

Provost

Academic year 2005–2006 was a year of transition, distinguished in part by a number of personnel changes among the Institute’s leadership positions and by the opening of several new campus buildings that reflect the Institute’s goal of providing the best possible physical environment for our academic and research activities. This year also witnessed the release of several key committee reports and the announcements of new initiatives directed at improving some of MIT’s internal policies and at the advancement of MIT’s contributions to the global environment. This report attempts to describe the most important activities and accomplishments in these areas.

People

Academic year 2006 marked a number of changes in the senior leadership staff in the Provost’s and other areas.

L. Rafael Reif completed his first year of service as the tenth provost of MIT. Professor Reif, the Fariborz Maseeh professor of emerging technology, had previously served as head of the Department of Electrical Engineering and Computer Science.

Professor Alice P. Gast, vice president for research and associate provost, announced her acceptance of the presidency of Lehigh University effective summer 2006. The Institute deeply appreciates the intellectual and administrative leadership that Professor Gast provided.

Professor Alan Brody announced his intention to conclude his term as associate provost for the arts at the end of academic year 2006 and return to full-time teaching in theater arts. We thank him for his many years of fine service.

Following Philip Khoury’s announcement of his plan to step down as dean of the School of Humanities, Arts, and Social Sciences at the close of academic year 2006, Professor Khoury was appointed associate provost effective July 2006. He will be responsible for overseeing MIT’s noncurricular arts programs and initiatives, MIT’s strategic planning for international education and research, and MIT’s efforts to promote the public understanding of science and technology.

Professor Deborah K. Fitzgerald of the Program in Science, Technology, and Society and associate dean of the School of Humanities, Arts, and Social Sciences, was appointed interim dean of the school effective July 2006, until a new dean is identified.

Dr. David L. Briggs announced his intention to step down as director of Lincoln Laboratory at the close of AY2006. Dr. Eric D. Evans, head of the Air and Missile Defense Technology Division at Lincoln since 1999, was appointed to succeed Dr. Briggs as director effective July 2006.

Daniel Hastings was appointed dean for undergraduate education effective January 1, 2006, succeeding Professor Robert Redwine, who returned to teaching and research

in the Physics Department. Hastings, a professor of aeronautics and astronautics and engineering systems, was most recently director of the Engineering Systems Division.

John Durant accepted an appointment as the new director of the MIT Museum as of July 1, 2006. Previously he was the head of At-Bristol, a science and natural history center in Bristol, England.

Lorna Gibson, Matoula S. Salapatas professor of materials science and engineering, completed the first year of her term as chair of the MIT Faculty.

There were no changes in the ranks of active Institute Professors. A memorial service was held in September for Institute Professor emeritus Philip Morrison, who passed away in April 2005.

We note with great sadness the death in September of David Dibner, whose family established the Dibner Institute for the History of Science and Technology at MIT, and the death in December of David Saxon, former chairman of the MIT Corporation.

Academic Programs

The following paragraphs highlight some of the several new developments and activities related to the Institute's academic programs that took place in 2005-2006. Please refer to the individual reports of academic units for detailed information about their areas.

Biological Engineering Major

The Institute introduced its first new undergraduate course of study in 29 years when Biological Engineering (BE) formally began as Course 20 in 2005-2006. BE began as a division within the School of Engineering in 1998, defining a new discipline which integrated life sciences with engineering. Following the recommendations of a committee which reviewed the BE division in 2003, which noted the strength of its faculty and the growing popularity of the BE undergraduate minor, the faculty approved the new major in February 2005. Students who have completed core subject requirements are permitted to apply for the BE major in the sophomore year. While the number of applicants in 2005 exceeded by around 50% the number of available slots, the program was provided with sufficient teaching resources to allow all applicants to be admitted. The innovative course of study in BE focuses on connecting molecular and cellular biosciences with quantitative, systems-oriented engineering approaches. Among its goals is the development of new, biology-based technologies that can address the treatment and prevention of human disease. The program illustrates the increasing importance of research and education activities that transcend traditional academic boundaries.

Harvard-MIT Division of Health Sciences and Technology 35th Anniversary

In September 2005, the Harvard-MIT Division of Health Sciences and Technology (HST) celebrated its 35th anniversary at an event entitled "HST (R)evolution: Celebrating 35 Years of Bench-to-Bedside." Over 350 alumni, faculty, students, and friends of HST attended a weekend of festivities, including a daylong symposium, an exhibition of current HST academic programs and research centers, and an evening gala event.

Leaders from both the Harvard and MIT communities spoke during the weekend, as did 16 alumni who presented talks on the many different technologies and specialties HST touches, such as neuroscience, cardiology, cancer, tissue engineering, stem cells, and genetics. They also described how HST discoveries and inventions are finding their way into clinical practice. The anniversary celebration provided an opportunity for everyone close to HST to reflect on HST's growth, accomplishments, and future potential. It also generated tremendous excitement about the future. The weekend served as the official launch of the HST Alumni Association, and it infused energy into HST's recently formed advisory council. Now, HST is translating this momentum into the work of defining and implementing the vision for HST's next 35 years as a preeminent interdisciplinary biomedical engineering and physician scientist training program.

Energy Council Report

Following its charge from President Susan Hockfield last year to investigate ways in which MIT could help address global energy challenges, the Energy Research Council submitted its report in May, which provided recommendations for new campus initiatives in energy research and education. The release of the report coincided with a daylong "MIT Energy Forum: Taking in the Challenge" on May 3, which featured faculty engaged in energy-related research in science, technology and policy. The council, which included 16 faculty members representing all five MIT schools, consulted with MIT faculty, staff, students, and alumni, as well as with leaders from the energy industry. The report recommended the establishment of a new laboratory or center which would unify under a single organizational structure the numerous energy-related research activities that are taking place across several disciplines at MIT. In addition to citing a number of specific energy sources and issues that such a new laboratory should be engaged in studying, the report also urged the consideration of incorporating a new energy minor into the undergraduate curriculum, noting that the current review of the subjects that comprise the General Institute Requirements provides an opportunity to "consider how energy subject matter could be included in the undergraduate common curriculum." President Hockfield is reviewing the report and is expected to announce next steps in the coming year.

Katrina-area Students Welcomed to MIT

A total of 10 students from universities affected by Hurricane Katrina enrolled at MIT as visiting students in the fall term of AY2006. Tuition and MIT housing costs were waived for these students, who came from Tulane University, the University of New Orleans, Loyola University, and Xavier University. Eight of these students were able to return to their home institutions for the spring term, while two chose to remain at MIT through the entire year.

Buildings and Facilities

Academic year 2006 marked the opening of the Institute's major facility dedicated to brain and cognitive science research and education, which houses three distinct but integrated units: the McGovern Institute for Brain Research, the Picower Institute for Learning and Memory, and the Department of Brain and Cognitive Sciences. Formally dedicated on December 2, the new 411,000-square-foot facility is one of

the largest neuroscience research centers in the world, and an important example of multidisciplinary collaboration and research.

In May, the Broad Institute of MIT and Harvard, dedicated to genomic medicine and its application to the better understanding and treatment of disease, formally opened its new building at 7 Cambridge Center. The institute is jointly governed by the two universities and involves extensive collaboration with the Whitehead Institute for Biomedical Research and with the Harvard-affiliated hospitals.

Construction began in summer 2005 on a new building which will occupy the courtyard of Building 6 as an anchor to the new Green Center for Physics. This new “infill” structure will serve to consolidate the activities of the Department of Physics within a single location. The project is scheduled for completion in spring 2007.

Task Force and Committee Reports

In the fall 2005, the Task Force on Medical Care for the MIT Community, chaired by Professor Paul Joskow, submitted its report after a yearlong comprehensive review of MIT’s health care and medical insurance programs. The Task Force was charged with evaluating access, quality, and cost of these programs. A working group was subsequently convened by President Hockfield to address the issues raised by the report, and we expect to have the results of this effort in the coming academic year. The entire report of the task force can be viewed at <http://web.mit.edu/task-force/medical/>.

In order to ensure that MIT continues to attract the best graduate students and to maintain the excellent quality of our graduate programs, the Committee on the Funding of Graduate Students (FOGS) was formed in late 2004 to examine current policies related to graduate student financial support and to help determine best practices for the future. The FOGS report, released in February, emphasized the importance of recognizing the diversity of financial aid strategies among MIT’s schools and departments, which reflect in large part the different natures of the sources of support available to different disciplines. For example, while grant-based support for graduate research assistants (RAs) remains preeminent in science and engineering, other areas of MIT depend heavily on internal MIT funds to sustain their graduate programs. One important area of convergence among all schools is the growing need for fellowship support, as fellowships have become the standard means of supporting first-year students, in particular among top research universities. The report thus emphasizes the priority of fundraising targeted at increasing the Institute’s resources for graduate fellowships in the coming years. Other areas that fall within FOGS’ recommendations are tuition subsidies that MIT provides for RA appointments and tuition rates for nonresident graduate students. The provost is reviewing the report in order to decide on the outcome of its recommendations.

The report of the Ad Hoc Committee on Research Misconduct Allegation, chaired by Vice President for Research and Associate Provost Claude Canizares, was submitted in May 2006. This committee was charged to (i) identify the factors that have complicated and delayed the satisfactory resolution of a particular allegation of research misconduct concerning members of the technical staff at Lincoln Laboratory, (ii) determine the

implications, if any, for how the Institute should conduct itself in the future, and (iii) recommend any changes in policy and/or practice that would help avoid a recurrence.

While the report concluded that “MIT’s research misconduct policies are fundamentally sound,” it did identify several areas of policy and procedure that could be improved in future cases that are unusually complex. The Provost’s Office is working with the faculty and administration in considering the report’s recommendations. The full report may be viewed at <http://web.mit.edu/provost/letter-5-19-06.html>.

Three related initiatives were begun this year in conjunction with the Institute’s ongoing efforts to strengthen the diversity of its community, particularly among the faculty. A Faculty Recruitment Committee was convened to explore and make recommendations on how to increase the pool of minority candidates for faculty appointments at MIT, in part by identifying existing strategies that have had a record of success as well as by proposing innovative courses of action for the future. A Committee on the Retention of Minority Faculty was also established for the purpose of examining and understanding the experiences of minority faculty at MIT with the goal of supporting their career development. Finally, a panel to review the Dr. Martin Luther King, Jr. Visiting Professor and Scholar Program was convened for the purpose of assessing the activities and policies of the current program to see if any modifications should be considered, particularly in connection with minority recruitment and retention efforts. The panel released its report in May 2006, making several recommendations for refining the role of this program in the Institute’s efforts to strengthen faculty diversity. These recommendations are currently under the provost’s review.

Faculty

Eleven faculty members retired from MIT at the end of AY2006.

Faculty recruitment continued at a strong pace. In AY2006, 35 faculty members were appointed at untenured ranks, and seven were appointed at the tenure level. Of these (untenured and tenured), nine are women and six are members of minority groups. During AY2006, 23 MIT faculty were awarded tenure within MIT. Of these, five are women, and three represent minority groups.

Professor Richard R. Schrock won the 2005 Nobel Prize in Chemistry, sharing the award with two other researchers. Professor Schrock, the Frederick G. Keyes professor of chemistry, was recognized for his development of a chemical reaction known as “metathesis,” which enabled the more efficient development and production of pharmaceuticals, plastics, fuels, and other materials.

The James R. Killian, Jr. Faculty Achievement Award is the highest honor bestowed by the MIT faculty on one of its own members. It was established in 1971 “to recognize extraordinary professional accomplishments by full-time members of the MIT faculty.” In 2005–2006, the Killian Award was won by Institute Professor Isadore Singer of the Department of Mathematics.

The Harold E. Edgerton Award is the highest honor bestowed by the MIT faculty on one of its own junior faculty members. The Edgerton Award, a tribute to the late beloved inventor and photographer “Doc” Edgerton, recognizes exceptional distinction in teaching and research. The 2005–2006 winner of the Edgerton Award was Professor David I. Kaiser of the Program in Science, Technology and Society.

Three faculty members were appointed as Margaret MacVicar Faculty Fellows this year in recognition of their outstanding contributions to the quality of undergraduate education at MIT. These awardees were Samuel Bowring, Department of Earth, Atmospheric and Planetary Sciences; Dennis Freeman, Department of Electrical Engineering and Computer Science; and Leslie Norford, Department of Architecture. These additions bring the total number of current fellows to 40, with 25 emeritus fellows, who together form a small academy of scholars committed to excellent teaching and innovation in education.

The Dr. Martin Luther King, Jr. Visiting Professor Program was established in 1995 to recognize the many contributions of outstanding minority scholars in the academy, to enhance their scholarship through intellectual interactions with MIT peers, and to enrich the intellectual life of MIT through their participation in MIT research and academic programs. The 2005–2006 Dr. Martin Luther King, Jr. Visiting Professors were: Professor Taft Broome Jr., Engineering Systems Division; Professor Dale Joachim, Media Arts and Sciences; and Professor Earthea Nance, Department of Urban Studies and Planning.

Faculty Services

The Faculty Relocation Office opened in fall 2005, following the establishment of the revised Faculty Housing Assistance Program (FHAP) earlier that year. Aside from administering and communicating the details of the mortgage program, the Faculty Relocation Office assists faculty members with the entire home buying process, which includes identifying a real estate agent, mortgage lender, and attorney. The services provided by this office have been particularly useful for new faculty and for first-time home buyers. The office assists new faculty with moving arrangements, temporary housing, and familiarization with the Boston/Cambridge area. The long-term goal of the office is to provide a central and comprehensive relocation service for faculty, in part by establishing partnerships with private vendors for better pricing, along with higher levels of service.

Graduate Student Fellowships

In AY2006 the Presidential Graduate Fellowship program awarded 108 fellowships across a wide range of academic departments, a slight increase from 106.5 in AY2005. Following is a list of those fellowships which are named for individual and corporate donors and a table showing the distribution of fellowships across the academic areas.

- Akamai (Mathematics and EECS)
- Homer Burnell (Architecture and Urban Planning)
- Robert T. Haslam (Chemistry and Chemical Engineering)
- William M. Layson (Physics)

- Edward H. Linde (Civil and Environmental Engineering)
- Praecis (Biology and the School of Science)
- Robert M. Rose
- Walter A. Rosenblith
- Kenan Sahin (Humanities, Arts, and Social Sciences)
- Henry Singleton (Brain and Cognitive Sciences)
- Charles M. Vest
- Edward Clark Walsh (Chemical Engineering)

Graduate Student Fellowships by School/Unit

| School/Unit | AY2005 | AY2006 |
|---------------------------------------|--------------|--------------|
| Architecture and Planning | 14.5 | 15.0 |
| Engineering | 25.0 | 27.0 |
| Humanities, Arts, and Social Sciences | 20.0 | 20.0 |
| MIT Sloan School of Management | 3.0 | 3.0 |
| Science | 41.0 | 40.0 |
| VP Research | 3.0 | 3.0 |
| Total | 106.5 | 108.0 |

In addition, five students held provost’s Women and Minority Fellowships (one in each school). The School of Engineering allocated the Lemelson Fellowships to the Presidential Fellowship Program. The Lemelson Foundation provided funding for eight underrepresented minority students with interests in innovation, and these fellowships were intended for incoming students.

The DuPont/MIT Alliance supported 14 fellowships, which are designated as Presidentials. DuPont Presidential Fellows had the opportunity for direct interaction with corporate officials in Wilmington, DE, as well as at events held on the MIT campus.

The Society of Presidential Fellows hosted several events during the academic year, including beginning- and end-of-year receptions, and a lecture and dinner series cosponsored by the Sidney-Pacific Graduate Residence.

Fundraising for the Presidential Fellowship Program continued to be a high priority of the Institute.

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

L. Rafael Reif
Provost
Fariborz Maseeh Professor of Emerging Technology