flow of information, and analysis of business process. Theories and skills associated with group work, project management and organization effectiveness will be covered in this course. Workforce preparedness for graduates of the program will also be covered. (INSC Core Course in Table 1, 2, and 3 below)

**INSC 384 Database Design (3)** The course introduces the student to the process of database development, including data modeling, database design, and database implementation. Students learn basic interactive SQL for both data definition and queries. Students practice design skills by developing a small database project. (DIMA Concentration Course in Table 3 below)

**INSC 430 User Experience Foundations (3)** This is the introductory course for the UXD concentration in the BSIS degree. In this course students will learn the fundamentals of user experience, including the

theories of user experience, scope of the field, common research methods and applications of user experience. Students will also be exposed to the functional, aesthetic and experience design process and its role in usability. (UXD Concentration Course in Table 2 below)

**INSC 435 Usability Testing and Methods (3)** This is an advance course in the UXD concentration in the BSIS degree. This course specifically covers usability testing processes and methods for usability testing. Upon completion of this course, students will be able to run usability tests using multiple simple and advance protocols and develop assessment reports for websites or mobile content. (UXD Concentration Course in Table 2 below)

**INSC 436 Analytics and Metrics for User Experience (3)** This course will introduce students to the analytics and measurement tools in user experience, their scope and usage, and how to analyze and interpret data into UX recommendations. Students will master basic concepts and acquire analytical skills. (UXD Concentration Course in Table 2 below)

**INSC 439 Interfaces and Interactions Design (3)** In this course students will learn how to combine their technical and social skills to understand how users interact with systems and how system design can be improved. Interface evaluations and prototype development using multiple tools will be covered. Understanding of the human computer interaction process will be essential in creating improved interfaces. (UXD Concentration Course in Table 2 below)

**INSC 484 Database Implementation (3)** The course offers hands-on experience for developing database applications using a major database management system. Students learn how to create and manipulate database objects, including tables, views and sequences; develop program units using SQL; and implement client applications such as forms and reports. The course provides students with firsthand experience developing prototype client/server applications. (DIMA Concentration Course in Table 3 below)

**INSC 486 Data Analytics (3)** This course will cover data analytics techniques and tools in various context such as social media, marketing and communities. Students will master basic concepts and processes of data analytics; learn how to extract, transform, and load big data into systems; and interact with data to discover hidden patterns and knowledge. (DIMA Concentration Course in Table 3 below)

**INSC 489 Data Visualization (3)** This course offers basic principles and techniques in data analytics; methods for the collection of, storing, accessing, and manipulating standard-size and large-scale datasets. This course introduces the fundamental principles that inform data visualization: creative processes, cognitive thinking and semiotics, as well as the fundamental form of visual, such as charts, maps, graphs, and diagrams. (DIMA Concentration Course in Table 3 below)

**INSC 499 Practicum (3)** Opportunity to translate theory into practice under guidance of qualified information professionals. Prereq: Completion of required and pertinent advanced courses relevant to student's practicum design. Written consent of advisor and approval of advisor. May be repeated. Maximum 6 hours. S/NC only. (INSC Capstone Requirement)



**Information Sciences Major, Bachelor of Science in Information Sciences****Table 1. Requirements for Bachelor of Science in Information Sciences Major**

Term 1	Hours	Course Category
ENGL 101 or 118	3	GenEd Course
Arts and Humanities Elective	3	GenEd Course
Natural Science Elective	4	GenEd Course
CCI 150	3	College Elective
SOCI 110	3	GenEd Course
	16	
Term 2		
ENGL 102	3	GenEd Course
PHIL 244	3	GenEd Course
MATH 125, MATH 141 or MATH 147	3-4	GenEd Course
Natural Science Elective	3	GenEd Course
Intermediate Foreign Language	3	GenEd Course
	15-16	
Term 3		
SOCI 250	3	GenEd Course
ECON 201	4	GenEd Course
COSC 100	3	GenEd Course
Intermediate Foreign Language	3	GenEd Course
STAT 201 or STAT 207	3	GenEd Course
	16	
Term 4		
INSC 450	3	INSC Elective
COSC 102	3	UTK Elective
CMST 240	3	College Elective
Unrestricted Electives	6	UTK Elective
	15	
Term 5		
INSC 201	3	INSC Core Course
INSC 210	3	INSC Core Course
INSC 311	3	INSC Core Course
College Elective	3	College Elective
Unrestricted Electives	3	UTK Elective
	15	
Term 6		
INSC 360	3	INSC Core Course
INSC Elective	3	INSC Elective
College Elective	3	College Elective
Unrestricted Electives	6	UTK Elective
	15	
Term 7		
INSC 380	3	INSC Core Course
INSC Electives	6	INSC Elective
Unrestricted Elective	6	UTK Elective
	15	
Term 8		

INSC Electives	9	No milestone
INSC 493, 495, or 499	3	INSC Capstone Requirement
Unrestricted Elective	0-1	UTK Elective
	12-13	
TOTAL	120	

***Information Sciences Major, Bachelor of Science in Information Sciences – User Experience Design (UXD) Concentration***

**Table 2. Requirements for Bachelor of Science in Information Sciences Major – User Experience Design (UXD) Concentration**

Term 1	Hours	Course Category
ENGL 101 or 118	3	GenEd Course
Arts and Humanities Elective	3	GenEd Course
Natural Science Elective	4	GenEd Course
CCI 150	3	College Elective
SOCI 110	3	GenEd Course
	16	
Term 2		
ENGL 102	3	GenEd Course
PHIL 244	3	GenEd Course
MATH 125, MATH 141 or MATH 147	3-4	GenEd Course
Natural Science Elective	3	GenEd Course
Intermediate Foreign Language	3	GenEd Course
	15-16	
Term 3		
SOCI 250	3	GenEd Course
ECON 201	4	GenEd Course
COSC 100	3	GenEd Course
Intermediate Foreign Language	3	GenEd Course
STAT 201 or STAT 207	3	GenEd Course
	16	
Term 4		
INSC 450	3	College Elective
COSC 102	3	UTK Elective
CMST 240	3	College Elective
Unrestricted Electives	6	UTK Elective
	15	
Term 5		
INSC 201	3	INSC Core Course
INSC 210	3	INSC Core Course
INSC 311	3	INSC Core Course
College Elective	3	College Elective
Unrestricted Elective	3	UTK Elective
	15	
Term 6		

INSC 360	3	INSC Core Course
INSC 430	3	UXD Concentration Course
INSC Elective	3	INSC Elective
College Elective	3	College Elective
Unrestricted Elective	3	UTK Elective
	15	
Term 7		
INSC 380	3	INSC Core Course
INSC 435	3	UXD Concentration Course
INSC 436	3	UXD Concentration Course
Unrestricted Elective	6	UTK Elective
	15	
Term 8		
INSC 439	3	DIMA Concentration Course
INSC 493, 495, or 499	3	INSC Capstone Requirement
INSC Elective	6	INSC Elective
Unrestricted Elective	0-1	UTK Elective
TOTAL	12-13	
	120	

**COLOR KEY:****Prerequisites**

INSC 201- Foundations of Information Sciences

INSC 210 – Foundations of Information Technology

INSC 311 – User Centered Design

INSC 360 – Programming for Information Professionals

INSC 380 – Information Management for Information Professionals

**Concentration Requirements**

The concentration consists of 30 hours (5 core courses; 4 concentration courses and 1 capstone project)

INSC 430 – User Experience Foundations

INSC 435 – Usability Testing and Methods

INSC 436 – Analytics and Metrics for User Experience

INSC 439 – Interfaces and Interaction Design

***Information Sciences Major, Bachelor of Science in Information Sciences - Data, Information Management and Analytics Concentration*****Table 3. Requirements for Bachelor of Science in Information Sciences Major – Data, Information Management and Analytics Concentration**

Term 1	Hours	Milestones
ENGL 101 or 118	3	GenEd Course
Arts and Humanities Elective	3	GenEd Course
Natural Science Elective	4	GenEd Course
CCI 150	3	College Elective
SOCI 110	3	GenEd Course
	16	
Term 2		
ENGL 102	3	GenEd Course
PHIL 244	3	GenEd Course
MATH 125, MATH 141 or MATH 147	3-4	GenEd Course
Natural Science Elective	3	GenEd Course
Intermediate Foreign Language	3	GenEd Course
	15-16	
Term 3		
SOCI 250	3	GenEd Course
ECON 201	4	GenEd Course
COSC 100	3	GenEd Course
Intermediate Foreign Language	3	GenEd Course
STAT 201 or STAT 207	3	GenEd Course
	16	
Term 4		
INSC 450	3	INSC Elective
COSC 102	3	GenEd Course
CMST 240	3	GenEd Course
Unrestricted Electives	6	UTK Elective
	15	
Term 5		
INSC 201	3	INSC Core Course
INSC 210	3	INSC Core Course
INSC 311	3	INSC Core Course
College Elective	3	College Elective
Unrestricted Elective	3	UTK Elective
	15	
Term 6		
INSC 360	3	INSC Core Course
INSC 384	3	DIMA Concentration Course
INSC Elective	3	INSC Elective
College Elective	3	College Elective
Unrestricted Elective	3	UTK Elective
	15	
Term 7		
INSC 380	3	INSC Core Course
INSC 484	3	DIMA Concentration Course

INSC 486	3	DIMA Concentration Course
<sup>4</sup> Unrestricted Elective	6	UTK Elective
	15	
Term 8		
INSC 489	3	DIMA Concentration Course
INSC 493, 495, or 499	3	INSC Capstone Requirement
INSC Elective	6	INSC Elective
Unrestricted Elective	0-1	UTK Elective
	12-13	
TOTAL	120	

**COLOR KEY:****Prerequisites**

INSC 201- Foundations of Information Science

INSC 210 – Foundations of Information Technology

INSC 311 – User-Centered Design

INSC 360 – Programming for Information Professionals

INSC 380 – Information Management for Information Professionals

**Concentration Requirements**

The concentration consists of 30 hours (5 core courses; 4 concentration courses and 1 capstone project)

INSC 384 – Database Design

INSC 484 – Database Implementation

INSC 486 – Data Analytics

INSC 489 – Data Visualization

In addition to the two concentrations in User Experience Design, and Data, Information Management and Analytics, topical areas of data curation and information security management were both discussed during the planning of this major. Ultimately, we decided to start with two concentrations for which we already had strong experience and talent. We currently have a data curation course at the graduate level, as well as courses on data management. Thus, interested students in the advanced stages of their BSIS degree program could take these courses. This area is a natural one for us to explore at the undergraduate level given our existing strengths. With respect to information security management, we currently do not have any faculty who are experts in this area. It is also the case that the UTK Department of Electrical Engineering and Computer Science offers a minor in cybersecurity, so we would need to work with them to determine how anything we might offer would complement their existing minor. This is a direction we will explore in the future, when we are ready to increase our course offerings and specializations.

## *Distance Learning*

Currently, SIS offers a nationally ranked master's program that can be completed on campus or via distance education. For the undergraduate program, SIS plans to offer a combination of online and face to face classes.

## *Course Syllabi*

APPENDIX C – Syllabi for all the information sciences courses for the BSIS major except for:

1. INSC 493 – Independent Study – There is no prescribed syllabus for this course because the course content is determined by the student and instructor together. This course number exists to allow students to specialize in topics that might not be offered in a regular course format and address their knowledge gaps.
2. INSC 495 – This course number is reserved for “Special Topics.” The courses offered under this number are usually courses that are taught by faculty for teaching new topics. Generally, a course topic is taught twice as a special topics course and then, if successful, is converted to a regular course number.
3. INSC 499 – This is the course number for Practicum and it does not have a specific syllabus because this course is an opportunity for students to get real world work experience and the content depends on their knowledge areas and location of the practicum.

---

## ACADEMIC STANDARDS

**Undergraduate Admission Standards** –At the University of Tennessee, Knoxville, the Undergraduate Admissions office is responsible for administration of all admissions (e.g., high school seniors, international students, transfer students, and so forth) (<https://admissions.utk.edu/>). The processes and deadlines for undergraduate admissions are outlined on the university website. When applying to the University of Tennessee, Knoxville, students choose a major and if they choose Information Sciences, they will be automatically admitted to the School of Information Sciences, no additional admission requirements need to be fulfilled. Admissions to the BSIS major will be handled by the University of Tennessee, Knoxville and will follow the same requirements:

- Completed and submitted an application for admission
- Core GPA evaluated
- Standardized test scores
- High school and/or college official transcripts
- One required essay
- Recommendations from teachers or counselors (optional)
- Personal statement (optional)
- TOEFL or IELTS for international students

Requirements described reflect the minimum requirements for admissions consideration at the University of Tennessee, Knoxville and do not guarantee acceptance.

### ***Program Admission Standards***

Students seeking admission to the major may select it upon application to the University. Students seeking to change to the major must be in good academic standing. A student is in good academic standing when both the student's term and cumulative GPAs are 2.0 or higher or, if after two consecutive terms, the student's cumulative GPA is 2.0 or higher and at least one term GPA is also 2.0 or higher.

Initially, the information sciences major will be open to any UTK student who elects to pursue the major. If demand grows rapidly or reaches a point that exceeds our capacity, we will consider instituting school-level admissions; a personal statement will likely be part of the application package. The external reviewer, Dr. Todd, commented on the importance of selecting students who have clear goals and have a good understanding of how the major will enable them to reach these goals. While we agree this alignment is important, we also want to be careful not to create biases related to the perspectives, training, opportunities, and experiences students bring to the university. In our experiences and the experiences of our peers offering similar majors, students often “discover” this major since it is not a traditional major. Initially, we want to have an admissions policy that facilitates this discovery.

### ***Program Retention Standards***

Retention standards for students match those of the University. Students in good academic standing will be retained. Students are placed on Academic Probation when (1) his/her cumulative GPA falls below the minimum acceptable level of 2.0 for one semester or (2) the semester GPA falls below the minimum acceptable level of 2.0 two consecutive terms of enrollment. During the semester that a student is placed on Academic Probation, and any other semesters in Academic Probation, a student must participate in a special directive advising program to help the student address concerns that are impacting his/her academic performance and to outline a plan for achieving academic success. Other details related to Academic Probation and Academic Dismissal for the major will match those found in the University of Tennessee, Knoxville Academic Policies and Procedures (<https://onestop.utk.edu/academic-policies/>).

UTK’s Office of the Provost recently started a number of initiatives to increase retention and graduation rates, including tactics such as tracking student performance, providing early feedback to students about their performance, and intervening when students are struggling. We plan to participate in this office’s initiatives. In our graduate program, we already have mid-semester student check-ins in which faculty identify students who are struggling in courses or are experiencing difficulties, so that we can reach-out to these students to see how we can help.

### ***Program Graduation Standards***

Program graduation standards for the major follow the University of Tennessee, Knoxville Academic Policies and Procedures (<https://onestop.utk.edu/academic-policies/>). The University of Tennessee, Knoxville, requires a minimum of 120 credit hours to earn a bachelor's degree. At least 36 credit hours should be completed within the major. Students must achieve a grade point average of at least 2.0 on all work attempted at the University of Tennessee, Knoxville.

---

## **DIVERSITY**

The School of Information Sciences (SIS) at the University of Tennessee, Knoxville is committed to promoting diversity. We both value and embrace cultural awareness and diversity. One of the topmost strategic priorities of SIS is "to advance the school’s diversity and multicultural and global perspectives." SIS also aims to further "community engagement, social responsibility, information literacy, and equity of

access to information." We recognize and promote diversity in terms of student demographics, student recruitment, faculty skills and knowledge, curriculum and instruction, training, and career opportunities for our graduates.

The newly proposed BSIS program will help SIS promote diversity by recruiting students with diverse cultural, geographical, demographic, social, and academic backgrounds. We are committed to offering multiple modes of course delivery to serve a diverse population of students (e.g., adult learners, students working and unable to relocate, students with preference for various delivery modes and various course delivery time). In our current master's program, we offer classes in the evening and we are committed to offering these options to our undergraduate students.

According to all the latest surveys about information technology and gender, women are severely underrepresented in this area, SIS is committed to focus on recruiting, retaining and graduating women in this major. This effort will play an important role in addressing this inequality in the state, nation and globally. We will also seek sources of funding for recruiting female undergraduate students to improve the IT workforce gender balance. One of the strengths of SIS is a diverse faculty with broad research interests and expertise in various areas of information sciences. This intellectual diversity will be leveraged for training BSIS students in diverse skills and knowledge, and building the 21<sup>st</sup> century workforce. Our BSIS curriculum with courses focusing on information, technology, and applications of technology to society, businesses, and a wide range of information-intensive organizations (professional settings) will advance the School's diversity and multicultural and global perspectives. SIS is a leader in distance education (DE) at the University of Tennessee, Knoxville. BSIS instruction will continue embracing intellectual and pedagogical diversity of our current instruction based on our DE leadership, which will benefit adult learners, students working and unable to relocate, students with preference for various delivery modes.

---

## **PROGRAM ENROLLMENT AND GRADUATES**

Our intent is to deliver the program using a hybrid approach (with face-to-face courses and distance education courses). There are a substantial number of traditional, full-time students who would be interested in this program, therefore we are confident about meeting our projected cohort number. The first cohort will therefore serve as a foundation for the program. Once the needed adaptations and alignment of the curriculum are addressed, we will begin transitioning identified courses to blended learning and fully online platforms of delivery format, making the courses totally accessible to all students, including working adults.

A full-time undergraduate student at the University of Tennessee, Knoxville enrolls in 12-credit hours or more, while a part-time student takes 12 or fewer hours. This program is designed to allow either type of participant to enroll with the confidence that the courses will be offered regularly, thus allowing them the opportunity to progress as they are able. A full-time student could complete the program in as little as four semesters, while part-time students could complete the program based on the timeline that fits their personal circumstances, as long as it lies within the University's standards for degree completion. Table 4 reflects projected enrollment of BSIS students and graduates over five years.



**Table 4. Estimated Headcounts for Enrolled Students and Graduates (AY 2019-20 to AY 2023-24)**

Year	Students admitted in Fall	Fall headcount	Spring headcount	Summer headcount	Attrition	Graduates
1 <sup>st</sup> Year (2019-20)	10	10	9	8	2	--
2 <sup>nd</sup> Year (2020-21)	10	18	17	16	2	--
3 <sup>rd</sup> Year (2021-22)	10	26	25	24	2	--
4 <sup>th</sup> Year (2022-23)	10	34	33	32	2	6 (70% graduation rate)
5 <sup>th</sup> Year (2023-24)	10	42	41	40	2	12 (70% Graduation rate)

### ADMINISTRATIVE STRUCTURE

The BSIS major will be housed in the School of Information Sciences, in the College of Communication and Information at the University of Tennessee, Knoxville. At the university level administrative structure for student affairs, there is the Graduate School, the Office of Research, the Office of Equity and Diversity, and the Office of the Provost—offices with which the School most frequently interacts.

The College of Communication and Information (CCI) administrative structure includes:

- CCI Dean, Dr. Mike Wirth
- CCI Associate Dean of Academics, Dr. Michael Palenchar
- CCI Associate Dean of Research, Dr. Suzie Allard
- CCI Director of Development, Mark Geller
- Budget Director, Jock McLerran

The School of Information Sciences administrative structure includes:

- Director, School of Information Sciences, Dr. Diane Kelly
- SIS Director of Undergraduate Studies, School of Information Sciences, Dr. Vandana Singh
- SIS Director of Graduate Studies, School of Information Sciences, Dr. Rachel Fleming-May

### FACULTY RESOURCES

#### *Current Faculty*

School of Information Sciences has recently restructured its master's program to delete some of the courses taught by the full-time faculty. The master's degree program was 42 credit hours and has recently

been reduced to 36 credit hours, this has opened up teaching capacity in the department and hence more faculty will be teaching undergraduate courses. A more efficient course scheduling model has been developed, including a four-year course plan, which has led to better allocation of faculty and lectures across courses. Together, these changes have increased the availability of full-time faculty to teach in the program.

Most of the current faculty in SIS is eager to teach, mentor and conduct research with undergraduate students, as indicated in Table 5. The Director makes the teaching assignments for each semester, this is done in consideration of the program needs and in consultation with the faculty. Please refer to Appendix E for a three-page vita of each SIS faculty member.

**Table 5. SIS Full Time Faculty, Rank, Degree and Interest in Teaching, Mentoring and Research with UG students**

Faculty	Rank	Highest Degree	Teaching in BSIS Major	Research in BSIS Major	Mentors UG Students
Suzie Allard	Professor	PhD Communication		Yes	Yes
Dania Bilal	Professor	PhD Library & Information Studies	Yes	Yes	Yes
Wade Bishop	Associate Professor	PhD Library & Information Studies	Yes	Yes	Yes
Rachel Fleming-May	Associate Professor	PhD Library & Information Studies	Yes	Yes	Yes
Carolyn Hank	Assistant Professor	PhD Information & Library Science	Yes	Yes	Yes
Diane Kelly	Professor	PhD Information & Library Science		Yes	Yes
Devendra Potnis	Associate Professor	PhD Informatics–Information Science	Yes	Yes	Yes
Vandana Singh	Associate Professor	PhD Library & Information Science	Yes	Yes	Yes
Carol Tenopir	Professor	PhD Library & Information Science		Yes	Yes
Peiling Wang	Professor	PhD Information Science	Yes	Yes	Yes
Cindy Welch	Clinical Associate Professor	PhD Library & Information Science	Yes	Yes	Yes
Xiaohua Zhu	Assistant Professor	PhD Library & Information Studies	Yes	Yes	Yes

### *Anticipated Faculty*

The faculty needed to make this program a success consists of tenure-track faculty, as well as lecturers with significant industry experience. Our current tenure-track faculty conduct research in all areas covered by this degree. They have received external funding for their research from multiple funding agencies and are also recipients of major research awards of merit in areas such as data management and information retrieval. Faculty also have experience teaching similar courses at the Master's level. For example, the MSIS degree offers courses in human-computer interaction, usability testing, information organization, and data curation and management. This year, the School is searching for a new assistant professor to replace a full professor who has left the University. The description for this position includes areas such as data management, data science, and human-computer interaction, which are all components of the information sciences major.

A combination of current faculty, doctoral students and part-time lecturers will teach in the program. Figure 1 shows the 5-year course roll-out plan, along with the anticipated course instructor types. This plan starts in Fall 2018 to show the lead-up since we have already started to introduce some new courses into our undergraduate minor course offerings. The numbers in the cells indicate how many sections of a particular course will be offered during a particular semester. This figure also shows the break-down of instructors according to PhD students, part-time lecturers, and full-time faculty, as well as the percentages for each group. As of fall 2018, about 63% of the undergraduate minor courses are taught by PhD students. As Figure 1 shows, the distribution across instructor type slowly shifts as the program grows over time; it reaches 50% full-time faculty in Year 3, which is when it is anticipated that a full-time lecturer or clinical professor will be added.

The growth in full-time faculty teaching in this program is modest and should only have a small impact on the MSIS program. Specifically, in creating the model, a guiding principle was to maintain at least 70% of MSIS courses taught by full-time faculty. With respect to summer course offerings, which are not reflected in Figure 1, we currently offer one online summer course with multiple sections. Starting in summer 2019, we will offer additional online courses from the list in Figure 1, which will be taught by part-time lecturers.

In the financial projection form, the first two years of requested salary (\$10K and \$20K) are for part-time lecturer (adjunct) salaries. The faculty salary that is included in Year 3 is for a full-time lecturer. The primary rationale for hiring a full-time lecturer is to add someone with significant practical experience to the faculty. We will specifically target a seasoned practitioner in the areas of information management and/or user experience for this position to allow us to better educate and prepare students for careers in information sciences. Our aspirational peers who have information sciences undergraduate degrees employ a mix of faculty types including tenure-track faculty and full-time lecturers. (It should be noted that since this time this proposal was written, SIS has decided to no longer offer *INSC 330 Books and Materials for Children*. The majority of students in this course were aspiring education majors as this was a pre-requisite course for the degree. In discussions with the UTK CEHHS, it was decided to allow the Department of Theory and Practice in Teacher Education to start teaching this course in fall 2019, since it did not fit with the focus of our degree. This course was taught by part-time lecturers, so the figures in these rows will decrease, including the percentages.)

	Course#	Year 1		Year 2		Year 3		Year 4		Year 5			
		F18	S19	F19	S20	F20	S21	F21	S22	F22	S23	F23	S24
NewCore	201	1	1	1	1	1	1	1	1	1	1	1	1
	210	1	1	1	1	1	1	1	1	1	1	1	1
	311	1	1	1	1	1	1	1	1	1	1	1	1
	360				1		1		1		1		1
	380		1	1		1		1		1		1	
NewDIMA	384				1		1		1		1		1
	484					1		1		1		1	
	486					1		1		1		1	
	489						1		1		1		1
NewUXD	430				1		1		1		1		1
	435					1		1		1		1	
	436					1		1		1		1	
	439						1		1		1		1
Existing	102	1	1	1	2	2	2	2	2	2	2	2	2
	310	2	2	2	2	1	1	1	1	1	1	1	1
	330	2	3	2	3	2	3	2	3	2	3	2	3
NewElec	307		1	1	1	1	1	1	1	1	1	1	1
	Total	8	11	10	14	14	15	14	15	14	15	14	15
Instructors	PhD Students	5	5	5	5	5	5	5	5	5	5	5	5
	PT Lecturers	2	3	3	5	4	5	2	3	2	3	2	3
	FTF	1	3	2	4	5	5	7	7	7	7	7	7
	Total	8	11	10	14	14	15	14	15	14	15	14	15
Instructors %	PhD Students	63%	45%	50%	36%	36%	33%	36%	33%	36%	33%	36%	33%
	PT Lecturers	25%	27%	30%	36%	29%	33%	14%	20%	14%	20%	14%	20%
	FTF	13%	27%	20%	29%	36%	33%	50%	47%	50%	47%	50%	47%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Figure 1. Model for introducing new undergraduate courses, growing instructor capacity and distribution of instructors across types.

The School will seek additional tenure-track faculty lines as the program grows. UTK will likely hire a number of new faculty in the upcoming years in the area of data science who will be located in different units. We plan to participate in any program that seeks to hire such individuals. The School is also currently hiring a new tenure-track faculty member; the position description includes data science as a potential area of expertise, and the potential of the candidate for teaching in the undergraduate program will be a consideration during the hiring process. Finally, we anticipate at least one faculty retirement within the next few years and expect any new hire will be able to contribute to the BSIS program.

## **LIBRARY AND INFORMATION TECHNOLOGY RESOURCES**

### ***Library Resources***

#### *University Libraries*

The School is less than three blocks away from John C. Hodges Library, the main library facility on campus. The Libraries offer a Library Express Service that expedites the borrowing and return of library materials to faculty offices. The Libraries recently completed the migration to the Alma system in 2015, and the new “OneSearch” interface provides convenient searching in UTK collections, course reserves and beyond. Hodges Library can seat 2,000 users in its 350,000 square foot building. The University of Tennessee, Knoxville Libraries have a print collection of 2,972,146 volumes (2,236,145 titles)<sup>2</sup> and a serial collection of 81,439 titles. Its non-print collection includes 40,743 audio titles and 52,369 films/videos. Thousands of titles are available for faculty, staff, and student research via electronic access. Access is provided to 79,950 electronic periodicals/serials and to over 666,000 e-books. Hodges Library has been a federal depository library that receives U.S. government documents since 1907. As a selective

<sup>2</sup> 5 Year Trend of Main Library Holding and Expenditures, [https://oir.utk.edu/sites/default/pdfs/fb/fb2015/14\\_15FB\\_Facilities2.pdf](https://oir.utk.edu/sites/default/pdfs/fb/fb2015/14_15FB_Facilities2.pdf)

depository, it receives 42 percent of the available items currently offered through the Federal Depository Library Program. The University of Tennessee, Knoxville Libraries also house materials and services supporting the School.

The Libraries' facilities include several branch libraries: Music, Agriculture and Veterinary Medicine, Special Collections in the Hoskins Building, and the Social Work Library in Nashville. In particular, the George F. Devine Music Library has been recently updated and housed in the brand new Natalie L. Haslam Music Center. In addition, facilities and collections of the independently administered Katz Law Library (also a Federal Depository Library) and Preston Medical Library are also available to UTK students and faculty. See Table 6 for a list of library physical facilities and their availability to SIS students and faculty.

**Table 6: List of Library Physical Facilities and Their Availability to SIS Students and Faculty.**

Resource	Location	Travel Time	Hours	Available to DE Students
Hodges Library (Stacks)	3 blocks from SIS, Volunteer Blvd.	5 - 10 min walking	M-Th 7:30 am – 6 pm Fri 7:30 am – 6 pm Sat 10 am – 6 pm Sun 1 pm - midnight	Yes, online presence <a href="http://www.lib.utk.edu/aboutlibs/libmaps.html">http://www.lib.utk.edu/aboutlibs/libmaps.html</a>
The Commons <a href="http://commons.utk.edu">http://commons.utk.edu</a>	3 blocks from SIS, located within Hodges	5- 10 min walking	M-Th – open 24 hrs. Fri – closes at midnight Sat 8 am – midnight Sun – opens at noon	OIT Helpdesk available by phone
The Studio	3 blocks from SIS. Located within Hodges	5 – 10 min walking	M-Th – 9 am – 12 am. Fri – 9 am – 6 pm Sat 10 am – 6 pm Sun 1 pm – 12 am	By phone or text chat
Katz Law Library	105 W. Cumberland Ave.	10 – 15 min walking	M-Th –7:30 am – 11 pm Fri 7:30 am – 8 pm Sat 10 am – 6 pm Sun 10 am – 11 pm	Yes, online presence for catalog and databases
Preston Medical Library	UT Medical Center, Alcoa Hwy.	10 min drive	M-Th 8:30am – 9 pm Fri 8:30 am – 5 pm Sat 9 am -5 pm Sun 2 pm – 10 pm	Yes, online presence for catalog and databases

Resource	Location	Travel Time	Hours	Available to DE Students
Agriculture & Veterinary Medical Library	Veterinary Teaching Hospital – UT Agriculture campus	20 min walk or 5 min drive. Bus transportation is provided.	M-Th 7:30 am – 10 pm Fri – 7:30 am – 6 pm Sat 10 am – 6 pm Sun 1 pm – 10 pm	Off campus access is available <a href="http://www.lib.utk.edu/agvet/services/offcampus.html">http://www.lib.utk.edu/agvet/services/offcampus.html</a>
DeVine Music Library	1741 Volunteer Blvd. 2 blocks from SIS	5 min walking	M-Th 8 am – 10 pm Fri 8 am – 5 pm Sat. Closed Sun 2 pm – 10 pm	Yes, online presence
Special Collections	Hoskins Library, Cumberland Ave.	10- 15 min walking	M-Th 9 am – 5:30 pm	Digital collections
SIS Commons and Collaboratory	Across hall from Main SIS Office	None	M- Th 8 am – 9:15 pm Fri 8 am – 5 pm	
User Experience Lab	2 <sup>nd</sup> floor Communications Bldg. – same as SIS	1 min	By request	
Scripps Convergence Lab	4 <sup>th</sup> floor Communications Bldg. – Down the hall from SIS	1 min	Monday-Thursday 8:30 am - 9:00 pm, Friday 8:30 am - 5:00 pm	
CCI Patrick Auditorium	321 Communications Building	1 min	Monday – Friday 8 am – 9 pm, and by request	

**Table 7. Library and Information Science Collection**

Library and Information Science Collection		
Call Number	Description	No. Titles
QA 75-76.95	Computer science; Electronic computers	13,766
TK 7800-8360	Electronic technology; Computer engineering and hardware	6,323
Z 1-115.5	Books (general); Writing	1,083

Z 116-659	Book industries and trade	3,900
Z 662-1000.5	Library and information science	12,544
Z 1001-1975	General bibliography	3,507
Z 2000-4980	National bibliography	1,578
Z 5051-7999	Subject bibliography	5,566
Z 8001-8999	Personal bibliography	1,812
ZA 575-5075	Information resources	463
	<b>Total</b>	<b>50,542</b>

The UTK Libraries offer access to hundreds of electronic resources. These include databases, e-books, e-journals, datasets, primary sources, maps, streaming videos, and other electronic research tools.<sup>3</sup> All but a few of these materials are available to authorized users at off-campus locations as well as through the campus network. Providing this access is an absolute necessity for the success of the School's Distance Education Program.

The Tennessee Electronic Library (TEL) is a Web-based collection of databases available to every academic, public, school, and special library in Tennessee since November 1999. TEL is comprised of several separate collections of full-text and indexing databases on a variety of topics. A total-access interface allows users to search across databases and selected websites.<sup>4</sup>

The Libraries also make available publications related to information technology from computing and engineering societies, including the Association for Computing Machinery (ACM), American Society of Civil Engineers (ASCE), American Society of Mechanical Engineers (ASME), Institute of Electrical Engineers (IEE), Institute of Electrical and Electronics Engineers (IEEE), and the Society for Industrial and Applied Mathematics (SIAM). Subject guides to databases, electronic journals, print resources, newsletters, Internet resources, and general information resources for the School of Information Sciences can be found at the University Libraries website.<sup>5</sup>

**Table 8. IT, Journalism collection and Datasets**

<b>Information Tech. &amp; Engineering</b>	<b>Journalism and Mass Communications</b>	<b>Datasets</b>
ACM Digital Library	AP Images	Data-Planet Statistical Datasets
Compendex	Communication & Mass Media Complete	ICMA datasets
IEEE Xplore	National Newspaper Index	ICPSR
INSPEC	New York Times, ProQuest Historical	LandScan Global Population Database and Archive
	PAIS International	

<sup>3</sup> University of Tennessee, Knoxville Libraries. <http://libguides.utk.edu/databases>

<sup>4</sup> TEL: Tennessee Electronic Library, <http://tntel.tnsos.org/> (last accessed 9/19/15).

<sup>5</sup> Information Sciences Subject Guide. <http://libguides.utk.edu/infosci>

Morgan & Claypool Synthesis Digital Library of Engineering and Computer Science	Times Digital Archive	Roper Center for Public Opinion Research
		Simmons OneView
ScienceDirect	<b>Education and Social Sciences</b>	Social Explorer
SpringerLink	Education in Video	Soc. Sci. Electronic Data Lib. (SSEDL)
	Education Source	
	ERIC	
	SAGE Research Methods Online	

The Commons, located on the second floor of Hodges Library, is a collaborative partnership between the Office of Information Technology (OIT) and the Libraries. Multiple services available in this area include a computer lab, reference assistance, loaner laptops, a presentation practice room, and computer support. Adaptive workstations, equipment, and software are available at the Commons. The reference function of Hodges Library, as part of a Research Services and Collections Department, is also located in the Commons area. In addition to in-person reference, the Libraries offer live-text chat, instant messaging, as well as email and telephone reference services. Moreover, presentation practice rooms with a large screen, symposium and video conferencing unit allowed students to practice presentation and conduct online meetings and interviews.<sup>6</sup> The Commons also has a mix of informal and formal learning spaces with group study rooms, collaborative furniture, computer workstations, recording studios, classrooms, and more, which allows students to meet and work in groups.<sup>7</sup>

Access to the media teaching and research collections (all DVDs and high-use or rare VHS) and lesser used VHS and audio CDs are available for self-service retrieval and in-building use. Viewing is available both inside and outside the Libraries, and faculty and graduate teaching assistants may check out media for classroom use. The Studio, a multimedia production lab, provides computers, software, video room, and staff to assist users in the creation of multimedia projects. Users may also check out various types of cameras and use editing equipment for video and audio projects.<sup>8</sup>

### ***Technology Resources***

Within the Communications Building other spaces provide additional special facilities for the School. An updated usability lab, the UTK CCI User-Experience Laboratory (<http://cics.cci.utk.edu/user-experience-lab>), is located in Communications 230. The user-experience lab provides an environment conducive to studying how users interact with systems and applications, and to gaining insight into the system's usability. For example, the lab can be used to conduct behavioral science-related studies measuring task performance and emotional reactions.

The Scripps Convergence Lab provides communication and information students with a transformative facility for creating, writing and producing a variety of projects to prepare themselves for successful careers as working professionals. The 4000 sq. ft. facility consists of an open commons area, a conference room-focus group room, observation room and studio/theater. The Scripps Lab is open Monday-Thursday

<sup>6</sup> About the Commons. <http://commons.utk.edu/about.html>

<sup>7</sup> Learning Spaces. <http://commons.utk.edu/learningspaces.html>

<sup>8</sup> The Studio. <https://www.lib.utk.edu/studio/>



8:30 am - 9:00 pm, Friday 8:30 am - 5:00 pm. The lab is closed Saturday and Sunday. An online reservation system is used for reserving the conference room, studio/theater, and 402F. The Commons area has 8 24" iMacs for student use, plus casual seating for groups.

The Scripps Lab is open Monday-Thursday 8:30 am - 9:00 pm, Friday 8:30 am - 5:00 pm. The lab is closed Saturday and Sunday. It also provides an additional conference room, laboratory space, shared working spaces, and video studio.

The Scripps Convergence Lab John & Patty Williams Conference Room (402D CUEB) has a conference tables with seating for 14 plus 6 extra chairs (20 total). The room includes 46" LCD screen with mini Mac; H.323 Protocol Teleconferencing capabilities; Wireless keyboard and mouse are available for checkout at the SCL front desk. The Scripps Theater is a multi-function space that can be used by groups for gatherings. It has a HD overhead projector (6000 Lumen), configurable tables, and seating for up to 100 (<http://www.cci.utk.edu/scl/studio-theater>). The Scripps Lab has become the “heart” of CCI. SIS has hosted many functions in the lab, from notable information sciences speakers, dinners and luncheons, and orientation events. The Scripps Lab is heavily used during the annual CCI Diversity and Inclusion Week (<http://www.cci.utk.edu/diversity/archive>) and the CCI Social Media Week (<https://www.cci.utk.edu/social-media-week>). SIS faculty meetings are held in the focus room in Scripps Lab and other events like advisory board meetings, and faculty presentations are held in the main area of Scripps Lab.

Facilities in both the Communications and Bailey buildings are Americans with Disabilities Act (ADA) compliant, supplied with elevators to permit easy access to all levels from ground level. There is handicapped parking available in front of the Communications Building and curb cuts designed to facilitate entry for wheelchair users.

---

## **SUPPORT RESOURCES**

### *Evidence of Willingness to Partner*

The School of Information Sciences is actively engaged with multiple stakeholders including external stakeholders such as collaborators from Oak Ridge National Laboratory (ORNL), Y-12, OCLC, Scripps Network, etc. The evidence of willingness to partner is presented in Appendix B, along with the letter of intent and letters of support from multiple stakeholders and partners. For an exhaustive list of partners for the College of Communication and Information, please refer to the college website at <https://cics.cci.utk.edu/clients-and-partners>.

### *Support Currently Available*

The School’s administrative and other staff are highly qualified and sufficient in number to fulfill necessary roles and support the teaching, research and service mission of the School. Each member of the administrative team is strategically positioned to respond to planned and unexpected developments on day-to-day basis. A team approach to carrying out the administrative functions of the School is the norm where staff readily share information, assist each other on various tasks and assignments, and collaborate on projects.

The current CCI and SIS staff related to this program are:

- CCI Director of Advising – Betty Bradley
- Three additional student advisors at the College of Communication and Information – Rochelle nelson, Gary Peterman, Wilbert McDaniels
- A technology team of 3 members – Director of Technology - John McNair, IT Administrator – Anne Hensley, SIS IT Coordinator – Dan Greene
- One Communication Specialist at CCI – Donna Silvey
- One Communication Specialist at SIS – Hillary Tune
- One Administrative Support Specialist at SIS – Pamela Durban
- One Digital and Field Marketing Specialist at SIS – Joe Pecor
- One Student Services Coordinator in SIS – Tanya Arnold

### *Other Support Needed*

Anticipating the needs of the new Undergraduate major at SIS, the College of Communication and Information is currently interviewing candidates for a new academic advisor to join the team of existing advisors. This new advisor will focus on advising new undergraduate students in Information Sciences and the position is funded by the College of Communication and Information. At this time no additional support is needed for tutoring or professional development for SIS faculty and staff.

10

---

## **FACILITIES AND EQUIPMENT**

### *Existing Facilities and Equipment*

School administrative and faculty offices are located within a wing of the fourth floor of the Communications Building, with offices for PhD candidates located on the first floor. Faculty offices are an average of 145 square feet and contain work and storage space and room for meetings with individual students. A 376 square foot conference room that seats 15 is located within the main administrative office complex. Also, there is Robinson/Watson Conference Room adjacent the director's office that can be used for meetings with the director. This office complex also contains mailboxes for faculty and staff, a photocopier and scanner, several networked printers, a fax machine, and storage for office supplies.

SIS quarters and offices for faculty and staff were remodeled, including adding wooden filing cabinets for the SIS quarter, replacing furniture in multiple faculty and staff offices, and furnishing offices for new faculty and staff members, as well as graduate research/teaching assistants. The kitchenette in the main office (located in the conference room) was recently remodeled to include wooden cabinets and refurbished counter top. The main office space has three cubicle offices for graduate teaching associates who provide technical support for online courses. Please refer to floor plans of the Communications Building, including the fourth floor plan to see the details of the location of these new cubicles and other facilities that include the new graduate teaching assistant offices near the development office.

The School's wing includes an area for students to congregate and to work on individual and group projects. This 800 square foot area, was refurbished in the summer 2017 and contains a lounge, kitchen area, and computer lab. The lounge area provides a comfortable place for students to gather informally. A nearby kitchen area with microwave and refrigerator/freezer allows students to conveniently and inexpensively bridge the time between daytime and evening classes.

Classrooms for SIS classes are available in the Communications Building and in near-by university buildings. Classrooms in the Communications Building are equipped with Smart Podiums with a built-in PC desktop computer and screen, a ceiling mounted projector, pull down projector screen, and a DVD/VHS player.

The following are select CCI spaces (including classrooms) in the Communications Building that are available to SIS and some recent upgrades:

**Message Effects Lab:** The lab facilities include three separate rooms with cameras, microphones, web and computer connections, monitors, response electronics and PowerLab software. The software allows researchers to capture data on perceptual and physiological human responses to technical data from video and audio equipment. The lab is located on the 2<sup>nd</sup> floor of the Communications Building.

In 2016, CCI also inaugurated the Adam Brown Social Media Command Center, where faculty, staff, and students are able to employ the same leading technology Fortune 100 companies worldwide use to publish, engage, and analyze their social media marketing activities. This cutting-edge facility, is powered by Salesforce Marketing Cloud Social Studio technology. The Social Media Command Center is located in Room 467 of the Communications Building.

CCI Auditorium 321 Communications Building, Patrick Auditorium (completed in spring 2010):  
<http://www.cci.utk.edu/take-a-seat>;

- Seating for 98, overhead projector, 3 glass boards;
- Computer setup and sound system;
- It is the location for CCI Faculty meetings and the CCI Annual Research Symposium;
- Right outside the CCI Patrick Auditorium is the refurbished CCI Lobby (2011);
- This auditorium is frequently used by SIS for activities ranging from New Student Orientation, Guest Lectures, Practitioner Panels, Faculty presentations, etc.

#### 3<sup>rd</sup> Floor Lobby:

- Redone with raised ceiling, soundproofing, display cabinets for “brag” cases;
- Donor/Award Recipient panels. Overhead banner identifying the College and Schools;
- Handicap accessible patio completed fall 2015, with patio tables and seating recently completed;
- 314 Communications:
  - 5 50” HD Screens and one 70” HD Screen, all with MacMinis attached;
  - Tandberg H.323 unit with whole room microphone and camera;
  - Furniture for flexible arrangements;
  - Used for breaking into small collaborative groups.

JEM Converged News Lab: <http://jem.cci.utk.edu/school-opens-converged-news-lab>;

- 20 iMacs with Adobe CS 6;
- Used for small group media, podcasts, live broadcasts.

In addition, the School has access to BEC 116 in the nearby Jane and David Bailey Education Complex. This classroom is used for a number of on-campus and distance education classes. The college has also been given priority to teach in one classroom in the new James A. Haslam II Business Building, which has been outfitted with state of the-art technology.

With respect to office space for the full-time lecturer, the School currently has one office that is being used by a fixed-term, grant-funded research associate, who will no longer be on contract at the time of new faculty appointment.

### ***Additional Facilities***

No additional facilities are needed at this time, all the facilities that are available to the College of Communication and Information undergraduate students will be available to information science undergraduate students.

---

## **MARKETING AND RECRUITMENT PLAN**

There is an identifiable growing market for the proposed BSIS at UTK, Knoxville that embraces both students and employers. We plan to employ social media, such Facebook, Twitter, YouTube, and Instagram, mobile technologies, and Customer Relationship Management (CRM) systems for advertising, digital campaigns, and promotional videos for building our brand and engaging with potential students.

SIS has a new full-time staff member (Joe Pecor) who works on digital & field marketing and recruitment with the following key duties and responsibilities: (a) ongoing creation, implementation and evaluation of strategic marketing plans, and (b) promote SIS's graduate and undergraduate programs, with the overarching goals of student recruitment and increased brand awareness. The Digital and Field Marketing Specialist is: (1) using paid search marketing, search engine optimization, social media marketing and other digital marketing tactics; (2) setting, monitoring and improving key online marketing performance metrics; (3) maintaining and growing SIS's social media presence via Facebook and Twitter, and other emerging communication platforms; (4) using techniques to increase SIS enrollments (e.g., through career fairs, technology fairs, conferences, etc.); and (5) is traveling to different locations, locally and nationally, to engage in key recruitment activities. In particular, our marketing and recruitment plan is based on the following strategies:

- We will communicate early and talk about careers via mobile friendly websites, text messaging, and emails. We will be proactive and explore the possibility of using Google AdWords for the BSIS program.
- We will make advertising personal for genuinely personalized engagement – develop targeted communication messages for students, parents, teachers, and peers on topics such as student finances, extra-curricular activities and interests related to information sciences, etc.
- We will adopt a "more video fewer words" approach by creating a YouTube channel for advertising the BSIS program.
- We will identify key feeders (both local and global) for our BSIS program and plan to cast a wide net for outreach and advertising. For instance, we will organize campus open house events, campus visit days for high school students, and meetings for high school counselors to create more awareness about our newly proposed BSIS program.
- We believe that student review and recommendations of UTK, CCI, and SIS will make a difference. Prior reputation of UTK, CCI, and SIS will likely affect program growth.
- We will not completely rely on social media since some parents might not take it as an authentic source of information.

- We will use CRM solution for managing and tracking recruitment communications, online applications, etc. We will systematically contact admitted students to gauge their level of interest in enrolling at UTK (“qualifying” admits). We will use admissions tracking to monitor and predict students’ incremental rates of movement toward enrollment.
- SIS Director of Undergraduate Studies, Dr. Vandana Singh, will work with National Center for Women & Information Technology (NCWIT) to develop recruitment strategies focused on recruiting women to the undergraduate bachelor’s program in information sciences.
- We will focus on targeting schools and community colleges with programs for adult learners and minority populations to recruit a diverse student body, especially those that offer associate degrees in information technology.

## ASSESSMENT AND EVALUATION

10

### *Schedule for Program Assessment*

The schedule for program assessments includes data collection that is required by the University's Academic Program Review; necessary for the SACSCOC accreditation evaluation; and other summative assessments to evaluate student learning outcomes. A ten-year cycle for program reviews was adopted in 2011 at the University of Tennessee, Knoxville (<https://provost.utk.edu/academic-program-reviews/>). The strategic priorities outlined in the Vol Vision 2020 (<https://top25.utk.edu/2016/vol-vision-2020/>) inform many of the metrics assessed in this schedule.

Assessment activities include data collection on both the program's operations and the evaluation of the major. The assessment activities related to the program operations concern the personnel facilitating the major and information technology infrastructure, services, and resources to enable learning. Annual performance reviews assess faculty teaching and service performance related to the major. The assessment activities related to the evaluation of the major concern (a) recruitment; (b) retention; (c) graduation; (d) placement; (e) curriculum review; (f) student satisfaction; (g) student learning outcomes; and (h) student organization activities. The following lists evaluation of the major assessment activities.

- Annual reports will provide data on recruitment, retention, graduation statistics, student organization activities, and other items.
- Student Exit Surveys will be conducted each semester with graduating students for a reflection on their experience in the undergraduate program and to indirectly gauge if the program learning outcomes were met.
- Every three years, a systematic curriculum review will assess program learning outcomes through a 20 percent sample of artifacts (e.g., papers, projects) students complete for their courses. Curricular changes will occur when learning outcomes are not met.
- A biannual Alumni Survey will assess placement of graduates.
- A biannual Employer Survey (in alternating years from the Alumni Survey) will assess curriculum relevance to current jobs.
- An advisory board will be formed to provide additional feedback on the major.

### *Responsibility for Conducting Program Assessment*

The Director of the School of Information Sciences oversees the implementation of all program assessments related to both the program's operations and the evaluation of the major. The Director of the School of Information Sciences manages all faculty and lecturer appointments, reviews, and retention. The Director of Undergraduate Studies compiles data for the annual reports related to the evaluation of the major, including recruitment, retention, graduation statistics, student organization activities, and other items related to the program's operations. The SIS Undergraduate Program Committee will administer the Student Exit Survey, Curriculum Review, and Alumni and Employer Surveys.

### *Use of Results*

The plan for how the assessment results inform the program outlines the mission of the University of Tennessee, Knoxville and related metrics from Vol Vision 2020. The primary mission of UTK is to move forward the frontiers of human knowledge and enrich and elevate the citizens of the State of Tennessee, the nation, and the world. Several of the Vol Vision Metrics for Continuous Improvement appear in the program assessment plan:

- Continue to attract first year students with ACT scores equivalent to the campus "Top 25" comparison group.
- Increase retention rates from first to second year.
- Increase six-year graduation rates.
- Improve the undergraduate student per tenure-line faculty ratio.
- Increase teaching and support expenditures per student.
- The goals of the major are as follows:
  - Admit and enroll 10 new students each year into the program.
  - Maintain annual retention to 80 percent per academic year for the first four years.
  - Increase six-year graduation rate in major to 75 percent.
  - Graduate 70 percent of students in the major beginning in year 4.
  - Successfully place at least 50 percent of graduates in information-related positions.

To match the graduation metrics from the Vol Vision 2020 (<https://top25.utk.edu/2016/vol-vision-2020/>), we plan to graduate 70 percent of admitted students within the major. These efforts also relate to Goal B, recruit and retain outstanding undergraduate students, of the College of Communication and Information's Strategic Plan (<http://www.cci.utk.edu/strategic-plan>).

There is no standardized test to assess achievement in undergraduate information sciences programs, and so a local procedure will be created by faculty. The School has experience creating and implementing assessment procedures for its MSIS program because there are no standardized tests for this degree. The School routinely conducts assessment of the MSIS degree for SACSOC, and for a national accrediting body (American Library Association) that requires more extensive assessment than SACSOC.

To assess the extent to which students are achieving the information sciences major program learning outcomes, each course will be required to have at least one assignment that demonstrates at least one program learning outcome. In their final semester of the program, students will be required to submit a designated number of assignments (e.g., three) demonstrating achievement of at least half of the program learning outcomes. These assignments will be anonymized, and a committee of faculty will evaluate a random sample of these assignments to determine the extent to which the program is meeting its intended outcomes. A student's ability to graduate is not contingent on this assessment (in all likelihood this assessment will take place after the student has graduated). An exit survey will also be created with items to directly and indirectly assess program learning outcomes. Students will be required to complete this anonymous survey as part of their exit requirements.

---

## **ACCREDITATION**

The undergraduate major like all academic programs at the University of Tennessee, Knoxville will be regionally accredited by SACSCOC (<https://sacs.utk.edu/>). There is no accrediting body for undergraduate information sciences programs. Therefore, no professional disciplinary accreditation organizations are identified.

---

## **FUNDING**

The financial projections form for this program can be viewed in Appendix A. The funding for this program will be met from internal reallocation, as well as tuition and fees generated by the new program. SIS currently offers one degree: Master of Science in Information Sciences (MSIS), which is a professional degree. As of fall 2018, the number of students enrolled in this program was approximately 230. This program has both online and on-campus options, although the majority of students are enrolled in the online program. The internal reallocation will consist of shifting some full-time faculty teaching duties from the MSIS program to this new program, as well as using revenue generated from the online MSIS program to support additional lecturers in both the undergraduate major program and MSIS program.

In the financial projection form, the first two years of requested salary (\$10K and \$20K) are for part-time lecturer (adjunct) salaries. The faculty salary that is included in Year 3 is for a full-time lecturer. Revenue from tuition and fees from the undergraduate program will be used to finance the additional part-time lecturers that are needed. If these funds are insufficient in the early years of the program, then revenue from the online MSIS program will be used to support any needed part-time lecturers. In Y3, distance education revenues generated by the MSIS program will be used to hire a full-time lecturer.

In the budget, Y1 includes a cost of \$15,000 to purchase technology (equipment and licenses) that will be used by students when completing our coursework. Y2 includes an additional technology start-up cost of \$10,000 since some of our courses will be offered for the first time during this year. In each year thereafter (Y3-Y5), we have allocated \$5,000 to technology maintenance, upgrades and licenses.

## Appendix A: THEC Financial Projection



**Tennessee Higher Education Commission  
Attachment A: THEC Financial Projections  
Please Enter the Name of the Institution Here  
Please Enter the Name of the Proposed Program Here**

Seven-year projections are required for doctoral programs.  
Five-year projections are required for baccalaureate and Master's degree programs  
Three-year projections are required for associate degrees and undergraduate certificates.  
Projections should include cost of living increases per year.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>I. Expenditures</b>							
<b>A. One-time Expenditures</b>							
New/Renovated Space	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Equipment	15,000	10,000	5,000	5,000	5,000		
Library	-	-	-	-	-	-	-
Consultants	2,000	-	-	-	-	-	-
Travel	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
<b>Sub-Total One-time</b>	\$ 17,000	\$ 10,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ -	\$ -
<b>B. Recurring Expenditures</b>							
<b>Personnel</b>							
<b>Administration</b>							
Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Benefits	-	-	-	-	-	-	-
<b>Sub-Total Administration</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Faculty</b>							
Salary	\$ 10,000	\$ 20,000	\$ 60,000	\$ 61,800	\$ 63,654		\$ -
Benefits	-	-	24,000	24,720	25,462	-	-
<b>Sub-Total Faculty</b>	\$ 10,000	\$ 20,000	\$ 84,000	\$ 86,520	\$ 89,116	\$ -	\$ -
<b>Support Staff</b>							
Salary	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Benefits	-	-	-	-	-	-	-
<b>Sub-Total Support Staff</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Graduate Assistants</b>							
Salary						\$ -	\$ -
Benefits						-	-
Tuition and Fees* (See Below)						-	-
<b>Sub-Total Graduate Assistants</b>						\$ -	\$ -
<b>Operating</b>							
Travel	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Printing	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
<b>Sub-Total Operating</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Recurring</b>	\$ 10,000	\$ 20,000	\$ 84,000	\$ 86,520	\$ 89,116	\$ -	\$ -
<b>TOTAL EXPENDITURES (A + B)</b>	\$ 27,000	\$ 30,000	\$ 89,000	\$ 91,520	\$ 94,116	\$ -	\$ -

10

**\*If tuition and fees for Graduate Assistants are included, please provide the following information.**

Base Tuition and Fees Rate \$ - \$ -  
 Number of Graduate Assistants - -

**II. Revenue**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Tuition and Fees <sup>1</sup>	129,700	240,464	357,757	481,870	613,108	-	-
Institutional Reallocations <sup>2</sup>	(102,700)	(210,464)	(268,757)	(390,350)	(518,993)	-	-
Federal Grants <sup>3</sup>	-	-	-	-	-	-	-
Private Grants or Gifts <sup>4</sup>	-	-	-	-	-	-	-
Other <sup>5</sup>	-	-	-	-	-	-	-
<b>BALANCED BUDGET LINE</b>	<b>\$ 27,000</b>	<b>\$ 30,000</b>	<b>\$ 89,000</b>	<b>\$ 91,520</b>	<b>\$ 94,116</b>	<b>\$ -</b>	<b>\$ -</b>

**Notes:**

**(1) In what year is tuition and fee revenue expected to be generated and explain any differential fees. Tuition and fees include maintenance fees, out-of-state tuition, and any applicable earmarked fees for the program.**

Only in-state tuition is included in the calculation. The current in-state tuition for a full-time student semester at UTK is \$6485.00. The growth model assumes a start of 10 students and a growth of 10 students each year, with 2 lost to attrition. Year 4 assumes 8 students graduate.

**(2) Please identify the source(s) of the institutional reallocations, and grant matching requirements if applicable.**

We currently have a number of GTAs who teach our undergraduate minor courses – many of these courses will be replaced with new ones that are part of the major, so these existing GTAs lines will be

**(3) Please provide the source(s) of the Federal Grant including the granting department and CFDA(Catalog of Federal Domestic Assistance) number.**

N/A

**(4) Please provide the name of the organization(s) or individual(s) providing grant(s) or gift(s).**

N/A

**(5) Please provide information regarding other sources of the funding.**

N/A

10



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>Proposed UTC Student Code of Conduct</u></b>
Type:	Action
Presenter:	Yancy Freeman, UTC Vice Chancellor Enrollment Management, Student Success, and Student Affairs

On March 29, 2017, the Board approved substantial revisions to the student code of conduct for the University of Tennessee, Knoxville (UTK) following a comprehensive review by UTK of its student conduct policies and procedures. Prompted by the revision of the UTK student code of conduct, the Board requested that the other UT campuses conduct similar reviews of their respective student codes of conduct. In 2017, the University of Tennessee at Chattanooga (UTC) tasked its Division of Student Affairs to conduct a similar comprehensive review of the UTC Student Code of Conduct (“UTC Code”).

With guidance from and collaboration with the UTC administration and the General Counsel’s office, UTC’s Division of Student Affairs developed a proposed new UTC Code to improve clarity and organization, to effect needed changes in UTC student conduct policy and process, to ensure consistency with University policy and current law, to remove redundant or obsolete provisions, and to more closely align UTC student conduct policy and process with the UTK student code of conduct. UTC’s Division of Student Affairs solicited and received feedback from students, including the UTC Student Government Association and the UTC Graduate Student Association, regarding proposed changes to the UTC Code. Feedback was also solicited and received from the UTC Faculty Senate.

The proposed UTC Code does not substantively change the hearing processes and procedures through which student conduct cases are currently resolved, but rather explains those processes and procedures in more detail to provide clarity to students involved in the student conduct process. Other changes are summarized below:

- Reorganizes and consolidates the sections of the Code to improve clarity
- Adds defined terms utilized in the UTC Code and places the defined terms in alphabetical order under the “Definitions” section to improve clarity (Section .02)



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- Removes defined terms specific to UTC’s sexual misconduct policy to provide flexibility for potential changes in legal authority related to sexual misconduct cases. Such terms remain defined in UTC’s sexual misconduct policy. (Section .02)
- Clarifies the jurisdictional scope of the UTC Code by more clearly defining when a student is subject to the UTC Code (Sections .02(21) and .03(2))
- Clarifies the application of the UTC Code to conduct fairly attributable to student organizations (Section .03(3))
- Clarifies that violations of the UTC Honor Code are resolved through the Honor Code process instead of the student conduct process (Section .03(6))
- Makes the definition of the “Harassment” Standard of Conduct consistent with the definition of “harassment” under the “Campus Free Speech Protection Act” passed by the Tennessee General Assembly in 2017 (Section .04(6))
- Adds a specific reference to UTC’s Policy on Sexual Misconduct, Relationship Violence, and Stalking in the Standards of Conduct (Section .04(7))
- Incorporates changes to the “Unauthorized Use of Weapons and Related Misconduct” Standard of Conduct to align with 2017 legislative changes related to weapons (Section .04(18))
- Clarifies the due process rights of students in the student conduct process, including the right of students to an advisor during the student conduct process (Section .05)
- Incorporates “conflicts of interest” protections consistent with the “Student Due Process Protection Act” enacted by Tennessee General Assembly in 2018 (Section .05(6))
- Adds language to further explain the initial and pre-resolution stages of the student conduct process (Section .06)
- Adds language to provide further explanation of the methods of resolution available in student conduct cases, including the ability in certain cases to resolve misconduct allegations through resolution agreements, alternative resolution agreements, and behavioral agreements (Section .07)
- Clarifies when a student may contest misconduct allegations through a hearing under the Uniform Administrative Procedures Act (UAPA) (Section .07(1)(a)(3))



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- Clarifies when an Emergency Ad Hoc Committee Hearing may be held and removes such hearing provisions from Section .15 of the current student code and incorporates them under Section .07(f) of the proposed UTC Code (Section .07(1)(f))
- Adds language to provide further explanation of the process for Hearing Officer Hearings (Section .08)
- Adds language to provide further explanation of the process for Student Conduct Board Hearings, including incorporation of procedural requirements in sexual misconduct cases required under the “Student Due Process Protection Act” enacted by Tennessee General Assembly in 2018 (Section .09)
- Adds language clarifying the types of disciplinary sanctions that may be issued for Code violations and the manner in which such sanctions apply, and adds language that affirmatively trespasses suspended students from campus until such time that they are readmitted (Section .10)
- Adds language allowing for disciplinary sanctions that are primarily educational in purpose (Section .10(1)(c)-(d))
- Clarifies the process for appealing decisions by Hearing Officers and Student Conduct Boards (Section .11)
- Removes the right to appeal to the Chancellor. The final decision on appeal is now made by the Vice Chancellor of Student Affairs. (Section .11(1)(e)3)
- Clarifies the different ways in which the student conduct process may be concluded (Section .12)
- Adds language clarifying the types of interim actions that the University may take during the pendency of the student conduct process and how they are applied. The provisions under Section .09 of the current student code regarding no-contact directives and the provisions under Section .10 of the current student code regarding interim suspensions have been incorporated into Section .13 of the proposed UTC Code (Section .13)
- Reduces the size of the student parking appeals board and revises the manner in which board members are selected in order to allow for more efficient administration of student parking appeals. Sections .13 and .14 of the current student code regarding student parking appeals have been consolidated into Section .14 of the proposed UTC Code. (Section .14)
- Adds language explaining how student conduct records are maintained and when they are subject to disposal (Section .14)



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- Establishes a Good Samaritan/ Amnesty policy to encourage students to notify appropriate officials in the event of a health or safety emergency (e.g., situation involving the abuse of alcohol or other drugs) (Section .15)
- Removes the provisions under Section .05 of the current student code regarding residence hall inspections on the basis that such provisions are unnecessary. The same rights of entry accorded to University officials are addressed in UTC's standard housing contracts that all students must sign in order to live in University housing.
- Removes the provisions under Section. 12 of the current student code regarding the process for withdrawing or temporarily suspending a student due to physical or psychological illness. The process has not been utilized since its adoption in 2012 and is not viewed by UTC's Division of Student Affairs as a best practice for handling conduct cases involving students with psychological illness.

The proposed UTC Student Code of Conduct is included in its entirety in the meeting materials.

In accordance with the UAPA rulemaking procedures, the proposed UTC Code will be presented for adoption by a roll-call vote in the full Board meeting. Upon adoption by the Board, the UTC Code will be submitted to the Attorney General for approval and, if approved, filed with the Secretary of State and published for the statutorily required period prior to becoming effective.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution presented in the meeting materials for approval of the proposed UTC Student Code of Conduct.**



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Proposed UTC Student Code of Conduct

Resolved: The Board of Trustees approves the proposed Student Code of Conduct for The University of Tennessee at Chattanooga as presented in the meeting materials, which shall be attached to this Resolution after adoption and shall supersede the current Chapter 1720-02-05 of the Rules of The University of Tennessee after completion of the rulemaking procedures under the Uniform Administrative Procedures Act.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.





## **UT Board of Trustees UTC Student Code of Conduct Changes**

**Dr. Yancy Freeman, Enrollment Management and  
Student Affairs**



# Why Have a Student Code?

The Student Code of Conduct is a comprehensive set of behavioral standards and the rules and procedures for resolving student misconduct. UTC promotes and educates students on lawful and responsible behavior through application of the Code's standards.



[This Photo](#) by Unknown Author is licensed under [CC BY-NC-ND](#)

# Student Discipline Process



Report



Review



Investigation



Hearing



Decision



Appeal

# Benefits of New Code



More definition (terms and process)



More flexibility in resolving Code violations (e.g., alternative resolutions)



Transparency for students



Enhances educational tools for addressing misconduct

# Major Changes

- Describes preliminary and conduct hearing processes in more detail\*
- Establishes standards regarding when conduct of individuals may be attributed to student organizations\*
- Final appeal to Vice Chancellor for Student Affairs
- Removes obsolete and/or redundant processes and terms (e.g., process for temporary suspension of students with mental illness)

*\*Aligns with UTK code*

# Campus Vetting of Policy

## Students

- New Code presented to Student Government Association (SGA) and Graduate Student Association (GSA)-  
December 2017
  - Unanimously approved
- Subsequent revisions presented to judicial committees of SGA and GSA
  - Unanimously approved

# Campus Vetting of Policy

## Faculty

- New Code presented to Faculty Senate (FS)- November 2017
  - Unanimously approved by vote
- Subsequent revisions presented to FS President and Honor Board Chair
  - Unanimously approved

# Educating Students

- Classroom Visits
- Visits to Academic Department Meetings
- Programming in Residence Halls
- Social Media Campaigns

**RULES OF  
THE UNIVERSITY OF TENNESSEE AT CHATTANOOGA**

**CHAPTER 1720-02-05  
STUDENT CODE OF CONDUCT**

**TABLE OF CONTENTS**

1720-02-05-.01	Preamble	1720-02-05-.09	Student Conduct Board Hearings
1720-02-05-.02	Definitions	1720-02-05-.10	Disciplinary Sanctions
1720-02-05-.03	Jurisdiction and Application	1720-02-05-.11	Appeals
1720-02-05-.04	Standards of Conduct	1720-02-05-.12	Conclusion of the Student Conduct Process
1720-02-05-.05	Due Process Rights	1720-02-05-.13	Interim Actions
1720-02-05-.06	Student Conduct Process – Initial and Pre-Resolution Stages	1720-02-05-.14	Student Parking Appeals Board
1720-02-05-.07	Student Conduct Process – Methods of Resolution of Charges	1720-02-05-.15	Student Conduct Records
1720-02-05-.08	Hearing Officer Hearings	1720-02-05-.16	Amnesty for Good Samaritans and Impaired Students

**1720-02-05-.01 PREAMBLE**

- (1) Students at the University of Tennessee at Chattanooga ("University") are members of both the University community and the larger community of which the University is a part. Accordingly, students are responsible for conducting themselves in a lawful manner and in compliance with University rules and policies. The University has established the Student Code of Conduct ("Code") in order to advance the mission of the University by maintaining a safe and secure learning environment, protecting the rights and privileges of all members of the University community, providing a basis for orderly conduct of the affairs of the University, promoting a positive relationship between the University and its surrounding community, preserving institutional integrity and property, encouraging students to engage in conduct that brings credit to themselves and to the University, and ensuring that each student who matriculates at the University graduates ready to contribute to society as an ethical and law-abiding individual.
- (2) The University's behavioral standards are set forth in the Code. Students who engage in conduct in violation of the Code are subject to University disciplinary sanctions. The University investigates and resolves alleged violations of the Code through the student conduct process and utilizes the process to promote learning and the development of appropriate decision-making. The student conduct process is consistent, fair, and provides means of resolution that are commensurate with the skills and abilities of the participants in the process.
- (3) Primary authority and responsibility for the Code is delegated to the Vice Chancellor for Student Affairs, who has delegated certain authority and responsibility for administration and enforcement of the Code to the Office of Student Conduct.
- (4) The University is committed to respecting students' constitutional rights. Nothing in this Chapter is intended or will be interpreted in a manner that restricts a student's constitutional rights, including, but not limited to, a student's right to freedom of speech and freedom of assembly.
- (5) Students are responsible for being knowledgeable about and complying with the Code, applicable academic catalogues (undergraduate or graduate), and all other University rules, policies, and procedures.

**Authority:** T.C.A. § 49-9-209(e)



**1720-02-05-.02 DEFINITIONS**

The following words, terms, or phrases, when used in the Code, shall have the following meanings:

- (1) Advisor: A person who provides assistance to a Complainant or Respondent during the student conduct process, as provided under [Section .05\(3\)](#) of this Chapter.
- (2) Business day: An official workday during which the University conducts business. Typically, a business day is a weekday (Monday through Friday), excluding any weekdays designated by the University as a holiday or in which the University is administratively closed. Each business day commences at 8:00 a.m. and ends at 5:00 p.m.
- (3) Chancellor: The University's chief executive officer to whom the President of the University of Tennessee system has delegated primary responsibility for administration of University operations, policies, and procedures.
- (4) Code: The Student Code of Conduct of the University of Tennessee at Chattanooga, as set forth under this Chapter.
- (5) Complainant: Any person, group, or organization that may have been subjected to conduct that violates the Code, regardless of whether that person, group, or organization makes a complaint or reports an alleged violation of the Code to the University.
- (6) Designee: A University official or office designated with the authority to carry out a duty or role on behalf of another University official or office.
- (7) Faculty: A University employee who holds faculty rank and whose primary appointment is to engage in academic instruction, research, or service.
- (8) Formal Hearing: A University hearing before a fair and impartial decision-maker in which a Respondent may contest charges of Code violations and/or disciplinary sanctions issued against the Respondent, as provided under [Section .07\(1\)](#) of this Chapter.
- (9) Good faith: Having a belief in the truth of information that a reasonable person in the same position could have, based on the information known to the person communicating the information at the time the information was communicated by that person. Information is not communicated in good faith if it is communicated with knowing or reckless disregard for its truth.
- (10) Hearing Officer: A University employee designated by the Office of Student Conduct to conduct a Preliminary Meeting, as provided under [Section .06\(3\)](#) of this Chapter, or to conduct and serve as the decision-maker in a Hearing Officer Hearing, as provided under [Section .08](#) of this Chapter.
- (11) Hearing Officer Hearing: A type of Formal Hearing in which a Hearing Officer serves as the decision-maker, as provided under [Section .08](#) of this Chapter.
- (12) Member of the University community: Any person who is a student, faculty member, staff employee, campus visitor, or participant in a University-sponsored or University-affiliated activity, or any organization that participates in a University-sponsored or University-affiliated activity.
- (13) Notice: Notice given in writing and transmitted by one (1) or more of the following: (i) e-mail to a student's University-issued e-mail account; (ii) United States mail, (iii) courier service, and/or (iv) hand-delivery to the address the University's Records Office has on file for the student. When a notice is transmitted by e-mail, the notice is effective on the date the e-mail is sent. E-mail to a student's University-issued e-mail address is an official method of communication used by the University for student conduct matters. When a notice is transmitted by United States mail or courier service, the notice is effective on the date that it is mailed or delivered to the courier service. When

a notice is transmitted by hand-delivery, the notice is effective on the date that it is delivered to the person to whom the notice is addressed.

- (14) Office of the Dean of Students: The University office designated with primary responsibility for the administration of the Office of Student Conduct. The Office of the Dean of Students may act as or on behalf of the Office of Student Conduct.
- (15) Office of Student Conduct: The University office designated with primary responsibility for administering and enforcing the Code and implementing student conduct-related rules, policies, procedures, training, and education.
- (16) Possession: Direct, indirect, or communal control of a substance or property, actual knowledge of a substance or property, and/or being in such close proximity to the substance or property that a reasonable presumption could be made that one had possession of the substance or property.
- (17) Relevant information: Information having any tendency to make the existence of any fact that is of consequence to determining whether a Respondent violated the Code more probable or less probable than it would be without the information.
- (18) Respondent: A student who has been charged with violating the Code and/or whose alleged misconduct is being investigated by the Office of Student Conduct.
- (19) Staff: Any full-time or part-time University employee not primarily engaged in academic instruction, research, or service, who holds either an exempt or non-exempt position with or without administrative, executive, or managerial responsibilities, excluding student employees of the University.
- (20) Student: A person who:
  - (a) Is admitted, enrolled or registered for study at the University, either full-time or part-time, pursuing undergraduate, graduate, professional, and/or non-degree courses; or
  - (b) Has completed a preceding academic term at the University and is eligible for re-enrollment without re-applying for admission and/or otherwise has a continuing relationship with the University; or
  - (c) Attended the University during a previous academic term and engaged in conduct in violation of the Code during his or her time of enrollment; or
  - (d) Is admitted to the University and later matriculated at the University, and committed conduct in violation of the Code during the application process or during the period of time between admission and matriculation at the University.

Except where explicitly provided otherwise in this Code, the term "student" shall also refer to student organizations.

- (21) Student Conduct Board: A hearing board consisting of students, faculty, and staff appointed by the Office of the Dean of Students (or designee), which serves as the decision-maker in a Student Conduct Board Hearing, as provided under [Section .09](#) of this Chapter.
- (22) Student Conduct Board Chairperson: A University employee appointed by the Office of the Dean of Students (or designee) to preside over and facilitate a Student Conduct Board Hearing.
- (23) Student Conduct Board Hearing: A type of Formal Hearing in which a Student Conduct Board serves as the decision-maker, as provided under [Section .09](#) of this Chapter.

- (24) Student conduct process: The processes and procedures for resolving alleged violations of the Code as set forth in University rules.
- (25) Student conduct record: The collective printed or electronic record of any cases involving alleged violations of the Code by a student. A student conduct record may include, without limitation, incident report(s), correspondence, investigation report(s), interview records, demographic information, evidence, hearing records and recordings, and the student's conduct history.
- (26) Student organization: An organization, club, fraternity, sorority or other group whose membership is composed of University students and which is formally registered and recognized by the University according to University rules, or which has submitted a pending application for registration with the University according to University rules.
- (27) UAPA: The Uniform Administrative Procedures Act, Tenn. Code Ann. § 4-5-101 *et seq.*
- (28) UAPA Administrative Judge: A hearing officer who presides over and serves as the decision-maker in a UAPA Hearing.
- (29) UAPA Hearing: A type of Formal Hearing conducted by a UAPA Administrative Judge in accordance with [Chapter 1720-01-05](#) and the UAPA.
- (30) University: The University of Tennessee at Chattanooga.
- (31) University-affiliated activity: Any activity, on or off University-controlled property, that is initiated, aided, authorized, sponsored, or supervised by the University.
- (32) University-controlled property: All land, buildings, facilities, grounds, structures, or any other property owned, leased, used, maintained, or operated by the University. For purposes of this rule, University-controlled property includes all streets, alleys, sidewalks, and public ways abutting such property. University-controlled property also includes, but is not limited to, computers and network systems owned, maintained, controlled, or funded by the University.
- (33) University official: A University employee when acting in the course and scope of his or her employment duties.
- (34) Vice Chancellor for Student Affairs: The University's chief student affairs officer to whom the Chancellor has delegated primary authority and responsibility for the administration of the Code.
- (35) Weapon: Any device, instrument, or substance that is designed to, or reasonably could be expected to, inflict a wound, incapacitate, or cause serious bodily injury or death, including, without limitation, any firearm (loaded or unloaded); real firearm or device that would appear to a law enforcement officer to be a real firearm; ammunition; electronic control device (including, but not limited to, a Taser gun or stun gun); device designed to discharge an object (including, but not limited to, a BB gun, air/CO<sup>2</sup> gun, pellet gun, potato gun, paintball gun, or slingshot), excluding water guns; dangerous chemical (including, but not limited to, tear gas or oleoresin capsicum), explosive or explosive device, including a substance or combination of substances possessed or prepared for producing a visible or audible effect by combustion, explosion, deflagration or detonation (including, but not limited to, a bomb, grenade, or firework); martial arts weapon; bow and arrows; metal knuckles; nightstick; blackjack; dirk; knife with a fixed blade longer than four (4) inches (not including an ordinary eating utensil); switchblade, dagger, and sword. The term "weapon" does not include an ordinary pocket knife that folds; an available over-the-counter chemical repellent for self-defense (including, but not limited to, mace); or an instrument used solely for personal hygiene, preparation of food, maintenance, University-related instruction, or University employment-related duties.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 49-7-1702(1); T.C.A. § 49-7-1703(c); T.C.A. § 4-5-101 *et seq.*

**1720-02-05-.03 JURISDICTION AND APPLICATION**

- (1) Jurisdiction. The Code applies to the conduct of a student that occurs on University-controlled property. With respect to conduct that does not occur on University-owned property, the University has the discretion to discipline a student for conduct in violation of the Code if the student's conduct adversely affects the interests of the University, including, without limitation, when the conduct:
  - (a) Occurs during or in connection with a University-affiliated activity, including, without limitation, an overseas study program, clinical or field placement, internship, or in-service experience;
  - (b) Consists of academic dishonesty or research misconduct;
  - (c) Is prohibited by local, state, or federal law;
  - (d) Involves another member of the University community; or
  - (e) Threatens, or indicates that the student may pose a threat to, the health or safety of the student or other person, or the security of any person's property, including, without limitation, alcohol-related misconduct, drug-related misconduct, arson, battery, fraud, hazing, participation in group violence, sexual misconduct, relationship violence, stalking, and theft.
  
- (2) Time Period of Application to Students. The Code applies to a student's conduct from the time the student applies for admission to the University through the entire time that the student is a candidate for and/or is awarded a degree from the University (even if a student's conduct which violates the Code is not discovered by the University until after the University awards a degree to the student). The Code applies to a student's conduct that occurs during the academic year, between semesters, and during periods between terms of actual enrollment at the University.
  
- (3) Conduct Attributable to Student Organizations. Each student organization is responsible for conduct fairly attributable to the student organization. A determination that conduct is fairly attributable to a student organization does not preclude holding student members of the student organization accountable for acts committed in relation to the student organization's conduct. The chief student officer of the student organization (e.g., president or equivalent) or his or her designee will serve as the representative of the student organization during any proceedings against the student organization under the Code. In determining whether misconduct in violation of the Code is fairly attributable to a student organization, the University will consider the following factors:
  - (a) Whether one (1) or more officers of the student organization had prior knowledge that the misconduct was reasonably likely to occur and failed to take reasonable preventative or corrective action, failed to attempt to stop known misconduct while it was occurring, and/or helped to plan, promote, or carry out the misconduct.
  - (b) Whether the misconduct occurred in connection with an activity: (i) financed by the student organization and/or one (1) or more members or alumni of the student organization who contributed personal funds in lieu of organizational funds; (ii) related to initiation into, admission into, affiliation with, or as a condition for continued membership in the student organization; and/or (iii) advertised, promoted, or publicized in such a way that a reasonable person viewing or hearing the advertisement, promotion, or publication would believe that the activity was affiliated with the student organization.

- (c) Whether the misconduct occurred on property owned, controlled, rented, leased, and/or used by the student organization and/or any of its members or alumni acting on the student organization's behalf.
  - (d) Whether a member of the student organization attempted to conceal the activity connected with the misconduct or concealed the misconduct of another member of the student organization.
- (4) Relation to Criminal and Civil Legal Proceedings. The Code has been adopted in furtherance of the University's interests and serves to supplement, rather than substitute for, the enforcement of criminal and civil law. Accordingly, a Respondent may be charged with violating the Code for conduct that also constitutes a violation of criminal or civil law without regard to whether criminal or civil legal proceedings have been initiated against the Respondent. Disciplinary action for student conduct in violation of the Code may be carried out prior to, simultaneously with, or following criminal or civil proceedings regarding the same conduct. A Respondent charged with violating the Code may not challenge University proceedings in the student conduct process on the grounds that a criminal or civil legal proceeding (or another University proceeding) regarding the same misconduct is pending or has been dismissed, or otherwise that criminal charges or civil claims regarding same misconduct have been adjudicated, settled and/or reduced. When appropriate, the University may refer student conduct matters involving violations of the law to federal, state, or local authorities for prosecution.
- (5) Misconduct Not Excused by Intoxication or Impairment. The intoxication or impairment of a student by alcohol, drugs, or other substances will not diminish or excuse any conduct in violation of the Code that the student commits while intoxicated or impaired, except as provided under [Section .16](#) of this Chapter.
- (6) Concurrent Honor Code and Non-Honor Code Violations of the Code. Notwithstanding anything in this Chapter to the contrary, allegations of violations of [Section .04\(1\)](#) of this Chapter will be resolved in accordance with the Honor Code procedures under Chapter 1720-02-01. In cases involving allegations of both Honor Code violations and non-Honor Code violations of the Code, the alleged Honor Code violations will be resolved in accordance with the Honor Code procedures under Chapter 1720-02-01 separately from resolution of the alleged non-Honor Code violations, which will be resolved pursuant to the Code procedures under this Chapter. In such cases, disciplinary sanctions may be issued against the Respondent for any Honor Code violations separate from and additional to disciplinary sanctions issued for any non-Honor Code violations of the Code.
- (7) Violations of Professional Standards or Ethics. Graduate or professional programs within the University may take separate and independent action against students for alleged violations of professional and/or ethical standards using procedures other than those contained in the Code.
- (8) Effect on Coursework. Coursework performed by a Respondent during the student conduct process will be considered conditional. Credit for such coursework may be affected, delayed, denied, and/or revoked based on a finding of a Code violation and/or disciplinary sanctions imposed against the Respondent under the Code. In addition, subject to the other provisions of the Code, a delay in the granting of a degree or diploma may be imposed, or a degree that is awarded prior to a decision under the Code may be revoked.
- (9) Withdrawal During the Student Conduct Process. If a Respondent voluntarily withdraws from the University before the conclusion of the student conduct process, the Office of Student Conduct retains the right to investigate and resolve the allegations against the Respondent as a condition of the Respondent being allowed to re-enroll in the University. A Disciplinary Hold on the Respondent's record, as provided under [Section .13\(2\)](#) of this Chapter, may be implemented or remain in place after the Respondent withdraws in order to enforce this [Section .03\(8\)](#).

- (10) Time Extensions and Rescheduling. Any time period specified under the Code may be extended for good cause at the discretion of the Office of Student Conduct. Any hearing or meeting described in the Code may be rescheduled for good cause at the discretion of the Office of Student Conduct.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-05-.04 STANDARDS OF CONDUCT**

All students are prohibited from engaging in the following:

- (1) Academic Dishonesty/Honor Code Violation: Cheating, plagiarism, or any other act of academic dishonesty, including, but not limited to, an act in violation of the Honor Code.
- (2) Providing False Information: Providing false information to a University official.
- (3) Misuse of Information in Connection with a University Investigation or Hearing: Falsifying, distorting, misrepresenting, or withholding information in connection with a University investigation or hearing, except for the withholding of information as provided under [Section .05\(1\)\(d\)](#) and [Section .05\(2\)\(c\)](#) of this Chapter.
- (4) Misuse of Records, Identification, and/or Documents: Forging, altering, destroying, falsifying, or misusing records, identification, or documents, whether in print or electronic form.
- (5) Harm and/or Endangerment: Causing physical harm to any person, including oneself; endangering the health, safety, or welfare of any person, including oneself; engaging in conduct that causes a reasonable person to fear harm to his or her health, safety, or welfare; or making an oral or written statement that a reasonable person hearing or reading the statement would interpret as a serious expression of an intent to commit an act of unlawful violence to a particular individual or group of individuals.
- (6) Harassment: Unwelcome conduct that is so severe, pervasive, and objectively offensive, that it effectively bars the ability of a person to work, learn, live, or participate in or benefit from the services, activities, or privileges provided by the University. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution including, but not limited to, mere insulting or offensive speech).
- (7) Sexual Misconduct, Relationship Violence, Stalking and/or Retaliation: Engaging in conduct that violates the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation.
- (8) Invasion of Privacy: Invasion of another person's privacy when that person has a reasonable expectation of privacy, including, but not limited to, by using electronic or other means to make a video or photographic record of any person in a location in which the person has a reasonable expectation of privacy, without the person's knowledge or consent. This includes, but is not limited to, making a video or photographic record of a person in a shower, locker rooms or restrooms. The storing, sharing, and/or distributing of such unauthorized recordings by any means is also prohibited.
- (9) Theft, Misappropriation and/or Unauthorized Possession/Sale: Theft, misappropriation, unauthorized possession, or unauthorized sale of private or public property, including but not limited to, University-controlled property.
- (10) Vandalism: Vandalizing, destroying, damaging, engaging in conduct that reasonably could cause damage to, or misusing private or public property, including but not limited to, University-controlled

property.

- (11) Hazing: Any intentional or reckless act on or off University-controlled property by one (1) student, acting alone or with others that is directed against any other student, that endangers the mental or physical health, safety, or welfare of that student, or that induces or coerces a student to endanger his or her mental or physical health, safety, or welfare. "Hazing" does not include customary athletic events or similar contests or competitions and is limited to those actions taken and situations created in connection with initiation into or affiliation with any organization.
- (12) Disorderly Conduct: Fighting or other physically violent or physically threatening conduct; creating a hazardous or physically offensive condition by any act that serves no legitimate purpose; making noise that could unreasonably disturb others who are carrying on lawful activities; or conduct that breaches the peace.
- (13) Lewd, Indecent, or Obscene Conduct: Engaging in lewd, indecent, or obscene conduct, including, without limitation, public exposure of one's sexual organs, public urinating, and public sexual acts.
- (14) Imminent Lawless Action: Engaging in speech, either orally or in writing, that is directed to inciting or producing imminent lawless action and is likely to incite or produce such action.
- (15) Arson and/or Fire Safety: Any act of arson; falsely reporting a fire, the presence of an explosive or incendiary device, or other emergency; setting off a false fire alarm; or tampering with, removing, or damaging fire alarms, fire extinguishers or any other safety or emergency equipment from its proper location except when removed in a situation in which there is a reasonable belief of the need for such equipment.
- (16) Unauthorized Possession and/or Access to University Property: Possessing, using, or duplicating University keys, access cards, parking permits, or identification cards without authorization; or possessing, using, or entering University-controlled property without authorization.
- (17) Misuse of University Information and/or Technology: Theft, misuse, or unauthorized use of information technology facilities, resources, or access codes, including, but not limited to: unauthorized entry into or transfer of a file; using another person's identification and/or password without that person's consent; using information technology facilities or resources to interfere with the work of another student, faculty member, staff employee, or other member of the University community; using information technology facilities or resources to interfere with normal operation of a University information technology system or network; circumventing University information technology system or network security; using information technology facilities or resources in violation of copyright laws; falsifying an e-mail header; and conduct that violates the University's rules or policies on the acceptable use of information technology resources.
- (18) Unauthorized Use of Weapons and Related Misconduct: Possessing, using, storing, or manufacturing any weapon on University-controlled property or in connection with a University-affiliated activity, unless authorized in writing by the Chief of Police (or his or her designee) of the University Police Department or unless federal or state law affirmatively gives a student a right, irrespective of the Code, to possess or carry a weapon on University-controlled property or in connection with a University-affiliated activity.
- (19) Alcohol-Related Misconduct: Consuming, manufacturing, possessing, distributing, dispensing, or selling alcohol or alcohol paraphernalia, or being under the influence of alcohol, on University-controlled property or in connection with a University-affiliated activity, unless expressly permitted by University rules or policy.
- (20) Violation of Federal, State, or Local Alcohol Laws: Consuming, manufacturing, possessing, distributing, dispensing, or selling alcohol or alcohol paraphernalia, or being under the influence of alcohol, if prohibited by federal, state, or local law.



- (21) Providing Alcohol to Minors: Providing alcohol to a person younger than twenty-one (21) years of age, unless permitted by law.
- (22) Drug-Related Misconduct: Using, manufacturing, possessing, distributing, selling, or dispensing drugs or drug paraphernalia, or being under the influence of drugs, if prohibited by federal, state, or local law; using or possessing a prescription drug if the prescription is not issued to the student using or in possession of the prescription drug; or distributing or selling a prescription drug to a person to whom the prescription was not originally issued.
- (23) Obstruction or Disruption of University Activities: Obstructing or disrupting teaching, learning, studying, research, public service, administration, disciplinary proceedings, emergency services, or any other University-affiliated activity, or the free flow of pedestrian or vehicular traffic. In no event shall this rule be construed to discipline a student for speech protected by the First Amendment to the United States Constitution.
- (24) Failure to Comply with University Request or Directive: Failing to respond to a request to report to a University administrative office; failing to comply with a lawful directive of a University official or other public official acting within the scope of his or her duties, except as provided under [Section .05\(1\)\(d\)](#) and [Section .05\(2\)\(c\)](#) of this Chapter; or failing to identify oneself to a University official or other public official acting within the scope of his or her duties when requested to do so.
- (25) Failure to Pay Financial Obligation: Failing to pay a bill, account, or other financial obligation to the University.
- (26) Failure to Appear at Hearing: Failing to appear at a University hearing, including, but not limited to, a Formal Hearing or a hearing related to alleged violations of the Honor Code, following a request to appear either as a party or as a witness.
- (27) Retaliation: Retaliation is an act or omission committed by a student because of another person's participation in a protected activity that would discourage a reasonable person from engaging in protected activity, including, without limitation, any act or omission constituting "retaliation" under the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation. Retaliation violates the Code regardless of whether or not the underlying allegation of a violation of the Code is ultimately found to have merit. Retaliation can include, without limitation: (i) an act or omission committed against a person's family, friends, advisors, and/or other persons reasonably expected to provide information in connection with a University investigation or hearing; and (ii) an act or omission committed by a student through a third party.
- (28) Violation of Housing & Residence Life Policies: Violating any obligations under a University Housing & Residence Life contract for University residential housing and/or any policies under the Housing & Residence Life Student Handbook.
- (29) Violation of Other University Rule, Policy, or Procedure: Violating any University rule, policy, or procedure other than the Code, including, without limitation, University rules or policies relating to use of University facilities, smoking, the acceptable use of information technology resources, research misconduct, University libraries, dining services, parking or transportation, University identification card use, and registered student organizations.
- (30) Violation of Federal, State, or Local Law: Committing an act that is prohibited by federal, state, or local laws, regulations, and/or ordinances.
- (31) Attempt to Commit or Accessory to a Violation: Attempting to commit a violation of a Standard of Conduct set forth under this Section .04 or being an accessory to the commission of an act or attempted act in violation of a Standard of Conduct set forth under this Section .04.



- (32) Violation of University Action: Violating the terms of an interim action under [Section .13](#) of this Chapter (including, but not limited to, a no-contact directive, interim restriction, or interim suspension); Behavioral Agreement; Resolution Agreement, Alternative Resolution Agreement, disciplinary sanction; or restriction, sanction, or condition of enrollment or re-enrollment imposed by the University.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 49-7-123(a)-(b); T.C.A. § 49-7-1702(3); T.C.A. § 49-7-2406(a)-(b)

#### **1720-02-05-.05 DUE PROCESS RIGHTS AND CONFLICTS OF INTEREST**

(1) Rights of the Respondent

A Respondent will have the following rights during the student conduct process:

- (a) The right to a prompt, thorough, and equitable investigation.
- (b) The right to meet with the Office of Student Conduct to ask questions and receive information about the student conduct process, including, without limitation, the status of an investigation.
- (c) The right to be informed of all charges in writing. The date, time, and place of occurrence of the alleged Code violation(s) will be stated in the written notice of charges.
- (d) The right to remain silent in any investigation, meeting, or hearing.
- (e) The right to a fair and equitable hearing.
- (f) The right to the presumption of innocence (i.e., the University has the burden of presenting information demonstrating that it is more likely than not that the Respondent violated a Standard of Conduct).
- (g) The right to receive notice of hearings at which the Respondent may be present.
- (h) The right to access any information or documents that will be used during a hearing, unless prohibited by law.
- (i) The right to challenge, for good cause, the fairness and/or impartiality of any Hearing Officer, Student Conduct Board Chairperson, Student Conduct Board member, or UAPA Administrative Judge. The Vice Chancellor for Student Affairs (or his or her designee) will decide on challenges to Hearing Officers or Student Conduct Board Chairpersons. The Student Conduct Board Chairperson will decide on challenges to Student Conduct Board members. Challenges to UAPA Administrative Judges will be decided according to the UAPA Hearing procedures under [Chapter 1720-01-05](#).
- (j) The right to challenge all charges and testimony against the Respondent; to present witnesses and other evidence; and to challenge the admissibility of evidence.
- (k) The right not to be questioned directly by the Complainant during a hearing.
- (l) The right to be informed in writing of the decision of the decision-maker in a case, and if applicable, the proper procedure for appealing the decision.
- (m) The right to appeal the decision of the decision-maker in a Hearing Officer Hearing, Student Conduct Board Hearing, or UAPA Hearing.

- (n) The right to be assisted by an advisor during all stages of the student conduct process in accordance with [Section .05\(3\)](#) of this Chapter.

(2) Rights of the Complainant

A Complainant will have the following equivalent rights granted to a Respondent during the student conduct process, unless otherwise provided by federal or state law:

- (a) The right to a prompt, thorough, and equitable investigation.
- (b) The right to meet with the Office of Student Conduct to ask questions and receive information about the student conduct process, including, without limitation, the status of an investigation.
- (c) The right to remain silent in any investigation, meeting, or hearing.
- (d) The right to receive notice of any hearings at which the Complainant may be present.
- (e) The right to access any information or documents that may be used during a hearing, unless prohibited by law.
- (f) The right to challenge, for good cause, the fairness and/or impartiality of any Hearing Officer, Student Conduct Chairperson, Student Conduct Board member, or UAPA Administrative Judge. The Vice Chancellor for Student Affairs (or his or her designee) will decide on challenges to Hearing Officers or Student Conduct Board Chairpersons. The Student Conduct Board Chairperson will decide on challenges to Student Conduct Board members. Challenges to UAPA Administrative Judges will be decided according to the UAPA Hearing procedures under [Chapter 1720-01-05](#).
- (g) The right to challenge all testimony against the Complainant; to present witnesses and other evidence; and to challenge the admissibility of evidence.
- (h) The right not to be questioned directly by the Respondent during a hearing, unless otherwise provided by federal or state law.
- (i) The right to be informed in writing of the decision of the decision-maker in a case, and if applicable, the proper procedure for appealing the decision.
- (j) If applicable and where provided by law or University rules or policy, the right to appeal the decision of the decision-maker in a Hearing Officer Hearing, Student Conduct Board Hearing, or UAPA Hearing.
- (k) The right to be assisted by an advisor during all stages of the student conduct process in accordance with [Section .05\(3\)](#) of this Chapter.

(3) Right to an Advisor

- (a) The Complainant and the Respondent each may choose to be assisted by one (1) advisor during all stages of the student conduct process.
- (b) The University encourages a Complainant or Respondent who chooses to be assisted by an advisor to consider selecting a University employee who has received training about the student conduct process from the Office of Student Conduct. The Complainant and the Respondent may obtain the names of trained advisors from the Office of Student Conduct. At their own expense, the Complainant and the Respondent may choose a person who is not employed by the University to serve as an advisor. The Complainant and the

Respondent should select as an advisor a person whose schedule allows attendance at the scheduled date, time, and place for meetings and hearings, as delays will generally not be granted due to the scheduling conflicts of an advisor.

- (c) The role of an advisor is limited to assisting, advising, and/or supporting a Complainant or Respondent during the student conduct process. An advisor is not permitted to speak for or on behalf of a Complainant or Respondent, appear in lieu of a Complainant or Respondent, participate as a witness, or participate directly in any other manner during any phase of the student conduct process, including, without limitation, a Hearing Officer Hearing or Student Conduct Board Hearing. However, in a UAPA Hearing, the Complainant and the Respondent are entitled to be represented by legal counsel at their own expense.
- (4) Restrictions on Participation Imposed by Law. Notwithstanding any provisions of the Code to the contrary, including, without limitation, any provisions in this [Section .05](#), a Complainant will not have the right to attend a meeting or hearing, receive information concerning a case, or otherwise participate in the student conduct case, if such attendance, receipt of information, or participation would violate federal or state law.
- (5) Rights in Sexual Misconduct, Relationship Violence, Stalking, and/or Retaliation Cases

Notwithstanding any provisions of the Code to the contrary, including, without limitation, any provisions in this [Section .05](#), in cases involving alleged conduct that violates the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation:

- (a) The Respondent and the Complainant will have the rights outlined in the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation, in accordance with Title IX of the Education Amendments of 1972, the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, and other applicable laws; and
- (b) The University shall provide the Respondent with notice of the extent to which the University may allow a licensed attorney or other advisor to represent or advise the Respondent in the investigation or student disciplinary proceeding.
- (6) Conflicts of Interest
  - (a) The student conduct process must be carried out in a manner that is free from conflicts of interest consistent with due process of law.
  - (b) In cases involving alleged conduct that violates the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation, the student conduct process must include protections for the Respondent analogous to, and no less protective than, the conflict of interest provisions of Tenn. Code Ann. § 4-5-303. Notwithstanding the preceding sentence: (i) an attorney for the University is allowed to provide legal advice to multiple University employees who serve in different roles in the student conduct process; and (ii) the University is allowed to provide the Complainant with equivalent rights as the Respondent during the student conduct process.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 49-7-1703(a); T.C.A. § 49-7-1704(a) and (d); T.C.A. § 4-5-101 *et seq.*

**1720-02-05-.06 STUDENT CONDUCT PROCESS – INITIAL AND PRE-RESOLUTION STAGES****(1) Initiation of the Student Conduct Process**

- (a) The University may initiate the student conduct process on the basis of written allegations received from any source including, without limitation, students, faculty members, staff employees, or law enforcement agencies. The University may also initiate the student conduct process in the absence of written allegations if the University becomes aware, through other means, of potential Code violations committed by a student.
- (b) Upon receipt of written allegations or other information concerning potential Code violations, the Office of Student Conduct, on behalf of the University, will review the information and determine whether or not to initiate the student conduct process. The Office of Student Conduct's determination of whether to initiate the student conduct process generally will be based on: (i) a preliminary investigation by the Office of Student Conduct or other University official(s) into the allegations or information received; (ii) a determination of whether the alleged conduct falls within the jurisdiction of the Code; and (iii) a determination of whether the alleged conduct, if true, violated the Code.

**(2) Notice of Allegations**

- (a) If the Office of Student Conduct determines to initiate the student conduct process, it will provide a Notice of Allegations to the Respondent.
- (b) The Notice of Allegations will:
  1. Inform the Respondent that the University has received allegations that the Respondent has violated the Code and that the University has begun or will begin an investigation of the alleged violations;
  2. Provide a brief description of the alleged Code violation(s);
  3. Notify the Respondent of his or her right to be assisted and/or supported by an advisor at all stages of the student conduct process;
  4. Instruct the Respondent to contact the Office of Student Conduct within five (5) business days of the effective date of the notice to schedule a Preliminary Meeting as provided under [Section .06\(3\)](#) of this Chapter;
  5. Inform the Respondent of the consequences for failure to schedule or appear at a Preliminary Meeting, as provided under [Section .06\(3\)](#) of this Chapter; and
  6. Advise the Respondent to review the Code for information about the student conduct process.

**(3) Preliminary Meeting**

After a Notice of Allegations is issued to a Respondent, a Hearing Officer, appointed by the Office of Student Conduct, will hold a Preliminary Meeting with the Respondent, unless the Respondent fails to schedule a Preliminary Meeting as provided under [Section .06\(3\)\(a\)](#) of this Chapter or fails to appear at a scheduled Preliminary Hearing as provided under [Section .06\(3\)\(b\)](#) of this Chapter.

- (a) Failure to Schedule Preliminary Meeting. If the Respondent fails to contact the Office of Student Conduct within five (5) business days of the effective date of the Notice of Allegations to schedule the Preliminary Meeting, the Respondent waives his or her right to a Preliminary Meeting and the right to select the type of Formal Hearing for resolution of

the allegations, unless the Respondent's failure to contact the Office of Student Conduct is excused by the Office of Student Conduct upon a showing of good cause. If the Respondent waives his or her right to a Preliminary Hearing as provided under this Section .06(3)(a) and the Hearing Officer determines that charges should be issued based on the information available, the Hearing Officer will select the type of Formal Hearing for resolution of the charge(s) and provide the Respondent with a Notice of Charges in accordance with [Section .06\(5\)](#) of this Chapter. Notwithstanding any provisions to the contrary in this [Section .06\(3\)\(a\)](#), in cases in which the Respondent has the right to a UAPA Hearing, the Respondent waives his or her right to a UAPA Hearing only as provided under [Section .07\(1\)\(e\)](#) of this Chapter.

- (b) Failure to Appear at Preliminary Meeting. If the Respondent fails to appear at a scheduled Preliminary Meeting, the Respondent waives his or her right to a Preliminary Meeting and the right to select the type of Formal Hearing for resolution of the allegations, unless the Respondent's failure to appear at the Preliminary Meeting is excused by the Office of Student Conduct upon a showing of good cause. If the Respondent waives his or her right to a Preliminary Hearing as provided under this Section .06(3)(b) and the Hearing Officer determines that charges should be issued based on the information available, the Hearing Officer will select the type of Formal Hearing for resolution of the charge(s) and provide the Respondent with a Notice of Charges in accordance with [Section .06\(5\)](#) of this Chapter. Notwithstanding any provisions to the contrary in this [Section .06\(3\)\(b\)](#), in cases in which the Respondent has the right to a UAPA Hearing, the Respondent waives his or her right to a UAPA Hearing only as provided under [Section .07\(1\)\(e\)](#) of this Chapter.
- (c) Appearance at Scheduled Preliminary Meeting. If the Respondent appears at a scheduled Preliminary Meeting, the Hearing Officer will conduct the Preliminary Meeting in the following general manner:
1. The Hearing Officer will inform the Respondent of the allegations against the Respondent and the potential disciplinary sanction(s) that could be issued against the Respondent.
  2. The Respondent may ask questions and seek clarification about the allegations and any other information regarding the student conduct process.
  3. The Hearing Officer will provide the Respondent with an opportunity to respond to the allegations through various means, including, without limitation, the presentation of any information for consideration by the Office of Student Conduct and/or the identification of any witnesses the Respondent believes have relevant information.
  4. If the Hearing Officer determines at the Preliminary Meeting that additional investigation is not needed and that charges should not be issued against the Respondent, the Preliminary Meeting will be concluded and the Hearing Officer will provide a Notice of Decision to the Respondent in accordance with [Section .12\(1\)](#) of this Chapter.
  5. If the Hearing Officer determines at the Preliminary Meeting that no additional investigation is needed and that charges should be issued against the Respondent, the Hearing Officer will inform the Respondent of the determination, the proposed disciplinary sanction(s) to be issued, and the applicable options available for resolution of the charge(s) provided under [Section .07](#) of this Chapter. The Respondent will then be provided the opportunity to state whether the Respondent wishes to accept responsibility for the charge(s) and the proposed disciplinary sanction(s), or contest the charge(s) and/or proposed disciplinary sanction(s) in a Formal Hearing.

- (i) If the Respondent wishes to accept responsibility for the charge(s) and sanction(s), or otherwise not to contest the charge(s) and sanction(s) in a Formal Hearing, the Respondent may either:
    - I. Enter into a Resolution Agreement accepting responsibility for the charge(s) and sanction(s) in accordance with [Section .07\(2\)](#) of this Chapter; or
    - II. Sign a written waiver of Respondent's right to contest the charge(s) and sanction(s) in a Formal Hearing. In such case, the Hearing Officer will provide a Notice of Decision to the Respondent in accordance with [Section .12\(3\)](#) of this Chapter.
  - (ii) If the Respondent wishes to contest the charge(s) and/or the sanction(s) in a Formal Hearing, the Preliminary Meeting will be concluded and the Respondent will be issued a Notice of Charges in accordance with [Section .06\(5\)](#) of this Chapter, except as provided under [Section .08\(3\)](#) of this Chapter.
6. If the Hearing Officer determines at the Preliminary Meeting that additional investigation is needed before the Hearing Officer determines whether or not charges should be issued against the Respondent, the Preliminary Meeting will be concluded and the Office of Student Conduct will continue its investigation of the allegation(s).
- (4) Investigations
- (a) Investigations of alleged violations of the Code will be conducted by the Office of Student Conduct unless another person or organization is designated to serve as the investigator in accordance with University rules or policy.
  - (b) Investigations will be conducted in a prompt, thorough, ethical, and equitable manner.
  - (c) When conducting an investigation, the Office of Student Conduct (or other designated investigator) will act as a fair and impartial party rather than as a representative of the person, office, unit, or organization that submitted the allegations.
  - (d) During an investigation, the Complainant(s), the Respondent(s), witnesses, or any other persons may be interviewed, and other relevant information and documentation will be obtained as applicable. The Office of Student Conduct (or other designated investigator) is not obligated to interview a witness identified by the Complainant or the Respondent if the Office of Student Conduct (or other designated investigator) believes the witness is not likely to possess relevant information, the information from the witness is not likely to lead to the discovery of relevant information, or the information the witness is likely to possess is cumulative of other information already gathered. The Office of Student Conduct (or other designated investigator) may re-interview the Complainant(s), Respondent(s), witnesses, and/or any other person at any time during the investigation in order to obtain additional and/or clarifying information.
  - (e) Notwithstanding any provisions of the Code to the contrary, including, without limitation, any provisions in this [Section .06](#), the University will investigate and resolve reports of alleged conduct that violates the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation in accordance with the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation, Title IX of the Education Amendments of 1972, the Jeanne Clery Disclosure of Campus Security Policy and

Campus Crime Statistics Act, and other applicable laws.

1. Any University employee who investigates reports of alleged violations of the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation shall complete the following at least one (1) time each year:
  - (i) Training that satisfies the requirements of Title IX of the Education Amendments of 1972 (20 U.S.C. § 1681), the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (compiled in 20 U.S.C. § 1092(f)), and the federal regulations implementing the statutes, as amended, all of which may be satisfied by the training in [Section .06\(4\)\(e\)1\(ii\)](#) of this Chapter.
  - (ii) Training developed or conducted by the Tennessee Law Enforcement Innovation Center for Investigators who perform investigations of sexual misconduct.

(5) Notice of Charges

- (a) If it is determined that a Respondent should be charged with violation of the Code, the Office of Student Conduct will provide the Respondent with a Notice of Charges, unless otherwise provided in this Chapter.
- (b) The Notice of Charges will include, without limitation, the following information:
  1. A description of the conduct the Respondent is charged with committing, the specific Code violation(s) charged with violating, and the recommended disciplinary sanctions;
  2. The types of Formal Hearings available for resolution of the charge(s);
  3. That, if the Respondent wishes to contest the charge(s) and/or proposed disciplinary sanction(s), the Respondent must request one (1) of the available Formal Hearing options in writing within five (5) business days of the effective date of the Notice of Charges or otherwise waives the right to contest the charge(s) in a Formal Hearing; and
  4. The Respondent's right to be assisted and/or supported by an advisor at all stages of the student conduct process. In cases in which the UAPA requires the University to offer the Respondent a UAPA Hearing, the notice shall notify the Respondent of his or her right to be assisted or represented by legal counsel if the Respondent decides to contest the charge(s) through a UAPA Hearing.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 4-5-101 *et seq.*; T.C.A. § 49-7-122; T.C.A. § 49-7-1704

**1720-02-05-.07 STUDENT CONDUCT PROCESS – METHODS OF RESOLUTION**

Charges or allegations of violations of the Code may be resolved in one (1) of the following ways:

- (1) Resolution by Formal Hearing. A Formal Hearing is a process for resolving charges of Code violations in which the Respondent is provided the opportunity to contest the charges through the presentation of evidence at a hearing before a fair and impartial decision-maker.
  - (a) Types of Formal Hearings. Charges may be resolved through one (1) of three (3) types of Formal Hearings, depending on the gravity of the disciplinary sanctions proposed for the



charge:

1. Hearing Officer Hearing. A hearing held before a Hearing Officer in accordance with [Section .08](#) of this Chapter. A Hearing Officer Hearing will be offered in every case, except as provided in this [Section .07\(1\)\(a\)1](#). Hearing Officer Hearings will not be held for resolution of charge(s) of violations of the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation.
  2. Student Conduct Board Hearing. A hearing held before a Student Conduct Board in accordance with [Section .09](#) of this Chapter. A Student Conduct Board Hearing will be offered in every case.
  3. UAPA Hearing. A "contested case" hearing under the UAPA held before a UAPA Administrative Judge in accordance with [Chapter 1720-01-05](#). A Respondent has the right to a UAPA Hearing only when the UAPA requires the University to offer a UAPA Hearing as determined by the gravity of the disciplinary sanction(s) proposed for the charge.
- (b) Request for Formal Hearing. In order to contest the charge(s) set forth in the Notice of Charges, the Respondent must request in writing a Formal Hearing and the selected type of Formal Hearing using the form(s) provided by the University within five (5) business days of the effective date of the Notice of Charges. A verbal request by the Respondent for a Formal Hearing or of the selected type of Formal Hearing will not constitute a valid request. By selecting a type of Formal Hearing, the Respondent waives the right to contest the charged Code violation(s) through another type of Formal Hearing.
  - (c) Failure to Contest. If the Respondent fails to request a Formal Hearing in writing within five (5) business days of the effective date of the Notice of Charges, the Respondent waives the right to contest the charge(s), and the Office of Student Conduct may issue a Notice of Decision to the Respondent as provided under [Section .12\(3\)](#) of this Chapter. Notwithstanding the foregoing provisions in this [Section .07\(1\)\(c\)](#), the Office of Student Conduct may decline to issue a Notice of Decision and permit the Respondent to contest the charge(s) through a Formal Hearing upon a showing of good cause by the Respondent for his or her failure to timely request a Formal Hearing.
  - (d) Failure to Request Type of Formal Hearing. If, within five (5) business days of the effective date of the Notice of Charges, the Respondent requests a Formal Hearing in writing but fails to request in writing the type of Formal Hearing, the Respondent waives the right to select the type of Formal Hearing for resolution of the charge(s), unless the Respondent's failure to select the type of Formal Hearing is excused by the Office of Student Conduct upon a showing of good cause. If the Respondent waives his or her right to select the type of Formal Hearing as provided under this [Section .07\(1\)\(d\)](#), the Office of Student Conduct will select the type of Formal Hearing and will provide notice to the Respondent of the type of Formal Hearing selected and the date, time, and place of the hearing.
  - (e) Waiver of UAPA Hearing. Notwithstanding any provisions in this Chapter to the contrary, in a case in which the UAPA requires that the University offer the Respondent a UAPA Hearing, the Respondent waives his or her right to a UAPA Hearing only if the Respondent: (i) fails to request a Formal Hearing in writing within five (5) business days of the effective date of the Notice of Charges; or (ii) executes a voluntary written waiver of his or her right to a UAPA Hearing. If the Respondent timely requests a Formal Hearing in writing, the University will conduct a UAPA Hearing to resolve the charge(s) unless the Respondent executes a voluntary written waiver of the Respondent's right to a UAPA Hearing.
  - (f) Emergency Ad Hoc Committee Hearing. When, in the judgment of the Chancellor, conditions are such that the functioning of a Hearing Officer Hearing or Student Conduct



Board Hearing to resolve Code violation charges is impractical, the Vice Chancellor for Student Affairs may suspend the procedural rules for Hearing Officer Hearings and Student Conduct Board Hearings under this Chapter and appoint an ad hoc committee to hear a student conduct matter. Any such ad hoc committee will follow procedures that will insure the Respondent is provided due process. The decision of the ad hoc committee may be appealed in accordance with [Section .11](#) of this Chapter as if the decision were issued by a Hearing Officer or Student Conduct Board.

- (2) Resolution by Resolution Agreement. At any time during the student conduct process, the Respondent may resolve charges of violations of the Code by entering into a Resolution Agreement with the University.
- (a) By signing a Resolution Agreement, the Respondent: (i) accepts responsibility for the Code violations indicated in the agreement; (ii) agrees to the imposition of the disciplinary sanctions indicated in the agreement; and (iii) waives all rights the Respondent may have to resolve the charges through a Formal Hearing.
  - (b) Subject to [Section .07\(2\)\(c\)](#) of this Chapter, a Resolution Agreement will not become binding and effective until it is signed by the Respondent and an authorized University official. A Respondent may not revoke or appeal a Resolution Agreement at any time after the Respondent signs the agreement.
  - (c) The Complainant will have the right in certain cases (where provided by law or University rules or policy) to appeal the terms of a Resolution Agreement. In such cases, the procedures under this [Section .07\(2\)\(c\)](#) will apply. In a case in which the Complainant has the right to appeal the terms of a Resolution Agreement and properly exercises such right, the agreement will not become binding and effective unless and until the issuance of a final decision on appeal upholding the agreement.
    - 1. For a Resolution Agreement entered into between the Respondent and the University in any case in which the UAPA Hearing procedure has not been selected and initiated for resolution of the charge(s), the Office of Student Conduct will provide written notice to the Complainant of the agreement, and the Complainant may appeal the agreement in writing to the Vice Chancellor for Student Affairs within five (5) business days of the effective date of the notice of the agreement. The Vice Chancellor for Student Affairs must either uphold or reject the agreement in its entirety and provide notice of his or her decision to the Complainant and Respondent within ten (10) business days of receipt of the Complainant's appeal. If the Vice Chancellor for Student Affairs upholds the Resolution Agreement, the decision is final and the agreement will become effective and binding. If the Vice Chancellor for Student Affairs rejects the Resolution Agreement, the Office of Student Conduct will continue the student conduct process and resolve the charge(s) against the Respondent in accordance with the Code.
    - 2. For a Resolution Agreement entered into between the Respondent and the University in which the UAPA Hearing procedure has been selected and initiated for resolution of the charge(s), the availability of any appeal of the Resolution Agreement will be determined by the UAPA Administrative Judge under [Chapter 1720-01-05](#).
- (3) Resolution by Alternative Resolution Agreement.
- (a) Proposal of Alternative Resolution. At any time during the student conduct process, allegations or charges of violations of the Code against the Respondent may be resolved through an Alternative Resolution Agreement. An alternative resolution is a resolution that

is reached through a process and/or by a sanction or restriction not described in the Code. Before proposing an alternative resolution, the Office of Student Conduct shall determine whether an alternative resolution would be appropriate based on the facts and circumstances of the case, and if so, what type of alternative resolution process should be used. In cases involving allegations or charges of violations of the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation, the Title IX Coordinator will make that determination in consultation with the Office of Student Conduct. The process of trying to reach an alternative resolution is voluntary (i.e., neither the Respondent nor a Complainant is required to participate). If an Alternative Resolution Agreement as defined under Section .07(3)(b) is not reached, then the Office of Student Conduct will continue the student conduct process and resolve the allegations or charges against the Respondent in accordance with the Code.

- (b) Alternative Resolution Agreement. An Alternative Resolution Agreement is a written agreement that confirms an agreement to resolve the allegations or charges against the Respondent through an alternative resolution. To be valid, an Alternative Resolution Agreement shall in all cases be signed by the Office of Student Conduct and the Respondent, and shall include a waiver of the Respondent's right, if any, to have a Formal Hearing on the allegations or charges. Prior to the execution of an Alternative Resolution Agreement, if a Complainant has not participated with the Office of Student Conduct in the discussion of an alternative resolution, then the Office of Student Conduct will provide the Complainant with an opportunity to provide a timely objection to the proposed alternative resolution. In appropriate cases, the Office of Student Conduct may request the Complainant to sign the Alternative Resolution Agreement and determine that the Alternative Resolution Agreement is not effective without the Complainant's signature. Neither the Respondent nor the Complainant may revoke or appeal an Alternative Resolution Agreement.
- (4) Behavioral Agreement. In cases involving allegations of the Respondent engaging in behavior in the classroom or other areas of campus in violation of the Code, the Office of Student Conduct may request that the Respondent enter into a Behavioral Agreement to remediate and/or prevent recurrence of the alleged behavior. Under a Behavioral Agreement, the Respondent is allowed to continue participating in University programs and services with limited restrictions and/or conditions as provided under the agreement. Any violation of a Behavioral Agreement will be considered a violation of the Code and may result in disciplinary sanctions against the Respondent.
- (5) Resolution of Title IX-Related Cases. Notwithstanding any provisions of the Code to the contrary, including, without limitation, any provisions in this [Section .07](#), cases involving charges of violations of the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation will be resolved in accordance with the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation, subject to Title IX of the Education Amendments of 1972, the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, and other applicable laws.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 4-5-101 *et seq.*; T.C.A. § 49-7-1704

#### **1720-02-05-.08 HEARING OFFICER HEARINGS**

A Hearing Officer Hearing is held before and conducted by a Hearing Officer. The Hearing Officer serves as the decision-maker in determining whether the Respondent is responsible for the charged Code violation(s) and the disciplinary sanction(s), if any, to be imposed.

- (1) Hearing Officer. A Hearing Officer is a University employee selected by the Office of Student Conduct. Hearing Officers are trained by the Office of Student Conduct to conduct Hearing Officer Hearings in accordance with the Code.

- (2) Fairness & Impartiality. The Hearing Officer will be fair and impartial, and any party to a Hearing Officer Hearing has the right to challenge the fairness or impartiality of the Hearing Officer. Any Hearing Officer lacking fairness or impartiality will recuse himself or herself or may, for good cause and at the discretion of the Vice Chancellor for Student Affairs (or his or her designee), be removed from serving as Hearing Officer for the hearing.
- (3) Notice. If the Respondent timely requests a Hearing Officer Hearing in accordance with [Section .07\(1\)\(b\)](#) of this Chapter, the Hearing Officer will send the Respondent (and the Complainant, where provided by law or University rules or policy) notice of the time, place, and date of the hearing at least five (5) business days in advance of the date of the hearing. Notwithstanding any provisions in the Code to the contrary, including this [Section .08\(3\)](#), and except in cases involving a Complainant, if the Respondent requests at the Preliminary Meeting to hold a Hearing Officer Hearing immediately following the Preliminary Meeting, the Hearing Officer may agree to hold the hearing as requested. In such case, a Notice of Charges and a notice of hearing will not be provided to the Respondent.
- (4) Hearing Procedure. A Hearing Officer will conduct a Hearing Officer Hearing in accordance with the following general procedures and rules:
  - (a) The hearing will be closed to the public.
  - (b) The Hearing Officer will determine all procedural questions.
  - (c) The Respondent (and the Complainant in certain cases, as provided by law or University rules or policy) will be considered a party to the proceeding.
  - (d) Each party (and their respective advisors, if any) will be allowed to attend the portion of the hearing during which questioning is conducted and information is received by the Hearing Officer.
  - (e) Each party will be afforded a full and fair opportunity to present all evidence, including witness testimony, that reasonably relates to the charge or action at issue.
  - (f) The Hearing Officer may limit the presentation of evidence which is irrelevant or unreasonably repetitious or voluminous.
  - (g) The Hearing Officer will consider all evidence presented and give due consideration to the credibility or weight of the information presented. Technical rules of evidence, such as evidentiary rules applicable to civil or criminal court proceedings, will not apply.
  - (h) The Hearing Officer will apply the preponderance of the evidence standard in determining whether or not the Respondent is responsible for the charged Code violation(s).
  - (i) An appropriate record of the hearing proceedings will be made. An audio or video record may be made of the hearing. Defects in the record will not invalidate the proceedings.
  - (j) Following the conclusion of the hearing, the Hearing Officer will provide each party with a Notice of Decision setting forth the Hearing Officer's decision on responsibility and, if applicable, the disciplinary sanctions to be issued against the Respondent and their effective date.
- (5) Multiple Respondents. In cases involving more than one (1) Respondent, the Hearing Officer has the discretion to hold one hearing for all of the Respondents or separate hearings for each Respondent. Any Respondent may, prior to the hearing, request that his or her hearing be conducted separately from the other Respondent(s). Such a request must be made in writing to the Hearing Officer using the form(s) provided by the University. The Hearing Officer will decide

whether or not to grant such a request, and the Hearing Officer's decision will be final.

- (6) Failure to Appear. If proper notice of the Hearing Officer Hearing is provided to the Respondent in accordance with [Section .08\(3\)](#) of this Chapter but the Respondent fails to appear at the hearing, the Respondent waives the right to contest the charge(s), and the Office of Student Conduct may issue a Notice of Decision to the Respondent in accordance with [Section .12\(3\)](#) of this Chapter. Notwithstanding the provisions of this [Section .08\(6\)](#), the Office of Student Conduct may decline to issue a Notice of Decision and permit the Respondent to contest the charge(s) through a Hearing Officer Hearing upon a showing of good cause by the Respondent for his or her failure to appear.
- (7) Prohibition of Complainant's Participation. Notwithstanding any provisions of the Code to the contrary, including, without limitation, in this [Section .08](#), a Complainant or other student not designated as a Respondent will not have the right to attend or participate in a Hearing Officer Hearing or otherwise receive information concerning the hearing if such attendance, participation, or receipt of information would violate federal or state law.
- (8) Appeal. The decision of the Hearing Officer may be appealed to the Vice Chancellor for Student Affairs in accordance with [Section .11](#) of this Chapter.

**Authority:** T.C.A. § 49-9-209(e)

#### 1720-02-05-.09 STUDENT CONDUCT BOARD HEARINGS

A Student Conduct Board Hearing is held before a Student Conduct Board and chaired by a Student Conduct Board Chairperson. The Student Conduct Board serves as the decision-maker in determining whether the Respondent is responsible for the charged Code violation(s) and the disciplinary sanction(s), if any, to be imposed.

- (1) Student Conduct Board Chairperson. The Student Conduct Chairperson is appointed by the Office of the Dean of Students (or designee) to preside over and facilitate a Student Conduct Board Hearing to ensure that the hearing is conducted in accordance with the Code. Except as provided under [Section .09\(7\)\(j\)](#) of this Chapter, the Student Conduct Board Chairperson will not vote on the issues to be decided by the Student Conduct Board. The Student Conduct Board Chairperson will be a University employee trained by the Office of Student Conduct on the procedures for conducting a Student Conduct Board Hearing in accordance with the Code.
- (2) Student Conduct Board. The Student Conduct Board is a panel of appointed students, faculty, and staff, that serves as the decision-maker for the hearing.
  - (a) For each Student Conduct Board Hearing, the Office of the Dean of Students (or designee) will appoint members to serve on the Student Conduct Board from an annually-selected pool of qualified students, faculty members, and staff employees. In order to be qualified for the pool, a student, faculty member, or staff employee must be in good standing with the University. All persons appointed to serve on the board will be trained by the Office of Student Conduct (or other University officials) on their duties and responsibilities as board members under the Code.
  - (b) The Student Conduct Board empaneled ad hoc for each hearing from the pool described under [Section .09\(2\)\(a\)](#) of this Chapter will consist of one (1) Student Conduct Board Chairperson and six (6) voting members, with at least one (1) voting student and one (1) voting faculty member or staff employee, unless otherwise provided under [Section .09\(2\)\(b\)1](#) and [Section .09\(2\)\(b\)2](#) of this Chapter.
    1. A hearing may be held before a Student Conduct Board consisting of less than six (6) voting members with the consent of the Respondent (and the Complainant in

certain cases as provided by law or University rules or policy).

2. In cases involving charges of violations of the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation, the Office of the Dean of Students (or designee) will not appoint students to serve on the Student Conduct Board unless both the Complainant and Respondent consent to having students appointed to serve on the Student Conduct Board Hearing for their case.
- (3) Fairness & Impartiality. The Student Conduct Board members, including the Student Conduct Board Chairperson, will be fair and impartial. Any party to a Student Conduct Board Hearing will have the right to challenge the fairness or impartiality of the Student Conduct Board Chairperson or any voting member of the Student Conduct Board. Any voting member of the Student Conduct Board lacking fairness or impartiality will recuse himself or herself, or for good cause and at the Student Conduct Board Chairperson's discretion, be removed from the board. Any Student Conduct Board Chairperson lacking fairness or impartiality will recuse himself or herself, or for good cause and at the discretion of the Vice Chancellor of Student Affairs (or his or her designee), be removed from presiding over the hearing.
  - (4) Notice. If the Respondent timely requests a Student Conduct Board Hearing in accordance with [Section .07\(1\)\(b\)](#) of this Chapter, the Office of Student Conduct will provide the Respondent (and the Complainant in certain cases, where provided by law or University rules or policy) with notice of the time, place, and date of the hearing at least five (5) business days in advance of the date of the hearing.
    - (a) In cases involving charges of violations of the University's Policy on Sexual Misconduct, Relationship Violence, Stalking, and Retaliation, at least five (5) business days in advance of the date of the hearing, the Office of Student Conduct will provide the Respondent with notice of the following additional information:
      1. The name of each witness the University expects to present at the hearing or may present if the need arises;
      2. The Respondent's right to request a copy of the Office of Student Conduct's investigative file, redacted in accordance with the Family Educational Rights and Privacy Act of 1974 (20 U.S.C. § 1232g), and the federal regulations implementing that statute, as amended; and
      3. The Respondent's right to request copies of all documents, copies of all electronically-stored information, and access to tangible evidence that the University has in its possession, custody, or control and may use to support claims or defenses, unless the use would be solely for impeachment.
  - (5) Pre-Hearing Submissions from Parties. At least five (5) business days in advance of the date of the hearing, the Respondent (and the Complainant, where provided by law or University rules or policy), must provide the following information to the Office of Student Conduct:
    - (a) The names of all witnesses the party plans to present to the Student Conduct Board and a brief summary of the information that the party reasonably anticipates each witness to provide.
    - (b) A copy of all tangible or electronic information that the party plans to present to the Student Conduct Board (e.g., witness statements, video or audio recordings, photographs, e-mails, text messages, telephone records, medical bills, demonstrative exhibits, etc.). The party is not required to provide actual items of physical evidence (e.g., a weapon or article of clothing), but instead may provide photographs of such items.

- (c) A copy of a written statement, if any, that the party wants the Student Conduct Board to consider. A Complainant's statement may include a description of the impact of the Respondent's alleged conduct on the Complainant. The Respondent's statement may include a description of any factors the Respondent believes mitigate the alleged Code violation(s) or proposed disciplinary sanction(s).
- (6) Pre-Hearing Review of Information. After notice of the Student Conduct Board Hearing is provided to the Respondent (and the Complainant, where provided by law or University rules or policy) in accordance with [Section .09\(4\)](#) of this Chapter, the Office of Student Conduct will make available to each party the materials submitted by each party and the University upon the request of a party. Notwithstanding any provision to the contrary in this [Section .09\(6\)](#), no less than one (1) business day prior to the hearing, the Office of Student Conduct will make the materials submitted by each party and the University available for review by each party and their respective advisors, the Student Conduct Board Chairperson, and the voting members of the Student Conduct Board. The Office of Student Conduct will notify each party, the Student Conduct Board Chairperson, and the voting members of the Student Conduct Board when the materials are ready for review in the Office of Student Conduct or when the materials will be sent to them electronically. The Office of Student Conduct may redact irrelevant and/or protected information from any materials made available for review.
- (7) Hearing Procedure. The Student Conduct Board Chairperson will conduct a Student Conduct Board Hearing in accordance with the following general procedures and rules:
- (a) The hearing will be closed to the public.
  - (b) The Student Conduct Board Chairperson will determine all procedural questions. The Student Conduct Board Chairperson may be assisted by a procedural advisor appointed by the Office of Student Conduct.
  - (c) The Respondent (and the Complainant in certain cases, where provided by law or University rules or policy) will be considered a party to the proceeding.
  - (d) Each party and their respective advisors will be allowed to attend the portion of the hearing during which questioning is conducted and information is received from the parties or the University. The parties (and their advisors) will not be allowed to attend the portion of the hearing during which deliberations by the Student Conduct Board occur.
  - (e) Each party will be afforded a full and fair opportunity to present an opening statement, any evidence, including witness testimony, that reasonably relates to the charge or action at issue, and a closing statement.
  - (f) The Student Conduct Board Chairperson may bar or limit the presentation of evidence which is not provided to the Office of Student Conduct in advance of the hearing in accordance with [Section .09\(5\)](#) of this Chapter, or which (i) is irrelevant, (ii) unreasonably repetitious or voluminous; or (iii) protected from disclosure under federal, state, or local law.
  - (g) The Student Conduct Board will consider all evidence presented and give due consideration to the credibility or weight of the information presented. Technical rules of evidence, such as evidentiary rules applicable to civil or criminal court proceedings, will not apply.
  - (h) The Student Conduct Board will apply the preponderance of the evidence standard in determining whether or not the Respondent is responsible for the charged Code violation(s).



- (i) An appropriate record of the hearing proceedings will be made. An audio or video record will be made of the hearing, except for the portion of the hearing in which the Student Conduct Board deliberates and votes on its decision. Defects in the record will not invalidate the proceedings.
  - (j) After all information for consideration has been presented to the Student Conduct Board, the parties (and their advisors, if any) will be excused, and the members of the Student Conduct Board will deliberate and vote on the following issues: (i) whether the Respondent is responsible for the charged Code violation(s) and (ii) the disciplinary sanctions, if any, to be issued. The decision of the board on each issue will be made by simple majority of the voting members' votes. In the event of a tie-vote among the voting members, the Student Conduct Board Chairperson will cast the tie-breaking vote.
  - (k) At the conclusion of the hearing, the Student Conduct Board Chairperson will provide each party with a Notice of Decision setting forth the Student Conduct Board's decision on responsibility and, if applicable, the disciplinary sanctions to be issued against the Respondent and their effective date.
- (8) Multiple Respondents. In cases involving more than one (1) Respondent, the Student Conduct Board Chairperson has the discretion to hold one (1) hearing for all of the Respondents or separate hearings for each Respondent. Any Respondent may, prior to the hearing, request that his or her hearing be conducted separately from the other Respondents' hearings. Such a request must be made in writing to the Student Conduct Board Chairperson using the form(s) provided by the University. The Student Conduct Board Chairperson will decide whether or not to grant such a request, and the Student Conduct Board Chairperson's decision will be final.
- (9) Failure to Appear. If proper notice of the Student Conduct Board Hearing is provided to the Respondent in accordance with [Section .09\(4\)](#) of this Chapter but the Respondent fails to appear at the hearing, the Respondent waives the right to contest the charge(s), and the Office of Student Conduct may issue a Notice of Decision to the Respondent in accordance with [Section .12\(3\)](#) of this Chapter. Notwithstanding the foregoing provisions of this [Section .09\(9\)](#), the Office of Student Conduct may decline to issue a Notice of Decision and permit the Respondent to contest the charge(s) through a Student Conduct Board Hearing upon a showing of good cause by the Respondent for his or her failure to appear.
- (10) Prohibition of Complainant's Participation. Notwithstanding any provisions of the Code to the contrary, including, without limitation, any provisions in this [Section .09](#), a Complainant or other student not designated as a Respondent will not have the right to attend or participate in a Student Conduct Board Hearing or otherwise receive information concerning the hearing if such attendance, participation, or receipt of information would violate federal or state law.
- (11) Appeal. The decision of the Student Conduct Board may be appealed to the Vice Chancellor for Student Affairs in accordance with [Section .11](#) of this Chapter.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 49-7-1703; T.C.A. § 49-7-1704

#### **1720-02-05-.10 DISCIPLINARY SANCTIONS**

- (1) Disciplinary sanctions are primarily intended to: (i) educate Respondents about appropriate behavior; (ii) encourage Respondents to take responsibility for Code violation(s); (iii) encourage and promote the personal and professional development of Respondents; (iv) discourage other students from violating the Code; and/or (v) protect members of the University community.
- (2) The disciplinary sanctions imposed on a Respondent should be appropriate for the particular case based on the gravity of the Code violation, including, without limitation, how the violation affected or reasonably could have affected other members of the University community. Consideration also

may be given to other aggravating or mitigating factors, including, without limitation: (i) the Respondent's student conduct record; (ii) whether the Respondent committed the violation while acting in self-defense; (iii) the Respondent's responsiveness to the student conduct process; and (iv) the Respondent's academic classification.

(3) The following disciplinary sanctions may be imposed on a student (excluding student organizations) found to have violated the Code:

- (a) Disciplinary Reprimand. A disciplinary reprimand is a written warning that informs a Respondent that the Respondent is violating or has violated the Code and must cease and desist from engaging in the misconduct and/or prevent the misconduct from occurring again. A disciplinary reprimand will also inform the Respondent that any further violations of the Code may result in the imposition of more severe sanctions.
- (b) Loss or Restriction of Privileges. The University may impose a loss and/or restriction of privileges on a Respondent. Privileges that may be lost and/or restricted include, without limitation, the following: (i) scholarships; (ii) stipends; (iii) participation in co-curricular and/or extracurricular activities; and (iv) use and/or access to certain University-controlled property. A loss and/or restriction of privileges may be imposed for a definite or indefinite period of time.
- (c) Community Service. A Respondent may be required to perform unpaid service for a designated University department, program, or service and/or a University-affiliated or unaffiliated not-for-profit or volunteer organization.
- (d) Educational Sanction. A Respondent may be required to complete an educational assignment or program. Educational assignments and programs are designed to educate the Respondent about why certain conduct is inappropriate. Examples of educational assignments include, without limitation: (i) writing a reflection and/or research paper on a designated topic; (ii) completing a research project on a designated topic; (iii) giving a presentation on a designated topic; and (iv) issuing a formal apology in writing and/or in person. An educational program may include, without limitation, attending and satisfactorily completing an in-person or distance learning course, training, or workshop on alcohol or drug use, civility, ethics, or other topics deemed appropriate by the Office of Student Conduct. The Respondent will be responsible for all costs associated with the educational assignment or program.
- (e) Fee or Fine. The University may impose a monetary fee or fine for any cost incurred by the University as a result of the Respondent's conduct and may require that the Respondent pay the fee or fine by a designated due date.
- (f) Restitution. The University may require a Respondent to make restitution to another person or organization or the University for destruction, damage, or loss of property caused by the Respondent, or for unreimbursed medical expenses resulting from physical injury of another person caused by the Respondent. Restitution may take the form of a monetary payment or appropriate service to repair or otherwise compensate for the destruction, damage, or loss caused by the Respondent.
- (g) Reassignment or Removal from University Housing. The University may reassign a Respondent to a different University housing facility or remove and prohibit a Respondent from residing in any University housing facility for a definite or indefinite period of time.
- (h) Disciplinary Probation. A Respondent may be placed on disciplinary probation for serious or moderate Code violations or in the case of multiple or repeated minor Code violations. A Respondent may be placed on disciplinary probation for a definite or indefinite period of time, during which time the Respondent may continue to be enrolled at the University.



While the Respondent is on disciplinary probation, conditions may be placed on the Respondent's continued enrollment at the University, and University departments, programs, and/or services may limit or prohibit participation in certain activities. If a Respondent commits any further Code violations while on disciplinary probation, the Respondent may be subject to more severe sanctions up to and including permanent dismissal.

- (i) Suspension. Suspension is an official separation from the University for a specific period of time and/or until certain conditions are met. A Respondent may be suspended from the University for serious Code violations, in the case of multiple or repeated moderate or minor Code violations, and/or for any Code violations while on disciplinary probation. While on suspension, a Respondent (i) loses all rights and privileges at the University; (ii) may not represent the University in any manner; and (iii) is ineligible to apply for readmission to the University during the suspension period and/or until certain conditions are met. If a Respondent is suspended, the Respondent is prohibited, without the prior approval of the Vice Chancellor for Student Affairs (or his or her designee), from entering upon all University-controlled property, including University residence halls, from the date that the suspension period begins until such date that the Respondent is readmitted to the University (even if the suspension period ends prior to the date of the Respondent's readmission). Entering upon University-controlled property without prior approval from the Vice Chancellor for Student Affairs (or his or her designee) may result in criminal trespass charges against the Respondent under the criminal laws of the State of Tennessee. Respondents permitted to return to the University following a period of suspension will be automatically placed on disciplinary probation for a designated period of time following their return. A Respondent who commits any Code violations while on suspension may be subject to suspension for an additional period of time or barred from readmission and/or re-enrollment at the University.
- (j) Permanent Dismissal. Permanent dismissal is an official and permanent separation from the University. A Respondent may be permanently dismissed from the University when the Respondent's commission of one (1) or more Code violations is deemed so serious as to warrant total and permanent disassociation from the University or when, through repeated violations of the Code and/or violations of the Code while on disciplinary probation or suspension, the Respondent exhibits blatant disregard for (i) the health, safety, and welfare of himself or herself or other members of the University community or (ii) the University's right to establish rules of conduct. A Respondent who is permanently dismissed from the University: (i) loses all rights and privileges at the University; (ii) may not represent the University in any manner; (iii) is indefinitely prohibited, without prior approval of the Vice Chancellor for Student Affairs (or his or her designee) from entering upon all University-controlled property, including University residence halls; and (iv) is permanently barred from re-enrolling at the University. Entering upon University-controlled property without prior approval from the Vice Chancellor for Student Affairs (or his or her designee) may result in criminal trespass charges against the Respondent under the criminal laws of the State of Tennessee.
- (k) Revocation of Admission. The University may revoke a Respondent's admission to the University after the Respondent's admission to the University but prior to Respondent's enrollment at the University, if the Respondent (i) provides false or incomplete information on Respondent's application for admission; or (ii) violates federal, state, or local law or the Code prior to enrollment. A Respondent whose admission has been revoked: (i) loses all rights and privileges at the University; (ii) may not represent the University in any manner; and (iii) is indefinitely prohibited from entering upon all University-controlled property, including residence halls, without prior approval of the Vice Chancellor for Student Affairs (or his or her designee). Entering upon University-controlled property without prior approval from the Vice Chancellor for Student Affairs may result in criminal trespass charges against the Respondent under the criminal laws of the State of Tennessee.

- (l) Withholding of Degree. The University may withhold awarding a degree to a Respondent who has violated any University rule or policy. The University may withhold a degree for a definite period of time and/or until the Respondent has completed or served all sanctions or other requirements imposed by the University for releasing its award of the degree.
  - (m) Revocation of Degree. The University make revoke a degree awarded to a Respondent if the Respondent obtained the degree, in part, through cheating, plagiarism, academic dishonesty, research misconduct, or other serious violation of the Code. The University may also revoke a Respondent's degree if, after the degree was awarded, the University determines that the Respondent committed a serious violation of the Code while a student, but prior to being awarded the degree, that would have warranted permanent dismissal of the Respondent. Before a Respondent's degree may be revoked, the Chancellor must approve the revocation of the degree.
- (4) The following disciplinary sanctions may be imposed on a student organization found to have violated the Code:
- (a) Disciplinary Reprimand. A disciplinary reprimand is a written warning that informs a Respondent that the Respondent is violating or has violated the Code and must cease and desist from engaging in the misconduct and/or prevent the misconduct from occurring again. A disciplinary reprimand will also inform the Respondent that any further violations of the Code may result in the imposition of more severe sanctions.
  - (b) Loss or Restriction of Privileges. The University may impose a loss or restriction of privileges on a Respondent. Privileges that may be lost or restricted include, without limitation, the following: (i) participation in extracurricular activities (e.g., intramurals); (ii) housing privileges; (iii) participation in or sponsorship of social activities; and (iv) use and/or access to certain University-controlled property. A loss or restriction of privileges may be imposed for a definite or indefinite period of time.
  - (c) Fee or Fine. The University may impose a monetary fee or fine for any cost incurred by the University as a result of the Respondent's conduct and may require that the Respondent pay the fee or fine by a designated due date.
  - (d) Restitution. The University may require a Respondent to make restitution to another person or organization or the University for destruction, damage, or loss of property caused by the Respondent, or for unreimbursed medical expenses resulting from physical injury of another person caused by the Respondent. Restitution may take the form of a monetary payment or appropriate service to repair or otherwise compensate for the destruction, damage, or loss caused by the Respondent.
  - (e) Community Service. Members of the Respondent may be required to perform unpaid service for a designated University department, program, or service and/or a University-affiliated or unaffiliated not-for-profit or volunteer organization.
  - (f) Educational Sanction. Members of the Respondent may be required to complete an educational program. Educational programs are designed to educate the Respondent's members about why certain conduct is inappropriate. An educational program may include, without limitation, attending and satisfactorily completing an in-person or distance learning course, training, or workshop on alcohol or drug use, civility, ethics, or other topics as deemed appropriate by the Office of Student Conduct. The Respondent will be responsible for all costs associated with the educational program.
  - (g) Disciplinary Probation. A Respondent may be placed on disciplinary probation for serious or moderate Code violations or in the case of multiple or repeated minor Code violations.

A Respondent may be placed on disciplinary probation for a definite or indefinite period of time, during which time the Respondent may continue to operate at the University. While the Respondent is on disciplinary probation, conditions may be placed on the Respondent's continued operation, and University departments, programs, and/or services may limit or prohibit Respondent's participation in certain activities. If a Respondent commits any further Code violations while on disciplinary probation, the Respondent may be subject to more severe sanctions up to and including suspension or revocation of University registration.

- (h) Suspension. Suspension is an official separation from the University for a definite period of time and/or until certain conditions are met. A Respondent may be suspended from the University for serious Code violations, in the case of multiple or repeated moderate or minor Code violations, and/or for any Code violations while on disciplinary probation. While on suspension, a Respondent (i) may not operate at the University; (ii) may not represent the University in any manner; (iii) and is ineligible to resume operations at the University during the suspension period and/or until certain conditions are met. The Vice Chancellor for Student Affairs will determine whether the Respondent has fulfilled the required conditions for resuming operations at the University. Respondents permitted to resume operating at the University following a period of suspension will be automatically placed on disciplinary probation for a designated period of time following the suspension term. A Respondent who commits any Code violations while on suspension may be subject to suspension for an additional period of time or revocation of its registration with the University.
  - (i) Revocation of University Registration. In cases of a serious Code violation by a Respondent or a Respondent's violation of the Code while on disciplinary probation or suspension, the University may revoke the Respondent's registration with the University and cease to recognize the Respondent as a University-sanctioned student organization for a definite or indefinite period of time. If a Respondent's registration is revoked, the Respondent is barred from operating at the University.
- (5) More than one (1) of the disciplinary sanctions provided in this [Section .10](#) may be imposed on a Respondent for any single violation of the Code.
  - (6) Disciplinary sanctions may be applied retroactively to the date of the Code violation(s) committed by the Respondent.

**Authority:** T.C.A. § 49-9-209(e)

### **1720-02-05-.11 APPEALS**

- (1) Appeal to the Vice Chancellor for Student Affairs
  - (a) Appeal Period. Except as provided in [Section .12\(3\)](#) of this Chapter, the decision of a Hearing Officer or Student Conduct Board may be appealed to the Vice Chancellor for Student Affairs by submitting a Notice of Appeal to the Office of Student Conduct in accordance with [Section .11\(1\)\(b\)](#) of this Chapter within five (5) business days of the effective date of the Notice of Decision to the appealing party. A Notice of Appeal not submitted within five (5) business days of the effective date of the Notice of Decision to the appealing party will not be considered.
  - (b) Notice of Appeal. A Notice of Appeal must state: (i) the name of the party appealing the decision; and (ii) the specific grounds for the appeal. Appeals not based on one (1) or more of the grounds provided under [Section .11\(1\)\(c\)](#) of this Chapter will not be considered.
  - (c) Grounds for Appeal. Appeals are limited to the following grounds:

1. The party's rights were violated in the hearing process;
  2. New relevant and material information has become available that could not have been discovered at the time of the hearing;
  3. The information presented did not support the decision by a preponderance of the evidence standard; or
  4. The sanction(s) imposed were not appropriate for the violation.
- (d) Response to Appeal by Non-Appealing Party. Upon receipt of a timely-submitted Notice of Appeal, the Office of Student Conduct will provide a copy of the Notice of Appeal to the non-appealing party, if applicable. The non-appealing party may respond to the appeal by submitting a written response to the Office of Student Conduct within three (3) business days of the effective date of the Notice of Appeal to the non-appealing party.
- (e) Decision on Appeal.
1. Within ten (10) business days of the Office of Student Conduct's receipt of the Notice of Appeal or the non-appealing party's response to the appeal, whichever occurs later, the Vice Chancellor of Student Affairs (or his or her designee) will provide notice to the parties of his or her decision.
  2. The Vice Chancellor for Student Affairs (or his or her designee) may (i) uphold, amend, or overturn the decision of the Hearing Officer or Student Conduct Board; or (ii) return the case to the Hearing Officer or Student Conduct Board for reconsideration.
  3. If the Vice Chancellor for Student Affairs decides to uphold, amend, or overturn the decision of the Hearing Officer or Student Conduct Board, the decision of the Vice Chancellor for Student Affairs is final.
  4. A decision by the Vice Chancellor for Student Affairs to return the case to the Hearing Officer or Student Conduct Board for reconsideration may not be appealed. Any decision by the Hearing Officer or Student Conduct Board on reconsideration may be appealed in accordance with this [Section .11](#).
- (2) Any disciplinary sanction(s) issued by the Hearing Officer or the Student Conduct Board will remain in force throughout the pendency of an appeal, unless the Respondent requests that the disciplinary sanction(s) be stayed pending the Respondent's appeal and such a request is granted by the Hearing Officer or Student Conduct Board, as applicable.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-05-.12 CONCLUSION OF THE STUDENT CONDUCT PROCESS**

A case involving alleged violations of the Code by a Respondent may be concluded in one (1) of the following ways:

- (1) No-Action Determination. If the Office of Student Conduct determines at any point in the student conduct process that no action will be taken against the Respondent regarding alleged violations of the Code, it will issue a Notice of Decision to the Respondent setting forth the decision.
  - (a) The Office of Student Conduct, in its discretion, may determine that no action be taken against a Respondent based on, without limitation, the following reasons:

1. A determination that, based on a preponderance of the evidence, Respondent did not engage in the alleged Code violation(s);
  2. A determination that it does not have sufficient information or witnesses to move forward in the student conduct process; and/or
  3. The Complainant declines to participate in the student conduct process.
- (b) After making a no-action determination, the Office of Student Conduct may reinstate the student conduct process with respect to the alleged Code violations against the Respondent at any time for good cause, including, without limitation, the discovery of new relevant and material information or a decision by the Complainant to participate in the student conduct process.
- (2) Behavioral Agreement. A case involving alleged violations of the Code will be concluded when the Respondent signs a behavioral agreement as provided under [Section .07\(4\)](#) of this Chapter.
  - (3) Failure to Contest. If the Respondent: (i) fails to request in writing a Formal Hearing to contest the charge(s) as provided under [Section .07\(1\)\(c\)](#) of this Chapter; (ii) fails to appear at a Hearing Officer Hearing or Student Conduct Board Hearing for which the proper notice was provided to the Respondent in accordance with the Code; or (iii) signs a written waiver of his or her right to contest the Code violation charge(s) through a Formal Hearing, the Office of Student Conduct may issue a Notice of Decision to the Respondent finding the Respondent responsible for the charge(s) and imposing the disciplinary sanctions proposed in the Notice of Charges. A decision issued pursuant to this [Section .12\(3\)](#) is not subject to appeal. The Office of Student Conduct may decline to issue a Notice of Decision upon a showing of good cause by the Respondent for his or her failure to timely request a Formal Hearing or to appear at a properly noticed Hearing Officer Hearing or Student Conduct Board Hearing.
  - (4) Resolution Agreement. A case will be concluded when a Resolution Agreement resolving the Code violation charge(s) is signed by the Respondent and becomes final and binding in accordance with [Section .07\(2\)](#) of this Chapter.
  - (5) Alternative Resolution Agreement. A case will be concluded when the allegations or charges of violations of the Code against the Respondent are resolved through an Alternative Resolution Agreement as provided under [Section .07\(3\)](#) of this Chapter.
  - (6) Final Decision – Formal Hearing. In a case in which a Formal Hearing is held and the Respondent does not enter into a Resolution Agreement, the case will be concluded when a decision resolving the Code violation charge(s) is issued and is final. A decision is considered final when it is not appealed, is not subject to an appeal, or all appeals have been exhausted.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-05-.13 INTERIM ACTIONS**

In certain situations, the University may impose interim actions prior to the conclusion of the student conduct process. The University will determine the appropriate interim actions based on the totality of the circumstances. Interim actions are not disciplinary sanctions and are taken to protect the safety, security, and welfare of the Complainant, Respondent, the University community, and/or University property.

- (1) No-Contact Directive. In cases involving allegations of assault, physical injury, sexual misconduct, relationship violence, stalking, harassment, and/or retaliation, or where there is reason to believe continued contact between a student and a specific person may interfere with that specific person's security, safety, or ability to participate in work or studies, the University may issue a No-Contact Directive to the student that prohibits the student from having verbal, physical, written, and/or

electronic contact, either directly or indirectly, with the specific person for a definite or indefinite period of time. The student will receive written notice of the No-Contact Directive. Any student, faculty or staff member or other person with a reasonable justification may request a No-Contact Directive. Any violation of a No-Contact Directive will be considered a violation of the Code and a risk to the health, safety or welfare of the person whom the student is prohibited from contacting under the directive, and may result in disciplinary sanctions or additional interim actions against the student. A No-Contact Directive may be issued to a student organization under the same circumstances and conditions as provided under this [Section .13\(1\)](#).

- (2) Disciplinary Hold. A Disciplinary Hold is an encumbrance on a student's University record that prevents the student from registering for classes, receiving grades, transcripts, and/or academic credit, and being awarded a degree, until the reason for the hold is resolved. The Office of Student Conduct may place a Disciplinary Hold on a student's University record while allegations of Code violation(s) against the student are under investigation, disciplinary proceedings and/or sanctions against the student are pending or incomplete, or in accordance with other University rules or policies.
- (3) Interim Restriction. When the Office of Student Conduct has reasonable cause to believe that the continued presence of a Respondent (student or student organization) on certain University-controlled property or at certain University-affiliated activities (i) poses a risk to the health, safety, or welfare of others or to property; or (ii) poses a risk of disruption of or interference with the normal operations of the University, the Office of Student Conduct may impose an interim restriction and/or condition ("Interim Restriction") on the Respondent prior to the resolution of the allegations of Code violation(s) against the Respondent in the student conduct process. Examples of Interim Restrictions include, without limitation, restrictions on the Respondent's privileges to participate in University-affiliated activities, restrictions on the Respondent's privileges to access certain University-controlled property, and the Respondent's interim removal and/or reassignment from University-controlled housing. Restrictions imposed on a Respondent under a No-Contact Directive are not Interim Restrictions.
- (a) The Respondent will be provided written notice of the Interim Restriction and the basis for the Interim Restriction. Unless otherwise determined by the Office of Student Conduct, the Interim Restriction will remain in effect until the conclusion of the student conduct process, which should be completed without undue delay.
- (b) If the Respondent wishes to contest the Interim Restriction, the Respondent must request in writing to meet with the Vice Chancellor for Student Affairs within three (3) business days of the effective date of the notice of the Interim Restriction. Upon receipt of a timely request for a meeting, the Vice Chancellor for Student Affairs (or his or her designee) will schedule a meeting with the Respondent at which the Respondent will be offered the opportunity to discuss the following issues only: (i) the reliability of the information concerning the Respondent's conduct on which the Interim Restriction was issued; and (ii) whether the conduct and surrounding circumstances reasonably indicate that the Respondent's continued presence on certain University-controlled property or at certain University-affiliated activities poses a risk to the health, safety, or welfare of others or to property, or a risk to the disruption of or interference with the normal operations of the University. At the conclusion of the meeting, the Vice Chancellor for Student Affairs (or his or her designee) may remove, modify, or maintain the Interim Restriction and will notify the Respondent of his or her decision in writing.
- (c) Violations of the terms of an Interim Restriction may result in disciplinary sanctions and/or additional interim actions against the Respondent, and the Respondent may be treated as a trespasser.
- (4) Interim Suspension. When the Vice Chancellor for Student Affairs has reasonable cause to believe that the continued presence of a Respondent (student or student organization) on University-

controlled property or at University-affiliated activities (i) poses a significant risk of substantial harm to the health or safety of others or to property; or (ii) poses an ongoing or imminent threat of disruption to or interference with the normal operations of the University, the Vice Chancellor for Student Affairs may impose an Interim Suspension on the Respondent prior to the resolution of the allegations of Code violation(s) against the Respondent in the student conduct process. During an Interim Suspension, the Respondent shall be denied access to University-controlled property, including residence halls, and all other University-affiliated activities or privileges for which the Respondent might otherwise be eligible, as the Vice Chancellor for Student Affairs determines in his or her sole discretion to be appropriate.

- (a) The Respondent will be provided written notice of the Interim Suspension and the basis for the Interim Suspension. Unless otherwise determined by the Vice Chancellor for Student Affairs, the Interim Suspension will remain in effect until the conclusion of the student conduct process, which should be completed without undue delay.
- (b) If the Respondent wishes to contest the Interim Suspension, the Respondent must request in writing to meet with the Vice Chancellor for Student Affairs within three (3) business days of the effective date of the written notice of the Interim Suspension. Upon receipt of a timely request for a meeting, the Vice Chancellor for Student Affairs (or his or her designee) will schedule a meeting with the Respondent at which the Respondent will be offered the opportunity to discuss the following issues only: (i) the reliability of the information concerning the Respondent's conduct on which the Interim Suspension was issued; and (ii) whether the conduct and surrounding circumstances reasonably indicate that the Respondent's continued presence on certain University-controlled property or at certain University-affiliated activities poses a significant risk of substantial harm to the health, safety, or welfare of others or to property, or an ongoing or imminent threat of disruption to or interference with the normal operations of the University. At the conclusion of the meeting, the Vice Chancellor for Student Affairs (or his or her designee) may remove, modify, or maintain the Interim Suspension and will notify the Respondent of his or her decision in writing.
- (c) Violations of the terms of an Interim Suspension may result in disciplinary sanctions and/or additional interim actions against the Respondent, and the Respondent may be treated as a trespasser. During an Interim Suspension, permission to be on University-controlled property or participate in University-affiliated activities may be granted by the Vice Chancellor for Student Affairs.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-05-.14 STUDENT PARKING APPEALS BOARD**

- (1) All students who park vehicles or own vehicles parked on University-controlled property are subject to the UTC Parking Rules under [Chapter 1720-02-03](#).
- (2) The Student Parking Appeals Board will review all appeals of parking citations issued to students in accordance with [Chapter 1720-02-03](#). Decisions concerning appeals will be made by a majority vote of the Student Parking Appeals Board.
- (3) The Student Parking Appeals Board membership will consist of the student members of the Student Conduct Board.
- (4) A chairperson and a quorum of three (3) members of the Student Parking Appeals Board is required for each hearing on an appeal. A University official from either the Office of Parking Services or the Office of Student Conduct will serve as the chairperson for an appeal hearing. The chairperson will vote on an appeal only in the event of a tie-vote among the board members.



- (5) The chairperson and the board members will be fair and impartial. Any student appealing a parking citation has the right to challenge the fairness or impartiality of the chairperson or any board member hearing the student's appeal. Any chairperson or board member lacking fairness or impartiality will recuse himself or herself or may, for good cause and at the discretion of the Vice Chancellor for Student Affairs (or his or her designee), be removed from hearing an appeal.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-05-.15 STUDENT CONDUCT RECORDS**

- (1) Maintenance. The University maintains student conduct records separately from student academic records. The Office of Student Conduct serves as the record custodian for student conduct records.
- (2) Disclosure. A student may inspect and review his or her own student conduct records upon request to the Office of Student Conduct. The Office of Student Conduct may disclose a student's student conduct records to other persons upon written consent of the student. The Office of Student Conduct may disclose a student's student conduct records to other persons, including other University officials, without written consent from the student only in accordance with federal or state law.
- (3) Retention and Disposal of Student Conduct Records. The University will retain a student's student conduct records for a period of seven (7) years after the student's last date of enrollment with the University, unless required to retain the records for a longer period of time by law or as otherwise provided in this [Section .15\(3\)](#). The Office of Student Conduct will permanently retain student conduct records for students who receive one (1) or more of the following disciplinary sanctions (or equivalent sanctions under previous versions of the Code) from the University: Suspension, Permanent Dismissal, Withholding of Degree, and Revocation of Degree.
- (4) Retention and Disposal of Student Organization Conduct Records. The University will retain a student organization's conduct records for a period of seven (7) years following the conclusion of the matter to which the conduct records relate, unless required to retain the records for a longer period of time by law or as otherwise provided in this [Section .15\(4\)](#). The Office of Student Conduct will permanently retain student organization conduct records relating to matters in which a student organization receives one (1) or more of the following disciplinary sanctions (or equivalent sanctions under previous versions of the Code) from the University: Suspension or Revocation of Registration.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-05-.16 AMNESTY FOR GOOD SAMARITANS AND IMPAIRED STUDENTS**

- (1) The University holds paramount the health, safety, and welfare of students. Accordingly, all students are expected to alert appropriate officials in the event of a health, safety, or welfare emergency, including, without limitation, a situation involving the abuse of alcohol or drugs.
- (2) Expectations. When a student knows or reasonably should know that another student is in need of emergency medical attention, the student is expected to: (i) contact appropriate persons (e.g., University faculty or staff members, law enforcement officials, etc.) to report the incident and request assistance, including providing his or her name and contact information and the name and contact information of the impaired student; and (ii) demonstrate cooperation and care by remaining with the impaired student and providing reasonable assistance during and after the incident. A student who complies with the expectations described in this [Section .16](#) is referred to as a "Good Samaritan." A student in need of emergency medical attention is referred to as an "impaired student" under this [Section .16](#).
- (3) Amnesty for Good Samaritans. Unless a Good Samaritan has engaged in repeated or serious



violations of the Code (e.g., physical or sexual assault, property destruction, disorderly behavior, theft, multiple alcohol or drug violations), a Good Samaritan will not be subject to formal University disciplinary action for any Code violation(s) discovered by the University as a result of the Good Samaritan's report. While no formal University disciplinary action may be taken, a Good Samaritan may be required to meet with the Office of Student Conduct to discuss the Good Samaritan's Code violation(s) and adhere to appropriate remedial and/or educational recommendations.

- (4) Amnesty for Impaired Student. Unless an impaired student has engaged in repeated or serious violations of the Code (e.g., physical or sexual assault, property destruction, disorderly behavior, theft, multiple alcohol or drug violations), an impaired student will not be subject to formal University disciplinary action for any Code violation(s) discovered by the University as a result of the Good Samaritan's report. While no formal University disciplinary action may be taken, the impaired student may be required to meet with the Office of Student Conduct to discuss the impaired student's Code violation(s), participate in educational activities, and/or establish that he or she has addressed the issues that contributed to the Code violation(s).
- (5) Application to Student Organizations. Student organizations, through their officers and members, are also expected to take responsible action in emergency situations in accordance with the expectations under [Section .16\(2\)](#) of this Chapter. A student organization may receive amnesty for any Code violation(s) discovered by the University as a result of the Good Samaritan reports of its officers and/or members, but if not granted amnesty, the responsible actions of its officers and/or members will be considered a mitigating factor when determining disciplinary sanctions, if any, for any Code violation(s) for which the student organization is found responsible. Conversely, the failure of a student organization's officers and/or members to take responsible action in emergency situations in accordance with the expectations under [Section .16\(2\)](#) of this Chapter may be considered an aggravating factor when determining disciplinary sanctions, if any, for any Code violation(s) for which the student organization is found responsible.

**Authority:** T.C.A. § 49-9-209(e)



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

## AGENDA ITEM SUMMARY

Meeting Date:	March 1, 2019
Committee:	Education, Research, and Service
Item:	<b><u>Proposed UTC Honor Code</u></b>
Type:	Action
Presenter:	Yancy Freeman, UTC Vice Chancellor Enrollment Management, Student Success, and Student Affairs

On March 29, 2017, the Board approved substantial revisions to the student code of conduct for the University of Tennessee, Knoxville (UTK) following a comprehensive review by UTK of its student conduct policies and procedures (which include UTK's honor code policies and procedures). Prompted by the revision of the UTK student code of conduct, the Board requested that the other UT campuses conduct similar reviews of their respective student codes of conduct. In 2017, the University of Tennessee at Chattanooga (UTC) tasked its Division of Student Affairs to conduct a similar comprehensive review of the UTC Student Code of Conduct as well as the UTC Honor Code.

In contrast to UTK's honor code, the UTC Honor Code (Honor Code) is contained in a separate chapter of the Rules of The University of Tennessee (apart from UTC's Student Code of Conduct). No revisions to the Honor Code have been made since 1999.

With guidance from and collaboration with the UTC Faculty Senate, UTC administration, and the General Counsel's office, UTC's Division of Student Affairs developed a new Honor Code to improve clarity and organization, to effect needed changes in UTC academic misconduct policy and process, to ensure consistency with University policy and current law, and to remove redundant or obsolete provisions. UTC's Division of Student Affairs solicited and received feedback from students, including the UTC Student Government Association and the UTC Graduate Student Association, regarding proposed changes to the Honor Code.

The proposed Honor Code contains several substantive changes to the current procedures and processes utilized for resolving violations of the Honor Code, which are detailed below. The most significant change is that it provides a third hearing option (i.e., a hearing before a single Honor Code Officer) in addition to the two hearings options currently available—Honor Court hearing and UAPA hearing. The Honor Code Officer Hearing option was added to allow for more efficient resolution of Honor Code cases, particularly in cases that arise at the end of the semester when it is challenging to convene the necessary quorum for the Honor Court to hear a case. The hearing processes and procedures under the proposed Honor Code more closely align generally with the



# THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

hearing processes and procedures for UTC Student Code of Conduct violations than do the current Honor Code hearing processes and procedures.

The proposed Honor Code:

- Reorganizes and consolidates the sections of the Honor Code to improve clarity
- Adds a new section that lists the defined terms utilized in the Honor Code to improve clarity, including a definition of “complainant” that clarifies that a complainant for purposes of reporting an alleged Honor Code violation is not limited to a faculty member but may also include a staff employee or student. The terminology of the current Honor Code is also revised and updated for several defined terms (e.g., the “Honor Court” is now referred to as the “Honor Code Board”) (Section .02)
- Adds a new section that clarifies the jurisdictional scope of the Honor Code, including by more clearly defining when a student is subject to the Honor Code and clarifying that Honor Code violations are resolved through the Honor Code process instead of the student conduct process under the UTC Student Code of Conduct (Section .03)
- Adds language clarifying the effect of an Honor Code case on an accused student’s coursework during the pendency of the case (Section .03(6))
- Adds language that describes in more detail the types of academic dishonesty that constitute violations of the Honor Code (Section .04)
- Adds language that clarifies the due process rights of students during the Honor Code process, including the right of students to an advisor during the Honor Code process (Section .05)
- Adds language that further explains the initial and pre-resolution stages of the Honor Code process, including further explanation of the information an accused student will receive in a notice of allegations and notice of charges, and establishing a “Preliminary Meeting” stage during which an accused student has the opportunity to provide information to the Office of Student Conduct prior to the Office of Student Conduct making a determination as to whether a notice of charges should be issued against the student (Section .06)
- Adds language that further explains the methods of resolution of Honor Court cases (Section .07)
- Adds language that establishes an Honor Code Officer Hearing as a third hearing option for resolution of Honor Code cases and the circumstances under which such a hearing is offered (Section .07(1)(a)(1))



## THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

---

- Clarifies when a student may contest allegations of violations of the Honor Code through a hearing under the Uniform Administrative Procedures Act (UAPA) (Section .07(1)(a)(3))
- Adds language providing further explanation of when and how a case may be resolved by a resolution agreement (Section .07(2))
- Adds language to provide further explanation of the Honor Code Officer Hearing process (Section .08)
- Adds language to provide further explanation of the Honor Code Board Hearing process (Section .09)
- Revises the composition of the Honor Code Board and how board members are selected (Section .09(2))
- Adds language clarifying the types of disciplinary sanctions that may be issued for Honor Code violations and the manner in which such sanctions apply, and adds language which affirmatively trespasses suspended students from campus until such time that they are readmitted (Section .10)
- Clarifies the process for appealing decisions by Honor Code Officers and Honor Code Boards (Section .11)
- Removes the right to appeal to the Chancellor. The final decision on appeal is now made by the Provost. (Section .11(1)(e)3)
- Adds language explaining how records of Honor Code violations are maintained and when they are subject to disposal (Section .12)

The proposed Honor Code is included in its entirety in the meeting materials.

In accordance with the UAPA rulemaking procedures, the proposed Honor Code will be presented for adoption by a roll-call vote in the full Board meeting. Upon adoption by the Board, the Honor Code will be submitted to the Attorney General for approval and, if approved, filed with the Secretary of State and published for the statutorily required period prior to becoming effective.

**Motion: I move that the Education, Research, and Service Committee recommend adoption of the Resolution presented in the meeting materials for approval of the proposed UTC Honor Code.**



The University of Tennessee  
Board of Trustees

Resolution 00\_-2019\*  
Proposed UTC Honor Code

Resolved: The Board of Trustees approves the proposed Honor Code of Conduct for The University of Tennessee at Chattanooga as presented in the meeting materials, which shall be attached to this Resolution after adoption and shall supersede the current Chapter 1720-02-01 of the Rules of The University of Tennessee after completion of the rulemaking procedures under the Uniform Administrative Procedures Act.

Adopted this 1<sup>st</sup> day of March, 2019.

---

\* Number will be inserted after adoption.





## **UT Board of Trustees UTC Honor Code Changes**

**Dr. Yancy Freeman, Enrollment Management and  
Student Affairs**

# Why Have an Honor Code?

The Honor Code is a comprehensive set of standards and procedures for resolving student academic misconduct. UTC promotes and educates students on academic honesty and ethical behavior through application of the Honor Code's standards.



[This Photo](#) by Unknown Author is licensed under [CC BY-NC-ND](#)

# Academic Discipline Process



Report



Review



Investigation



Hearing



Decision



Appeal



# Benefits of New Code



Not revised since 1970's



Clarifies standards of  
academic misconduct



Enhances transparency of  
process for students



Clarifies disciplinary  
sanctions for academic  
misconduct

# Major Changes

- Due Process Rights: The rights of the Respondent (accused student), Complainant (referring instructor), and Advisor are more clearly defined
- Standards: Specific standards of academic misconduct are defined (e.g. Cheating, Plagiarism)\*
- Additional hearing option: option of hearing before a single Honor Code Officer added
- Final appeal to the Provost
- Records: Addition of a defined policy on retention of Honor Code records

*\*Aligns with UTK code*

# Campus Vetting of Policy

## Students

- New Honor Code presented to Student Government Association (SGA) and Graduate Student Association (GSA)-  
December 2017
  - Unanimously approved
- Subsequent revisions presented to SGA and GSA
  - Unanimously approved

# Campus Vetting of Policy

## Faculty

- New Honor Code presented to Faculty Senate (FS) - October 2017
  - Unanimously approved by vote
- Subsequent revisions presented to FS President and Honor Court Chair
  - Unanimously approved

# Educating Students

- Classroom Visits
- Visits to Academic Department Meetings
- Programming in Residence Halls
- Social Media Campaigns

**RULES OF  
THE UNIVERSITY OF TENNESSEE AT CHATTANOOGA**

**CHAPTER 1720-02-01  
HONOR CODE**

**TABLE OF CONTENTS**

1720-02-01-.01	Purpose	1720-02-01-.07	Honor Code Process – Methods of Resolution
1720-02-01-.02	Definitions	1720-02-01-.08	Honor Code Officer Hearings
1720-02-01-.03	Jurisdiction and Application	1720-02-01-.09	Honor Code Board Hearings
1720-02-01-.04	Honor Code Standards	1720-02-01-.10	Disciplinary Sanctions
1720-02-01-.05	Due Process Rights	1720-02-01-.11	Appeals
1720-02-01-.06	Honor Code Process – Initial and Pre-Resolution Stages	1720-02-01-.12	Records of Honor Code Violations

**1720-02-01-.01 PURPOSE**

- (1) Preamble. The Honor Code of the University of Tennessee at Chattanooga ("University") is designed to foster and develop a climate of honesty and integrity by giving students a primary responsibility for upholding the standards under the Honor Code. The Honor Code is based upon the assumption that each student recognizes the fundamental importance of honesty. Students are responsible for conducting themselves in accordance with the rules and regulations of the Honor Code, and insuring that other members of the University community uphold the standards as well.
- (2) Honor Code Pledge.
  - (a) The University's Honor Code Pledge states: "As a student of the University of Tennessee at Chattanooga, I pledge that I will not give or receive any unauthorized assistance with academic work or engage in any academic dishonesty in order to gain an academic advantage. I will exert every effort to insure that the Honor Code is upheld by myself and others, affirming my commitment to a campus-wide climate of honesty and integrity."
  - (b) By matriculating as a student at the University, a University student indicates his/her affirmation of the Honor Code Pledge, including the obligation to comply with the UTC Honor Code.

**Authority:** T.C.A. § 49-9-209(e)

**1720-02-01-.02 DEFINITIONS**

When used in this Chapter, the following words, terms, or phrases shall have the following meanings:

- (1) Academic dishonesty: Any act of cheating, plagiarism, or other type of academic misconduct.
- (2) Advisor: A person who provides assistance to a Complainant or Respondent during the Honor Code process, as provided under [Section .05\(3\)](#) of this Chapter.
- (3) Business day: An official workday during which the University conducts business. Typically, a business day is a weekday (Monday through Friday), excluding any weekdays designated by the University as a holiday or in which the University is administratively closed. Each business day commences at 8:00 a.m. and ends at 5:00 p.m.
- (4) Chancellor: The University's chief executive officer to whom the President of the University of Tennessee system has delegated primary responsibility for administration of University operations, policies, and procedures.

- (5) Complainant: Any member of the University community, including, without limitation, any University employee, student, organization, academic department, academic program, college, or unit, that reports an alleged violation of the Honor Code.
- (6) Designee: A University official or office designated with the authority to carry out a duty or role on behalf of another University official or office.
- (7) Faculty: A University employee who holds faculty rank and whose primary appointment is to engage in academic instruction, research, or service.
- (8) Faculty Senate: The representative body of the University's faculty composed of elected faculty representatives as well as administrators with *ex officio* status.
- (9) Faculty Senate President: The executive officer of the Faculty Senate elected from the faculty membership of the Faculty Senate.
- (10) Faculty Senate Executive Committee: A standing committee of the Faculty Senate composed of the faculty executive officers of the Faculty Senate.
- (11) Formal Hearing: A University hearing before a fair and impartial decision-maker in which a Respondent may contest charges of Honor Code violations and/or disciplinary sanctions issued against the Respondent, as provided under [Section .07\(1\)](#) of this Chapter.
- (12) Honor Code: The Honor Code of the University of Tennessee at Chattanooga and its related standards, processes and procedures, as set forth in this Chapter.
- (13) Honor Code Board: A hearing board consisting of students and faculty which serves as the decision-maker in an Honor Code Board Hearing, as provided under [Section .09](#) of this Chapter.
- (14) Honor Code Board Hearing: A type of Formal Hearing in which an Honor Code Board serves as the decision-maker, as provided under [Section .09](#) of this Chapter.
- (15) Honor Code Officer: A faculty member, appointed by the Faculty Senate, who serves on the Honor Code Board and is responsible for conducting an Honor Code Officer Hearing, as provided under [Section .08](#) of this Chapter.
- (16) Honor Code Officer Hearing: A type of Formal Hearing in which an Honor Code Officer serves as the decision-maker, as provided under [Section .08](#) of this Chapter.
- (17) Honor Code process: The processes and procedures as set forth in rules within this Chapter for resolving alleged violations of the Honor Code.
- (18) Member of the University community: Any person who is a student, faculty member, staff employee, campus visitor, or participant in a University-sponsored or University-affiliated activity, or any organization that participates in a University-sponsored or University-affiliated activity.
- (19) Notice: Notice given in writing and transmitted by one (1) or more of the following: (i) e-mail to a student's University-issued e-mail account; (ii) United States mail, (iii) courier service, and/or (iv) hand-delivery to the address the University's Records Office has on file for the student. When a notice is transmitted by e-mail, the notice is effective on the date the e-mail is sent. E-mail to a student's University-issued e-mail address is an official method of communication used by the University. When a notice is transmitted by United States mail or courier service, the notice is effective on the date that it is mailed or delivered to the courier service. When a notice is transmitted by hand-delivery, the notice is effective on the date that it is delivered to the person to whom the notice is addressed.
- (20) Office of the Dean of Students: The University office designated with primary responsibility for the administration of the Office of Student Conduct. The Office of the Dean of Students may act as or on behalf of the Office of Student Conduct.

- (21) Office of Student Conduct: The University office designated with responsibility for administering the Honor Code-related rules, processes, procedures, training, and education.
- (22) Provost: The University's chief academic officer and the University official to whom the Chancellor has delegated primary responsibility for the administration and enforcement of the Honor Code.
- (23) Relevant information: Information having any tendency to make the existence of any fact that is of consequence to determining whether a Respondent violated the Honor Code more probable or less probable than it would be without the information.
- (24) Respondent: A student who has been accused of violating the Honor Code.
- (25) Staff: Any full-time or part-time University employee not primarily engaged in academic instruction, research, or service who holds either an exempt or non-exempt position with or without administrative, executive, or managerial responsibilities, excluding student employees of the University.
- (26) Student: A person who:
  - (a) Is admitted, enrolled or registered for study at the University, either full-time or part-time, pursuing undergraduate, graduate, professional, and/or non-degree courses; or
  - (b) Has completed a preceding academic term at the University and is eligible for re-enrollment without re-applying for admission and/or otherwise has a continuing relationship with the University; or
  - (c) Attended the University during a previous academic term and engaged in academic misconduct during his or her time of enrollment; or
  - (d) Is admitted to the University and later matriculated at the University, and committed academic misconduct during the application process or during the period of time between admission and matriculation at the University.
- (27) Student Code of Conduct: The Student Code of Conduct of the University of Tennessee at Chattanooga, as set forth under Chapter 1720-02-05.
- (28) Student conduct record: The collective printed or electronic record of any cases involving alleged violations of the Student Code of Conduct by a student, including violations of the Honor Code. A student conduct record may include, without limitation, incident report(s), correspondence, investigation report(s), interview records, demographic information, evidence, hearing records and recordings, and the student's conduct history.
- (29) UAPA: The Uniform Administrative Procedures Act, Tenn. Code Ann. § 4-5-101 *et seq.*
- (30) UAPA Administrative Judge: A hearing officer who presides over and serves as the decision-maker in a UAPA hearing.
- (31) UAPA Hearing: A type of Formal Hearing conducted by a UAPA Administrative Judge in accordance with [Chapter 1720-01-05](#) and the UAPA.
- (32) University: The University of Tennessee at Chattanooga.
- (33) University-affiliated activity: Any activity, on or off University-controlled property, that is initiated, aided, authorized, sponsored, or supervised by the University.
- (34) University official: A University employee when acting in the course and scope of his or her employment duties.
- (35) Vice Chancellor for Student Affairs: The University's chief student affairs officer to whom the Chancellor has delegated primary authority and responsibility for the administration of the Student Code of Conduct.



**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 4-5-101 *et seq.*

### **1720-02-01-.03 JURISDICTION AND APPLICATION**

- (1) Jurisdiction. The Honor Code applies to every student of the University, without regard to the student's academic program, standing, location, or type of activity. The Honor Code applies to a student's conduct relating to any University-affiliated activity, regardless of the location of the University-affiliated activity, including, without limitation, an overseas study program, clinical/field placement, internship, or in-service experience.
- (2) Time Period of Application to Students. The Honor Code applies to the conduct of a student from the time of the student's application for admission to the University through the entire time that the student is a candidate for and/or is awarded a degree from the University (even if a student's conduct which violates the Honor Code is not discovered by the University until after the University awards a degree to the student). The Honor Code applies to a student's conduct that occurs during the academic year, between semesters, and during periods between terms of actual enrollment at the University.
- (3) Withdrawal with Pending Allegations. If a student withdraws from the University while allegations of Honor Code violations are pending against the student, the University retains the right to investigate and resolve the allegations before the University may allow the student to re-enroll at the University, and the student's academic record and/or ability to register for classes may be encumbered until such time that the allegations are resolved.
- (4) Concurrent Non-Honor Code Violations of the Student Code of Conduct. In cases involving allegations of both Honor Code violations and non-Honor Code violations of the Student Code of Conduct, the alleged Honor Code violations will be resolved in accordance with the Honor Code procedures under this Chapter separately from resolution of the alleged non-Honor Code violations, which will be resolved pursuant to the procedures under Chapter 1720-02-05. In such cases, disciplinary sanctions may be issued against the Respondent for any Honor Code violations separate from and additional to disciplinary sanctions issued for any non-Honor Code violations of the Student Code of Conduct.
- (5) Violations of Professional Standards or Ethics. Graduate or professional programs within the University may take separate and independent action against students for alleged violations of professional and/or ethical standards using procedures other than those contained in the Honor Code.
- (6) Effect on Coursework. Coursework by a Respondent involving an alleged Honor Code violation and, if applicable, the Respondent's final grade for the course, will be recorded as incomplete during the pendency of the resolution of the alleged violation under the Honor Code process. All other coursework performed by the Respondent during the Honor Code process will be considered conditional. Credit for the Respondent's coursework involving the alleged Honor Code violation or performed during the pendency of the Honor Code process may be affected, delayed, denied, and/or revoked based on a finding of an Honor Code violation and/or a disciplinary sanctions imposed against the Respondent under the Honor Code. In addition, subject to the other provisions of the Honor Code, a delay in the granting of a degree or diploma may be imposed, or a degree that is awarded prior to a decision under the Honor Code may be revoked.
- (7) Withdrawal During the Honor Code Process. If a Respondent voluntarily withdraws from the University before the conclusion of the Honor Code process, the University retains the right to investigate and resolve the allegations against the Respondent as a condition of the Respondent being allowed to re-enroll in the University. A Disciplinary Hold on the Respondent's record, as provided under Section .13(2) of Chapter 1720-02-05, may be implemented or remain in place after the Respondent withdraws in order to enforce this [Section .03\(8\)](#).
- (8) Time Extensions and Rescheduling. Any time period specified under the Honor Code may be extended for good cause at the discretion of the Office of Student Conduct. Any hearing or meeting described in the Honor Code may be rescheduled for good cause at the discretion of the Office of Student Conduct.

**Authority:** T.C.A. § 49-9-209(e)

#### 1720-02-01-.04 HONOR CODE STANDARDS

All students are prohibited from engaging in the following acts of academic dishonesty:

- (1) Cheating: A form of academic dishonesty in which there is an intent to deceive and in which the use of unauthorized materials or assistance is exploited. Examples of cheating include, without limitation: (i) copying another's work; (ii) obtaining or giving unauthorized assistance on exams, papers, or other coursework; (iii) unauthorized collaboration or collusion with another person on an examination or academic assignment; (iv) having another person take an exam for the student by proxy; and (v) the use of unauthorized materials or devices, including, but not limited to, computers, calculators, cell phones, cheat sheets, or other resources not allowed by the course instructor.
- (2) Plagiarism: The use of intellectual property or work product of another without giving proper credit. Examples of plagiarism include, without limitation: (i) using written or spoken words, phrases, or sentences from any source without proper attribution or citation; (ii) summarizing ideas from another source without proper attribution or citation, unless such information is recognized as common knowledge; (iii) using facts, statistics, graphs, pictorial representations, or phrases in one's work without acknowledgment or proper attribution of the source of such information, unless such information is recognized as common knowledge; (iv) submitting work as one's own that is either in whole or in part created by a professional service; and (v) using previously submitted academic work by the student for any assignment without the permission of the course instructor.
- (3) Falsification, Fabrication, or Misrepresentation: Falsifying, fabricating, or misrepresenting data, laboratory results, research results, citations, or other information in connection with an academic assignment, or altering grades, answers, or marks in an effort to change the earned grade or credit.
- (4) Use of Unauthorized Materials: Providing, bringing, receiving, and/or using unauthorized material during an examination or for any academic assignment.
- (5) Use of Unauthorized Assistance: Providing, bringing, receiving, and/or using unauthorized assistance during an examination, laboratory work, field work, scholarship, or other academic assignment, or collaborating with another on a graded assignment without the instructor's approval.
- (6) Gaining Unfair Advantage: Gaining an objectively unfair academic advantage by failing to observe the expressed procedures or instructions relating to an exam or academic assignment.
- (7) Causing Unfair Disadvantage: Engaging in any conduct that unfairly places another student at a disadvantage, including, but not limited to, taking, hiding, or altering resource material or manipulating a grading system.
- (8) Attempting or Assisting a Violation: Attempting to commit a violation of the Honor Code or assisting others to commit a violation of the Honor Code.

**Authority:** T.C.A. § 49-9-209(e)

#### 1720-02-01-.05 DUE PROCESS RIGHTS

- (1) Rights of the Respondent

A Respondent will have the following rights during the Honor Code process:

- (a) The right to a prompt, thorough, and equitable investigation.

- (b) The right to be informed of all charges in writing.
- (c) The right to ask questions and receive information about the case, including, without limitation, the status of an investigation.
- (d) The right to remain silent in any investigation, meeting, or hearing.
- (e) The right to a fair and equitable hearing.
- (f) The right to receive notice of hearings at which the Respondent may be present.
- (g) The right to access any information or documents that will be used during a hearing, unless prohibited by law.
- (h) The right to challenge, for good cause, the fairness and/or impartiality of any Honor Code Officer, Honor Code Board Chairperson, Honor Code Board member, or UAPA Administrative Judge. The Provost (or his or her designee) will decide on challenges to Honor Code Officers or Honor Code Board Chairpersons. The Honor Code Board Chairperson will decide on challenges to Honor Code Board members. Challenges to UAPA Administrative Judges will be decided according to the UAPA hearing procedures under Chapter 1720-01-05.
- (i) The right to challenge all charges and testimony presented; to present witnesses and other evidence; and to challenge the admissibility of evidence.
- (j) The right not to be questioned directly by the Complainant during a hearing.
- (k) The right to be informed in writing of the decision of the decision-maker in a case, and if applicable, the proper procedure for appealing the decision.
- (l) The right to appeal the decision of the decision-maker in an Honor Code Officer Hearing, Honor Code Board Hearing, or UAPA Hearing.
- (m) The right to be assisted by an advisor during all stages of the Honor Code process in accordance with [Section .05\(3\)](#) of this Chapter.

(2) Rights of the Complainant

A Complainant will have the following rights during the Honor Code process:

- (a) The right to a prompt, thorough, and equitable investigation.
- (b) The right to ask questions and receive information about the case, including, without limitation, the status of an investigation.
- (c) The right to remain silent in any investigation, meeting, or hearing.
- (d) The right to receive notice of any hearings at which the Complainant may be present.
- (e) The right to access any information or documents that may be used during a hearing, unless prohibited by law.
- (f) The right to challenge, for good cause, the fairness and/or impartiality of any Honor Code Officer, Honor Code Board Chairperson, Honor Code Board member, or UAPA Administrative Judge. The Provost (or his or her designee) will decide on challenges to Honor Code Officers or Honor Code Board Chairpersons. The Honor Code Board Chairperson will decide on challenges to Honor Code Board members. Challenges to UAPA Administrative Judges will be decided according to the UAPA hearing procedures under Chapter 1720-01-05.

- (g) The right to challenge all testimony presented; to present witnesses and other evidence; and to challenge the admissibility of evidence.
- (h) The right not to be questioned directly by the Respondent during a hearing.
- (i) The right to be informed in writing of the decision of the decision-maker in a case, and if applicable, the proper procedure for appealing the decision.
- (j) The right to appeal the decision of the decision-maker in an Honor Code Officer Hearing, Honor Code Board Hearing, or UAPA Hearing.
- (k) The right to be assisted by an advisor during all stages of the Honor Code process in accordance with [Section .05\(3\)](#) of this Chapter.

(3) Right to an Advisor

- (a) The Complainant and the Respondent each may choose to be assisted by one (1) advisor during all stages of the Honor Code process.
- (b) A student Complainant or a Respondent who chooses to be assisted by an advisor is encouraged to consider selecting a University employee who has received training about the Honor Code process from the Office of Student Conduct. A student Complainant and the Respondent may obtain the names of trained advisors from the Office of Student Conduct. At their own expense, a student Complainant and the Respondent may choose a person who is not employed by the University to serve as an advisor. A student Complainant and the Respondent should select as an advisor a person whose schedule allows attendance at the scheduled date, time, and place for meetings and hearings, as delays will generally not be granted due to the scheduling conflicts of an advisor.
- (c) A faculty or staff member Complainant who chooses to be assisted by an advisor is encouraged to consider selecting a supervisor as his or her advisor.
- (d) The role of an advisor is limited to assisting, advising, and/or supporting a Complainant or Respondent during the Honor Code process. An advisor is not permitted to speak for or on behalf of a Complainant or Respondent, appear in lieu of a Complainant or Respondent, participate as a witness, or participate directly in any other manner during any phase of the Honor Code process, including, without limitation, an Honor Code Officer Hearing or Honor Code Board Hearing. However, in a UAPA Hearing, the Complainant and the Respondent are entitled to be represented by legal counsel at their own expense.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 4-5-101 *et seq.*

**1720-02-01-.06 HONOR CODE PROCESS – INITIAL AND PRE-RESOLUTION STAGES**

(1) Initiation of the Honor Code Process

- (a) The University may initiate the Honor Code process on the basis of written allegations received from a Complainant. The University may also initiate the Honor Code process in the absence of written allegations if the University becomes aware, through other means, of potential Honor Code violations committed by a student.
- (b) Upon receipt of written allegations or other information concerning potential Honor Code

violations, the Office of Student Conduct (or designee), on behalf of the University, will review the information and initiate the Honor Code process by scheduling a Preliminary Meeting with the Respondent as provided under [Section .06\(3\)](#) of this Chapter.

(2) Notice of Allegations

- (a) If the Office of Student Conduct (or designee) determines to initiate the Honor Code process, it will provide a Notice of Allegations to the Respondent.
- (b) The Notice of Allegations will:
1. Inform the Respondent that the University has received allegations that the Respondent has violated the Honor Code and that the University has begun or will begin an investigation of the alleged violations;
  2. Provide a brief description of the alleged Honor Code violation(s);
  3. Notify the Respondent of his or her right to be assisted and/or supported by an advisor at all stages of the Honor Code process;
  4. Either notify the Respondent of the date, time, and location of the Preliminary Meeting, or instruct the Respondent to contact the Office of Student Conduct (or designee) within five (5) business days of the effective date of the notice to schedule a Preliminary Meeting;
  5. Inform the Respondent of the consequences for failure to schedule or appear at a Preliminary Meeting, as provided under [Section .06\(3\)\(a\)](#) of this Chapter; and
  6. Provide the website address where the Respondent can review a copy of the Honor Code and instruct the Respondent to review the Honor Code rules for information about the Honor Code process.

(3) Preliminary Meeting

After a Notice of Allegations is issued to a Respondent, the Office of Student Conduct (or designee) will hold a Preliminary Meeting with the Respondent in accordance with [Section .06\(3\)\(b\)](#) of this Chapter, unless the Respondent fails to schedule a Preliminary Meeting or fails to appear at a scheduled Preliminary Hearing as provided under [Section .06\(3\)\(a\)](#) of this Chapter.

- (a) Failure to Schedule or Appear at Preliminary Meeting. If the Respondent fails to contact the Office of Student Conduct (or designee) within five (5) business days of the effective date of the Notice of Allegations to schedule a Preliminary Meeting or fails to appear at a scheduled Preliminary Meeting, the Respondent waives his or her right to a Preliminary Meeting and the right to select the type of Formal Hearing for resolution of the allegations, unless the Respondent's failure to schedule or appear at a Preliminary Meeting is excused by the Office of Student Conduct upon a showing of good cause. If the Respondent waives his or her right to a Preliminary Hearing as provided under this Section .06(3)(a) and the Office of Student Conduct (or designee) determines that charges should be issued based on the information available, the Office of Student Conduct (or designee) will select the type of Formal Hearing for resolution of the charge(s) and provide the Respondent with a Notice of Charges in accordance with [Section .06\(5\)](#) of this Chapter. Notwithstanding any provisions to the contrary in this [Section .06\(3\)\(a\)](#), in cases in which the Respondent has the right to a UAPA Hearing, the Respondent waives his or her right to a UAPA Hearing only as provided under [Section .07\(1\)\(d\)](#) of this Chapter.
- (b) Appearance at Scheduled Preliminary Meeting. If the Respondent appears at a scheduled Preliminary Meeting, the Office of Student Conduct (or designee) will conduct a Preliminary Meeting with the Respondent in the following general manner:

1. The Office of Student Conduct (or designee) will inform the Respondent of the allegations against the Respondent, and if requested, provide the Respondent with a reasonable opportunity to review the written allegations.
2. The Office of Student Conduct (or designee) will provide the Respondent with an opportunity to respond to the allegations through various means, including, without limitation, the presentation of any information for consideration by the Office of Student Conduct (or designee) and/or the identification of any witnesses the Respondent believes have relevant information.
3. Both the Office of Student Conduct (or designee) and the Respondent may ask questions and seek clarifying information about the allegations, possible sanction(s), and the Honor Code process.
4. If, based on the available information provided by the Respondent, the Office of Student Conduct (or designee) determines that no additional investigation of the allegations is needed, the Office of Student Conduct (or designee) will inform the Respondent of the Formal Hearing options available for resolution of the allegations. The Respondent will then be provided with the opportunity to select the type of Formal Hearing through which to contest the allegations. Upon the Respondent's selection of the type of Formal Hearing, the Preliminary Meeting will be concluded, and the Office of Student Conduct (or designee) will provide the Respondent with a Notice of Charges in accordance with [Section .06\(5\)](#) of this Chapter.
5. If, based on the available information provided by the Respondent, the Office of Student Conduct (or designee) determines that additional investigation is needed, the Preliminary Meeting will be concluded, and the Office of Student Conduct (or designee) will continue its investigation in accordance with the applicable procedures under [Section .06\(4\)](#) of this Chapter.

(4) Investigations

- (a) The Office of Student Conduct may delegate to and/or collaborate with the Office of Research Integrity or other designated University official on the investigation of alleged Honor Code violations.
- (b) Investigations will be conducted in a prompt, thorough, ethical, and equitable manner.
- (c) When conducting an investigation, the Office of Student Conduct (or other designated investigator) will act as a fair and impartial party rather than as a representative of the person, office, unit, or organization that submitted the allegations.
- (d) During an investigation, the Complainant(s), the Respondent(s), witnesses, or any other persons may be interviewed, and other relevant information and documentation will be obtained as applicable. The Office of Student Conduct (or other designated investigator) is not obligated to interview a witness identified by the Complainant or the Respondent if the Office of Student Conduct (or other designated investigator) believes the witness is not likely to possess relevant information, information from the witness is not likely to lead to the discovery of relevant information, or the information the witness is likely to possess is cumulative of other information already gathered. The Office of Student Conduct (or other designated investigator) may re-interview the Complainant(s), Respondent(s), witnesses, and/or any other person at any time during the investigation in order to obtain additional and/or clarifying information.

(5) Notice of Charges

- (a) If the Office of Student Conduct (or designee) determines, either at the end of the Preliminary Meeting as provided under [Section .06\(3\)\(b\)](#) of this Chapter or at the conclusion of the investigation, that the Honor Code process should proceed with respect to the allegations, then the Office of Student Conduct (or designee) will provide the Respondent with a Notice of Charges.
- (b) The Notice of Charges will include, without limitation, the following information:
1. A description of the conduct the Respondent is charged with committing, the specific Honor Code violation(s) charged against the Respondent, and the recommended disciplinary sanctions;
  2. The types of Formal Hearings available for resolution of the charge(s);
  3. That the Respondent must request one (1) of the available Formal Hearing options in writing within five (5) business days of the effective date of the Notice of Charges or otherwise waives the right to select the type of Formal Hearing for resolution of the charge(s); and
  4. The Respondent's right to be assisted and/or supported by an advisor at all stages of the Honor Code process. In cases in which the UAPA requires the University to offer the Respondent a UAPA Hearing, the notice shall notify the Respondent of his or her right to be assisted or represented by legal counsel if the Respondent decides to contest the charge(s) through a UAPA Hearing.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 4-5-101 *et seq.*

#### **1720-02-01-.07 HONOR CODE PROCESS – METHODS OF RESOLUTION**

Charges or allegations of violations of the Honor Code may be resolved in one (1) of the following ways:

- (1) Resolution by Formal Hearing. A Formal Hearing is a process for resolving charges of violations of the Honor Code in which the Respondent is provided the opportunity to contest the charges through the presentation of evidence at a hearing before a fair and impartial decision-maker.
- (a) Types of Formal Hearings. Charges of violations of the Honor Code may be resolved through one (1) of three (3) types of Formal Hearings, depending on the gravity of the disciplinary sanctions proposed for the charge:
1. Honor Code Officer Hearing. A hearing held before an Honor Code Officer in accordance with [Section .08](#) of this Chapter. An Honor Code Officer Hearing will be offered in every case, except where a faculty or staff member Complainant requests that an Honor Code Officer Hearing not be offered as a hearing option for resolution of the charges.
  2. Honor Code Board Hearing. A hearing held before an Honor Code Board in accordance with [Section .09](#) of this Chapter. An Honor Code Board Hearing will be offered in every case.
  3. UAPA Hearing. A "contested case" hearing under the UAPA held before a UAPA Administrative Judge in accordance with [Chapter 1720-01-05](#). A Respondent has the right to a UAPA Hearing only when the UAPA requires the University to offer a UAPA Hearing as determined by the gravity of the disciplinary sanction(s) proposed for the charge.
- (b) Request for Type of Formal Hearing. Within five (5) business days of the effective date of the Notice of Charges, the Respondent must select in writing one (1) of the types of Formal Hearing available for resolution of the charge(s) using the form(s) provided by the Office of

Student Conduct (or designee). A verbal request by the Respondent for a type of Formal Hearing will not constitute a valid request. By selecting a type of Formal Hearing, the Respondent waives the right to contest the charge(s) through another type of Formal Hearing.

- (c) Failure to Request Type of Formal Hearing. If, within five (5) business days of the effective date of the Notice of Charges, the Respondent fails to request in writing the type of Formal Hearing, the Respondent waives the right to select the type of Formal Hearing for resolution of the charge(s), unless the Respondent's failure to select the type of Formal Hearing is excused by the Office of Student Conduct upon a showing of good cause. If the Respondent waives his or her right to select the type of Formal Hearing as provided under this Section .07(1)(c), the Office of Student Conduct (or designee) will select the type of Formal Hearing and will provide notice to the Respondent of the type of Formal Hearing selected and the date, time, and place of the hearing.
  - (d) Waiver of UAPA Hearing. Notwithstanding any provisions in this Chapter to the contrary, in a case in which the UAPA requires that the University offer the Respondent a UAPA Hearing, the Respondent waives his or her right to a UAPA Hearing only if the Respondent executes a voluntary written waiver of his or her right to a UAPA Hearing.
- (2) Resolution by Resolution Agreement. At any time during the Honor Code process, a faculty member Complainant may propose to the Respondent to resolve allegations or charges of Honor Code violations by Resolution Agreement in lieu of a Formal Hearing. A proposed Resolution Agreement must be reduced to writing by the faculty member Complainant using the form(s) provided by the Office of Student Conduct (or designee). The Respondent may accept the proposed resolution and sanctions (if applicable) by signing the proposed Resolution Agreement. The Resolution Agreement will become binding and effective after it is signed by the Respondent and the faculty member Complainant. The faculty member Complainant must send the fully-executed Resolution Agreement to the Office of Student Conduct (or designee) within five (5) business days after the agreement has been fully-executed.
- (a) By signing a Resolution Agreement, the Respondent: (i) accepts responsibility for the Honor Code violations stated in the agreement; (ii) agrees to the imposition of the disciplinary sanctions stated in the agreement (if applicable); and (iii) waives all rights the Respondent may have to resolve the allegations or charges through a Formal Hearing.
  - (b) A Respondent may not revoke or appeal a Resolution Agreement at any time after the Respondent signs the agreement.

**Authority:** T.C.A. § 49-9-209(e); T.C.A. § 4-5-101 *et seq.*

### 1720-02-01-.08 HONOR CODE OFFICER HEARINGS

An Honor Code Officer Hearing is held before and conducted by an Honor Code Officer. The Honor Code Officer serves as the decision-maker in determining whether the Respondent is responsible for the charged Honor Code violation(s) and the disciplinary sanction(s), if any, to be imposed.

- (1) Honor Code Officer. An Honor Code Officer is a faculty member selected by the Faculty Senate to serve on the Honor Code Board. Honor Code Officers are trained by the Office of Student Conduct to conduct Honor Code Officer Hearings in accordance with the Honor Code.



- (2) Fairness & Impartiality. The Honor Code Officer will be fair and impartial. Any party to an Honor Code Officer Hearing has the right to challenge the fairness or impartiality of the Honor Code Officer. Any Honor Code Officer lacking fairness or impartiality will recuse himself or herself or may, for good cause and at the discretion of the Provost (or his or her designee) or the Faculty Senate President (or his or her designee), be removed from serving as Honor Code Officer for the hearing.
- (3) Notice. If an Honor Code Officer Hearing is selected for resolution of the charge(s), the Honor Code Officer will send the Respondent and the Complainant notice of the time, place, and date of the hearing at least five (5) business days in advance of the date of the hearing.
- (4) Hearing Procedure. An Honor Code Officer will conduct an Honor Code Officer Hearing in accordance with the following general procedures and rules:
- (a) The hearing will be closed to the public.
  - (b) The Honor Code Officer will determine all procedural questions. The Honor Code Officer may be assisted by a procedural advisor appointed by the Office of Student Conduct.
  - (c) Each Respondent and Complainant will be considered a party to the proceeding.
  - (d) Each party and his or her advisor (if any) will be allowed to attend the portion of the hearing during which questioning is conducted and information is received by the Honor Code Officer.
  - (e) Each party will be afforded a full and fair opportunity to present all evidence, including witness testimony, that reasonably relates to the charge or action at issue.
  - (f) The Honor Code Officer may limit the presentation of evidence which is irrelevant or unreasonably repetitious or voluminous.
  - (g) The Honor Code Officer will consider all evidence presented and give due consideration to the credibility or weight of the information presented. Technical rules of evidence, such as evidentiary rules applicable to civil or criminal court proceedings, will not apply.
  - (h) The Honor Code Officer will apply the preponderance of the evidence standard in determining whether or not the Respondent is responsible for the charged Honor Code violations.
  - (i) An appropriate record of the hearing proceedings will be made. An audio or video record may be made of the hearing. Defects in the record will not invalidate the proceedings.
  - (j) Following the conclusion of the hearing, the Honor Code Officer will provide each party with a Notice of Decision setting forth the Honor Code Officer's decision on responsibility and, if applicable, the disciplinary sanctions to be issued against the Respondent and their effective date.
- (5) Multiple Respondents. In cases involving more than one (1) Respondent, the Honor Code Officer has the discretion to hold one (1) hearing for all of the Respondents or separate hearings for each Respondent. Any Respondent may, prior to the hearing, request that his or her hearing be conducted separately from the other Respondent(s). Such a request must be made in writing to the Honor Code Officer using the form(s) provided by the University. The Honor Code Officer will decide whether or not to grant such a request, and the Honor Code Officer's decision will be final.
- (6) Failure to Appear. If proper notice of the Honor Code Officer Hearing is provided to the Respondent in accordance with [Section .08\(3\)](#) of this Chapter but the Respondent fails to appear at the hearing, the Honor Code Officer has the discretion to hold the hearing in the party's absence or to reschedule the hearing. If the Honor Code Officer holds the hearing in a party's absence, the absent party will be subject to any decision(s) made by the Honor Code Officer, including any decision to issue disciplinary sanction(s) against the Respondent. Notwithstanding the foregoing provisions of this [Section .08\(6\)](#), the Honor Code Officer may decline to issue a Notice of Decision following the conclusion of the

hearing and schedule a new hearing upon a showing of good cause by the absent party for his or her failure to appear.

- (7) Appeal. The decision of the Honor Code Officer may be appealed to the Provost (or his or her designee) in accordance with [Section .11](#) of this Chapter.

**Authority:** T.C.A. § 49-9-209(e)

### **1720-02-01-.09 HONOR CODE BOARD HEARINGS**

An Honor Code Board Hearing is held before a panel of Honor Code Board members and chaired by an Honor Code Board Chairperson. The Honor Code Board members serve as the decision-makers in determining whether the Respondent is responsible for the charged Honor Code violation(s) and the disciplinary sanction(s), if any, to be imposed.

- (1) Honor Code Board Chairperson. The Honor Code Chairperson is a faculty member appointed by the Faculty Senate to preside over and facilitate an Honor Code Board Hearing to ensure that the hearing is conducted in accordance with the Honor Code. Except as provided under [Section .09\(7\)\(j\)](#) of this Chapter, the Honor Code Board Chairperson will not vote on the issues to be decided by the Honor Code Board. The Honor Code Board Chairperson will be trained by the Office of Student Conduct on the procedures for conducting an Honor Code Board Hearing in accordance with the Honor Code. In the event the Honor Code Board Chairperson is absent or recused from a case, a faculty member on the Honor Code Board may serve as the acting Honor Code Board Chairperson for the case.
- (2) Honor Code Board. The Honor Code Board is a panel of appointed students and faculty who are selected to serve as the decision-makers in an Honor Code Board Hearing.
- (a) The full membership of the Honor Code Board consists of: (i) six (6) undergraduate students recommended by the Student Government Association and appointed by the Office of Student Conduct; (ii) six (6) undergraduate students recommended by the Graduate Student Association and appointed by the Office of Student Conduct; (iii) six (6) undergraduate-level faculty members appointed by the Faculty Senate; and (iv) six (6) graduate-level faculty members appointed by the Faculty Senate.
- (b) For each Honor Code Board Hearing, (i) a minimum of six (6) Honor Code Board members is required to hear the case (excluding the Honor Code Board Chairperson); and (ii) the Honor Code Board hearing the case must consist of at least three (3) student members and at least three (3) faculty members who correspond to the academic level of the Respondent (e.g., for a case involving a Respondent who is an undergraduate student, the Honor Code Board hearing the case must consist of at least three (3) undergraduate students and at least three (3) undergraduate-level faculty members). Notwithstanding any provisions of this Section .09(2)(b) to the contrary, with the consent of the Complainant, Respondent and Honor Code Board Chairperson, an Honor Code Board hearing a case may consist of less than six (6) Honor Code Board members or be composed of less than three (3) student members and/or three (3) faculty members who correspond to the academic level of the Respondent.
- (3) Fairness & Impartiality. The Honor Code Board members and the Honor Code Board Chairperson will be fair and impartial. Any party to an Honor Code Board Hearing will have the right to challenge the fairness or impartiality of the Honor Code Board Chairperson or any Honor Code Board member hearing the case. Any Honor Code Board member hearing the case who lacks fairness or impartiality will recuse himself or herself, or for good cause and at the Honor Code Board Chairperson's discretion, be removed from hearing the case. Any Honor Code Board Chairperson lacking fairness or impartiality will recuse himself or herself, or for good cause and at the discretion of the Provost (or his or her designee), be removed from presiding over the hearing.
- (4) Notice. If an Honor Code Board Hearing is selected for resolution of the charge(s), the Office of Student Conduct will send the Respondent and the Complainant notice of the time, place, and date of the hearing at least five (5) business days in advance of the date of the hearing.

- (5) Pre-Hearing Submissions from Parties. At least five (5) business days in advance of the date of the hearing, the Respondent and the Complainant must provide the following information to the Office of Student Conduct:
- (a) The names of all witnesses the party plans to present at the hearing and a brief summary of the information that the party reasonably anticipates each witness to provide.
  - (b) A copy of all tangible or electronic information that the party plans to present at the hearing (e.g., witness statements, video or audio recordings, photographs, e-mails, text messages, telephone records, medical bills, demonstrative exhibits, etc.). The party may provide photographs of items of evidence that cannot be produced in a copy form.
  - (c) A copy of a written statement, if any, that the party wants the Honor Code Board members to consider. A Complainant's statement may include recommended sanctions for the Respondent's alleged Honor Code violation(s). The Respondent's statement may include a description of any factors the Respondent believes mitigate the alleged Honor Code violation(s) or proposed disciplinary sanction(s).
- (6) Pre-Hearing Review of Information. After notice of the Student Conduct Board Hearing is provided to the Respondent and Complainant in accordance with [Section .09\(4\)](#) of this Chapter, the Office of Student Conduct will make available to each party the materials submitted by each party and the University upon the request of a party. Notwithstanding any provision to the contrary in this [Section .09\(6\)](#), no less than one (1) business day prior to the hearing, the Office of Student Conduct will make the materials submitted by each party and the University available for review by each party and their respective advisors, the Honor Code Board Chairperson, and the Honor Code Board members hearing the case. The Office of Student Conduct will notify each party, the Honor Code Board Chairperson, and the Honor Code Board members hearing the case when the materials are ready for review in the Office of Student Conduct or when the materials will be sent to them electronically. The Office of Student Conduct may redact irrelevant and/or protected information from any materials made available for review.
- (7) Hearing Procedure. The Honor Code Board Chairperson will conduct an Honor Code Board Hearing in accordance with the following general procedures and rules:
- (a) The hearing will be closed to the public.
  - (b) The Honor Code Board Chairperson will determine all procedural questions. The Honor Code Board Chairperson may be assisted by a procedural advisor appointed by the Office of Student Conduct.
  - (c) Each Respondent and Complainant will be considered a party to the proceeding.
  - (d) Each party and their respective advisors will be allowed to attend the portion of the hearing during which questioning is conducted and information is received by the Honor Code Board members. The parties (and their advisors) will not be allowed to attend the portion of the hearing during which deliberations by the Honor Code Board members occur.
  - (e) Each party will be afforded a full and fair opportunity to present an opening statement, any evidence, including witness testimony, that reasonably relates to the charge or action at issue, and a closing statement.
  - (f) The Honor Code Board Chairperson may bar or limit the presentation of evidence which is not provided to the Office of Student Conduct in advance of the hearing in accordance with [Section .09\(5\)](#) of this Chapter, or which (i) is irrelevant, (ii) unreasonably repetitious or voluminous, or (iii) protected from disclosure under federal, state, or local law.

- (g) The Honor Code Board members will consider all evidence presented and give due consideration to the credibility or weight of the information presented. Technical rules of evidence, such as evidentiary rules applicable to civil or criminal court proceedings, will not apply.
  - (h) The Honor Code Board members will apply the preponderance of the evidence standard in determining whether or not the Respondent is responsible for the charged Honor Code violation(s).
  - (i) An appropriate record of the hearing proceedings will be made. An audio or video record will be made of the hearing, except for the portion of the hearing in which the Honor Code Board members deliberate and vote on their decision. Defects in the record will not invalidate the proceedings.
  - (j) After all information for consideration has been presented to the Honor Code Board members, the parties (and their advisors, if any) will be excused, and the Honor Code Board members will deliberate and vote on the following issues: (i) whether the Respondent is responsible for the charged Honor Code violation(s) and (ii) the disciplinary sanctions, if any, to be issued. The decision of the Honor Code Board members on each issue will be made by simple majority of the voting members' votes. In the event of a tie-vote among the voting members, the Honor Code Board Chairperson will cast the tie-breaking vote.
  - (k) At the conclusion of the hearing, the Honor Code Board Chairperson will provide each party with a Notice of Decision setting forth the decision of the Honor Code Board members on responsibility and, if applicable, the disciplinary sanctions to be issued against the Respondent and their effective date.
- (8) Multiple Respondents. In cases involving more than one (1) Respondent, the Honor Code Board Chairperson has the discretion to hold one (1) hearing for all of the Respondents or separate hearings for each Respondent. Any Respondent may, prior to the hearing, request that his or her hearing be conducted separately from the other Respondents' hearings. Such a request must be made in writing to the Honor Code Board Chairperson using the form(s) provided by the University. The Honor Code Board Chairperson will decide whether or not to grant such a request, and the Honor Code Board Chairperson's decision will be final.
- (9) Failure to Appear. If proper notice of the Honor Code Board Hearing is provided to a party in accordance with [Section .09\(4\)](#) of this Chapter but the party fails to appear at the hearing, the Honor Code Board Chairperson has the discretion to hold the hearing in the party's absence or to reschedule the hearing. If the Honor Code Board Chairperson holds the hearing in a party's absence, the absent party will be subject to any decision(s) made by the Honor Code Board members, including any decision to issue disciplinary sanction(s) against the Respondent. Notwithstanding the foregoing provisions of this [Section .09\(8\)](#), the Honor Code Board Chairperson may decline to issue a Notice of Decision following the conclusion of the hearing and schedule a new hearing upon a showing of good cause by the absent party for his or her failure to appear.
- (10) Appeal. The decision of the Honor Code Board members may be appealed to the Provost (or his or her designee) in accordance with [Section .11](#) of this Chapter.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-01-.10 DISCIPLINARY SANCTIONS**

- (1) Disciplinary sanctions are primarily intended to: (i) educate Respondents about appropriate behavior; (ii) encourage Respondents to take responsibility for Honor Code violation(s); (iii) encourage and promote the personal and professional development of Respondents; (iv) discourage other students from violating the Honor Code; and/or (v) protect the academic reputation of the University.

- (2) The disciplinary sanctions imposed on a Respondent should be appropriate for the particular case based on the gravity of the Honor Code violation, including, without limitation, how the violation affected or reasonably could have affected the academic reputation of the University and members of the University community. Consideration also may be given to other aggravating or mitigating factors, including, without limitation: (i) the Respondent's student conduct record; (ii) the Respondent's academic record; (iii) the Respondent's responsiveness to the Honor Code process; and (iv) the Respondent's academic classification.
- (3) A Respondent who accepts responsibility for an Honor Code violation pursuant to a Resolution Agreement may be subject only to a grade modification as provided under [Section .10\(4\)\(a\)](#) of this Chapter. No other disciplinary sanction may be imposed upon a Respondent pursuant to a Resolution Agreement. A Respondent who is found responsible for an Honor Code violation by the decision-maker in a Formal Hearing may be subject to one (1) or more disciplinary sanctions provided under [Section .10\(4\)](#) of this Chapter.
- (4) The following sanctions may be imposed on a student found to have violated the Honor Code:
- (a) Grade Modification.
1. Assignments. The University may impose a grade modification for an academic assignment if the Respondent is found to have violated the Honor Code in connection with performing or completing the assignment, including, without limitation, by providing another student with unauthorized assistance with the assignment.
  2. Examinations. The University may impose a grade modification for an examination if the Respondent is found to have violated the Honor Code in connection with taking or completing the examination, including, without limitation, by providing another student with unauthorized assistance on the examination.
  3. Courses. The University may impose a grade modification in a course if the Respondent is found to have violated the Honor Code in connection with taking or completing the course, including, without limitation, by providing another student unauthorized assistance with taking or completing the course.
- (b) Disciplinary Reprimand. A disciplinary reprimand is a written warning that informs a Respondent that the Respondent is violating or has violated the Honor Code and must cease and desist from engaging in the Honor Code violation and/or prevent the Honor Code violation from occurring again. A disciplinary reprimand will also inform the Respondent that any further violations of the Honor Code may result in the imposition of more severe sanctions.
- (c) Disciplinary Probation. A Respondent may be placed on disciplinary probation for serious or moderate Honor Code violations or in the case of multiple or repeated minor Honor Code violations. A Respondent may be placed on disciplinary probation for a definite or indefinite period of time, during which time the Respondent may continue to be enrolled at the University. While the Respondent is on disciplinary probation, conditions may be placed on the Respondent's continued enrollment at the University, and University departments, programs, and/or services may limit or prohibit participation in certain activities. If a Respondent commits any further Honor Code violations while on disciplinary probation, the Respondent may be subject to more severe sanctions up to and including permanent dismissal.
- (d) Educational Sanction. A Respondent may be required to complete an educational assignment or program. Educational assignments and programs are designed to educate the Respondent about why certain conduct is inappropriate. Examples of educational assignments include, without limitation: (i) writing a reflection and/or research paper on a designated topic; (ii) completing a research project on a designated topic; (iii) giving a presentation on a designated topic; and (iv) issuing a formal apology in writing and/or in person. An educational program may include, without limitation, attending and satisfactorily completing an in-person or

distance learning course, training, or workshop on alcohol or drug use, civility, ethics, or other topics deemed appropriate by the Office of Student Conduct. The Respondent will be responsible for all costs associated with the educational assignment or program.

- (e) Suspension. Suspension is an official separation from the University for a specific period of time and/or until certain conditions are met. A Respondent may be suspended from the University for serious Honor Code violations, multiple moderate Honor Code violations, multiple or repeated minor Honor Code violations, and/or any Honor Code violations while on disciplinary probation. While on suspension, a Respondent (i) loses all rights and privileges at the University; (ii) may not represent the University in any manner; and (iii) is ineligible to apply for readmission to the University during the suspension period and/or until certain conditions are met. If a Respondent is suspended, the Respondent is prohibited, without the prior approval of the Vice Chancellor for Student Affairs (or his or her designee), from entering upon all University-controlled property, including University residence halls, from the date the suspension period begins until such date that the Respondent is readmitted to the University (even if the suspension period ends prior to the date of the Respondent's readmission). Entering upon University-controlled property without prior approval from the Vice Chancellor for Student Affairs (or his or her designee) may result in criminal trespass charges against the Respondent under the criminal laws of the State of Tennessee. Respondents permitted to return to the University following a period of suspension will be automatically placed on disciplinary probation for a designated period of time following their return. A Respondent who commits any Student Code of Conduct violations while on suspension may be subject to suspension for an additional period of time or barred from readmission and/or re-enrollment at the University.
- (f) Permanent Dismissal. Permanent dismissal is an official and permanent separation from the University. A Respondent may be permanently dismissed from the University when the Respondent's commission of one (1) or more Honor Code violations is deemed so serious as to warrant total and permanent disassociation from the University or when, through repeated violations of the Honor Code and/or violations of the Honor Code while on disciplinary probation or suspension, the Respondent exhibits blatant disregard for (i) the academic integrity and reputation of the University or (ii) the University's right to establish rules of conduct. A Respondent who is permanently dismissed from the University: (i) loses all rights and privileges at the University; (ii) may not represent the University in any manner; (iii) is indefinitely prohibited, without prior approval of the Vice Chancellor for Student Affairs (or his or her designee) from entering upon all University-controlled property, including University residence halls; and (iv) is permanently barred from re-enrolling at the University. Entering upon University-controlled property without prior approval from the Vice Chancellor for Student Affairs (or his or her designee) may result in criminal trespass charges against the Respondent under the criminal laws of the State of Tennessee.
- (g) Withholding of Degree. The University may withhold awarding a degree to a Respondent who has violated any University rule or policy. The University may withhold a degree for a definite period of time and/or until the Respondent has completed or served all sanctions or other requirements imposed by the University for releasing its award of the degree.
- (h) Revocation of Degree. The University make revoke a degree awarded to a Respondent if the Respondent obtained the degree, in part, through cheating, plagiarism, academic dishonesty, research misconduct, or other serious violation of the Honor Code. The University may also revoke a Respondent's degree if, after the degree was awarded, the University determines that the Respondent committed a serious violation of the Honor Code while a student, but prior to being awarded the degree, that would have warranted permanent dismissal of the Respondent. Before a Respondent's degree may be revoked, the Chancellor must approve the revocation of the degree.
- (5) More than one (1) of the disciplinary sanctions provided in this [Section .10](#) may be imposed on a Respondent for any single violation of the Honor Code.



- (6) Disciplinary sanctions may be applied retroactively to the date of the Honor Code violation committed by the Respondent.

**Authority:** T.C.A. § 49-9-209(e)

**1720-02-01-.11 APPEALS**

(1) Appeal to the Provost

- (a) Appeal Period. The decision of an Honor Code Officer in an Honor Code Officer Hearing or the Honor Code Board in an Honor Code Board Hearing may be appealed to the Provost by submitting a Notice of Appeal to the Office of Student Conduct in accordance with [Section .11\(1\)\(b\)](#) of this Chapter within five (5) business days of the effective date of the Notice of Decision to the appealing party. A Notice of Appeal not submitted within five (5) business days of the effective date of the Notice of Decision to the appealing party will not be considered.
- (b) Notice of Appeal. A Notice of Appeal must state: (i) the name of the party appealing the decision; and (ii) the specific grounds for the appeal. Appeals not based on one (1) or more of the grounds provided under [Section .11\(1\)\(c\)](#) of this Chapter will not be considered.
- (c) Grounds for Appeal. Appeals are limited to the following grounds:
1. The party's rights were violated in the hearing process;
  2. New relevant and material information has become available that could not have been discovered at the time of the hearing;
  3. The information presented did not support the decision by a preponderance of the evidence standard; or
  4. The sanction(s) imposed were not appropriate for the violation.
- (d) Response to Appeal by Non-Appealing Party. Upon receipt of a timely-submitted Notice of Appeal, the Office of Student Conduct will provide a copy of the Notice of Appeal to the non-appealing party, if applicable. The non-appealing party may respond to the appeal by submitting a written response to the Office of Student Conduct within three (3) business days of the effective date of the Notice of Appeal to the non-appealing party.
- (e) Decision on Appeal.
1. Within ten (10) business days of the Office of Student Conduct's receipt of the Notice of Appeal or the non-appealing party's response to the appeal, whichever occurs later, the Provost (or his or her designee) will provide notice to the parties of his or her decision.
  2. The Provost (or his or her designee) may (i) uphold, amend, or overturn the decision of the Honor Code Officer or Honor Code Board; or (ii) return the case to the Honor Code Officer or Honor Code Board for reconsideration.
  3. If the Provost (or his or her designee) decides to uphold, amend, or overturn the decision of the Honor Code Officer or Honor Code Board, the decision of the Provost (or his or her designee) is final.
  4. A decision by the Provost (or his or her designee) to return the case to the Honor Code Officer or Honor Code Board for reconsideration may not be appealed. Any

decision by the Honor Code Officer or Honor Code Board on reconsideration may be appealed in accordance with this [Section .11](#).

- (2) Any disciplinary sanction(s) issued by the Honor Code Officer or the Honor Code Board will remain in force throughout the pendency of an appeal, unless the Respondent requests that the disciplinary sanction(s) be stayed pending the Respondent's appeal and such a request is granted by the Honor Code Officer or Honor Code Board, as applicable.

**Authority:** T.C.A. § 49-9-209(e)

#### **1720-02-01-.12 RECORDS OF HONOR CODE VIOLATIONS**

- (1) Maintenance. A student's records relating to violations of the Honor Code are maintained by the Office of Student Conduct as part of the student's student conduct record. Records related to grade modifications or withdrawals resulting from violations of the Honor Code are also maintained by the University Records Office as part of a student's academic record.
- (2) Disclosure. A student may inspect and review his or her own student conduct records upon request to the Office of Student Conduct. The Office of Student Conduct may disclose a student's student conduct records to other persons upon written consent of the student. The Office of Student Conduct may disclose a student's student conduct records to other persons, including other University officials, without written consent from the student only in accordance with federal or state law.
- (3) Retention and Disposal of Student Conduct Records. The University will retain a student's student conduct records for a period of seven (7) years after the student's last date of enrollment with the University, unless required to retain the records for a longer period of time by law or as otherwise provided in this [Section .12\(3\)](#). The Office of Student Conduct will permanently retain student conduct records for students who receive one (1) or more of the following disciplinary sanctions (or equivalent sanctions under previous versions of the Honor Code and/or Student Code of Conduct) from the University: Suspension, Permanent Dismissal, Withholding of Degree, and Revocation of Degree.

**Authority:** T.C.A. § 49-9-209(e)





## **STUDENT SUCCESS**

initiatives and  
opportunities  
update to the  
Education,  
Research, and  
Education  
Committee

Linda C. Martin

Vice President  
Academic Affairs & Student Success

The University of Tennessee  
[lcmartin@tennessee.edu](mailto:lcmartin@tennessee.edu)

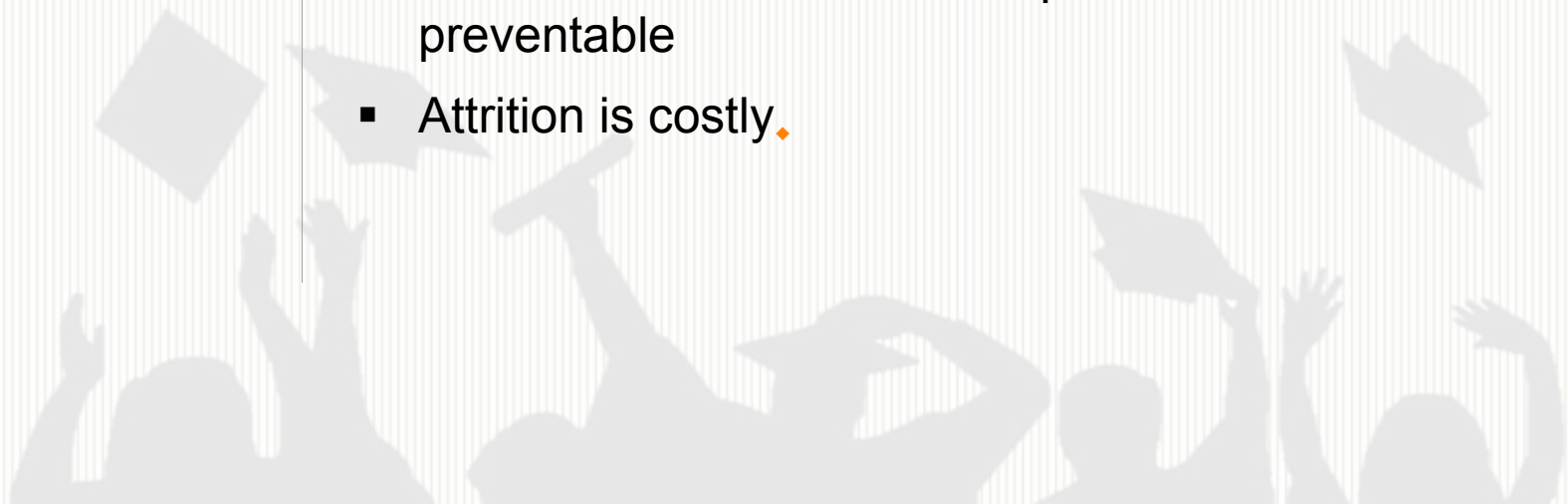
March 1, 2019



# THE UNIVERSITY OF TENNESSEE

## **Underlying Principles Associated with Student Success**

- Enhanced student experience should be the focus
- Integration of student life and academic affairs
- Retention initiatives based upon successful integration of academic and non-academic components of the undergraduate experience
- Retention efforts must be systematic and purposeful
- Student-centered policies, procedures and programming are essential
- Some, but not all, attrition is predictable and preventable
- Attrition is costly.



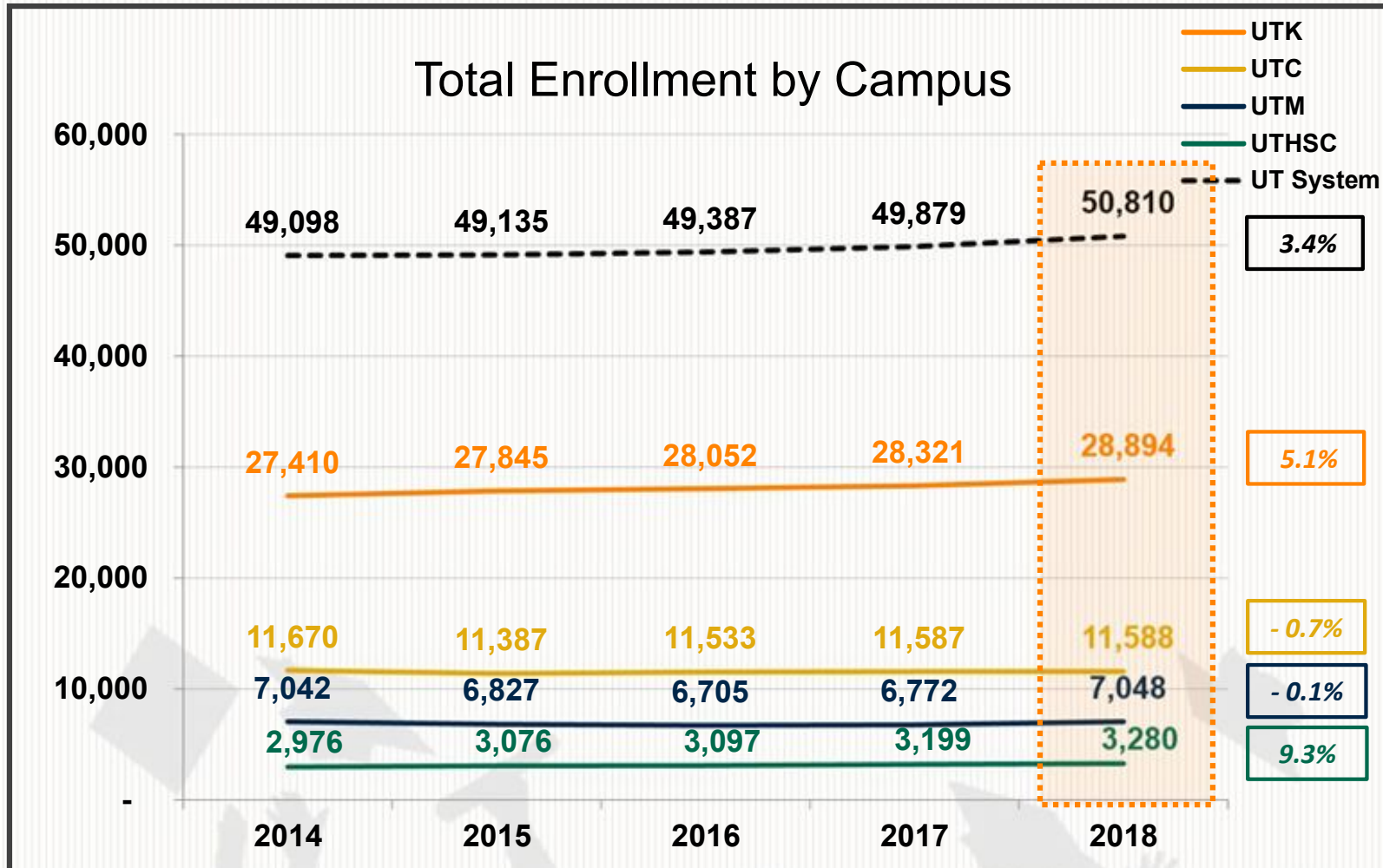
# **UT** THE UNIVERSITY OF TENNESSEE

## **Student Success Initiatives**

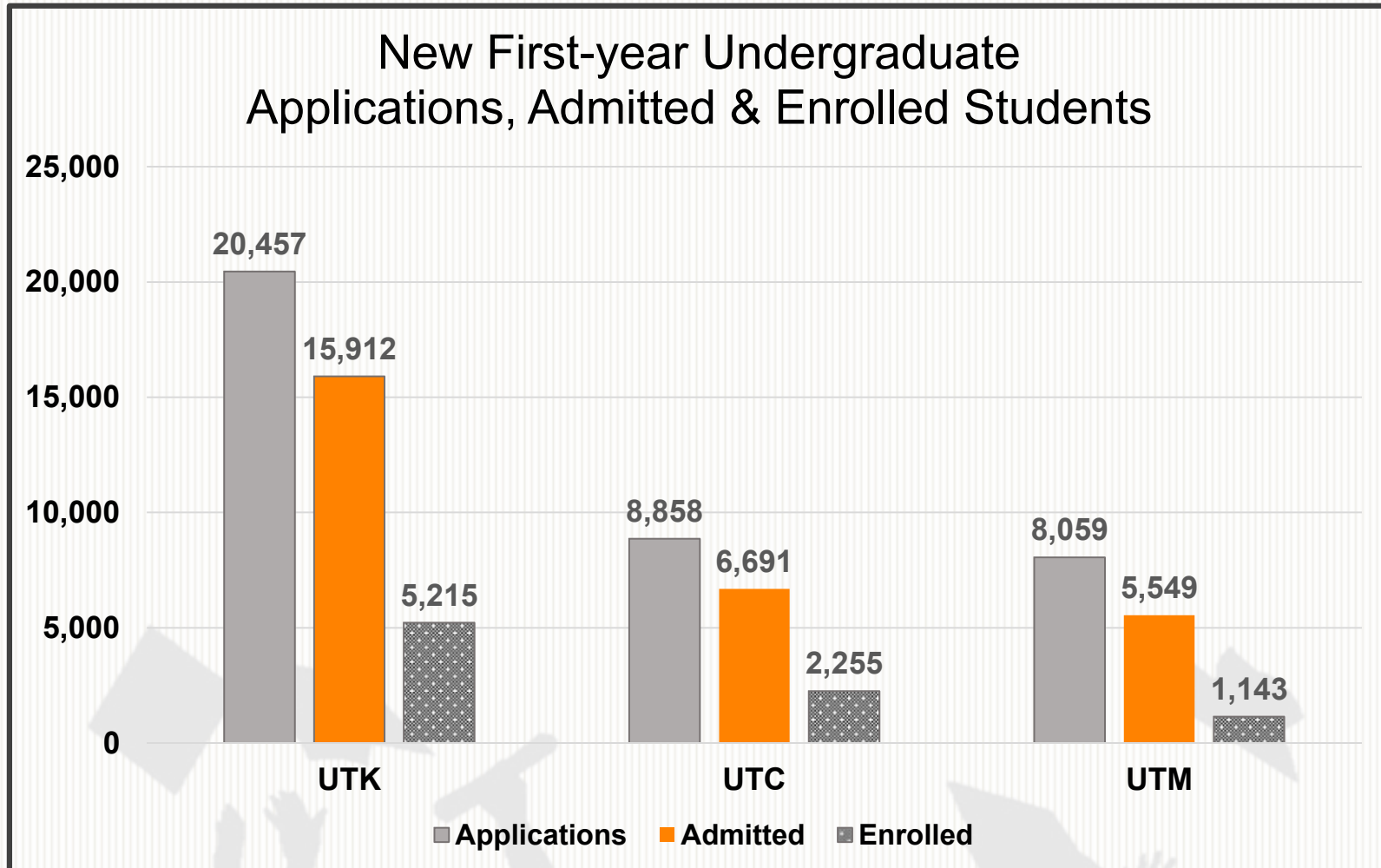
- **Grow Enrollment System-wide**



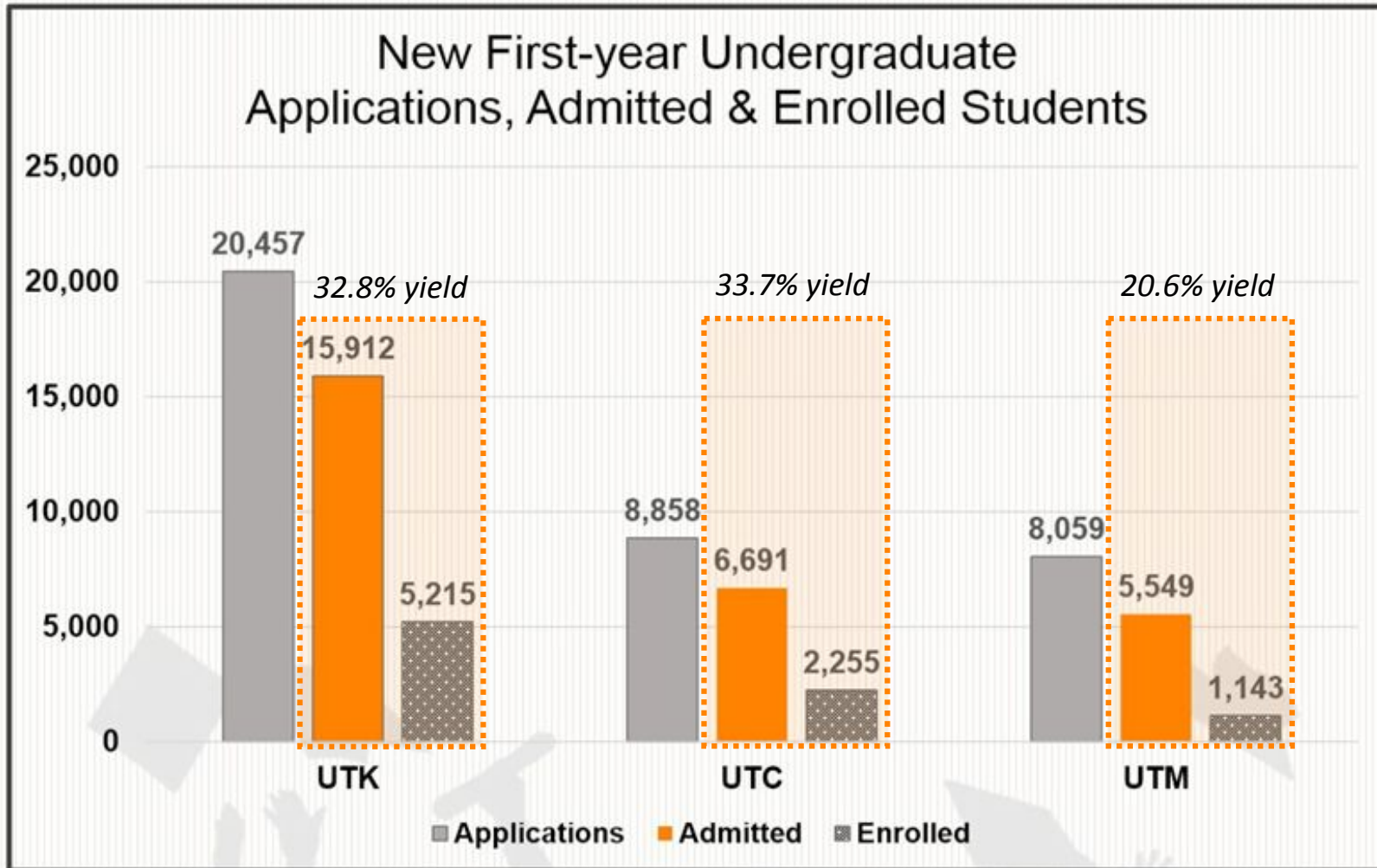
# THE UNIVERSITY OF TENNESSEE



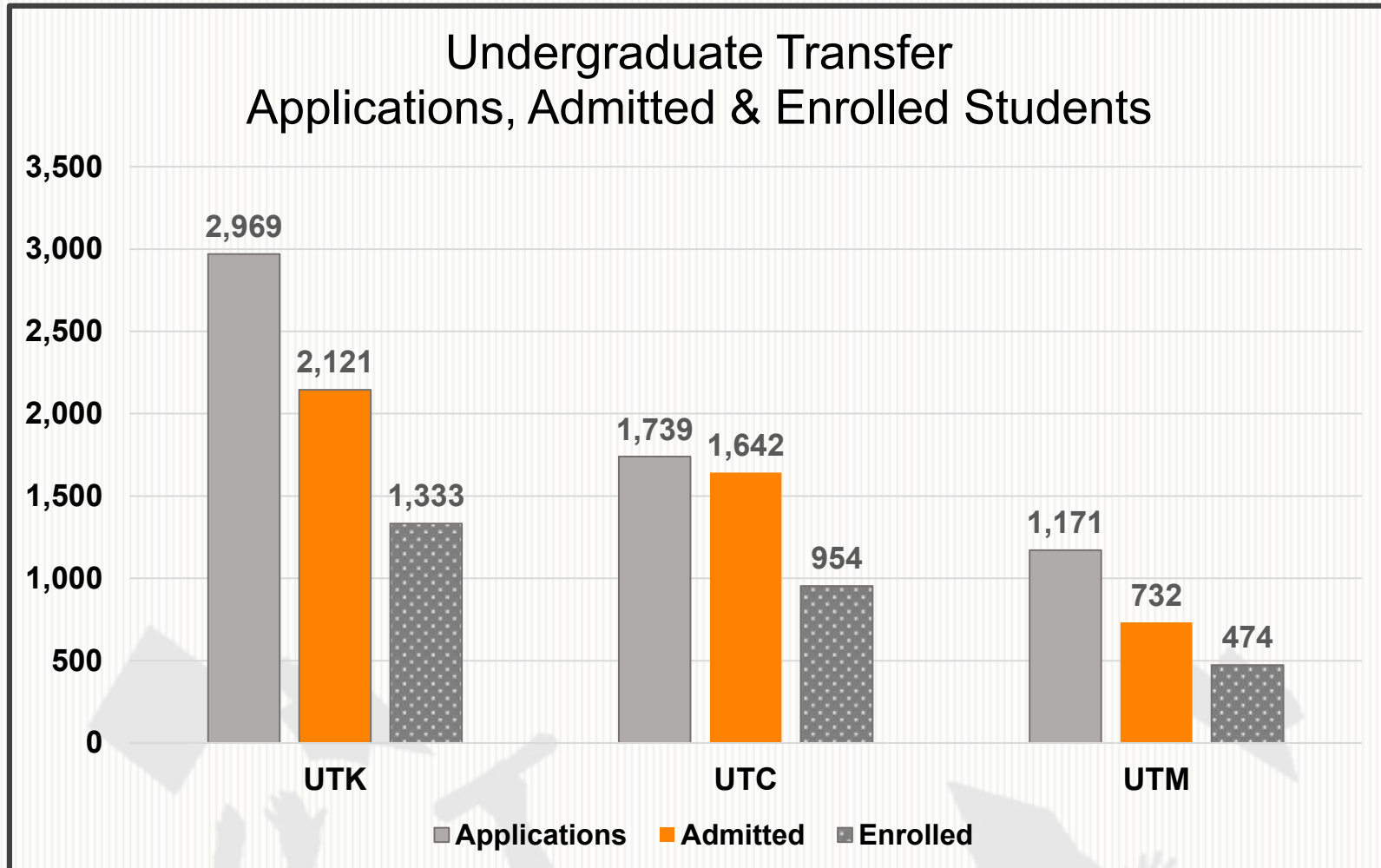
# THE UNIVERSITY OF TENNESSEE



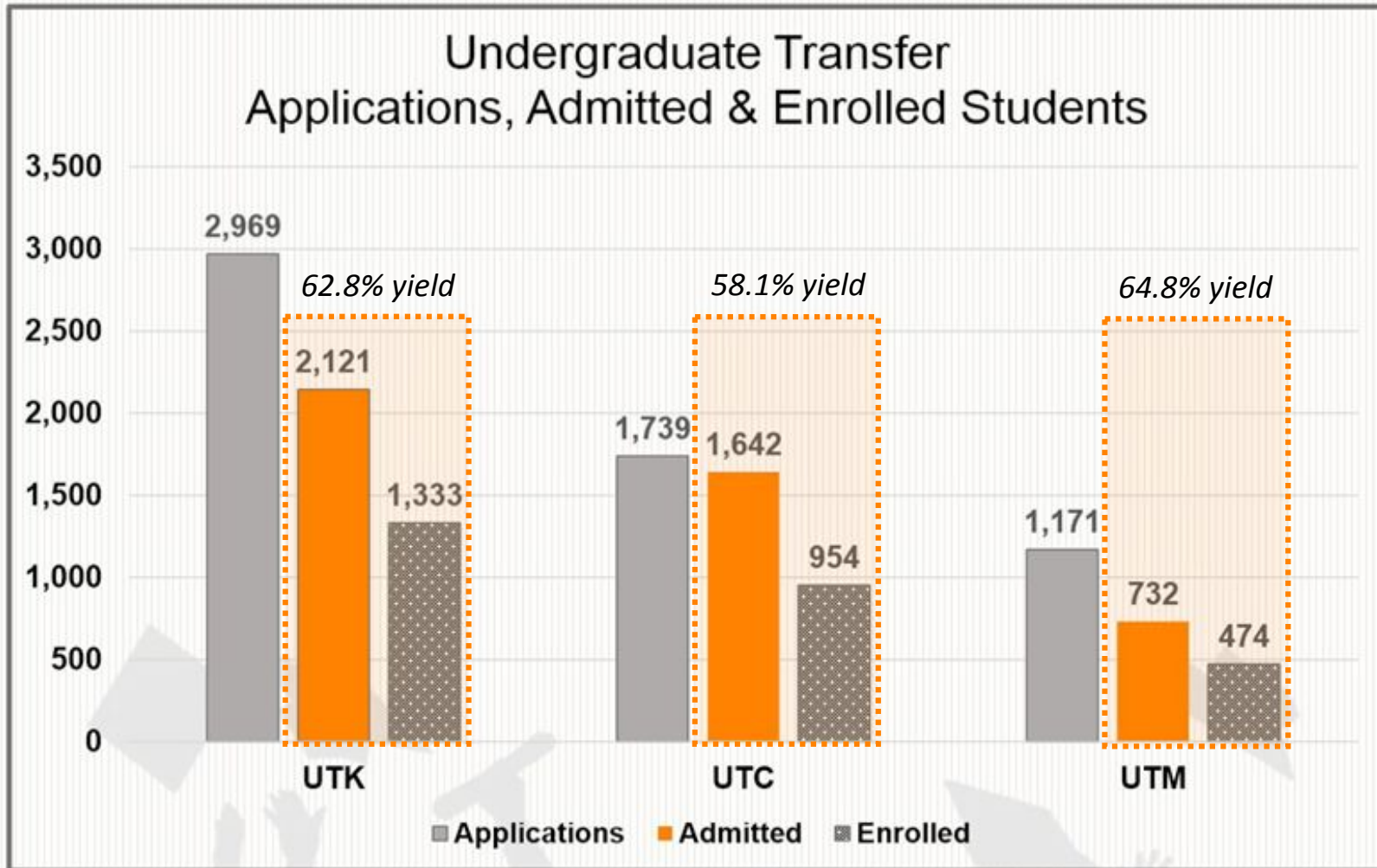
# THE UNIVERSITY OF TENNESSEE



# THE UNIVERSITY OF TENNESSEE



# THE UNIVERSITY OF TENNESSEE





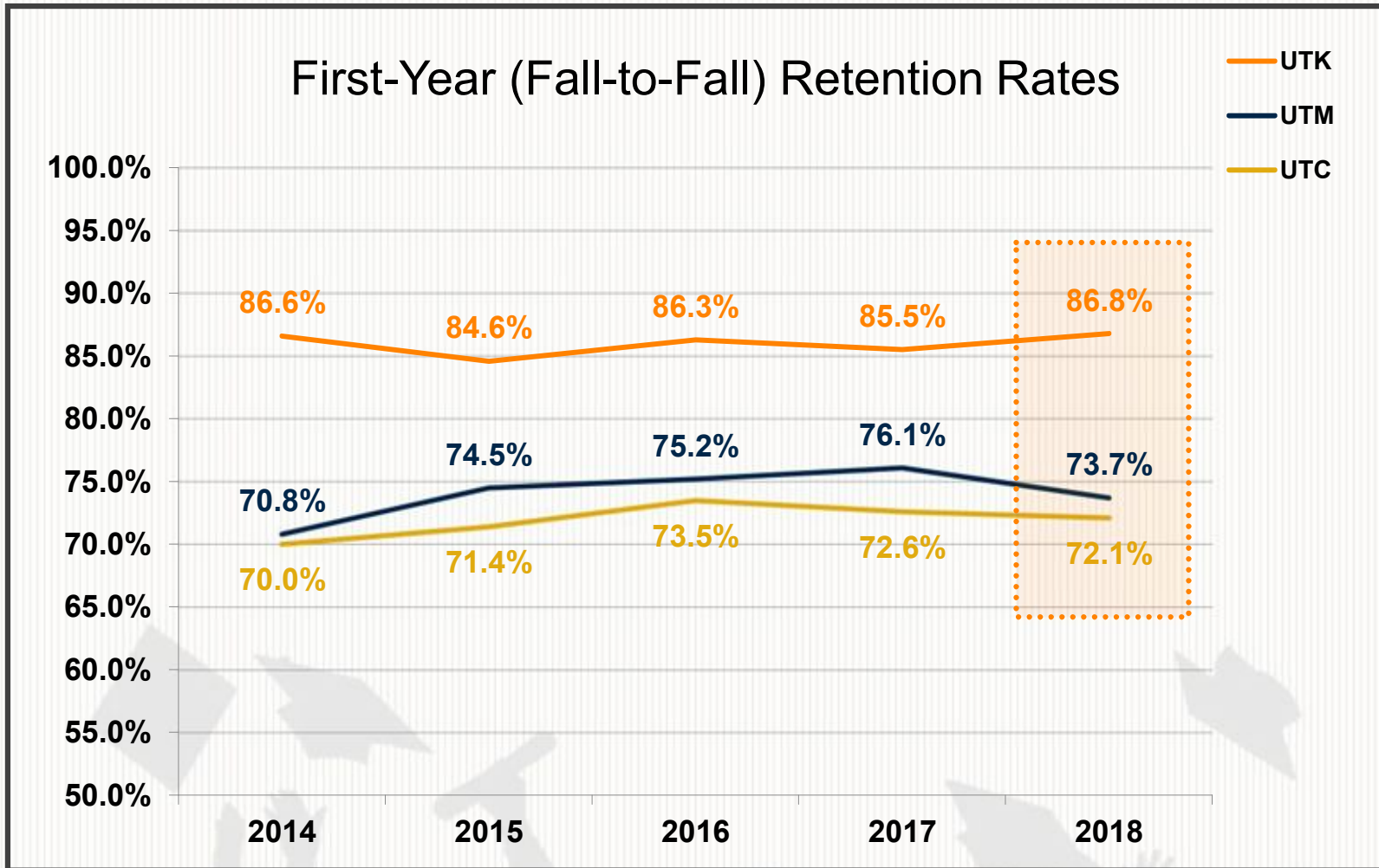
# **UT** THE UNIVERSITY OF TENNESSEE

## **Student Success Initiatives**

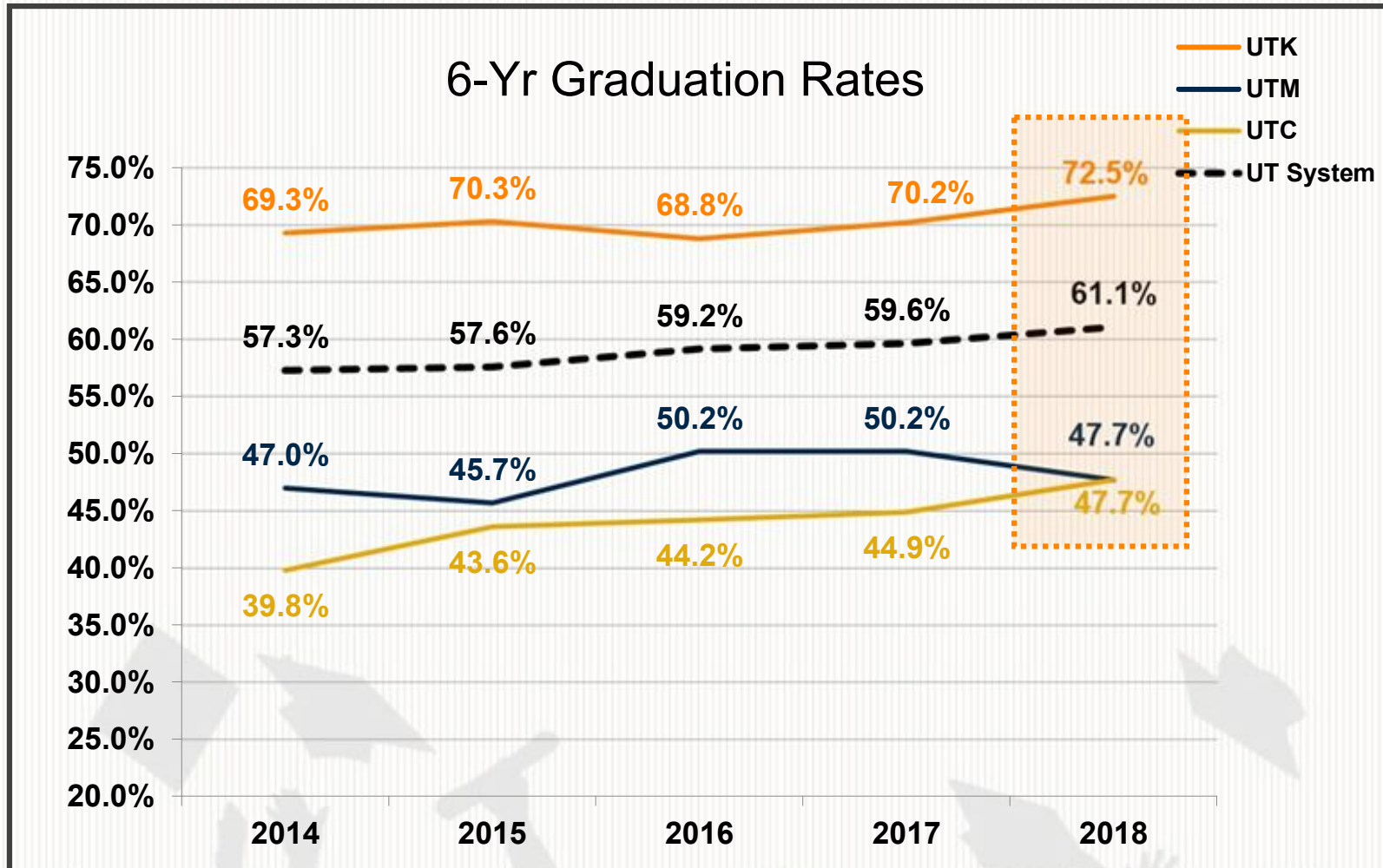
- Grow Enrollment System-wide
- Increase Retention and Graduation Rates



# THE UNIVERSITY OF TENNESSEE



# THE UNIVERSITY OF TENNESSEE












# **UT** THE UNIVERSITY OF TENNESSEE

## **Student Success Initiatives**

- Grow Enrollment System-wide
- Increase Retention and Graduation Rates
- Joint Academic & Student Affairs Summit
- Education Advisory Board (EAB) – Academic Performance Solutions (APS)



EAB Academic Performance Solutions		
Examples of Data-Informed Academic Planning		
<p><b>Course Planning</b></p> <p>Align your resources and needs by analyzing course capacity, specialization and class size.</p> <p><i>Critical analyses:</i></p> <ul style="list-style-type: none"> <li> Seat Utilization</li> <li> Distinct Course Offerings</li> <li> Class Size Distribution</li> </ul>	<p><b>Student Success</b></p> <p>Identify opportunities for improving outcomes through changes in resource allocation or program redesign.</p> <p><i>Critical analyses:</i></p> <ul style="list-style-type: none"> <li> Completion Rates</li> <li> Course Bottlenecks</li> <li> Intercurricular Dependencies</li> </ul>	<p><b>University Operations</b></p> <p>Increase efficiency and identify opportunities for program growth.</p> <p><i>Critical analyses:</i></p> <ul style="list-style-type: none"> <li> Enrollment Trends</li> <li> Costs per Student Credit Hour</li> <li> Faculty Mix and Workload</li> </ul>
<p><small>©2018 EAB Global, Inc. • All Rights Reserved • eab.com</small></p>		



EAB Academic Performance Solutions

## Opportunity Assessment Recommendations

Opportunities to Align Instructional Capacity, Faculty Activity, and Instructional Cost with Growth Trends Across Campus



### 1 Address Capacity Constraints

Pilot new approach to managing enrollment, ending 0 cap practice in order to improve course capacity data



### 2 Improve Course Completion Rates

Investigate root cause of high variation in completion rates in some courses and agree on action plan to improve student achievement.



### 3 Faculty Workload Optimization

Confirm current instructional workload meets institutional policy to maximize existing instructional capacity

EAB Academic Performance Solutions

## Getting Started with Opportunity Assessment

A Guide, Not a Prescription, for Early Action

### What Is An Opportunity Assessment?

#### In-Depth Analyses Based on Your Data

E.g., enrollment growth trends, demand-capacity mismatches



#### Reports to Use Right Away

E.g., total collapsible sections report, high unproductive credit courses



#### Best Practices and Use Cases

How other APS members use similar data and address common challenges



### Ask

The right questions

### Converse

With the experts

### Decide

What opportunity you want to pursue

#### ! What It Is Not:

- ✗ A prescriptive plan of action
- ✗ A seamless reflection of campus realities
- ✗ A project management tool

# **UT** THE UNIVERSITY OF TENNESSEE

## **Student Success Initiatives**

- Grow Enrollment System-wide
- Increase Retention and Graduation Rates
- Joint Academic & Student Affairs Summit
- Education Advisory Board (EAB) – Academic Performance Solutions (APS)
- National Association of System Heads (NASH) Leadership Academy





# THE UNIVERSITY OF TENNESSEE



## 2019 NASH LEADERSHIP ACADEMY: ONE UT FOR CAMPUS CHANGE

### PROJECT OVERVIEW AND GOALS

The University of Tennessee (UT) System seeks to be a national leader by providing transformational student experiences and academic support services to enhance student success; removing barriers to degree completion; eliminating educational disparities; enabling seamless transitions across system campuses; and creating a deep sense of mattering and belonging for all students.

Through the NASH System Leadership Academy, we will focus on enterprise-level student success strategies to enhance access to education across the UT System and ensure the success of students transitioning among campuses within the system.

### DATA THAT INFORMS THE PROJECT

System and campus data reveal that overall retention and graduation rates are lower for transfer students.

- UT campuses at Knoxville, Chattanooga, and Martin enrolled 1,368, 944, and 474 transfer students, respectively, during the previous academic year.
- The Knoxville campus achieved an 81% retention rate among transfer students in their 2<sup>nd</sup> fall semester.
- The Chattanooga campus enrolled 42 campus change students in Fall 2018.
- On the Martin campus, one-third of all graduates began at the institution as transfer students. The campus enrolled 20 campus change students last year.

### OPPORTUNITIES & CHALLENGES

- A shared vision for more collaboration and better alignment among UT campuses.
- Tracking campus change students.
- Creating common data definitions.
- Better understanding of barriers to campus change.
- Assessing campus change student success.



### TEAM MEMBERS

- Vincent Carilli, Vice Chancellor for Student Life, UTK
- Philip Cavalier, Provost of UT Martin
- Nancy Freeman, Vice Chancellor of Enrollment Management and Student Success, UT Chattanooga
- Robert Hinde, Vice Provost for Academic Affairs, UTK
- George Hynd, Interim Provost of Chattanooga
- Andy Lewter, Vice Chancellor for Student Affairs, UTM
- David Manderscheid, Provost of UT Knoxville
- [Name], Vice President of Academic Student Success, UT System
- [Name], Associate Vice President of Academic Student Success, UT System

### PROJECT BACKGROUND

The University of Tennessee has played a key role in elevating the state to a level of national recognition regarding transfer and adult learners through its leadership in key programs such as Reverse Transfer and TNReconnect.

However, only 5% of four-year institutions in the U.S. has no dedicated transfer, or seamless, students transition to another system.

Thus, the goal of this initiative is to develop new policies, programs, and practices that improve the campus change experience for UT students, making the change as seamless as possible. Initial efforts will begin with three primary undergraduate campuses: UT Knoxville, Chattanooga, and Martin.

### ACCOMPLISHMENTS TO DATE

- Identified data needs.
- Drafted a quantitative census and qualitative survey to learn more about how students experience changing campuses.
- Benchmarked current practices, programs, policies, and student resources to support transfer students systemwide.
- Identified stakeholders and developed a stakeholder communication plan.



# UT THE UNIVERSITY OF TENNESSEE

## Student Success Initiatives

- Grow Enrollment System-wide
- Increase Retention and Graduation Rates
- Joint Academic & Student Affairs Summit
- Education Advisory Board (EAB) – Academic Performance Solutions (APS)
- National Association of System Heads (NASH) Leadership Academy
- AA&SS Website
- Working Group on Tuition Assistance Models and Student Success
- Future Joint Academic & Student Affairs Summit – Mental Health & Wellness
- Student Success Innovation Fund.

# THE UNIVERSITY OF TENNESSEE

## Student Success Initiatives



### Living-Learning Communities:

- collaborative effort between academic and student affairs
- students live together with students in same major
- tutors/study groups and faculty office hours in the residence hall
- 240 first-year students
- includes majors in Agriculture and Applied Sciences, Education, Pre-Professional Health Sciences, Music, Criminal Justice, Engineering, ROTC, and Honors
- implementation: currently underway.

# UT THE UNIVERSITY OF TENNESSEE

## Student Success Initiatives



### Captain's Pantry & Skyhawks Share:

- on-campus food pantry for students experiencing food insecurity.
- open to all students
- Students, faculty and staff (and community) can donate meal swipes in the dining hall through Skyhawks Share
- Joint effort of UTM Student Government Association and the Division of Student Affairs
- Skyhawks Share has provided 65 students with more than 966 meals
- implementation: currently underway.



# UT THE UNIVERSITY OF TENNESSEE

## Student Success Initiatives

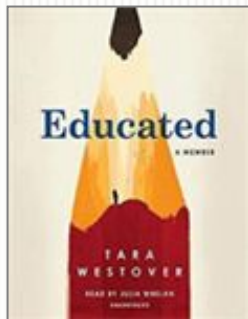


### Captain's Closet:

- provides gently used professional clothing to students at UT Martin
- Office of Career Development & Planning
- must schedule a resume and mock interview appointment to be eligible
- no cost to students
- accept donations throughout the year.
- implementation: established Summer 2018.

# UT THE UNIVERSITY OF TENNESSEE

## Student Success Initiatives



### UTM Engage:

- new “campus conversations” program around a common theme
- common reading with related events
- small group discussion (weekly)
- collaboration across departments and faculty from different disciplines
- implementation: Fall 2019.



# THE UNIVERSITY OF TENNESSEE

## Student Success Initiatives



### New Transfer Orientation Pilot:

- collaborative effort between academic and student affairs
- focus on persistence (68%) and graduation (58%) rates
- remove obstacles and addresses challenges unique to transfer students
- acclimates students to academic expectations and student engagement opportunities
- intentional peer and faculty mentoring
- goal: persistence 75%, graduation rate 65%
- intentional peer and faculty mentoring
- implementation: Fall 2019.

# UT THE UNIVERSITY OF TENNESSEE

## Student Success Initiatives



### UTM Math Camp:

- summer camp support students with interest in math-intensive majors (patterned after UTK Math Camp)
- live on campus; eat in dining halls
- review of math concepts
- placement exam at the conclusion (eligible for course credit)
- academic advising, tutoring, and student support services
- implementation: Summer 2020.





## **STUDENT SUCCESS**

initiatives and  
opportunities  
update to the  
Education,  
Research, and  
Education  
Committee

## Questions?

