

Minutes of the Research, Outreach and Economic Development Committee

The University of Tennessee Board of Trustees

**February 27, 2009
Memphis, Tennessee**

The Research, Outreach and Economic Development Committee of the Board of Trustees of the University of Tennessee met February 27, 2009, in Freeman Auditorium at the Hamilton Eye Institute on the UT Health Science Center campus in Memphis, Tennessee.

I. Call to Order

Mr. Don Stansberry, Chair, called the meeting to order at 8:00 a.m. Mr. Stansberry noted the meeting was not a public meeting and business would be followed according to the agenda. The Chair will recognize speakers on recognition.

II. Roll Call

Dr. David Millhorn called the roll and the following voting members were present:

Mr. Don Stansberry, Chair
Mr. Crawford Gallimore
Ms. Monice Moore Hagler
Mr. Doug Horne
Ms. Brittany McGruder
Mr. Jim Murphy
Dr. John Schommer
Ms. Betty Ann Tanner

The following non-voting members were present:

Mr. Tyler Forrest
Dean Dick Gourley
Dr. John Petersen
Dr. Verbie Prevost
Mr. Glenn Turner

Commissioner Ken Givens, Dr. Richard Rhoda, Ms. Sharron Rollins, and Commissioner Tim Webb were absent from the meeting.

Dr. Millhorn declared a quorum present for the meeting.

III. Approval of Minutes of the Last Meeting

Mr. Stansberry asked if there were corrections or questions regarding minutes of the October 23, 2008, meeting in Knoxville. There being none, Dr. Schommer moved the minutes be approved and Mr. Gallimore seconded the motion. Mr. Stansberry announced the motion carried. Ms. Loughry noted the minutes reflected distribution would be made of a tuition study prepared by UTK Professor Dr. Louis Gross and she did not recall receipt of this document. Several committee members stated they had received the material in question.

IV. Intent to Close Buford Ellington 4-H Center in Milan--Information

Mr. Stansberry recognized Dr. Joe DiPietro, UT Vice President for Agriculture (UTIA). Dr. DiPietro noted UT's 4-H program in Tennessee is among the largest in the nation, helping UTIA connect in special ways as a "state-wide classroom" with constituents across the state. The program teaches positive life concepts to promote better living, health and service to others. The 4-H motto is to "make the best better." The UTIA's 4-H programs reach youngsters in the fourth grade to grade 12, providing a wide variety of educational, adventure, instructional and technical camps. It is with a sense of melancholy that a serious look at budgetary situations has resulted in the need to close the Buford Ellington 4-H Center in Milan, TN. Dr. DiPietro elaborated on the rationale for this closure. There are currently four 4-H centers: the Ellington Center in Milan, the Ridley 4-H Center in Columbia, the York 4-H Center in Crossville, and the Austin 4-H Center in Greeneville. Dr. DiPietro showed a diagram of the Centers' locations within the state. With the exception of the Ellington Center, these facilities operate year round. The Ellington Center is located on a former Army facility in buildings approximately 70 years old and it is the only center without heating or air-conditioning. The Center is used approximately the last week of May through the last week of July. In closing the Ellington Center, three full-time personnel and 10 term positions are eliminated. The centers at Columbia, Crossville and Austin are able to accommodate West Tennessee 4-H campers and UTIA will assist with travel for the campers. Discussions with Ellington Center employees have taken place and press releases to the public have been sent out about the closure. Given budgetary circumstances in UT Extension, the unit operating the 4-H Centers, UTIA is looking at approximately \$2.6 million in cuts, and a savings of about \$400,000 in recurring funds by the Ellington Center closure will help meet the budget challenges. A vision of building a new facility in the West Tennessee region is a goal in better economic times and this vision has been in various capital long-range plans for some time. There are approximately 1,280 campers annually at Ellington; 6,200 at Ridley; 2,700 campers at York; and 6,800 at Austin. The 1,280 Ellington campers will be accommodated primarily at Ridley or York. Dr. DiPietro gave a power-point presentation of the Milan facility and compared it with the other centers, showing that extensive renovations were needed for Ellington. West Tennessee campers deserve a better experience than the one currently available at Ellington. A possible relocation site (95 acres with utilities) has been explored. There would be approximately \$25 million in construction costs needed to support 400-500 campers. Dr. DiPietro concluded his report and offered to answer any questions.

Mr. Crawford asked for details of the transportation subsidy for getting campers to the other locations. Dr. DiPietro said plans were considering the use of school bus transportation at

UTIA expense or providing transportation scholarships to campers needing assistance. Some campers will find it as feasible to go to Columbia as it would have been for them to travel to Milan. If campers were further away and could not afford additional cost of transportation to new camping locations, UTIA would provide it.

Ms. Tanner noted her office had received a letter from Tim Smith, Obion County Director and a devoted servant to this area of the state. Mr. Smith stated that the Milan 4-H Center had been on the capital improvements list since 1985 but had gone unfunded. Ms. Tanner asked if the deteriorating condition of the Center had determined it not to be funded. Dr. DiPietro said the plan had been to build a new facility. Renovations costs, however, didn't make sense on this particular facility for many reasons, including the facility's age and the fact it is not ADA compliant. The capital program grows all the time and is very challenging. The Milan facility is on this list, and it is also on the UT campaign list as far as looking for donors interested in helping build a new 4-H facility. Ms. Tanner noted she had been a 4-H camper and she gives a lot of value to the institution and the lessons learned therein to carry throughout life to foster better citizens. She hopes a new 4-H facility will definitely be kept in mind for West Tennessee.

Ms. Hagler asked if the 1,280 campers' number for Ellington Center is a result of the facility being open only three months of the year and whether this number would be significantly higher if the facility was open longer throughout the year. Dr. DiPietro said this was part of that equation. Another factor is that families of the West Tennessee campers take a look at the facility and decide not to send their children to the camp. Dr. DiPietro believes a camp in this area would be used if there was a proper facility with heating and air-conditioning.

Private funding and fund-raising are key items in Extension's Campaign for Tennessee and work is diligently taking place in these efforts. Mr. Talbott asked about the amount of funds needed to build the facility. Dr. DiPietro responded that \$25M is needed for a facility to house 500 campers. The facility could be phased in. The 4-H centers act as community centers for other functions. There is nothing in the West Tennessee area to serve this purpose. The lack of heat and air-conditioning in the Ellington facility has greatly limited opportunities for this kind of use by civic, church and other groups. It would build revenue to have a facility to accommodate these kinds of activities.

Mr. Horne asked about using an ADA-compliant hotel and perhaps busing to the campsite. Dr. DiPietro said the main objective of the facility is for the campers to have a true camping experience. Dr. Schommer noted his daughter went to the camp last summer. She took a camera and came back home with ample shots of dilapidated facilities but she had a good time. Ms. McGruder commented she attended the Ellington camp every summer for about eight years and echoed Ms. Tanner's wishes for the camp to be relocated to enable good camp experiences for young people.

Mr. Stansberry noted no action was required on this agenda topic and thanked Dr. DiPietro for his presentation.

V. Overview of Cherokee Farm Campus Master Planning Effort—Information

Mr. Stansberry turned the presentation of the Cherokee Farm Campus master planning effort over to Dr. Millhorn. Dr. Millhorn indicated the design firm for the Cherokee Farm campus is Gresham, Smith & Partners. He introduced two members of that firm, Mr. John Houghton (Senior Planner) and Mr. Steve Johnson (Executive Vice President) to give an update on the design and building guidelines for the Cherokee Farm project.

Mr. Johnson noted Gresham, Smith & Partners (GSP) is a Nashville-based architectural, engineering and planning firm, with offices also in Memphis, Knoxville and 12 other locations in the Southeast and in China. He thanked members for allowing Gresham Smith to be a part of this very forward-looking project for the state of Tennessee. Noting it is an exciting project on a special piece of land, Mr. Johnson said two other professional design firms were assisting with the project. Wilbur Smith Associates, a transportation design specialist firm, is enlisted to ensure issues such as access, convenience to the property and relationship with the neighborhood are carefully thought out. HOK, a global firm with broad experience in projects such as Cherokee Farm, is serving as a quality reviewer. Other key team contributors are the UT Facilities Planning staff headed by George Criss; the Cherokee Farm Steering Committee, led by David Millhorn; and Sylvia Davis, who serves as project liaison. The Cherokee Farm Steering Committee is comprised of a cross-section of community members, the UT medical center, the business community of Knoxville, and other staff and faculty members of the campus. GSP has worked regularly to get feedback from these groups.

Mr. Johnson turned the presentation over to Mr. Houghton. Mr. Houghton said GSP began their master planning and design work on Cherokee Farm last fall. The GSP guidepost has been the creation of a world-class research campus for the University of Tennessee and the state of Tennessee which will produce multiple benefits over time. The work of GSP has incorporated knowledge obtained from previous analyses of the site. The UT Archaeological Research Lab had studied the site extensively and had identified the property as a national historic-eligible site with Native American skeletons dating back 10,000 years. There was also a feasibility study conducted to understand the notion of a science/technology/research campus and what could broadly fit on the property. GSP did due-diligence work on the site, and Wilbur Smith Associates prepared traffic study work as well. Mr. Houghton pointed out via power-point diagrams the locations of various entities in relation to the Cherokee Farm property. The feasibility study, conducted by EDAW, showed a site of approximately 200 acres available for science and technology research labs and offices, the possibility of a hotel and conference center, services and restaurants to support the employees and visitors, a greenway and arboretum on the property, bicycle/pedestrian/transit choices to give people various ways to get to the site, and a heavy emphasis on sustainable design thinking that this is not only a place for research and technology but also an example for going forward in terms of integrated design. The GSP task was to come out with two documents, the master plan similar to the plan done in 2001 for the UT Knoxville campus and the complementary development guidelines document. These documents help provide a clear roadway for development of the Cherokee Farm campus. Mr. Houghton emphasized the total team effort of the project. Mr. Houghton described steps of the planning process and said feedback is of

continuing importance in the project. He spoke of a public meeting in January where good input was received.

The master plan is not developed in isolation. It is being coordinated in relationship to other development work on the campus. A project timeline and status report was shown. Work on the master plan is moving in parallel fashion with other project activities, thereby saving 12-24 months on the project. The master plan planning principles evolved from the EDAW study and were refined by subsequent GSP work, primarily to: emphasize design excellence and innovation throughout the campus; integrate sustainable design strategies in all aspects of campus development; foster a spirit of collaboration and collegiality across the campus through a well defined, pedestrian friendly and comfortable public realm; maximize the site's rich history, context and potential as a cultural resource, a neighbor and a gateway; and, connect the campus to the city and region through multiple modes of transportation and public spaces. GSP performed site analysis studies involving topography, vegetation, sun and wind, and pedestrian-friendly conditions. Access is a major issue and Wilbur Smith has worked on how to improve access to the campus. One idea is a new interchange on the north end of the campus. There is already a plan in place for TDOT to approve a full interchange on the south end of the campus. Landscape views are critically important considerations to the project. Heading along Alcoa Highway, the UT medical center complex is on one side of the gateway and the UT Cherokee Farm campus will become the other side of that gateway coming into the city. The archaeological area requires quite a bit of the Cherokee Farm property and there is a vibration zone which implies sensitivity for technological and scientific instruments. These are some of the constraints which must be considered in plan development. The site is approximately 200 acres; however, in removing the archaeological zone and a TVA easement, there is roughly 77 acres of developmental area.

The development framework of the plan recognizes that Cherokee Farm is a multiple-year development requiring flexibility and efficiency. GSP layered in these factors in development of the master plan. Development framework slides were shown for circulation and utilities, public space, buildings and parking, allowing for a central open mature nature space and two major development zones. The draft includes a series of garages along Alcoa Highway. The archaeological zone becomes essentially a buffer against the river. The City of Knoxville has designed a greenway as a multiple-use path that follows the river's edge. A potential hotel-conference facility is designed to be in close proximity to the city gateway and to look to the growth of trees and open space. An additional building was shown which could serve as an additional education center to be used by the UTK campus, particularly by the archaeological group as they continue to do field studies along the river bank.

The proposed master plan includes 1.65M sq. ft., with the vast majority a concentration of research labs and offices for a total of 15 buildings (1.45M sq. ft.). In addition, there is the possibility of the hotel-conference center, to be roughly 160,000 sq. ft.; the educational nature/interpretative center would be 40,000 sq. ft.; and there would be a total of approximately 4,000 parking spaces. Mr. Houghton showed models of the development plan, noting the flow of Alcoa Highway, the river, the quads for buildings, and the grove of trees that opens out to the archaeological zone. For residents of the Sequoyah Hills neighborhood, this design will allow a light imprint buffer for that area as they look across the river. The

hotel-conference facility space, or whatever use will be given to the building, will be the landmark for the property. An important part of the building arrangement is the east-west design to ensure ideal solar energy. Green roofs and other environmental-friendly design elements were discussed. Quads for the design provide traditional campus symbolism and could also serve as geothermal fields to provide cooling and heating to the buildings. The opportunities for these features are available in construction in the flexible design concept GSP has created. The garages can also be well-designed to be attractive and to provide additional fields of energy.

Guidelines are being developed in conjunction with the master plan. Areas covered in the guidelines include architecture, parking, access, signage, utilities, landscaping, and policies for prospective building sponsors that will provide a clear process to ensure the buildings meet the vision and mission of the University.

Mr. Stansberry asked if the access points would include right-turn-only or fly-over ramps. Mr. Houghton said ultimately these points would be full interchanges and he demonstrated the patterns for access. As the interchange is currently proposed, coming from the north there would be a partial, right-turn-only access; coming from the south, there is a loop and traffic would come across the highway. Mr. Stansberry noted that in leaving the Cherokee Farm area travelers would make a right turn onto Alcoa Highway, travel a short distance, and loop around for return to Knoxville.

Mr. Horne asked if more of the archaeological property might be developed and if over-allowance for the Sequoyah Hills' buffer was a factor in the design of the property. Mr. Houghton replied that additional development was an option and he did not believe over-allowance was a factor in the current design. Mr. Horne noted that Cherokee Farm is an exceptional piece of real estate and maximum use should be made of the development opportunities, noting the buffer involves a good bit of acreage and it could be used for recreational fields. Dr. Millhorn asked Mr. Houghton to outline the flood plain, which comprised approximately the bottom-third of the property.

Mr. Schledwitz stated he was a proponent of the Cherokee Farm vision; however, he has concerns in that he has not seen a budget for the project. The state entrusted UT with ~\$30M several years ago and he does not know if the project is on/off budget or how much has been spent on design and studies and we seem to be behind schedule. In light of being unable to construct a 4-H facility in West Tennessee, he has not yet seen a means to build one building on Cherokee Farm. Everything looks promising with the Cherokee Farm development plan, but he wants to be realistic about the vision and he is concerned with the lack of accounting and what can be shown for the ~\$30M. Dr. Millhorn noted there is funding for the first building, the Joint Institute for Advanced Materials (JIAM). The JIAM building is supported by both state and federal funds. In addition, there is a solid commitment from a private research organization to build a 100,000 sq. ft. building. Other discussions are taking place with interested parties. Until this current stage of development plans, it has been difficult to present plans to potential tenants because they cannot see the vision for the site. We are now at the point where plans can be shown. The goal is to have both private and public-funded research buildings and organizations within this site. Mr. Cates asked how much of the \$32M remained and could a budget be given for the project. Mr. George Criss (UT

Facilities Planning) responded that only a small portion of the funds had been spent thus far of the \$32M. Bidding the demolition of the existing structures had cost approximately \$300,000; the balance of the \$32M will provide the infrastructure improvements for the site itself with roads and utilities. The process of establishing costs is underway. Dr. Millhorn stated that money for the buildings is still in place and it is important to move quickly on this project. Mr. Schledwitz requested reports on this process and Dr. Millhorn said the stage has been reached for these updates. The concept had not been fully developed until this point in time except for the land analyses and studies.

Dr. Schommer asked for further information on green roofs. GSP described the green roof concept, which would involve vegetation on a roof to control heat and storm water. It is an ancient technology which has returned to the forefront as a part of the sustainable movement to control water and energy costs and it is now widely incorporated in roof design. Mr. Stansberry asked if guarantees of non-leakage could be made and was told no such guarantee could be made on any roof; however, the same warranty can be made for green roofs as conventional ones. The Nissan headquarters in Nashville is an example incorporating the green roof technology. Dr. Millhorn noted a decision has not yet been made to use green roofs in the Cherokee Farm project.

Mr. Horne again emphasized that focus should be made on the archaeological land to ensure the Cherokee Farm project utilizes as much of this valuable acreage as possible. He noted that if this land is shown as a buffer it will be difficult to later incorporate it in the project. Dr. Millhorn noted there could certainly be a phase II of the project and no elimination of any future use is given in the initial plan. Mr. Cates noted the plan as currently designed seemed to cut-off good access to this property and future access would be a back-door approach. This configuration needs to be given serious attention. Mr. Houghton pointed out options for this future access.

A brief discussion took place of the golf practice facility located next to the Cherokee Farm project. Mr. Cates asked if more of the archaeological site could be shifted to the southern end to open up more acreage for development. Mr. Houghton showed the golf practice facility representation and explained access to this area.

No action being required on this informational topic, Mr. Stansberry concluded this item on the agenda.

VI. UT Research Foundation Review and Update—Information

Mr. Stansberry introduced Dr. Fred Tompkins to give a review of the UT Research Foundation. Dr. Tompkins made a power-point presentation and began with a review of the four-fold mission of the UTRF to: 1) support the research mission of the University; 2) harvest, manage, protect, and market intellectual property of the University and drive it to commercialization; 3) develop an entrepreneurial culture; and 4) drive technology-based economic development accruing to the University of Tennessee research enterprise. These dimensions make up the notion of technology transfer and incorporate everything from the generation of an idea, to perfecting the intellectual property associated with that idea, to having an opportunity to

move that idea to a product for the purpose of benefit of society, and to engage in an economic activity to comprise economic development.

Dr. Tompkins described the processes of selecting invention disclosures for development. A tremendous amount of staff time is spent seeking outside assistance and professional opinions in determining if a particular technology is a viable marketable product. Out of every 100 disclosures received (and this UTRF data mirrors such data with universities around the country), approximately 35 will be further pursued for economic opportunity. One of the options at this point is to use provisional patenting as a way to allow additional time for further study and development of the technology. After this stage, there will be approximately 20 disclosures or 20 percent of the technologies for which patent protection will be sought. This provides exclusivity for UTRF and gives a competitive advantage in the marketplace, thus adding value to UTRF licenses. About 10 of this group of disclosures actually result in a license agreement, allowing conveyance to either an existing company for further development and marketing of a particular technology or else--and this is a considerable effort of UTRF activity--the technology will result in the establishment of a new start-up company to keep this activity in the state of Tennessee and to drive economic development. UTRF experience to date is that about 2 of these 10 licenses will result in net positive revenue. It is a numbers game in that more disclosures generate more opportunities for development. It is also a quality game. As the quality of the research program is enhanced, there will be increased opportunities to get technologies out into the marketplace. Dr. Tompkins also discussed the timeline paralleling the disclosure processes. Timely assessments and early decisions concerning the technologies are important and this is usually accomplished within 30 days. The period for preliminary positioning for patenting is approximately nine months; patent applications require approximately 15 months. Once an application is submitted to the U.S. Patent and Trademark Office, feedback may not be received for several months or even years. There is often need to modify and to negotiate claims, which can be lengthy processes.

Once a license is received, the search for revenue has just begun. UTRF tries to structure licenses so that revenue is obtained as quickly as possible to incentivize inventors and to share with the University. With start-up companies, revenue return can be a long time in coming. Dr. Tompkins noted that in a recent conversation with the technology transfer director at UNC-Chapel Hill he was told that in the period 2000-2008 UNC had 42 start-up companies, none of which had yet gotten to a point of liquidity with revenue return to the university.

Dr. Tompkins described the UTRF governance structure, the current portfolio of technologies, staffing, and activities. In terms of governance, UTRF reports to a board created and operating for the benefit of the University of Tennessee. UTRF operates as one corporation with offices on the UTHSC and UTK campuses. There is continuous sharing of expertise and personnel between the two locations and with the other UT campuses and institutes. The UTRF board structure is comprised of nine external and nine internal (UT-affiliated) members, with the Chairman of the board selected from among the external representatives. The Attorney General of the State is agreeable with this composition. UTRF also has strategic partners to provide a range of expertise and a vast experience in managing areas involved with UTRF technologies: the Memphis Bioworks Foundation in West Tennessee, Technology

2020 in East Tennessee, The Enterprise Center in Chattanooga, the R.E.E.D. Center in Martin, and the Oak Ridge National Laboratory Partnership Directorate. In addition to these alliances there are conversations with other economic development and technology organizations around the state, including the Mind2Marketplace innovative group. Dr. Tompkins reviewed the UTRF staff organization, expertise and backgrounds and introduced two UTRF licensing-associated staff members on the UTHSC campus, Dr. Richard Magid and Dr. Lakita Cavin.

The current UTRF portfolio includes approximately 600 active invention disclosures; 460 active patents (279 US), about half of which are under license and moving forward in development; and 144 active licenses. For the five-year period 2003-2008, 347 US patent applications were filed. There are currently 61 pending items in the US Patent & Trademark Office for consideration. Looking at a one-year period (2008) UTRF had 97 disclosures, 15 issued US patents, 17 executed licenses conveying the rights to use UT technology to a company or start-up entity, and 53 US patent applications. UTRF has 346 agreements at the present time that license or option Intellectual Property, of which 134 are within Tennessee. Among this number 38 activities are located in the Memphis area, largely associated with medical therapeutics, candidate drugs, and medical devices; in Middle Tennessee there are many agreements with agricultural and nursery industries; and, in East Tennessee, agreements feature industrial plasma technologies and a wide variety of other technologies. Typically, an agreement with one of the 212 agreements external to Tennessee would be with a company licensing a piece of UTRF technology to further develop and productize that technology.

Dr. Tompkins presented graphics with data on UTRF revenue flow into UT. With a \$2M annual investment from the University (including licensing revenues, industrial contracts surrounding IP, and governmental agencies through the small business innovative research programs which fund industry to partner around a technology), results over the last three years indicate a return to the University. In 2008 UTRF shared ~\$1.8M in revenues from licenses and royalties collected to faculty, staff members, or their technology contributions. The University also derives benefit from approximately \$1M annually spent on IP development, protection, and related issues to further develop the next-generation of IP. UTRF, however, is challenged, along with the general economy, with a great deal of economic uncertainty. Investment dollars are difficult to find and risk-aversion is substantial at the present time. UTRF, at least in the near term, seems to be in reasonable shape.

A partial listing of UTRF start-up companies was highlighted and Dr. Tompkins discussed the nature and relationships of those enterprises. ArGentis Pharmacaaceuticals, a Memphis company working on a scleroderma treatment, is mentored by Memphis Bioworks, one of UTRF's strategic partners. GTx, also a Memphis company, is believed to be very near to receiving drug FDA approval. Computable Genomix produces software related to bioinformatics and is from UTHSC with University of Memphis input. Novostem Therapeutics is in the Memphis area and is working on a novel approach to cancer treatments. Over the last 5-6 years, there have been 20 start-up companies associated with UTRF IP, and UTRF is monitoring/mentoring other companies which do not meet the full start-up definition but are part of UTRF because of its support to them in their efforts to build the economy of the state of Tennessee.

Dr. Tompkins presented two sets of metrics depicting UTRF peer comparisons. One set considered eight regional peer institutions with a research portfolio of approximately \$300M: University of Alabama-Birmingham, LSU, Mississippi State, University of Virginia, University of Kentucky, University of Kansas, Virginia Tech and the University of South Carolina. Using data from the Association of University Technology Managers (AUTM), there is an average of 100 invention disclosures a year for this peer group; last year UTRF had 97 disclosures. The peer average of licenses executed was 14-15; UTRF executed 17 in 2008. Regarding peer license revenue, \$1.5 was the average; UTRF is in this range (in 2008 there were extraordinary circumstances with one-time revenue which increased their license revenue substantially). Peer start-ups formed (within specific AUTM definition) were 3 on the average; UTRF has averaged 2 for the last couple of years.

The second set of peer metrics included all Carnegie very-high research universities, which are the best research institutions in the US. Using this set of measurements, peer schools averaged 120 invention disclosures; UTRF was just under 100 but is growing. For licenses executed, the peer average approached 30; UTRF were at 17 and increasing. License Revenue for peers was slightly less than \$4M per year; UTRF was over that mark (again due in large part to the one-time 2008 funds). Peer start-up companies formed averaged 4 start-ups per year; UTRF averaged 2. The UTRF goal is to move to the average of these peers and beyond.

In order to do this, UTRF strives to do things better. UTRF will work with faculty in orientation meetings and will hold more researcher events to engage researchers and keep them involved to the highest extent possible. UTRF will do its best to evaluate and nurture technologies to broaden the funnel of invention disclosures. UTRF is refining how to market, conferring with people from such institutions as the University of Florida, which has a tremendous marketing approach to intellectual property. UTRF has engaged an MBA team to assess its business and operations and to identify opportunities to enhance their performance.

UTRF seeks continuous operational improvements. Its goals are 1) for licensing revenues to flow back to the inventors and the University and 2) for research funds to come back to support UT's faculty. These factors will grow the prestige of the University and the state will enjoy economic development associated with this technology. Dr. Tompkins asked if during these tough economic times it is possible to make more than incremental progress and to move to the status of a national leader. He suggests there is a unique opportunity for UT because of its partnership in the management of Oak Ridge National Laboratory. UTRF can expand opportunities with world-class researchers who have world-class laboratory facilities and novel research infrastructure in place at ORNL. There are challenges to this strategy, including existing IP obligations in effect for all U.S. government facilities and in restrictions for doing business with the Department of Energy. UT and ORNL can help each other and thus help the University and the state of Tennessee. To echo this concept, Dr. Tompkins noted a news release this week which read: *Oak Ridge-UT Project Can Save the Vision of Millions*. Dr. Ed Chaum is the head researcher of the project. Dr. Chaum is a UTHSC researcher working at ORNL with a group of people in nanotechnology. The article states that "working together novel things can be done that could not be accomplished separately." There are mechanisms in place now to do many of these collaborations. UT and ORNL have joint appointments, shared facilities (such as the Joint Institutes), and joint educational opportunities. Think of the

notion of engaging the Laboratory in bringing the best and brightest graduate students in the nation into the University of Tennessee system. UT and ORNL are engaged in sharing intellectual property ownership and privately-funded technology transfer. UTRF has a mechanism to look into the Lab to help develop and capture technologies which complement some of the things UTRF is seeking to do. One of the points of value UTRF is bringing to the University is its focus on legal compliance and reporting to the federal agencies the results of research expenditures of the University. UTRF is striving to ensure that society gets access to these technologies and UTRF is working to expand the doors around intellectual property to enable the University to do some things the University has difficulty doing by itself. UTRF is working to help start-up companies and for UT to get recognition for its contribution. UTRF wants to drive this culture of entrepreneurship and start-up within the state of Tennessee and for revenue to flow back to the University. Dr. Tompkins concluded his power-presentation and report.

Mr. Stansberry asked Dr. Millhorn what must occur for UT to do what was suggested in the last portion of Dr. Tompkins' presentation; that is, to increase our collaboration and cooperation with the Laboratory. Dr. Millhorn stated there must be full integration with the Laboratory at the personnel level, more joint appointments, more joint programs for education, and more UT-ORNL collaborations on programs of national significance. UT needs to better populate the Lab and ORNL needs to be at the University. This is happening more often now at the administrative level and, historically, at the research level. UT and ORNL need to expand these efforts and to continue searching for opportunities to recruit together and to using each other's talents on projects. Both institutions want to do this better and can do so by getting through some minor barriers. Mr. Stansberry asked Dr. Millhorn to present an action plan at the next Research, Outreach and Economic Development Committee meeting on what steps must be taken and by whom to begin and/or continue this process. Dr. Millhorn said he will be pleased to do so.

As part of that action plan, Mr. Schledwitz noted the strong long-standing sentiments that the Memphis community and Health Science Center can be better engaged in the UTRF relationship. With its medical implications, over 50 percent of the revenue of UTRF comes from UTHSC, as well as over 50 percent of the licenses and patents. Yet, looking at the UTRF board representation of the nine external members, one person comes from West Tennessee; in the internal membership, one person comes from West Tennessee. This has been the composition for the last several years despite submission of names for membership. There are now two UTRF board vacancies. Many people, where over 50 percent of this revenue is being generated, want to be a part of this organization but they are not invited to participate. Mr. Stansberry asked for receipt of comments, by email or otherwise, concerning the most effective ways to increase the volume and quality of disclosures, as well as comments on the participation and cooperation with the UT Research Foundation, whether it is through governance or some other means, by Memphis or any other campus or institute. He proposed an action item to take a look at UTRF governance to seek the most effective ways to accomplish its mission. It is a numbers game with the more in-the more out, and it is also a quality game for engaging people with quality disclosures and discoveries.

Mr. Gallimore asked Dr. Tompkins about UTRF's biggest moneymaker and what he could discuss about work in progress. Dr. Tompkins referred to a publically-traded Memphis drug company, in business for over ten years, which is close to getting a product to market and it indicates a position of tens of millions of dollars in holdings for the development of their technologies. UTRF believes the company is a good prospect. There are a number of other companies that, over time, will probably do well. UTRF has good technologies in the wings, including some interesting UT Institute of Agriculture biotech initiatives. Dr. Tompkins indicated he'd be pleased to discuss these and other initiatives in one-to-one conversations. There are no guarantees on any of these endeavors, but the prospects appear promising.

Mr. Stansberry recognized a question from Dr. Gourley, who asked Dr. Tompkins about the disbursement plan back to the colleges. To improve what's going into the funnel, there must be incentives and funds coming back to the researchers; nothing to this effect has yet been seen and this is a great concern, especially as budgets shrink and as more revenue is generated back into UTRF. Reserves are important; however, if reinvestment of money isn't put back into research, things won't happen. Dr. Tompkins noted he was in complete agreement. He reviewed the two UTRF revenue-sharing plans: (1) an approved revenue-sharing plan where disclosures are made after July 1, 2008, and (2) a legacy plan. (1) After July 1, 2008, of any revenue received and processed, the first \$5,000 generated will go to the investor. After this point funds go to net; after net revenues, 40 percent of income will go to the inventors, followed by flow-back to academic units. There is not an item producing revenue from that date, out of those disclosures, that UTRF is sharing. (2) The legacy plan looks at those items which have been licensed in the past and where reserves in the UTRF are at a specified level. After this level a large percentage of these funds, similar to the revenue-sharing agreement for recent disclosures, come back to the units. UTRF seeks to build revenues to the reserve level to enable the return flow.

Mr. Stansberry asked that UTRF strategy for increasing disclosures, cooperation and participation be revisited at the next Board meeting or at an appropriate setting to determine a way to get funds out more quickly. Dr. Tompkins noted the schedules will be revisited, as he has confirmed with Dr. Gourley.

Mr. Cates stated he seconded Mr. Schledwitz's view concerning the top-heaviness of the UTRF Board. The time for action has long passed and he implores that action be taken on this situation. On the second point, with the majority of disclosures coming from UTHSC, there is a lack of confidence in UTRF. "Sales call" meetings with the researchers, a basic approach to any research foundation, should be held on a timely, systematic basis. Mr. Cates suggested for there to be some method of feedback of customer satisfaction, a rating of the effectiveness of the UTRF, which, to his knowledge, is lacking at the present time. This deficiency in customer feedback admits a lack of confidence and provides no way to rate the UTRF on this critical point. Mr. Stansberry reiterated he welcomes any suggestions concerning how to restore confidence in the UTRF. Mr. Cates believes it is not complicated: UTRF getting out and talking to researchers should be the number one priority. Mr. Horne agreed with earlier remarks of Mr. Schledwitz, Mr. Cates and Dr. Gourley. He also concurs that two members from Memphis should be added to the UTRF Board. Mr. Stansberry noted a review of UTRF governance will be made. Confidence, cooperation and participation are

needed for UTRF success; perhaps good PR, sales calls and responsiveness will accomplish this success.

Mr. Schledwitz inquired about the size of UTRF reserves and was told by Dr. John Hopkins that there is approximately \$1M in reserves at the present time. Mr. Schledwitz noted a \$2M UTRF benchmark had been approved; however, in the meantime, funds are coming in, with \$1M held in reserves, and investors and researchers want and need money now. Dr. Rusty Johnson (UTHSC Vice Chancellor for Research) noted the reserve is not campus-specific and the reserve was built primarily by UTHSC. Once the \$2M reserve is reached, every campus will share in the revenues; yet, the reserve is made up almost entirely from the UTHSC. Mr. Stansberry noted the UT Research Foundation Board must deal with this issue, among others. Data is needed concerning these issues, as well as ideas and comments. Dr. Johnson stated the point Dr. Gourley made was extremely important. If faculty is doing research that becomes entrepreneurial, they must be encouraged by their department chairmen and by their deans. If money does not flow back to the department chairs and college deans, they will not do this work. No money has yet flowed back to these units; money dispersed has gone to the inventors, as it should, however, nothing has yet gone back to the departments or the colleges. One way to accomplish this flow-back would be to set a reserve for each campus. Once a campus exceeds its reserve, departments and colleges could share in the revenue and this disbursement would occur more rapidly. To say there is a \$2M reserve and it makes no difference where it comes from before it can be shared does not provide the needed incentive for the departments and colleges. Dr. Gourley noted that thought should be given to what is being invested in. There were five researchers in his college using the same triple-quad mass sector in line, which slows down the process. It would be advisable to stipulate that funds be used for research infrastructure within the program, because this area is where the investment needs to be made to grow the funnel.

Mr. Stansberry noted these were constructive comments and the UTRF Board will work to be responsive to them.

VII. Federal Economic Stimulus Package Update—Information

Mr. Stansberry introduced Dr. Blake Thompson, who has formerly served as a senior staff member and science advisor to the U.S. Senate Committee on Appropriations and as a senior member of Sen. Cochran's staff (of Mississippi). Dr. Thompson is currently Director of the Office of University Research and Educational Partnerships at ORNL and Special Assistant to UT Executive Vice President David Millhorn.

Dr. Thompson presented a power-point presentation of the American Recovery and Reinvestment Act of 2009 (ARRA), also called the Stimulus Package. Two major parts of the plan are: 1) federal appropriations (\$100B of which UT might actively be a player) and 2) the state fiscal aid package (\$50B). The ARRA is a comprehensive federal stimulus package, encompassing Agriculture, Defense, Homeland Security, Energy, Education and more, increasing the number of pieces the University can play in this realm. It is one-time, non-recurring funding. The focus is on major collaborative projects; there will be some PI-driven RFP-type proposals, but most of the real interest in spending this money is for major, multi-

institution projects that move institutions forward. Fortunately for Tennessee, energy is a key theme that runs throughout this appropriations' bill. The budgeting process at agencies is now underway. The RFP process will come out this summer. By this time, however, it will be too late to take advantage of the major ARRA opportunities; now is the 60-day window where delicate, behind-the-scenes negotiations are underway with federal agencies, the Office of Management and Budget (OMB), and the Congress. If institutions are not now engaged, they will not be engaged at the end of the funnel, as Fred Tompkins stated. The stimulus package process began about two days after President Obama was elected. It was a key moment when President Obama named a senior House Appropriations staffer as the deputy OMB chief. OMB is actively a part of this on-going process now, on-going because negotiations about the process are not concluded.

OMB has issued initial stimulus guidelines and there will be other, more definitive guidelines issued in approximately 30 days. Most agencies are now drafting spend plans which will come out in a RFP-type process that program managers at federal agencies have largely designed with a certain intent in mind. The ARRA, with a largely domestic focus, is dramatic in size and scope, larger than anything ever seen in a stimulus package. Dr. Thompson cited Department of Agriculture Distance Learning, Telemedicine and Broadband Program (\$2.5B), and the Commerce, Justice & Science Broadband Technology Opportunity Program (\$4.7B) as tremendous opportunities for a UT system-wide initiative. The question is whether there is capacity to roll-out \$7B in broadband capacity in the next few months. Other huge opportunities universities are chasing are with the National Science Foundation (NSF), which will go from a \$6B to a \$9B organization. The university leadership, in particular, sees \$2.5B for major equipment, facilities, and research infrastructure—things which have long-term payoffs.

Energy is a big winner in the stimulus package. There is no question of a Department of Energy Manhattan-type project, as Sen. Alexander has termed it. ORNL will be one of the beneficiaries of the federal stimulus package funding. The energy theme also runs throughout the Department of Defense, which presents a tremendous opportunity for us to demonstrate capability and to take some of the technologies in energy into other realms of the federal government.

Of particular interest to the UT Health Science Center (UTHSC), the National Institutes of Health (NIH)-National Center for Research Resources (NCRR) received a large budget increase, almost \$40B as an agency, which includes \$1B fund to build infrastructure. The energy theme carries through here, as well, and priority is given to applicants with experience in demonstrating energy-savings or beneficial environmental effects. This purports well for collaborations with ORNL as the largest science and energy laboratory in the country. \$1B for Health Information Technology brings further opportunity for revolutionary strides in IT initiatives. There is an opportunity to build an instrument at the Spallation Neutron Source (SNS) at ORNL which will work in this biomedical systems/structural biology realm. This will be a competitive proposal and a team is being put together, to include UTHSC members.

Within the Department of Education stimulus appropriations, the "Higher Education Repair and Modernization" account (between \$3-6B) was initially in both the House and Senate bills

and was later removed. It is likely this money was considered part of the state fiscal aid package. The State Fiscal Stabilization Fund will be administered by governors. Language within this fund allows modernization, renovation and repair activities consistent with state law for higher educational institutions. Within 30 days or so information will be presented concerning how monies will be used based upon governors' applications to the Department of Education.

Dr. Thompson concluded his presentation with implications for the \$800B ARRA. Researchers will prepare the RFP-type processes with existing mechanisms they already know and understand. The key will be to develop spend plans and take advantage of where the real increases and opportunities are, especially the focus on energy. Dr. Thompson alluded to the priority-setting processes at UT (Federal Stimulus Executive Committee), chaired by Dr. Millhorn. Collaborations among institutions and the identification of major projects and areas, such as an energy focus with ORNL, will be critical in the process. In many ways it is a competition among these institutions and UT needs to be ready to compete for these major projects in this on-going process.

Mr. Stansberry asked Dr. Thompson how UT should take advantage of these opportunities. Dr. Thompson stated he believes the unique resources of the University and the investments it has made in energy-related activities in ORNL will allow UT to capitalize on these sizeable opportunities. Mr. Charles Anderson asked if stimulus funds outside state education monies can be used to build out the research park at Cherokee Farm. Dr. Thompson responded that there is tremendous opportunity to do so. The Joint Institute for Advanced Materials (JIAM) is a pertinent example, capitalizing on the underlying problem of energy materials. The JIAM vision is a UT-ORNL collaborative project focused on the energy theme running through the stimulus bill. Dr. Millhorn noted it is important to understand the bill provides for job-creation within the projects not only during the course of the funding but for sustained employment. This will be the focus of the proposals to a large extent. Mr. Wharton asked if there were funding opportunities to renovate or repair dilapidated buildings. Dr. Thompson suggested these facilities be listed as funding priorities and stated that stimulus funds can be used for renovation and refurbishment for items such as upgrading heating-cooling systems to energy-efficient units. Stimulus funds can be used for projects and plans already in place. There are buildings on the UTHSC campus which are prime candidates for stimulus funds.

Mr. Stansberry asked who will coordinate the University-wide stimulus response, both to the state and federal government, in determining priorities and what the mechanism would be in this process. He would like regular, perhaps weekly reports, to be emailed to the Board with this information. Mr. Wharton noted he would like to understand the priorities being recommended and believes these should be recommendations made to the Board of Trustees. Dr. Millhorn outlined the stimulus task force he is chairing which includes representatives from all UT campuses and institutes. The first meeting is March 10. Mr. Horne suggested this committee membership include a UT trustee and Mr. Stansberry said he would be pleased to participate in this group as it is the biggest opportunity he has been shown in his tenure at UT.

Ms. Loughry noted Dr. Thompson had made an excellent presentation and requested a copy be distributed to the Board.

Mr. Cates asked if there are provisions for dilapidated charity hospitals within the stimulus plan. There is not a UT teaching hospital and reliance is made on the MED, which is dilapidated and has limited resources. Dr. Thompson spoke of a number of flow-back payments to the states, such as Medicaid. Once received such funds can be used for whatever needs are deemed priority by the states. Dr. Petersen pointed out the multiple-access avenues for opportunities depending on which agencies are making specific proposals within the landscape of the stimulus plan.

Mr. Stansberry thanked Dr. Thompson for his presentation, and Dr. Thompson said he looks forward to working with committee on the stimulus opportunities. It is important these efforts use the full expanse of the UT-Battelle organization.

VIII. Other Business

Mr. Stansberry asked if there was other business for the committee. There was none.

IX. Adjournment

Mr. Stansberry asked for a motion for adjournment and Mr. Gallimore made a motion for adjournment. The meeting was adjourned at 10 a.m.

Mr. Stansberry thanked the committee for their participation in today's meeting.

Respectfully submitted,

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