

Minutes of the Outreach Committee

The University of Tennessee Board of Trustees

**November 8, 2007
Knoxville, Tennessee**

The Outreach Committee of the Board of Trustees of the University of Tennessee met at 2:50 p.m., EST, on November 8, 2007, in Room 225 of the University Center in Knoxville.

I. Call to Order

Mr. Bucky Wolford, Chair of the Outreach Committee, called the meeting to order. He welcomed three new Trustees joining the Committee (Doug Horne, George Cates, and Candace White) and said he knew they would make a strong contribution to the work of the Committee.

II. Roll Call

Mr. Wolford called on Dr. David Millhorn to call the roll and the following voting members were present:

Mr. Bucky Wolford, Chair
Mr. George Cates
Mr. Doug Horne
Mr. Jerry Jackson
Ms. Andrea Loughry
Mr. Karl Schledwitz
Dr. Candace White
Ms. Anna York

The following non-voting members were present:

Ms. Brittany McGruder
Mr. Romeo Morrissey
Dr. John Petersen
Ms. Mary Kate Ridgeway
Dr. John Schommer
Mr. Chuck Shoopman

Commissioners Givens, Commissioner Seivers, Dr. Rhoda, Dean Gourley, and Mr. Hart were absent from the meeting. Dr. Millhorn declared a quorum present for the meeting.

III. Approval of Minutes of the Last Meeting

Mr. Wolford asked for discussions or questions in regard to the minutes of the June Committee meeting. Ms. McGruder noted her name should have been on the attending list. With this correction, a motion was made to approve the minutes as written; the motion was seconded and unanimously approved.

IV. Revision of Committee Charter (Recommendation to Governance Committee)

Mr. Wolford outlined the procedure to revise the Charter of the Committee. If approved, the recommendation for revising the Charter will go to the Governance Committee for consideration and, if further approved, the necessary Bylaw revisions will then be presented to the Full Board at its next meeting. The name change was first discussed at the Board's retreat in Tullahoma to encompass more fully the functions of the Committee. Mr. Wolford called on Dr. Millhorn for comments on the name change, to be followed by general discussion.

Dr. Millhorn noted the name change of *Outreach Committee* to *Research, Outreach, and Economic Development Committee* will provide a more appropriate description of the activities and role of the Committee. He referred members to the proposed purpose statement in the Charter at Tab 13 in the Board notebook. The proposed purpose statement will more succinctly encompass the committee's broader scope with a focus on programs seeking to extend the university's scientific, technological, commercialization and education expertise to communities, counties, agencies, and organizations in Tennessee.

Under the section *Powers and Responsibilities*, Dr. Millhorn said the proposed revisions will maintain the intent of the current committee charter while expanding it to give a clearer understanding of the Committee's role in research and economic development areas. This section also recognizes in item 4 the need to coordinate with the Academic Affairs and Student Success Committee on the development of campus/institute mission statements. The Academic Committee has the responsibility for reviewing and approving for the Board's recommendation the campus/institution mission statements and it is the Committee to which recommendations would be conveyed regarding research, outreach, and economic development expectations.

In conclusion, Dr. Millhorn said the proposed name change of the Committee will better identify the activities taking place without changing the intent of the Charter.

Mr. Wolford asked for a motion to approve, which was given, and a second was duly received. He asked for questions and discussion.

A question by Mr. Jackson was addressed concerning the Committee's annual report to the Board on the university's economic development activities. The Charter does not indicate when this report should be made. It was noted that an annual report is given to the Board (it was given by Dr. Millhorn in 2007 at the June meeting). Updates concerning these and other issues, such as the University's Scorecard, are made regularly to the Board.

Dr. Millhorn noted that a correction to reinstate the word "programs" after *economic developments* in the *Powers and Responsibilities* section of the proposed Charter would be made.

Mr. Wolford noted a motion to approve had been made and seconded. There being no further questions or comments, he asked for a vote on the motion. The motion to revise the Charter was unanimously approved.

V. Review of UT Research Foundation Services and Incentives—Information

Dr. Millhorn gave comments prior to a presentation by Dr. Fred Tompkins, President of the UT Research Foundation. Dr. Millhorn said he had asked Dr. Tompkins for a step-by-step overall view of the functions, services and incentives in the university's economic development program through UTRF to give a clearer understanding of the relationship of UTRF with the university and how UTRF interfaces with the university in taking new knowledge generated in laboratories and classrooms and develops it into commercial opportunities.

Dr. Tompkins gave a power-point presentation of the UTRF organization and its facilitation of the activities Dr. Millhorn noted above, outlining the history of the UT Research Corporation (1935-2003) through the current operations of the UTRF (organized May 2, 2003; authorized by TCA 49-9-1401 through 1408, 501(c)(3) for the benefit of the University of Tennessee to create such entities as thought necessary and appropriate to aid in commercialization of technologies; with legislation also stating the UTRF was not to be considered an arm or instrumentality of the state and, further, that UTRF could staff its organization with its own employees.

Dr. Tompkins noted the mission of the UTRF falls within four categories; it is committed to growing the UT research state-wide enterprise; harvests, manages and markets UT's intellectual property; encourages and supports entrepreneurial education and ventures; and contributes to Tennessee's well-being through economic development.

Dr. Tompkins discussed the role of each category in the activities of the UTRF. He noted that research is the purview of the University of Tennessee. The UT Research Foundation is not the performer of research; rather, its task is to facilitate the flow of research monies into the University. For example, when UTRF has a piece of intellectual property--a discovery--UTRF leverages that

intellectual property in a licensing process to cause money for further development, i.e., further research, to flow back into the research enterprise. Funds are also funneled into the University through the UTRF licensing fees and networks.

In the course of performing research, UT faculty regularly discover, create, and invent. Board of Trustees' policies have established that should UT employees—in the course of their regular duties or in the course of doing what they do using University facilities, equipment or resources—invent, discover or create, they are by policy to disclose those inventions to the University. Likewise by BOT policy, the University assigns that intellectual property, that discovery, to the UTRF for commercialization. The UTRF helps neighborhoods around the various UT campuses and institutes to position themselves entrepreneurially so they might have new start-up companies based upon technology flowing out of the University of Tennessee; thus, the UTRF supports entrepreneurial education inventions and contributes to Tennessee's well-being through technology-based economic development.

Dr. Tompkins outlined the two offices of the UTRF, one based in Knoxville and the other on the UT Health Science Center campus, operating as a single corporation. He noted the outstanding credentials of the staff of both units and their duties of interfacing with UT faculty, collecting disclosures and looking at opportunities to commercialize. Area partners assist in these functions by providing business mentoring, helping with evaluation of technologies, identifying management teams for licensing technologies and commercializing the enterprises. West Tennessee partners are the Memphis Bioworks Foundation and the REED Center (Regional Entrepreneurial and Economic Development Center) in Martin; East Tennessee partners are Technology 2020 and The Enterprise Center in Chattanooga. Dr. Tompkins noted that technology and the capacity to commercialize technology will never be better than the research that is performed. The more research and the higher the quality of the research, the better the opportunities will be to commercialize the research. The AUTM (Association of University Technology Managers) indicate that on average one invention disclosure is expected per every \$2.5M expended on research.

Much time is spent by UTRF staff in evaluating the disclosures that are made to the University to gauge economic potential, markets, ways to derive value, possible applications of a given technology and then the best route for commercializing the technology.

Mr. Schledwitz asked about the evaluation process. Dr. Tompkins noted that the UTHSC and Knoxville licensing staffs meet together weekly to look at data base and corporate searches of similar activities to evaluate particular disclosures; they will consult with experts in pertinent areas in a given situation; technologies can be sent out for external evaluation to make sure the science is solid; and UTRF partners and colleagues can also be consulted in this process. Mr.

Jackson asked about ownership of research done by UT for an external company. Dr. Tompkins discussed the various negotiations that can take place, from UTRF having simple work-for-hire status to UTRF partnering in ownership of the intellectual property or to have an option to negotiate a license. The primary role of UTRF in these situations is to protect rights of and maximize the benefits for UT faculty. Mr. Cates inquired about options for someone at the inventing store to bring back up an intellectual property for consideration or to take it somewhere else if they wish to do so. Dr. Tompkins noted that policy holds that if UT assigns UTRF a faculty invention and UTRF cannot determine a way to derive economic value from that invention, the intellectual property is returned to the faculty member where it can be handled as the faculty member sees fit. Approximately 25-30 percent of intellectual properties make it through to commercialization and patent application.

Responding to a question from Mr. Wolford about the affiliation to UT of companies UTRF represents, Dr. Tompkins noted that UTRF works with external companies to UT when there is potential for economic gain for the University.

Giving a summary of FY 2007, Dr. Tompkins noted that the patent process usually takes about 3 1/2 – 5 years for turn around. UTRF had 11 continuation US patent applications, 11 US patents issued, 12 license agreements and four start-up companies were formed, with \$1.7M revenue along with \$5M license-related research revenue. Dr. Tompkins followed up on the June request and presented 2007 campus breakout information. There was net revenue in Memphis of -\$170K and \$540K in Knoxville. Disbursements were made of \$102K to Memphis Area faculty and \$502K to Knoxville Area faculty. Responding to questions from Mr. Cates, Dr. Tompkins noted that roughly a third of UTRF disclosures over the last 15 years came from UTHSC, which is in line with the norm of 30-40 percent.

Dr. Tompkins also discussed the proposed incentive distribution which will be presented for approval at the UTRF board meeting set for November 30. The restructured plan will have greater financial incentive to the originating units/departments and the campuses (currently 50-50 inventor-UTRF); under the new plan, UTRF will retain a smaller share (30 percent with \$5K-\$1M license revenue, 25 percent over \$1M revenue), but expectations are for greater long-term revenue generated by the increased incentives.

Dr. Tompkins noted that the University has received the go-ahead to proceed with the Tennessee Biofuels Initiative. Appropriated state money to UT will be granted to UTRF for this program, and Mascoma Corporation is the University's industrial partner, operating through a Tennessee-based LLC with 51 percent owned by UTRF and 49 percent owned by Mascoma. The Board of Governors for the Initiative will have three members appointed by the UTRF, two appointed by Mascoma.

Dr. Tompkins discussed the UTRF portfolio history of the Memphis-licensed technology of GTx, beginning with the licensing of this small start-up company consisting of a faculty member and a few industrial backers. On November 6 of this year, GTx announced a sub-licensing arrangement with Merck & Co. which will bring GTx \$40M up front, \$15M recovered research sunk costs, an investment of \$30M from Merck with stock purchased at a 40 percent premium, with GTx remaining eligible for milestones established in the contract for receiving future payments of \$420M as well as the collection of royalties. In response to questions by Mr. Cates and Mr. Jackson, Dr. Tompkins noted that he could not divulge details because it was a private corporate matter; however, under the disclosure arrangements with the inventor and UTRF, there will be a significant flow of revenue to UTRF also resulting in benefit to UTHSC.

Also to be presented at the November UTRF board meeting is a proposal to amend the bylaws to move the UTRF a bit further from the University as a distinct corporate entity, an action highly agreeable to the Tennessee Attorney General, by increasing external board participation to seven directors (to include the chair) to equal the seven voting University representatives. The UT president also sits on the board as a non-voting member and has a voice in board appointments and in the actions of the board.

Mr. Wolford thanked Dr. Tompkins for his presentation. Dr. Tompkins' power-point presentation was sent electronically to Committee members after the Outreach Committee meeting.

VI. Computational Science Presentation—Information

Dr. Millhorn introduced Dr. Thomas Zacharia, Associate Laboratory Director of Computational Sciences at Oak Ridge National Laboratory, who is also a member of the UT Faculty in the Department in Electrical and Computational Engineering and who recently was named UT Vice President for Science and Technology. He noted that Dr. Zacharia is recognized around the country as an expert in high-performance computing and UT is most fortunate to have Dr. Zacharia as part of the University's staff. Dr. Millhorn asked Dr. Zacharia to give an overview of the recent win of the \$65M National Science Foundation grant to UT to build and operate a Cray Track2 petascale supercomputing facility for science and engineering, one of four such facilities to be built in the country and the only one in the Southeast. Dr. Millhorn pointed out that this grant is the largest award ever received by UT and is a result of an intense nationally-competed award effort headed by Dr. Zacharia. It is a major win for the University and it will bring much visibility to UT and ORNL.

Dr. Zacharia presented a talk on the National Institute for Computational Sciences: Transforming Research, Education, and Economic Development. He presented the successful UT-Battelle management partnership created in 2000 to manage ORNL and the changing competitiveness landscape as the context for

the presentation. Under UT-Battelle stewardship, ORNL has emerged as the nation's premier laboratory, with science growing from \$173M to nearly a \$.5B, and the overall budget increasing from \$669M in FY00 (\$809M in FY07 dollars) to \$1,160M in FY07. Dr. Zacharia noted that the NSF award will attract other agencies and will bring significant investments, including federal and private funding, and will create tremendous opportunities for Oak Ridge and UT in the areas of economic development, the entire research enterprise, and in attracting the world's best technology.

Dr. Zacharia described the NSF award which will make UT one of four academic institutions in the country and the first in the Southeast to have such significant capabilities. The award will make UT home to a major scientific computing facility with the capability of performing 1000 Trillion calculations per second. Approximately 20 percent of this world leading resource will be dedicated for the benefit of UT and the State of Tennessee. Nearly 8 percent is dedicated for TN institutions, from research universities to junior colleges as well as for non-profit research institutions, or state or local agencies. Another 5 percent is dedicated to industrial collaborations to foster economic competitiveness in the global innovation economy. Nearly 7 percent is dedicated to broad based scientific and engineering partnership with institutions all over the globe.

Dr. Zacharia illustrated how computing and computational science have a profound impact on tomorrow's world in how we will live and work. UT-ORNL have an extraordinary set of assets (world's most powerful system for open scientific computing, a new Bioenergy Science Center, the nation's broadest portfolio of energy programs, unique resources for nuclear technology, and robust national security programs) to be used to meet the challenge to transform education, research and economic development for Tennessee and the nation. Major trends for a fast-changing competitive landscape, Dr. Zacharia outlined, include decline in manufacturing, shifts to a service economy, rise of international trade, and shifts of job skill mix requirements.

Dr. Zacharia discussed how UT and Tennessee will work to create a strong competitive advantage using sophisticated cyperinfrastructure to position Tennessee as a worldwide leader in computational science, biofuels, nanoscience and biological sciences. Within this context, Mrs. Blackwell asked what will make Middle Tennessee students come to UT to study computer technologies and not attend other institutions. Dr. Zacharia noted that with the new capabilities in supercomputing and technology, UT is the place for these students to come—not Stanford, Carnegie-Mellon, or MIT. The UT-ORNL partnership features a \$160M investment in computing facilities and infrastructure (through the Joint Institute for Computational Sciences), \$80M in annual investments in a leadership computing facility, the new \$65M NSF award, the Computational Sciences Initiative, the Governor's Chair and joint faculty programs, and IGMCS (Integrated Graduate Minor in Computational Science) to prepare the next generation of scientists and engineers. Fifty percent of the

world's calculations for the IPCC climate change calculations were done at ORNL. "Next-door" access to this computation capability to every Tennessee University, school, industry and community is a goal of these efforts. The academic world will come to compute at UT-ORNL.

Dr. Zacharia noted that an advanced environment for research and development is in itself critical to the state's ability to support and further develop the intellectual environment needed to foster economic growth, evidenced by well-known successes of Silicon Valley, Boston/Cambridge, North Carolina's Triangle Park, and Austin, Texas. A stronger research base in Tennessee's universities will be critical to attracting other strong faculty and students, business and industry. In partnership with business, these faculty will attract much larger federal dollars to fund their programs.

Mr. Wharton asked if ORNL would be compensated for use of its facilities when corporations such as Boeing come to compute at ORNL. Dr. Zacharia replied that the corporation would not be charged and results of the computations can be published freely; ORNL will benefit greatly from exposure to the research being conducted and from the high-profile visibility brought through such collaboration.

Dr. Petersen noted that the NSF award of \$65M and the \$125M biofuels center was the equivalent of breaking through the glass ceiling elite award system. These initiatives will bring visibility and will open windows to capitalize on new opportunities.

In summary, Dr. Zacharia told the Committee that the Track2 Cray system will be one of the world's most powerful general-purpose open computing systems in 2009, will present tremendous opportunities for UT's faculty and students, and will bring leadership and bragging rights for UT and ORNL.

Mr. Wolford thanked Dr. Zacharia for his presentation. A copy of the power-point presentation was sent electronically to members after the presentation.

VII. Other Business

As follow-up to discussion at the June meeting, Mr. Jackson told the Committee meetings were taking place with Chancellor Rakes and others concerning the economic development opportunities in North West Tennessee with the intersection of Interstate I-69 and Highway 51. The study group is carefully proceeding with their deliberations and they will bring other people into the process as they progress.

VIII. Adjournment

Mr. Wolford thanked Dr. Millhorn for arranging the two impressive presentations to the Committee and thanked members for their participation in the meeting. The meeting was adjourned at approximately 4:35 p.m.

Respectfully submitted,



David E. Millhorn, Ph.D.
Executive Vice President