

**UNIVERSITY OF MASSACHUSETTS**

**AMHERST•BOSTON•DARTMOUTH•LOWELL•WORCESTER**

**MINUTES OF THE MEETING OF THE  
COMMITTEE ON SCIENCE, TECHNOLOGY AND RESEARCH**

**Wednesday, November 18, 2009; 8:00 a.m.**

**University of Massachusetts Club**

**Dining Room**

**225 Franklin Street – 33rd Floor**

**Boston, Massachusetts**

**Committee Members Present:** Vice Chair Johnston, Trustees Hoyt, Lawton, Osterhaus-Houle, Thomas and Young

**Committee Member Absent:** Trustees King-Shaw, Reville and Tocco; Chairman Manning

**University Administration:** President Wilson; General Counsel Heatwole; Senior Vice President Williams; Vice President Chmura; Associate Vice Presidents Brancato and Harrington; Chancellors Holub, Motley, MacCormack, Meehan and Collins; Executive Deputy Chancellor/Provost Flotte; Provosts Langley and Garro; Vice Chancellor for Research and Engagement Malone, UMass Amherst; Vice Provost for Research Xia, UMass Boston; Vice Chancellor Petrovic, UMass Dartmouth; Ms. Moore Co-Director, RNA Therapeutics Institute, UMass Worcester; Ms. Kiefe, Chair, Quantitative Health Sciences, UMass Worcester

**Faculty Representatives:** Professor May, UMass Amherst; Ms. Gibbs, UMass Dartmouth, Professor Carter, UMass Lowell

Vice Chair Johnston convened the meeting at 8:08 a.m. and informed the Committee that Dr. Janet Pearl had been replaced as a member of the Board. He thanked former Trustee Pearl for her leadership as former Chair of the Committee.

Vice Chair Johnston expressed satisfaction that we are returning to the process of engaging with campus leadership on their research strategies. He noted that today's agenda includes a presentation from Chancellor Michael Collins and his team on enhancing the research enterprise at the UMass Medical School. Chancellor Holub and the team at Amherst will present their strategy at our next meeting in February.

He then announced that the Association of Public and Land Grant Universities (APLU) has appointed President Wilson to head one of seven commissions that promote the public university's role in different aspects of national life. President Wilson will serve as Chair of the Commission on Innovation, Competitiveness and Economic Prosperity and as a board member of the APLU until the end of 2012.

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Under the **President's Report**, President Wilson first expressed his excitement for his upcoming work with the Commission on Innovation, Competitiveness and Economic Prosperity and the opportunity it presents for communicating the accomplishments of UMass to a national audience. He then thanked Vice Chair Johnston for assuming the Chair of the Science, Technology and Research Committee, and thanked Dr. Janet Pearl for her dedication and commitment while chairing the Committee over the past two years.

President Wilson next reported on some important developments across the University. The most important development since September has been the final State approval of funding for the Albert Sherman Center at the UMass Medical School. This is one of the most significant developments in the history of the Medical School. These funds were provided through the Mass Life Sciences Center. While the state's fiscal situation remains constrained, the Center is now hopeful that it will still have a modest budget of \$10M to work with in the coming year. This should provide additional funding opportunities for our campuses to pursue.

The other strategic priority that this Committee has focused on has been Clean Energy. Under the leadership of Senior Vice President Williams, we had a team in China recently exploring potential collaborations in R&D and technology commercialization. This effort has been led by Paul Kostecki of the Amherst campus and Allan Guo from the President's Office. In addition, the state is strengthening its approach to Clean Energy by merging two key state programs – the Clean Energy Center and the Renewable Energy Trust. When completed, this merger will create a single state-wide Board that will control about \$50M in annual clean energy resources. It should also provide additional funding opportunities for our campuses to pursue. President Wilson also noted that he will be a member of the board of this important initiative.

In the area of Information Technology, our major system-wide initiative is the planning and development of a Green High Performance Computing Center in Holyoke. We have completed a very successful initial phase of planning for this facility in partnership with the state, colleagues at MIT, BU, and private industry.

Finally, as mentioned at the last meeting, our Technology Commercialization Program is going strong, having earned a record amount of over \$73M in FY 09 – primarily due to some spectacular successes at the Medical School.

The University was a leader in the state's celebration of "Clean Energy Week" last week in which we showcased new technologies at two different conferences – in Boston and Springfield - - that attracted close to 1,000 participants. The University has also approved an investment of \$325,000 in a very promising nanotech company called Anterios; CVIP has launched the 7th Annual Technology Development Fund competition with plans to award grants to faculty across this system to move their inventions closer to commercialization – e.g., through "proof of concept" activity.

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In spite of all the economic challenges we face today, the University's R&D enterprise continues to grow and thrive. Additional evidence of that fact will be heard today from Chancellor Collins and his team in their presentation of Worcester's R&D strategy and from Associate Vice President Brancato in his report on our success in winning Federal R&D dollars, especially under the President's Economic Stimulus Bill.

Vice Chair Johnston then asked for a motion to **Consider the Minutes of the Previous Meeting.**

It was moved, seconded and

**VOTED:** To approve the minutes of the September 17, 2009 meeting of the Committee.

Vice Chair Johnston introduced the first item for **Discussion, UMass Worcester Research and Development Strategy.** Chancellor Collins led a team from the Medical School in Worcester and described its R&D program and strategy for the future. Chair Johnston noted that in recent years the Medical School has developed the largest R&D program in the system, led the University's impressive growth in technology commercialization, and seen its faculty win numerous national and international awards and commendations, including the Nobel Prize.

Under Chancellor Collins' leadership, the Medical School is continuing to develop and position itself for future growth with impressive new hires, strategic R&D initiatives and substantial development of its infrastructure as highlighted by the new Albert Sherman Center.

Chancellor Collins made opening remarks and introduced Dr. Terry Flotte, Executive Deputy Chancellor/Provost and Dean of the Medical School; Dr. Melissa Moore, Co-Director of the RNA Therapeutics Institute, a Howard Hughes Medical Institute Investigator, and a Professor of Biochemistry and Molecular Biology; and Dr. Catarina Kiefe, Chair of the Department of Quantitative Health Sciences.

Provost Flotte indicated that there is a tremendous atmosphere of excitement at the Worcester campus. He then reported that the Medical School's mission is to advance the health and well-being of the people in the Commonwealth and the world through pioneering advances in education, research and health care delivery. In 2010 the Med School will end up with \$242M in research awards, the vast majority coming from federal funding. Research growth has occurred even with a fairly flat level of funding from the state allocation, which is typical of all the campuses.

Recently, the Medical School received \$36M million in federal research funding over 2 years which includes 40 supplemental grants and 28 reachback grants. The strategic research direction is to build a robust clinical and translational research program, and then to move scientific discoveries into clinical application and into Massachusetts communities. The Center for Clinical and Translational Science initiative reflects new directions of research. During the five-

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campus plan around the life sciences, Chancellor Collins endorsed the idea that the Center should be a system-wide initiative. Collaborations have been established with each of the other four campuses as well as arrangements for the sharing of research core facilities and the development of new grant programs such as the Life Sciences Moment Fund.

Provost Flotte then provided a virtual tour of the Medical School's Research Enterprise with highlights from each of its major facilities. The Medical School Building: he described the work of Dr. Gary Stein, Chair, Cell Biology and Interim Director of the Center for Stem Cell Biology and Regenerative Medicine. Dr. Stein recently received 3 NIH grants as a result of his work on the Massachusetts Stem Cell Bank. Dr. Chris Sasseti joined the Medical School in 2004 and focuses on tuberculosis research. He is two UMass Medical School researchers out of fifty young investigators nationwide to be named an Early Career Scientist by the Howard Hughes Medical Institute.

The Lazare Research Building (LRB): This facility was developed in 2000 and is an example of how the Medical School drives economic development, with an annual operational impact of \$100M of research activity and 700 jobs. Jeanmarie Houghton is a winner of the Presidential Early Career Award for Scientist and Engineers and a leader in the study of cancer stem cells. Dr. Robert Finberg, Chair of the Department of Medicine, recently received \$3.6M to study innate immune responses associated with the herpes simplex virus. And, Dr. Shan Lu, Professor of Medicine and Biochemistry, recently received two five-year grants from NIH totaling \$18M in support of his research and development for an AIDS vaccine

The Biotech Park II for Molecular Medicine: This is the home to the Medical School's research on oral delivery of RNAi and treatment of autoimmune disease. Drs. Michael Czech and Gary Ostroff were awarded a 5-year, \$6M Director's Transformative R01 Award from NIH to continue pursuit of a novel approach to the delivery of small pieces of genetic material in order to silence inflammation related genes using RNAi. In addition, the facility houses Dr. Craig Mello, who co-discovered RNAi, a process by which dsRNA triggers gene silencing, and won the Nobel Prize in 2006, along with Victor Ambros, who discovered micro-RNAs and won the prestigious 2008 Lasker Award.

The Massachusetts Biologic Laboratories (MBL): Its facilities are located in Jamaica Plain and Mattapan. It is the only publicly owned non-profit FDA-licensed manufacturer of vaccines and other biologic products in the U.S. In recent years, it has become a tremendous driver for technology licensing revenues, with revenues approaching \$100M annually. Since 1998, MBL has developed eight monoclonal antibodies (Mabs). Executive Director Donna Ambrosino is an expert in monoclonal antibody for rabies, and has been a leader in the global health problem of rabies and its treatment, with an active program in India.

The Advanced Center for Clinical Education and Science (ACCES): The facility represents the convergence of clinical care, research and education, with Centers of Excellence (heart and

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vascular, diabetes, musculoskeletal disease and cancer). David Harlan, MD is Chief of the Diabetes branch.

Catarina Kiefe, MD, Founding Chair of the Department of Quantitative Health Sciences (QHS), then reported on the department. Their vision is to improve population and individual health by transforming health care delivery through methodological innovation. In seeking their vision, their goal is to become nationally and internationally recognized. Thirteen members have been recruited including four division chiefs. Jeroan Allison serves as the Department's vice chair, and John Ware, a member of the Institute of Medicine, is one of its renowned faculty. Seven innovators in methodology with independent research programs have been recruited to date. By the end of 2010, 22 faculty members are expected to be on board, and 32 by 2012.

Lastly, Provost Flotte reported on The Albert Sherman Center (ASC), now in development. The vision of the ASC is to promote T1 "bench-to-bedside" translational research, integrate quantitative 'dry lab' methods, create the ideal learning environment and foster interactions among students, faculty, and the community in public and social forums.

The Advanced Therapeutics Cluster (ATC) is a key element of the Medical School's new strategic research direction, focused on translating fundamental basic science discoveries into innovative and effective human therapies. The elements within the cluster include the Center for Stem Cell Biology and Regenerative Medicine, the RNA Therapeutics Institute and the Gene Therapy Center.

Melissa Moore PhD, Co-Director of the RNA Therapeutics Institute (RTI), a Howard Hughes Medical Institute Investigator and a Professor of Biochemistry and Molecular Biology, spoke on the RNA Therapeutics Institute. The Institute was created around Dr. Mello's Nobel Prize-winning research on RNAi. The Institute's vision is to build therapeutics expertise around the already strong core program in basic RNA biology research, hire chemists to synthesize modified RNAs and small molecule lead compounds targeting various RNA-base pathways, hire structural biologists and structure-based drug designers, and develop strong connections with clinicians and bioinformatics. RTI anticipates developing its translational research for programs such as ALS (Lou Gehrig's disease) by collaborating with the Stem Cell and Gene Therapy programs.

Gene Therapy is an important element of delivery for treating defective disorders. Guangping Gao is Founding Director of the Gene Therapy Center. Dr. Shalesh Kaushal has been recruited to work with a defective disorder that causes blindness.

A strong economic impact is projected for the ATC. Worcester is being solidified as a hub for the life sciences, State investment is being leveraged to acquire new NIH funding, and commercialization of new products is being promoted in partnership with Massachusetts companies. The future is bright for Gene Therapy and RNA Therapeutics.

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Following the panel presentation, there was a brief discussion on the challenges facing the Medical School in developing its research program. The lack of a substantial endowment was highlighted as a particular challenge. Vice Chair Johnston, Trustee Thomas and other Trustees then congratulated Chancellor Collins for his leadership and thanked the participants for an extremely impressive presentation.

The final item was the **Update on Federal R&D Expenditures Performance and Track Record in Securing Federal Recovery Act Funds**. Associate Vice President Brancato reported on some “good news” about the performance of UMass campuses in R&D. He then reported on a new (still unpublished) NSF report that describes the University’s continually improving R&D performance, as well as recently published national data on research expenditures for FY2008.

For FY2008 the University’s research enterprise was at \$435M. UMass now ranks 38<sup>th</sup> in the U.S. among all universities in annual expenditures and 21<sup>st</sup> among public universities. It also increased its ranking on federally-funded R&D to 33<sup>rd</sup>. These improving rankings reflect the fact that UMass continues to grow its research enterprise at a rate higher than national average. MIT, Harvard, UMass and BU are now responsible for 80% of University R&D in the Commonwealth, with UMass continuing to conduct the lion’s share of this R&D outside of Route 128.

Associate Vice President Brancato then reviewed the latest results of our faculty’s efforts to secure funding under the American Recovery and Reinvestment Act (the federal stimulus program). He noted that to date 160 awards were selected for funding, over 100 from NIH and 38 from NSF. The total project funding for awards is \$84M.

The meeting adjourned at 9:49 a.m.

Zunilka Barrett  
Assistant Secretary to the Board