

Provost

Academic year 2004 was a year of transition for MIT. The year was marked by the need to realign revenues and expenses of the Institute so as to lower significantly the need for distribution from the endowment. These budgetary changes were heralded at the end of academic year 2003. Planning and implementation of the needed budgetary changes consumed much of AY2004. These budgetary realignments followed small budget reductions that occurred in FY2003. Also in December 2003, Charles Vest announced his intention to step down as president of MIT after 14 years of service in this position. The impending change in leadership also colored the progress made during the year. This report attempts to summarize some of the important issues that occurred during this academic year.

People

In academic year 2002, Professor William J. Mitchell, dean of the School of Architecture and Planning, announced his intention to step down from this position at the beginning of AY2004. A faculty advisory committee was formed to recommend candidates to the provost for this position. On the advice of the committee, Professor Adèle Naudé Santos of the Department of Architecture at the University of California at Berkeley and a well-respected architect was recruited as the new dean of the School at MIT. Because Dean Santos did not join MIT until January 2004, Professor Terry Knight of the Department of Architecture and previously associate dean of the School agreed to serve as interim dean from September 1, 2003, until Dean Santos' arrival.

The other senior officers of the Institute remained the same from AY2003 through AY2004, giving MIT great leadership and stability during this time of transition. The five Schools of the Institute were led by the following deans: Philip S. Khoury, School of Humanities, Arts, and Social Sciences; Thomas L. Magnanti, School of Engineering; Adèle Naudé Santos, School of Architecture and Planning; Richard Schmalensee, Sloan School of Management; and Robert J. Silbey, School of Science.

The senior staff of the Provost's Office continued as follows: Claude Canizares, associate provost; Alice P. Gast, vice president for research and associate provost; and Doreen Morris, assistant provost for administration.

Professor Rafael Bras, Bacardi and Stockholm Water Foundations professor of civil and environmental engineering, completed the first year of his term as chair of the MIT Faculty.

We were saddened by the death of Institute Professor Hermann Haus and the death of Institute Professor Emeriti Franco Modigliani and Arthur Robert Von Hippel.

Academic Programs

There were many developments in academic programs that occurred during AY2004. I have selected several highlights of units that report directly to the Office of the Provost in this report because they are particularly important to the continued evolution of programs at the Institute. For information on MIT's individual academic units, see their separate detailed reports. .

MIT OpenCourseWare

In partnership with the William and Flora Hewlett Foundation and the Andrew W. Mellon Foundation, MIT announced in the spring of 2002 their intent to publish the content of the majority of all subjects taught at MIT into a web-based format and to make the website open to any worldwide user as long as the use is not for monetary gain. The initiative was named MIT OpenCourseWare, or OCW. During AY2004, it moved forward to fulfill this mission under the leadership of Anne Margulies, the executive director. During the fall of AY2004, OCW met the milestone of publishing the first 500 MIT subjects on the web. By spring this total had risen to 708, and progress was well underway toward reaching the goal of publishing 900 subjects by fall 2004.

Broad Institute

In June of 2003, MIT, Harvard University, and the Whitehead Institute for Biomedical Research (WIBR) signed a memorandum of understanding to partner in the establishment of the Broad Institute as an interinstitutional research center focused on genomic medicine. The implementation of the plan for the Broad Institute started in earnest in AY2004 with MIT acquiring the assets of the Human Genome Research Center of the WIBR. This acquisition was led by a team consisting of Jamie Lewis Keith, senior counsel, Julie Norris, director of the Office of Sponsored Programs, and Professor Alice Gast, vice president for research and associate provost. The transaction was completed on November 1, 2003, and resulted in the establishment of the Broad Institute as an entity within MIT with a projected research volume for FY2004 of \$45M.

Plans for the launching of the full interinstitutional collaboration filled the remainder of AY2003, with the formal collaboration agreement being signed on May 1, 2004. The agreement calls for an Operating Committee, cochaired by the provosts of Harvard and MIT, that meets quarterly. This committee makes decisions on financial commitments of the Broad Institute and on the appointment of both core and affiliated investigators in the institute. The founding core investigators are Eric Lander, professor of biology at MIT, WIBR member and director of the Broad Institute and professor of systems biology, Harvard Medical School; Stuart Schreiber, professor of chemistry, Harvard University; David Altshuler, associate professor of genetics, Harvard Medical School and Massachusetts General Hospital; and Todd Golub, associate professor of pediatrics, Harvard Medical School and Dana Farber Cancer Institute. The affiliated faculty members already number over 60 and are from MIT, WIBR, Harvard University, and the Harvard-affiliated hospitals.

The Broad Institute began operation in the original facilities of the WIBR–MIT Human Genome Research Center at 320 Bent Street. A major commitment of new space was approved by the Operating Committee and Executive Committee of the Broad Institute and by MIT to develop a new facility at 7 Cambridge Center, adjacent to the WIBR on Main Street. The facility is owned by Boston Properties and will be developed as lease property by MIT. Groundbreaking for this facility occurred on July 14, 2004.

McGovern Institute for Brain Research

In the spring of 2003, Institute Professor Philip Sharp, the founding director of the McGovern Institute for Brain Research (MIBR) announced his intention to step down from this position and resume teaching and research. A committee to advise the provost on the selection of the next director of the MIBR was formed with Institute Professor Emilio Bizzi as chair. As a result of input from this committee, the provost recruited Dr. Robert Desimone as professor of brain and cognitive science and director of the MIBR. Dr. Desimone is a distinguished neuroscientist and director of the intramural research program at the National Institute for Mental Health. He will join MIT and assume his duties as MIBR director in October 2004.

Facilities

Since AY1999, much energy has gone into the renovation and renewal of our campus through both the development of new facilities and the renovation of existing ones. The most significant milestone in AY2004 toward these goals was the opening of the Ray and Maria Stata Center, which was occupied in March 2004.

The Stata Center is the home of the Computer Science and Artificial Intelligence Laboratory, the Laboratory for Information and Decision Systems, and the Department of Linguistics and Philosophy. It also houses a major child care facility (with the first facility on campus for infants) and teaching facilities. The Stata Center also has significant social spaces, including a large food service on the ground floor and the new Faculty Lunch Room on the 4th floor.

Two major construction projects remained underway. The first project is the brain and cognitive science project, which is a facility for neuroscience research on campus that will house the McGovern Institute for Brain Research, the Picower Center for Learning and Memory, and the Department of Brain and Cognitive Sciences. The combined space in these buildings will be approximately 200,000 net assignable square feet. Construction is on schedule for completion in fall 2005. The second project is the new facility for the Broad Institute at 7 Cambridge Center, which is being developed as commercial real estate by Boston Properties and is scheduled for completion in spring 2006.

The process of site selection and establishing the program for a new facility for the Sloan School of Management and a preliminary schematic design was completed in December 2003 by the architectural firm of Moore, Ruble and Yudell. The project was halted at this point awaiting progress on fundraising. Similarly, the expansion of the Media

Laboratory, for which the design is complete, is awaiting the completion of the fundraising campaign for this facility.

The Institute remained committed to an aggressive plan for renovation of our existing physical facilities. The process for prioritizing and planning space renovations was led by associate provost Claude Canizares as chair of the Committee for Review of Space Planning (CRSP). Other members of CRSP include the provost, the executive vice president, the chancellor, the vice president for research and associate provost, the chief facilities officer, assistant to the provost for space planning, the director of capital project development, the director of design and construction, and the staff liaison in the Department of Facilities. Some \$21.5M was spent on renovations in FY2004. Several major renovations were funded. These included the MOCVD System, Building 13 (VPR); the Department of Materials Science and Engineering Undergraduate Teaching Lab, Building 8; an infrastructure upgrade and second-floor expansion, Building 48; and classrooms, Building 4.

Faculty

At the end of academic year 2004, nine faculty retired from MIT.

Faculty recruitment continued at a vigorous level. In AY2004, 41 faculty were hired at untenured ranks and 5 tenured faculty were recruited. Of these (tenured and untenured), 18 are women and 2 are minorities. During FY2004, 16 MIT faculty members were awarded tenure within MIT. Of these, 2 are underrepresented minorities and 4 are women.

The intensity of faculty recruiting slowed in FY2004 from the aggressive pace of the past six years. In October 2003, the size of the MIT faculty stood at 974 compared to 960 in October 1995, just before the early retirement program. The faculty renewal spawned by the retirement program is essentially complete.

MIT continues in its commitment to improving the gender and racial diversity of the faculty, which began in AY2002 with the formation of the Council on Faculty Diversity.

MIT continued its commitment to enhancing the diversity of the teaching staff of the Institute through the Dr. Martin Luther King Jr. Visiting Professor Program. There were seven visitors sponsored by this program during the academic year. The visitors and their departments were Xavier de Souza Briggs, Urban Studies and Planning; Jonathan Farley, Mathematics; Olufemi Olowolafe, Materials Science and Engineering; Arlie Petters, Physics; Mark Lloyd, Urban Studies and Planning; Koffi Maglo, Department of Linguistics and Philosophy; and Patricia Powell, Program in Writing.

Five new Margaret MacVicar Faculty Fellows were named this year in recognition of their important contributions to the quality of undergraduate education at MIT. These awardees were David Darmofal, Aeronautics and Astronautics; Jean Jackson, Anthropology; David Jerison, Mathematics; Steven Leeb, Electrical Engineering and

Computer Science (EECS); and Anne McCants, History. These additions bring the total number of active fellows to 44, with 16 emeritus fellows.

Graduate Student Fellowships

In academic year 2004, the Presidential Graduate Fellowship program awarded 118 fellowships across all MIT academic departments, down from the 189 awarded in AY2003. This marked decrease in the number of fellowships was caused by the planned removal of financial support from the General Institute Budget. Support in AY2004 came from income from the endowment established for the program and from the provost's discretionary funds allocated as part of the budget process.

The Presidential Fellowships are distributed as follows, and included fellowships named for several individual and corporate donors:

- Akamai (Mathematics and EECS)
- Homer Burnell (Architecture and Urban Planning)
- Robert T. Haslam (Chemistry and Chemical Engineering)
- Kenneth Jamieson, Norman B. Leventhal Presidential Graduate Fellowship
- William M. Layson (Physics)
- Edward H. Linde (Civil and Environmental Engineering)
- Praecis (Biology and the School of Science)
- Walter Rosenblith
- Samuel H. Maslak
- Robert M. Rose
- Kenan Sahin
- EdwardWalsh

Graduate Student Fellowships, by School or Unit

School/Unit	AY2002	AY2003	AY2004
Architecture and Planning	12.5	14.5	14.5
Engineering	56	57	23
Humanities, Arts, and Social Sciences	20	20	20
Sloan	15	15	3
Science	57	57	36
VP Research	7	7	3
Total	167.5	170.5	99.5

In addition to the named and Institute fellowships reflected above, several competitive fellowships are reflected in the final numbers. In AY2004, five students held Provost's Women and Minority Fellowships (one in each school) and four underrepresented minority graduate students held Norman B. Leventhal Presidential Graduate

Fellowships (two in Engineering and two in Science). Also, the School of Engineering added the Lemelson Fellowships to the Presidential Fellowship Program. The Lemelson Foundation provided funding for 6.5 underrepresented minority students with interests in innovation, and these fellowships were intended for incoming students.

The Society of Presidential Fellows hosted several events during the academic year including beginning and end of year receptions and a series of lectures and dinners hosted by high-profile MIT faculty members. Fundraising for the Presidential Fellowship Program continued to be a high priority of the Institute.

Finances

Financial issues dominated MIT in FY2004. The impact of the downturn in the economy on the growth of the MIT endowment forced a severe pullback in the MIT budget that was first projected in spring 2004 and executed as part of the budgetary planning for FY2005 as a restructuring of significant revenues and expenses.

The FY2004 budget included adjustments for the removal of recurring funding for new initiatives, a small decrease (from \$42 per unit to \$41 per unit) of the distribution from the endowment to accounts, and decreases in the General Institute Budget of \$4.0M from academic units and \$13.3M from administrative units. The funding from the General Institute Budget for the Presidential Graduate Fellowship Program also was discontinued, although funding for the program continued from endowment income and discretionary sources. The realignments of revenues and expenses in FY2004 totaled \$39M per year. The FY2004 budget concluded on June 30, 2004, with a surplus of \$5.1M on a base expenditure of \$1,839.9M.

The Institute continued to benefit in FY2004 from the robust growth of the sponsored research base on campus. The research base bearing indirect costs (the MTDC base) grew 7.9% in FY2004, marking the fifth year in a row of significant growth in on-campus research volume. Tuition revenue, net of financial aid rose 6.6%, or \$21.4M, in FY2004, influenced most greatly by the increase in financial aid. Net tuition revenue showed an increase of 5%, or \$8.5M. This tuition increase was influenced most greatly by the increase in the number of graduate students at MIT to 6,228 in fall of 2003; this total compares to 5,302 a decade earlier, or a 17% increase. Tuition rose 4.9% in FY2004, while room and board rose 11.2%.

The financing of operations continued to rely heavily on income generated by the Institute's endowment. The market value of investments in the endowment totaled \$5,869.8M at the end of FY2004, compared to \$5,133.6M at the end of FY2003. The final returns for FY2004 reflect a healthy increase, the first substantial increase after three years of flat or negative returns. The decreases in the endowment value from FY2000 to FY2003, coupled with the forecasts for slow growth in FY2005 and beyond, resulted in significant realignment of revenues and expenses for the FY2005 budget. The changes total almost \$70M per year and include

- A decrease in the tuition subsidy for graduate research assistants supported on contracts and grants from 65 to 50%
- A salary freeze for all employees making in excess of \$55,000 per year
- A reduction in the General Institute Budget for academic units of \$11M per year
- A reduction in the General Institute Budget for administrative units of \$22.2M per year
- A reduction in the CRSP budget for renovation and renewal of space from \$20M to \$15M per year

In spite of the down economic conditions, the MIT capital campaign continued ahead of schedule. The campaign, which was launched in FY2000 to raise \$1.5B in endowment and expendable gifts, was expected to run through AY2004 to reach this goal. The \$1.5B hurdle was crossed in November 2002, and the goal was raised to \$2.0B. At June 30, 2004, the campaign total stood at \$1.92B, with approximately \$205.8M added to the total in FY2004. The campaign goal is expected to be reached in fall 2004.

Research

MIT remains the preeminent research university, combining world-leading research across a spectrum of disciplines with intense undergraduate and graduate education. Research activities at MIT remain vigorous across most of science and engineering. There was a healthy increase in all sponsored research on campus, which was up 12% to \$531M in FY2004 from \$474M in 2003. The portion of this research volume that supports financial and administrative (F&A) costs rose 7.9% in FY2004 to \$256M. The F&A rate charged to research contracts and grants was stable at 60% in FY2004, down from 63% charged in FY2003.

The federal government continued to dominate this budget, accounting for approximately 74%. MIT saw continued growth in health science research supported by the US Department of Health and Human Services (HHS). With the addition of the Broad Institute to MIT in fall of 2003, the research volume at MIT from HHS rose to \$160M and again was the biggest component to our on-campus research volume. The Lincoln Laboratory research volume in FY2004 was \$498M, up from FY2003 at \$443M.

This report marks the completion of my sixth year as provost.

Robert A. Brown

Provost

Warren K. Lewis Professor of Chemical Engineering