THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

MINUTES OF THE
RESEARCH, OUTREACH, AND ECONOMIC DEVELOPMENT COMMITTEE

June 22, 2016

Knoxville, Tennessee

The Research, Outreach, and Economic Development Committee of the Board of Trustees of The University of Tennessee met at 3:15 p.m. EDT, Wednesday, June 22, 2016 in the Hollingsworth Auditorium, on the Institute of Agriculture campus in Knoxville, Tennessee.

I. CALL TO ORDER

Dr. William E. Evans, Chair, called the meeting to order.

II. ROLL CALL

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

William E. Evans, Chair
George E. Cates
Tim L. Cross
Susan C. Davidson
Joseph A. DiPietro
Jefferson S. Rogers
Raja J. Jubran
Rhedona Rose
Miranda N. Rutan
David M. Stern
John D. Tickle

Russ Deaton, Candice McQueen, Margaret A. Norris, and Jai Templeton were not present at the meeting.

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

the media were also present.

III. MINUTES OF LAST MEETING

Chair Evans asked for any corrections to the minutes of the March 31, 2016, meeting of the Committee. Hearing none, the Chair called for a motion to approve the minutes as written. The motion was made, seconded, and carried unanimously.

IV. REVISION OF COMMITTEE CHARTER

Chair Evans called on Dr. David Millhorn to address the committee. Dr. Millhorn explained how the trusteeship committee will be recommending amended and restated bylaws to the board, and as a result, relatively minor revisions will need to be made to the ROED Committee's charter. The current committee charter with changes marked and the revised charter with all changes accepted follow this memorandum (Exhibit 1).

Trustee Cates moved that the Research, Outreach, and Economic Development Committee recommend the following Resolution for adoption by the Board of Trustees:

> **Resolved: The revised Research, Outreach, and Economic Development Committee Charter is approved as presented in the meeting materials.**

The motion was seconded by Trustee Raja Jubran. Chair Evans called for discussion or questions. Hearing none, the motion carried by voice vote.

V. CHEROKEE FARM

Dr. David Millhorn gave a brief update and presentation on Cherokee Farm (Exhibit 2). The first building (JIAM) is complete and should be totally occupied by early fall. It is equipped to do work that requires a vibration free environment and offers outstanding space for this research. Ground has been broken on a second building that is being built fully by private dollars. It will be around 45,000 square feet of space and take approximately one year to finish. Civil and Environmental Consultants (CEC) will occupy the entire first floor of the building. The second floor has been designed to focus on flexible research and development space. The building is about 95% leased. A third building, which also will be privately funded, is in the works. We offer a unique opportunity for

collaborative research.

Trustee Charles Wharton asked if there were height constraints for the buildings. Dr. Millhorn answered, yes, due to Alcoa Highway being a scenic highway. The first building is 2½ stories and the second building will be two stories. Our objective is to build as much square footage as we can on each site.

VI. UT RESEARCH FOUNDATION ANNUAL REPORT

Dr. Stacey Patterson, Associate Vice President for Research and Vice President of the UT Research Foundation, presented the annual report of UTRF (Exhibit 3). Dr. Patterson gave an overview of the UTRF structure and organization and highlighted some of the recent successes, Fetal Monitoring and Retina Vue (diabetic retinopathy screening). She explained the IDEA system for UT inventors and staff. IDEA is the new, secure online portal for invention disclosures. Over 100 disclosures have been completed through this process. UTRF held the Tennessee Venture Challenge again this year which was very successful. We have increased our outreach efforts through events like Knoxville Startup Day, which had over 700 in attendance this past year. An upcoming event is Innov865 Week which will celebrate and showcase Knoxville as a great place for entrepreneurs to start and grow businesses. Dr. Patterson encouraged Trustees to attend. She closed by giving the UTRF 2017 budget overview.

Chair Evans asked, "Of the number of disclosures processed - how many turn into patent applications, how many are awarded patents, how many are licensed and how much revenue is generated?"

Dr. Patterson responded that for this fiscal year to date there have been 140 disclosures, 65 patent applications on average and about 30 US patents were issued. There are currently 500 patents and applications, 54% are licensed and 11% have been licensed but are turned back for one reason or another. About 4% of our portfolio is available for licensing. On a national level in terms of what is licensed, we have a high rate compared to the average university tech transfer office which is 27%. Our patent applications awarded appears low, but we pull the plug if it's not going anywhere. Even with our 50% average, we're still in the top 100 universities worldwide and have been the last two years.

Trustee Charles Wharton asked, "What is the status of the possibility of development officers for UTRF?"
Dr. Patterson responded that the Corporate Foundation and Relations Office has been created. Five core development people, co-funded by UTK Office of

Research and UTRF, whose job is to find industry and foundations interested in co-development of ideas are in place. There are two foundation and three industry people doing the work. The office has been up and running for about 16 months, and we're making headway. There have been corporate visits weekly and meetings with faculty. Four master agreements for research have been established this past year under this effort.

President Joe DiPietro said his view is to continue to invest significant resources from the University into the operation of UTRF. The reality is unless we hit a home run, we are going to need to make that investment. He then asked Dr. Patterson if she had any predictions on potential homeruns in the next 3-5 years? She responded, no, but added that we are on track to make steady progress in terms of revenue growth. Last year we incorporated a 15% increase in our budget; this year we are set for 20% increase. It is going to take a home run to get to those big numbers. You never know what's going to hit your door. In reality, even if we made the deal today it will still be 5-7 years or more to realize those kind of revenues. Our philosophy is to get those technologies out there to the best partners we can and make the best deals we can for the University. We work very closely with all of the Offices of Research.

In response to a question about royalties, Dr. Patterson responded that UTRF only retains 30%. Last year we distributed almost $1.5 million back to UT students, faculty and colleges.

Trustee Raja Jubran asked, "Do you anticipate the for-profit subsidiaries to produce?" Dr. Patterson responded that it depends on the market. They are wholly owned because UTRF owns a lot of equity.

VII. ORNL ANNUAL REPORT

Dr. Thomas Zacharia, Deputy for Science and Technology for ORNL, gave a presentation and update on Oak Ridge National Lab (Exhibit 4). He gave a historical overview including how UT and Battelle Memorial Institute created a 50-50 partnership for the sole purpose of competing and managing the contract for ORNL. The proposal included: Delivering the spallation neutron source on time and on budget; use of $18 million of state funding to build new scientific facilities as part of an extensive revitalization program; and expand student and faculty research opportunities at ORNL. The Department of Energy has assigned additional major projects to ORNL including managing the US contributions to the international ITER project and developing and exploiting leadership computing systems. UT Battelle has delivered on its commitments and more.

Because the lab, under the leadership of UT-Battelle, has done such an excellent job in managing big complex projects, the DOE decided the lab is going to manage the US participation and contribution to the international EDA/fusion project. This is another billion-dollar project that is the responsibility of the lab. In 1999 the lab had an annual budget of $500 million and today has a $1.5 billion budget and is the envy of many international lab colleagues in terms of the number of national and internationally relevant projects we manage and operate for the DOE. In a snapshot, ORNL has a $1.5 billion budget, 4,650 employees, 3,200 research guests and 35,000 visitors annually.

In 1999 if you visited, you would have seen a traditional World War II era government building, and today you see a modern campus which in a way is contributed to UT leadership. It looks more like a campus than a government lab, which makes a difference when recruiting people. The lab historically has been known as a leader internationally in materials research. We continue to maintain that portfolio. We also have the nation's most diverse energy research portfolio. We are the leaders in the US in supercomputing. We believe we are one of the best in the world in applying these supercomputers in diverse applications. We have the most intense neutron source and world-class research reactor.

ORNL's mission is to deliver scientific discoveries and technical breakthroughs that will accelerate the development and deployment of solutions in clean energy and global security, and in doing so create economic opportunity for the nation. A broad set of core capabilities is focused on compelling science and technology challenges. Computing is not just about having the biggest computers but also the application of computers. The National Strategic Computing Initiative is worth about $6 billion. DOE has been given the lead agency status, and ORNL has been given the lead lab status so we will be managing that initiative for DOE as well as the Cancer Moonshot Initiative that was announced in January. This is really the application of computing for healthcare and healthcare research. The pilot projects are funded by NIH and DOE. ORNL is participating in these projects. Our partnership with UT is a major asset.

The Governor's Chair program has been a very important and successful program that needs to continue and grow. It has attracted top talent to Tennessee. Also, the Bredesen Center has helped ORNL broaden its academic engagement. Other universities are envious of the quality of the students who come to the university through the Bredesen Center. Student candidates have an intensive interview which includes an entire day on campus and an entire day at the lab.

IACMI, a 501(c)(3) under the blueprint of UTRF has launched three projects in their first budget period, all of which ORNL and UT both are supporting. They focus on the areas of vehicles, wind turbines and compressed gas storage. Shared resources and research interests position us for emerging opportunities.

Dr. Zacharia closed by stating the competition is stiff and does not stand still. Georgia Tech has a building that is 24 stories high for only computing with an 80,000 sq. ft. computer room. They have 2,000 faculty - 1,750 in engineering, biology, sciences. He reiterated the importance of the opportunity to leverage our partnership to continue to succeed.

VIII. OTHER BUSINESS

None.

IX. ADJOURNMENT

There being no other business, the meeting was adjourned.

Respectfully submitted,

David E. Millhorn, Ph.D.