

UNIVERSITY OF MASSACHUSETTS

AMHERST•BOSTON•DARMOOUTH•LOWELL•WORCESTER

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

**Wednesday, August 29, 2007; 8:00 a.m.
Amherst Room
225 Franklin Street – 33rd Floor
Boston, Massachusetts**

Committee Members Present: Chair Pearl; Trustees Beatrice, Lawton, Nath and O’Shea (via conference call)

Committee Members Absent: Vice Chair Manning

University Administration: President Wilson; Vice Presidents Chmura, Lenhardt and Smith; Senior Vice President Williams; Chancellors Motley, MacCormack and Collins; Deputy Chancellor Stanton; Provosts Fonteyn and Garro; Vice Chancellor Ockene; Associate Vice Presidents Brancato, Griesemer and Harrington; Vice Provost Kostecki, UMASS Amherst

Faculty Representatives: Professor May, UMASS Amherst; Ms. Gibbs, UMASS Dartmouth

Chair Pearl convened the meeting at 8:04 a.m. and asked for a motion to **Consider the Minutes of the Previous Meeting.**

It was moved, seconded and

VOTED: To approve the minutes of the June 6, 2007 meeting of the Committee.

Under the **Chair’s Report**, Trustee Pearl indicated her honor and privilege serving as Chair of this Committee. The University is placing greater emphasis on research and development, and the State’s interest in science and technology-based economic development is evidenced by the Governor’s Life Science Initiative. The very creation of this Committee reflects the commitment of the Board, in addition to the University of Massachusetts Administration and faculty, to focus specifically on how the University of Massachusetts will position itself in the crucial areas of Science, Technology and Research in the future.

We hope that important collaborations will occur as an end result of the efforts of this Committee, the work of University faculty and administrators, and the relationships developed amongst faculty, students, industry and community. The breakthroughs in science and technology will help raise the University in stature to help benefit the citizens of the Commonwealth, the United States and the world.

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Chair Pearl introduced the newest members of the Committee: Anthony Beatrice of the University of Massachusetts Lowell, and Bharath Nath, medical student at the UMass Medical School in Worcester.

Today's agenda includes updates on initiatives that the Committee has helped launch or promote in the last year, including life sciences, clean energy, industry relations, and the President's investment funds. At the next meeting of this Committee, we will have the campuses begin the process of reporting on the performance of research and development and their competitive positioning based on data from sources such as the National Science Foundation.

The next item was the **President's Report**. President Wilson thanked Chair Pearl for her willingness to serve as Chair of this Committee and also welcomed the new members of the Committee. He noted that over the last few months UMass has had some great successes in the areas that this Committee is interested in, including the following:

- This year (FY 2007) UMass set a new record in generation of revenues from intellectual property (IP): over \$41 million. We have benefited particularly from the sale of stock of companies using our RNAi technologies. This is an outgrowth of the work of Nobel Laureate Craig Mello and his colleagues. Further up the IP pipeline, every campus reported increases in invention disclosures, patent applications, and patents issued during the past year.

- We have an exciting new start-up company that was just created out of UMass Amherst, called SunEthanol, which is based on biofuels technology developed by Professor Susan Leschine in the Department of Microbiology.

- The campuses have been involved in two major science and technology initiatives with the Commonwealth. The first is a U.S. Department of Energy-funded testing facility for new wind blade designs, which will be built in Charlestown and has the wind energy group at Amherst as the lead academic institution. This is a \$20 million project. The second is the recent announcement that Woods Hole Oceanographic Institution (WHOI) has been selected to lead the development of key components of ORION, a major research initiative to support ocean science. The Boston, Dartmouth, and Amherst campuses are all partners of WHOI and will participate in the \$110 initiative.

- In addition, the Commonwealth's Life Sciences Center selected the UMass Donohue Institute for a statewide study of the talent and workforce needs of the life sciences industry. All five campuses are engaged in this effort, and it is the very first project funded by the center.

- Michael Collins, the Interim Chancellor of the Medical School and Senior Vice President for Health Sciences, is doing an inventory of all life science work on the campuses and meeting with faculty and administrators so that we are fully prepared to take advantage of the Governor's proposed initiative. We have a number of existing partnerships, such as Lowell and Dartmouth in biomanufacturing and the Medical School and Lowell in medical devices, with emerging

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collaborations in other life sciences areas as well. All of our campuses are involved at this point. Both the Administration and the Legislature are supportive of such collaborative approaches.

*The President also noted the theme of collaboration in other areas such as clean energy, industry relations and the President's Investment Funds, which are all part of this meeting's agenda.

The first item for **Discussion** was an **Update on the Life Sciences Initiative**. Chancellor Collins reported on the Governor's legislation. The bill includes an array of programs and it is important to remember that the \$1 billion is spread over 10 years and includes tax breaks to companies as well as capital and operational funds. Between now and June 2008 we expect that the Commonwealth will have \$75 million that would be available.

There have been a series of meetings with the campuses, engaging in discussions about the roles the University could play in the Governor's Initiative. Based on those, there is a sense that over the course of the next five years, UMass has aspirations to invest somewhere between \$500 million and \$1 billion dollars into the life sciences, using state, internal and other funds. The goal is to devise a plan as to how the University will move forward to make our aspirations to an executable plan.

With respect to the proposed stem cell bank, the Medical School has begun a study to find out what the project would entail. In that evaluation it was clear that another opportunity existed – development of a stem cell registry. There is no comprehensive registry of all the existing stem cell lines in the world and the research being undertaken with them. This registry could be developed by UMass and branded with the University's name. So UMass will propose to the Commonwealth that it first develop the registry (at a cost of about \$1.5 M) and then build the bank (roughly a \$15 million project). Subsequently, UMass intends to move forward with the University's proposal for \$66 million to create a research institute in regenerative medicine (developed at the urging of this Committee by the system-wide stem cell working group).

Beyond that, the Medical School is furthest along among the campuses in its thinking about what would be funded next. The Medical School is the RNAi center of the world. In UMMS's aspirant plan, there is building in our future and a component of that would be an RNAi therapeutic center. UMMS would create a center for stem cell biology, a gene therapy center, and an RNAi therapeutic center. This investment totals roughly \$250 million. We now need to get our arms around the efforts that would be led out of the other campuses (e.g., regional innovation centers), which we expect to total upwards of \$200 million and likely much more.

Chair Pearl thanked Chancellor Collins and had a few questions with regard to registry and how can we generate revenue.

Chancellor Collins responded that this is not primarily a revenue-generating initiative. It would largely be a web-based tool. The opportunity here is to be first and to be best. The way

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we get to be first is to be funded right away through the Commonwealth. However, this is much more of a service opportunity than it would be a revenue opportunity. President Wilson reported that the initiative has marketing potential as the University of Massachusetts Stem Cell Registry.

Chancellor Collins reiterated that we want to be known as an advanced therapeutic cluster that has some of the best scientists in the world around RNAi, stem cell and gene therapy – not just a stem cell bank and registry. If there is sufficient funding from the state for the latter, the University will have to figure out whether this is something it wants to continue.

The next item was an **Update on the Clean Energy Working Group**. Vice Provost Kostecki reported that the purpose of this working group is to position the University as a leader within the Commonwealth, nationally and globally. He stressed that the University already has significant strengths in this area. There are several components to the working group's activities: a system-wide research inventory is ongoing, as is state government and industry outreach. The group is now focusing on pulling together all of our knowledge into a white paper to outline future priorities and directions and developing a communications and marketing strategy to deliver the message of our work to key constituencies.

The working group met recently with Commonwealth Energy and Environmental Affairs Secretary Ian Bowles, and it took away a couple key messages. The Administration has a strong interest in working with UMass to increase the state's competitive ability to win major research, education and demonstration centers. The state also wants to us to help build a clean energy workforce development program to address what they see as one of the needs of the Commonwealth. With regard to the industrial outreach, the working group has ties to ongoing activities to establish a statewide clean energy council.

Trustee Lawton had a question about the nuclear reactor at UMASS Lowell. As one of 28 universities in the country that has an ongoing nuclear reactor, the University of Massachusetts stands to benefit substantially by looking into the role that the University can play with regards to nuclear power. He indicated his belief that it is important to include those activities in the inventory and discussion of priorities for University's clean energy strategy.

Vice Provost Kostecki indicated that the working group needs to continue to refine the parameters for what should be included in the inventory as a "clean energy technology," but that he believed the nuclear energy activities at Lowell were accounted for. However, he also noted that the Commonwealth seems to have no interest at this time in promoting the expansion of nuclear power as an energy source at this time (although there may be other opportunities to pursue such as international projects).

The next item was an **Update on Efforts to Strengthen Industry Relations**. Associate Vice President Brancato reported that there is a growing understanding is that these activities are embedded in the fundamental research, education and service mission of the University. Several steps are being taken. In terms of staffing, the President's Office and campuses are devoting

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additional human resources to the activity. New guidelines for agreements with industry have been developed and disseminated (and these have helped facilitates alliance agreements with companies such as Raytheon, Kodak, Bausch & Lomb, and IBM). And, new metrics for measuring progress in this area are being developed. All this is being done in ways that serve individual campus' special needs, opportunities and challenges. The University wants to give the campuses the opportunity to take leadership and run with the ball with respect to the kind of things they want to accomplish and pursue in industry relations.

Trustee Nath had a question about industry relations in context to purchasing agreements with particular company vendors, and if that's the case is this a coordinated university-wide level or are they restricted to campus or departments? Mr. Brancato responded that we have not included procurement as part of the industrial relations discussions at this point. Vice President Lenhardt added that we want to make sure that our industry relationships are properly developed; we have certain stipulations to meet certain standards. President Wilson reported that we have traditionally viewed procurement as very separate from corporate relations and activity.

The next item was the **President's Creative Economy Initiatives Fund and Science and Technology Initiatives Fund: 2007 Awards**. Vice President Chmura reported that this is a very important tool to promote the University's research enterprise. President Wilson initiated the fund in the area of science and technology four years ago and expanded it to other non-science areas this year. The purpose here is to use approximately \$1.5 million to encourage the growth of our research enterprise particularly in strategic areas like life-sciences, energy, and the creative economy.

Vice President Chmura reviewed the growing level of collaboration in this year's S&T projects – highlighting system-wide efforts in stem cell R&D (led by Worcester and involving all campuses), nano-medicine (involving Amherst, Lowell and Worcester), and intelligent transportation systems (involving Dartmouth, Boston, Lowell and Amherst). Others included projects focused on marine sensing networks (Amherst, Dartmouth, Lowell and Woods Hole), youth health promotion (Boston and Children's Hospital), robotics and human interaction (Lowell and industry), and wireless communications (Amherst and industry).

Senior Vice President Williams's report on the Creative Economy Initiatives Fund began by noting that the University supports scholarship across a broad range of disciplines, not just science and engineering. The Creative Economy Fund looks to the humanities and social sciences as an important part of the economy, one that encourages an invigorated and engaged population.

Reviewing the funded projects, she noted that collaboration between the Amherst campus and the Dartmouth campus, jointly led by Deans Martin and Peacock, was made possible. Other supported projects include COOL: the Cultural Organization Of Lowell, and the revolving Museum. There is also a collaboration between the Boston campus and the Boston Public

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Library to provide access to rare books for a population that hasn't been able to get them before. It is a new community outreach program.

Trustee Nath asked if these are new grants or are they one-time grants. Senior Vice President Williams indicated they are one-time grants. President Wilson added that these grants are intended to take an emerging effort and nurture that into the next stage.

In **Concluding Remarks**, Trustee O'Shea indicated that in listening to the discussion over the course of the Committee meeting, he detected two themes – breadth of focus and strategic targeting and priority-setting – that may be in some conflict but which he both supports. The Life Sciences Initiative, for example, is critically important and should be an area of focus. There may be others and it is worthwhile for the University to invest time and energy in identifying and articulating its priorities. Simultaneously, we also need to enable cross-disciplinary activities and continue to build connections across multiple areas of expertise.

Chair Pearl wrapped up the meeting and asked that the five campus research officers come together as a panel at a future meeting to address this Committee about their strategies and areas of focus in science, technology and research.

The meeting was adjourned at 10:00 a.m.

Barbara F. DeVico
Secretary to the Board of Trustees