

THE UNIVERSITY OF TENNESSEE
BOARD OF TRUSTEES

MINUTES OF THE
RESEARCH, OUTREACH, AND ECONOMIC DEVELOPMENT COMMITTEE

October 17, 2013
Knoxville, Tennessee

The Research, Outreach, and Economic Development Committee of The University of Tennessee Board of Trustees met at 12:45 p.m. EDT, Thursday, October 17, 2013, in the Hollingsworth Auditorium on the campus of the University of Tennessee Institute of Agriculture in Knoxville, Tennessee.

I. CALL TO ORDER

Chair Pro Tempore Don Stansberry called the meeting to order in the absence of Chair George Cates, who was unable to attend the meeting due to illness.

II. ROLL CALL

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

Tim L. Cross
Joseph A. DiPietro
Spruell Driver
J. Brian Ferguson
Monice Moore Hagler
Raja J. Jubran
Bonnie E. Lynch
Margaret Norris
Richard G. Rhoda
Shalin N. Shah
Don C. Stansberry, Jr.
Victoria S. Steinberg
Thaddeus A. Wilson

George E. Cates, Kevin S. Huffman, Julius T. Johnson, and David M. Stern were not present at the meeting.

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

III. MINUTES OF LAST MEETING

Chair Pro Tempore Stansberry asked for any corrections to the minutes of the June 19, 2013 meeting of the Committee. Hearing none the Chair called for a motion. Trustee Hagler moved approval of the minutes as presented in the meeting materials, and Trustee Jubran seconded the motion. The motion carried unanimously.

IV. ROED HIGHLIGHTS AND UPDATES

Dr. Millhorn presented a presentation (Exhibit 1) giving news and highlights of a variety of research and economic development initiatives. Dr. Millhorn noted the University of Tennessee (UT) and Battelle (UT-B) began its partnership management of Oak Ridge National Laboratory (ORNL) in April 2000 and was awarded a five-year extension in 2010. UT-B will soon find out if will be awarded another such extension in 2015 or if a management re-competition will be implemented. UT-B is moving ahead with proposal plans as if a rebid competition will take place.

Dr. Millhorn stated the 13th Governor's Chair, Dr. Steve Zinkle, is on board as of October 1 and is affiliated at UTK in the Departments of Nuclear Engineering and Materials Science and Engineering. Dr. Zinkle was recently elected a member of the National Academy of Engineering.

Dr. Millhorn gave an update on the TN-SCORE (Tennessee Solar Conversion and Storage Using Outreach, Research, and Education) reverse site visit in Washington, D.C. and noted the program's success within the National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR). UT will receive two more years of NSF funding (\$24M over five years). TN-SCORE will also host the 23rd National NSF EPSCoR Conference in Nashville November 3-7, and 500 attendees from the 31 EPSCoR jurisdictions are expected to participate.

Dr. Millhorn introduced Dr. Larry Arrington, Chancellor of the Institute of Agriculture, to provide an update on the West Tennessee 4-H Camp and Conference Center. Dr. Arrington noted the Buford Ellington 4-H Center in Milan closed in 2009 due to state budget restrictions and deteriorating conditions at the Center. A strategic plan for Ag Extension was developed in 2010, with input by over 2,000 individuals, identifying a statewide high priority for a new 4-H camp in West Tennessee. Nineteen sites were proposed and a 30-member advisory group identified the top three sites. Intensive reviews and visits of the sites led to the recommendation of the Lone Oaks Farm site in Hardeman County, and Dr. Arrington outlined the outstanding advantages of this property. Dr. Arrington discussed gift and budget considerations for the development and purchase of the Farm. Two UT Architecture classes are using the site as studio projects, developing conceptual drawings, models and a detailed program for the complex. Dr. Rachel Chen, UT Director of the Center for Sustainable Business and Development, was contracted by Hardeman County to conduct an economic impact analysis of the facility and her report indicates the Center will produce about \$1.4 million in total economic impact annually through direct and indirect expenditures and sales, and approximately 18 jobs will be added in the County as a result of the project. Mr. Stansberry commended Dr. Arrington on the use of UT resources for the studies, and Dr. DiPietro noted the high interest of the community and state in re-establishing a 4-H Center in West Tennessee.

Dr. Millhorn presented a power-point presentation concerning the Strategic Plan Dashboard Review: Expanding Research Capabilities (Exhibit 2). Dr. Millhorn provided graphic indicators of 2012 UT educational and general revenues by source, noting total revenues of \$1.709 billion, with sponsored programs accounting for 27 percent of the University's budget. Dr. Millhorn noted 36 percent of the total faculty and 19 percent of staff salaries, in addition to student stipends, equipment and overhead costs, are funded by sponsored program revenues. Dr. Millhorn presented total UT research expenditure graphics showing a 20 percent growth rate over the last five years. Expenditures, Dr. Millhorn said, are how the federal government measures research sources and grants. The number of UT research proposals submitted has held steady during recent years, Dr. Millhorn stated, and he noted only 10 percent of the proposals submitted nationally are funded. Dr. Millhorn presented information concerning UT's research peers, giving rankings (UT is currently ranked 54 among public universities), faculty numbers, research expenditures and federal research expenditures, citing figures from the NSF Research Expenditures and Integrated Postsecondary Education Data System (IPEDS) Human Resource surveys from 2011.

Dr. Millhorn discussed ways to grow research funding, giving the traditional approach of adding more faculty and resources versus thinking beyond the traditional university growth models: emphasizing a strategic focus in making hires in areas of growth and investing in big-program opportunities, leveraging UT's unique strengths (our history and partners, growing productive joint faculty appointments), and developing new winning partnerships to achieve desired outcomes of growth and productivity. Decreased funding opportunities, Dr. Millhorn stated, means there must be increased competitive activity. Collaborations are crucial to this activity; in addition, UT must be careful of long-term financial obligations that might block success in this endeavor.

Board Vice Chair Ferguson asked if metrics are available to show how the research enterprise is successful, i.e., in value creation, in indicating if research funds are well-spent, and in providing a track record of delivering results. Dr. Millhorn said more emphasis is and should be put on outcomes. Dr. DiPietro noted mechanisms are in place to track and measure many of these activities. Ms. Gregg noted it would be helpful to see the areas where proposal success rates are greater. Other discussions took place on the process of quantifying outcomes and the progress being made in this endeavor.

V. CHEROKEE FARM UPDATE

Mr. Cliff Hawks, President and CEO of the Cherokee Farm Development Corporation (CFDC), gave a presentation (Exhibit 3) of updates concerning Cherokee Farm Innovative Campus. Mr. Hawks gave an overview of 14 companies currently engaging in discussions regarding potential tenant lease at Cherokee Farm. The chief focus of these discussions is the capability of meeting specific needs of square footage for office, lab and R&D requirements and the timeline of such aspects at the property. Mr. Hawks also noted connections of several of these prospects coming from the UT College of Business Administration, the Joint Institute of Computational Sciences and other collaborations at ORNL.

Mr. Hawks stated the CFDC Board last met on September 26; members are David Millhorn, Jeff Smith (Deputy of Operations at ORNL), Barry Davis (CFO General Energy LLC), and Raja Jubran (UT Trustee and CEO of Denark Construction, Inc.). The Board, Mr. Hawks noted, is particularly well-suited with construction, institutional, financial and developmental knowledge and expertise. Members are actively engaged and eager to provide resources for prospects.

Increased real estate and development activities for the property, Mr. Hawks said, have warranted the addition of a key staff member. A job description is being developed for a Chief Operating Officer position. Responsibilities, among other things, would be coordination with contractors for planning and engineering of infrastructure development, monitoring lease negotiations and use of available space, and assisting with building designs and construction projects. The COO will work closely with the President and CEO to develop and accomplish goals and strategic plans established by CFDC Board members and executives of the Corporation.

Mr. Stansberry thanked Mr. Hawks for his presentation and said he is encouraged by the progress being made in this initiative.

VI. IMPACT OF GOVERNOR'S CHAIRS ON UT KNOXVILLE

Mr. Stansberry recognized Dr. Taylor Eighmy, UT Knoxville Vice Chancellor for Research and Engagement, to give a presentation on the impact of the Governor's Chair program on the UT Knoxville research enterprise (Exhibit 4). Dr. Eighmy discussed the history of the Governor's Chair program, established in 2006 by then Governor Bredesen (funded by \$8M in State annual support) to attract exceptionally talented researchers and scientists to joint appointments at UT and ORNL. With a vision of 40 appointments for the program, the provided funding will support 20 Chairs. There are 13 Chairs currently filled (12 at UT Knoxville and 1 at UTHSC), and other recruitments are underway. Dr. Eighmy noted the areas of expertise represented by Chairholders, the peer recognition via prestigious societies and organizations to which the individuals belong, and the broad impact of their scholarship and thought leadership on UT's research enterprise. Dr. Eighmy noted Dr. Ramamoorthy Ramesh and Dr. Suresh Babu, both Governor Chair appointees, as later presenters in the ROED Committee meeting.

Dr. Eighmy gave an overview of the significant level of external funding Governor's Chair appointees bring to UT: \$24 million in proposal value was submitted in FY13, representing 26 percent of the total proposal value by joint faculty (\$90 million); \$6.9 million in new award obligations in FY13, representing 26 percent of new award obligations from joint faculty (\$26.5 million); and significant impact to UTK annual federal research expenditures and total research expenditures in FY13. Dr. Eighmy gave illustrations of the national leadership Governor's Chairs bring to UT using Dr. Yilu Liu's contributions in

developing grid stabilizer monitors and bringing a \$25 million National Science Foundation Engineering Research Center (ERC) to UT, in areas of biotechnology by Drs. Terry Hazen and Frank Loeffler during the BP spill clean-up efforts, and in areas of advanced manufacturing by Drs. Suresh Babu and Steve Zinkle.

Dr. Eighmy introduced Dr. Suresh Babu, Governor's Chair and affiliated with the UT Departments of Mechanical, Aerospace and Biomedical Engineering and Materials Science and Engineering and the ORNL Energy and Environmental Sciences Directorate and Energy Material Program. Dr. Babu gave a presentation (Exhibit 5) of advanced manufacturing initiatives at UTK and ORNL: bringing disruptive innovation to manufacturing methods and materials at the crossroads of traditional and additive manufacturing of hybrid materials.

Dr. Babu presented a video of the electron beam powder bed melting technology (Arcam®) he and colleagues are working on and the benefits of this additive manufacturing process. Dr. Babu noted the importance of advanced manufacturing initiatives and training for engineers within the context of existing and emerging techniques, especially in light of the trend of decreasing US expertise in these areas. Dr. Babu discussed the current focus of additive manufacturing and collaborations taking place at UT and ORNL within the Joint Institute of Computational Sciences (JICS) and the Joint Institute of Advanced Materials (JIAM), as well as other federal agencies and industrial partnerships.

Mr. Stansberry thanked Drs. Eighmy and Babu for their informative and useful reports.

VII. A VISION FOR OAK RIDGE NATIONAL LABORATORY

Dr. Millhorn recognized Dr. Ramamoorthy Ramesh, Deputy Director for Science and Technology (S&T) at Oak Ridge National Laboratory (ORNL) and, as previously noted, a Governor's Chair appointee, to give an update on ORNL science and technology. In his presentation (Exhibit 6), Dr. Ramesh noted ORNL has all the pieces to "go the distance" to compete and to be at the top, just like former UT women's basketball Coach Pat Summitt. Its exceptional record of accomplishment, its focused approach in resolving compelling problems in science and technology, and its strong strategic partnerships with UT are among these pieces, Dr. Ramesh stated. Maintaining excellence with constraining budgets, recruiting key leaders, driving innovation and strengthening university partnerships are critical challenges in the S&T enterprise, Dr. Ramesh said.

Dr. Ramesh discussed ORNL's major science and technology initiatives, including Jaguar reconfigured as Titan, the Critical Materials Institute established with a major role for ORNL, the Carbon Fiber Technology Facility, the BioEnergy Science Center (BESC), the Consortium for Advanced Simulation of Light Water Reactors (CASL) and the Spallation Neutron Source (SNS) achievement of 1.4 MW of beam on target. In addition, Dr. Ramesh noted research conducted at ORNL to solve a long-standing mystery in determining the genetic basis for bacterial mercury methylation, research highlighted in *Science* magazine earlier this year. The discovery was enabled by, among other things, the integration of interdisciplinary strengths and the unique facilities of the Titan supercomputer and the SNS.

Dr. Ramesh discussed processes for driving technology from ORNL to the marketplace, leveraging relationships to move into new areas and in building connections to new user communities. Dr. Ramesh said he aims to have the next "Google" discovery to come out of UT and ORNL; after all, he stated, this region has the highest density of Ph.D.'s in the country. Dr. Ramesh noted his key areas of focus, particularly those in encouraging and engaging the nation's youth in the pursuit of excellence in scientific and technological advancements for the betterment of society. Dr. Ramesh concluded his presentation with emphasizing the importance of deepening engagement with ORNL's partner universities and the next steps in furthering graduate education through the Bredesen Center for Interdisciplinary Research and Graduate Education (CIRE) and moving CIRE to "CIRE Prime."

Mr. Stansberry thanked Dr. Ramesh for a most informative report.

VIII. FIFTY YEARS OF THE CENTER FOR INDUSTRIAL SERVICES

Mr. Stansberry called Dr. Mary Jinks, Vice President of Public Service, to give a presentation (Exhibit 7) commemorating the 50th anniversary of the Institute of Public Service (IPS) Center for Industrial Services (CIS). Dr. Jinks described the program from its beginning in 1963 when the Tennessee General Assembly established the Center and Bob Hutchison, former IPS vice president, tapped Reuben Harris as the first executive director of CIS, with a one room office, and its growth to the present-day average of a \$600M economic impact annually on the state of Tennessee.

CIS was organized, Dr. Jinks noted, upon the highly successful "extension service model." Dr. Jinks stated the mission of CIS is to deliver solutions that

help Tennessee businesses succeed, grow and create high-quality jobs; its vision is "A Better Tennessee with innovative and prosperous businesses, high-quality jobs and a safe and healthy workplace." Dr. Jinks discussed the wide variety of work CIS delivers across the state, assisting customers in a multitude of industries, including the automobile industry, health and safety fields, railway industry, government, and education. CIS provides training, practical applications, data and information through procedure manuals and project processes to deliver services to assist in growing an organization's business and in developing its workforce. Dr. Jinks noted the tremendous partnerships CIS has with faculty and instructors to provide critical assistance to industry and manufacturing in a broad range of areas. CIS is closely aligned, Dr. Jinks said, with the Tennessee Department of Economic and Community Development (TECD) and other state and federal partners. Dr. Jinks highlighted the significant impact of CIS through its benefits to communities across the state and the enhancement of quality of life for Tennessee citizens.

Mr. Stansberry thanked Dr. Jinks for an excellent presentation.

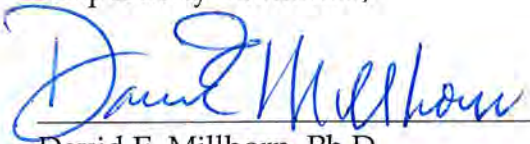
IX. OTHER BUSINESS

None.

X. ADJOURNMENT

There being no other business, Mr. Stansberry adjourned the meeting.

Respectfully Submitted,



David E. Millhorn, Ph.D.