

THE UNIVERSITY OF TENNESSEE
BOARD OF TRUSTEES

MINUTES OF THE RESEARCH, OUTREACH, AND ECONOMIC DEVELOPMENT
COMMITTEE

June 18, 2014
Knoxville, Tennessee

The Research, Outreach, and Economic Development Committee of The University of Tennessee Board of Trustees met at 1:45 p.m. EDT on Wednesday, June 18, 2014, in Hollingsworth Auditorium on the campus of the Institute of Agriculture in Knoxville, Tennessee.

I. CALL TO ORDER

Chair George Cates called the meeting to order.

II. ROLL CALL

Mr. Cates asked Dr. David Millhorn, Executive Vice President, to call the roll. The following members of the Research, Outreach, and Economic Development Committee were present:

George E. Cates, Chair
Tim L. Cross
Joseph A. DiPietro
Spruell Driver, Jr.
Robert J. Duncan
J. Brian Ferguson
David A. Golden
Monice Moore Hagler
Julius T. Johnson
Raja J. Jubran
Bonnie E. Lynch
Margaret A. Norris
Don C. Stansberry, Jr.
David M. Stern
Thaddeus A. Wilson

Kevin S. Huffman and Richard G. Rhoda were not present at the meeting.

Dr. Millhorn announced the presence of a quorum of the Committee. Other Trustees, administrative staff, members of the public, and representatives of the media were also present.

III. MINUTES OF LAST MEETING

Chair George Cates asked for any corrections to the minutes of the February 26, 2014 meeting of the Committee. Hearing none, the Chair called for a motion to approve the minutes as written. The motion was made by Trustee Driver, seconded, and carried unanimously.

IV. ANNUAL REPORT OF OAK RIDGE NATIONAL LABORATORY

Dr. Millhorn introduced Dr. Martin Keller, Associate Laboratory Director, Energy and Environmental Sciences, Oak Ridge National Laboratory (ORNL), who presented the Annual Report of ORNL, focusing on biofuels and biomaterials – UT and ORNL as a powerhouse (Exhibit 1).

Dr. Keller began his presentation by noting the UT and ORNL partnership, in his estimation since arriving at ORNL eight years ago, is growing stronger each year and has resulted in many meaningful collaborations. He envisions a bright future for the partnership of these two institutions.

Dr. Keller discussed impactful changes taking place in the global environment and the tremendous costs of weather-related natural disasters (\$3.8 trillion since 1980, *World Bank Report*, with rising annual costs currently of about \$200B). Within this context, Dr. Keller noted the importance of biofuels and biomaterials and UT- and ORNL-research directed toward development of these resources. Dr. Keller stated UT was a significant biofuels pioneer with its field trials in the production of ethanol using switchgrass and with its lignin byproduct research. He discussed numerous biomass and biomaterials collaborations of UT and ORNL and the challenges facing today's transportation industry. Dr. Keller showed slides of the ORNL Carbon Fiber Technology Facility and described the vision to accelerate the development of lignin-based carbon fiber technology and meet the demand for low-cost fiber from renewable resources and the development of lignin-derived polymer matrices for composite materials. Dr. Keller noted Dr. Art Ragauskas, a biologist from Georgia Tech and newly-appointed as a UT-ORNL Governor's Chair, is an expert in lignin research and will help fill a major gap in the UT-ORNL scientific portfolio.

Dr. Keller concluded his presentation by describing the Institute for Advanced Composites Manufacturing Innovation (IACMI) proposal (June 24 submission deadline) and the work of ORNL, UT, the National Renewable Energy Laboratory, Purdue University, Michigan State University, the University of Dayton Research Institute and the University of Kentucky on this initiative to accelerate large-scale commercial adoption of advanced composites to create energy savings and new U.S. manufacturing jobs. Dr. Keller noted bringing this manufacturing center to East Tennessee would be a significant economic development factor.

Dr. Keller responded to questions concerning switchgrass production, energy fuels, Genera Energy, and other related issues. Mr. Cates thanked Dr. Keller for a most informative and excellent presentation.

V. ANNUAL REPORT OF UT RESEARCH FOUNDATION AND FY 2015 UT RESEARCH FOUNDATION OPERATING BUDGET

Dr. Millhorn noted the UT Research Foundation (UTRF) is comprised of two offices: the Multi-Disciplinary office in Knoxville and the Health Science Center office in Memphis.

Dr. Stacey S. Patterson, UT Assistant Vice President, Director of Research Partnerships and Vice President of the UT Research Foundation, presented the UTRF annual report and the FY2015 operating budget (Exhibit 2). Dr. Patterson noted UTRF has a flat board-approved budget of \$2.427M with approximately \$.5M operations and approximately \$.5M legal and contractual services. Dr. Patterson noted the importance of the Bayh-Dole Act of 1980 whereby universities retain ownership of inventions coming out of federally-funded research. The business of licensing the products of research, Dr. Patterson stated, is, in fact, a big business: \$2.6B in total U.S. license income for FY12.

Dr. Patterson described the technology transfer process from UT faculty/staff/student ideas to new company start-ups and licenses and she outlined a four-step plan to grow UTRF. Dr. Patterson noted the first step--building a strong staff first: emphasize service and foundational support--was elaborated on initially by Dr. Millhorn at the June 2011 ROED meeting citing the need for "more licensing boots on the ground." Strategic new hires have been made, Dr. Patterson noted, and she stated she is excited about the team of career professionals in place at UTRF.

Dr. Patterson discussed the importance of increasing the disclosure pipeline to promote increased revenues, strategies to reach new inventors and increasing new deal flow, learning from successful models, comparisons of UTRF with peer institutions, the effect of “home runs” (Dr. Patterson noted Google had come out of Stanford University as a start-up company), ways to think beyond the traditional tech transfer format, and areas of challenges and “bottlenecks” to productivity. Dr. Patterson noted UTRF is above the national average in the number of annual invention disclosures as well as in the number of annual licenses issued.

Trustees asked Dr. Patterson questions about the UTRF business plan and other aspects of the presentation, as well as making comments and recommendations for enhancing productivity and other positive results. Drs. Millhorn, DiPietro and Magid also responded to questions, with Dr. DiPietro noting top-performing research foundations usually had “home runs” in their portfolios.

Mr. Cates thanked Dr. Patterson for the presentation and noted the variety of questions showed the intensity of interest in the UT Research Foundation.

VI. UT EXTENSION MASTER PROGRAMS

Dr. Millhorn recognized Dr. Tim Cross, UT Dean of Extension within the Institute of Agriculture, to give a presentation on UT Extension Master Programs (Exhibit 3). Dr. Cross discussed the Extension master producer education programs offered statewide to provide in-depth, science-based programs to increase the profitability of agricultural and natural resource operations in an environmentally and socially responsible manner. Dr. Cross noted the eight master programs and gave statistics for each program to include number of individuals certified, number of training hours, date of inception, and whether the program was part of a cost share collaboration with the Tennessee Department of Agriculture.

Dr. Cross noted the service-oriented and offer-as-needed aspects of the programs, responding to the needs of communities all across Tennessee. The master beef program, it has been calculated, has an average annual benefit of \$1,500 to the program’s graduates, contributing an estimated recurring economic impact of more than \$17M on the state’s beef cattle industry. Dr. Cross also highlighted the master gardener program, initiated by UT Extension in Knox County in 1985; since then, over 2,000 master gardeners have been certified from 61 counties.

Dr. Cross noted the impact of UT Extension programs to the quality of life for Tennessee citizens. He recognized the leadership of the Commissioner of Agriculture, Trustee Julius Johnson, and his support of UT Extension in continuing advancement through online courses, blended programs with both classroom and hands-on dimensions, and other such ways to best meet the needs and deliver these state-wide programs.

Mr. Cates thanked Dr. Cross for his presentation which highlighted, he said, programs which touch a lot of bases all across the state of Tennessee.

VII. IPS INVESTING IN MANUFACTURING COMMUNITIES PARTNERSHIP: DRIVE FOR THE FUTURE

Mr. Chuck Shoopman, Assistant Vice President in the Institute of Public Service (IPS), gave a presentation on "Investing in Manufacturing Communities Partnership (IMCP) (Exhibit 4)," a federal initiative in which IPS submitted one of 12 winning proposals, focusing on the automotive industry in our region and having \$1.3B in future funding for all programs within the initiative. Within IMCP, IPS collaborates with Tennessee Valley partners in DRIVE for the Future Consortium. Mr. Shoopman described the partners involved in the initiative (including Oak Ridge National Laboratory, UT campuses and institutes (UT Center for Industrial Services), the Tennessee Board of Regents, Tennessee Economic and Community Development, LaunchTN, Pathway Lending, Technology 20/20, state automotive associations, and many others) and the key innovation assets they bring to the Consortium.

The Drive for the Future Consortium initiative will accelerate the development of a strong and growing automotive cluster in the Tennessee Valley, Mr. Shoopman stated, which is already the fifth largest region in the country for automotive industry employment. In the last 24 months, 151 manufacturers have announced expansions or new locations in the DRIVE region, Mr. Shoopman said, and the region is now home to six major automotive manufacturers and 582 manufacturers in the automotive supply chain, employing more than 90,000 people. Mr. Shoopman elaborated on the vision, strategy, research, anticipated technical, and capital expansion for the region, trade and international investment, and other operational aspects of this important initiative.

Mr. Shoopman thanked UT leaders Drs. DiPietro, Jinks and Millhorn for the support they have given in such initiatives to advance quality of life for the state and region.

Mr. Cates thanked Mr. Shoopman for his informative report.

VIII. NUCLEAR ENGINEERING AT UT KNOXVILLE: MOVING TO THE TOP

Dr. Wes Hines, Professor and Head of UT Knoxville's Nuclear Engineering Department, and Dr. Wayne Davis, Dean of the College of Engineering, made a presentation, "UTK Nuclear Engineering: Journey to the Top (Exhibit 5)," giving highlights and accomplishments of the Nuclear Engineering Department which have moved the department from 12th to 5th in the nation over the last four years. Dr. Hines quoted Governor's Chair Brian Wirth's remarks at the June 2011 ROED meeting: "When I came to UT, our rankings had just moved from 12th to 9th and I was told our goal was to be a Top 5 Nuclear Engineering department; however, I left the University of California, Berkeley to come here because I feel we can become Number 1." Dr. Hines noted that this progression has moved Knoxville ahead of schools like the University of California, Berkeley and Georgia Tech in national rankings.

Dr. Hines provided statistics indicating dramatic graduate and undergraduate Nuclear Engineering enrollment increases at Knoxville over the last six years and the growth of faculty from 7 to 16, including three Governor's Chairs, the most of any other department at UT. Dr. Hines noted the Journey to the Top is a benchmark against the best nuclear engineering departments in the country.

Dr. Davis noted the facilities for the Nuclear Engineering Department in Knoxville are among the biggest challenges for moving the department higher in national rankings and in meeting its mission to provide education to the best and brightest engineering students the state can offer. Dr. Davis described the history of the facilities housing the Engineering Fundamentals building (built in 1898 as a power plant) and the Nuclear Engineering Department (located in a building constructed in 1925). Dr. Davis outlined plans for a new engineering complex to house the Nuclear Engineering Department, Engineering Fundamentals facility, and additional research labs, with a projected cost of around \$100M. Dr. Davis noted approximately \$10M has been secured through private donations; however, the project is currently stalled. Moving the project forward and resolving these challenges are prime goals of the College and Department in the Journey to the Top.

Mr. Cates thanked Drs. Hines and Davis for the excellent presentation.

IX. PROFESSOR GEORGE PHARR, MEMBER OF THE NATIONAL ACADEMY OF ENGINEERING

UT Knoxville Chancellor Jimmy Cheek recognized Professor George Pharr, Professor in Materials Science & Engineering and Director of the Joint Institute for Advanced Materials (JIAM), for his distinction in becoming a member of the National Academy of Engineering. Only 78 professionals in the U.S. and internationally were invited to join the Academy this year, 36 of this number being faculty at universities and 21 of this group coming from Top 25 public research universities. UT has six National Academy members. A round of applause was given to Dr. Pharr for this notable honor and for his many contributions to the University.

X. CHEROKEE FARM UPDATE

A one-page written report by Cliff Hawks, President and CEO of Cherokee Farm Development Corporation (CFDC), providing an update on Cherokee Farm Innovation Campus and CFDC matters (Exhibit 6), was included in the meeting material.

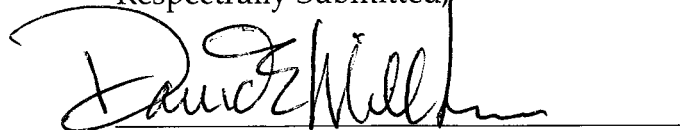
XI. OTHER BUSINESS

None.

XII. ADJOURNMENT

There being no other business, Mr. Cates adjourned the meeting at 3:30 p.m. EDT.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "David E. Millhorn", written over a horizontal line.

David E. Millhorn, Ph.D.