Report of the President

This academic year brought advances in education, research, campus development, outreach, and international expansion. The Institute examined the assessment of undergraduate education delivered by the Task Force on the Undergraduate Educational Commons and advanced its efforts for minority faculty recruitment. The findings of the Energy Resource Council led to the establishment of the new MIT Energy Initiative, designed to amplify MIT's current strengths in energy research for the world. The Institute also expanded its international endeavors, reaching out to local and distant communities while also enhancing and expanding the resources of its iconic Cambridge campus.

Undergraduate and Graduate Education

Student Enrollment

The Institute welcomed its sesquicentennial class this year. This class will graduate in 2011, the 150th anniversary of the Institute's founding in 1861. The class of 2011 continued the tradition of excellence set by its predecessors, with applications increasing 9 percent over the previous year to 12,445. The Institute admitted 12.5 percent of the applicant pool and 1,069 students enrolled. Among these students, 40 percent were valedictorians and 89 percent graduated in the top 5 percent of their high school classes, and 22 percent are underrepresented minorities. Forty-six percent of the new class are women, and 16 percent are the first generation in their families to attend college.

Task Force on the Undergraduate Educational Commons

With the release of the report of the Task Force on the Undergraduate Educational Commons, the Institute maintained of its standard of educational excellence by continuing its process of self-reflection. This assessment of student learning followed earlier work by the Task Force on Student Life and Learning, whose recommendations provided the intellectual underpinnings for initiatives in student life that have helped improve the student experience at MIT. The report from the Task Force on the Undergraduate Educational Commons, released in October, embraces and elaborates upon the four principles established at the Institute's founding: the educational value of useful knowledge, societal responsibility in education, learning by doing, and the importance of a liberal and professional education.

The report of the Task Force on the Undergraduate Educational Commons lays out a core course of study that MIT should require to prepare students for their roles in the 21st century. This report and the previous report of the Task Force on Student Life and Learning together provide the foundation for the cultural and educational shifts necessary to equip our students to be leaders in this new century. In particular, the report acknowledges that the number of areas of scientific knowledge of which our students should be aware has grown in the last 50 years and emphasizes the need for a more flexible and interdisciplinary education. The recommendations also include a more clearly articulated set of foundational elements in the humanities, arts, and social sciences. In addition, the report argues for the increased importance of international experiences to equip MIT graduates for their future roles in our increasingly networked

world. It further recommends initiatives that will help MIT support curricular change and sustained educational innovation. With the report now concluded, any decision to revise the curriculum rests with the Faculty.

Faculty

The excellence of the faculty sets the critical cornerstone of the Institute's continued success, and those who joined MIT this year are not only extraordinarily accomplished, but also represent increasingly diverse backgrounds. Of the 52 members of the faculty hired since the fall, 19 (36.5 percent) are women, and six (11.5 percent) are members of underrepresented minority groups. One way to measure this progress is to recall that last fall, women constituted 18 percent of the faculty and underrepresented minorities constituted 4 percent. This year also saw the addition of eight Dr. Martin Luther King Jr. Visiting Professors and Scholars, a greater number than in any previous year of this program.

The 33rd annual celebration of the life and legacy of Dr. Martin Luther King Jr. offered the MIT community an opportunity to renew its commitment to the ideals of opportunity and equality for which Dr. King worked. In this spirit, Provost L. Rafael Reif announced a new initiative last year to address issues of minority faculty recruitment and retention. Several faculty committees are considering how race may still affect the recruitment, retention, and experiences of underrepresented minority faculty members at MIT. The Institute is deeply committed to this initiative not only as a stimulus for accelerating progress at the Institute, but also as a national example.

As MIT moves forward, it will continue to strengthen support for its students and staff. In particular, the Office of the Dean for Undergraduate Education has identified diversity as one of the six cross-cutting themes that will define its activities in the years ahead, while the Graduate Students Office has been actively developing new approaches to recruit a diverse graduate student population. The Institute's Human Resources Department has launched efforts to engage minority communities. Our progress in each of these domains will amplify our success in the others.

To achieve greater coherence in faculty recruiting in neuroscience, the Provost established a Neurosciences Council to oversee and coordinate faculty recruitment in this burgeoning field. The council will provide a mechanism to align faculty recruiting in the McGovern Institute for Brain Research, the Picower Institute for Learning and Memory, and the Department of Brain and Cognitive Sciences, while supporting the goals of neuroscience education and research across the Institute.

Research Initiatives

MIT Energy Initiative

Last spring, the Energy Research Council (ERC) held a highly successful Energy Forum on campus at which its members delivered a strategy for how MIT would tackle many of the dimensions of the global energy challenge. The ERC report created unprecedented momentum and campus-wide interest that culminated in the establishment of the MIT Energy Initiative (MITEI) in the fall of 2006.

Professor Ernest J. Moniz was appointed director of MITEI, Professor Robert C. Armstrong as deputy director, and faculty from each of MIT's five Schools were appointed to the Energy Council to oversee and guide the work of MITEI. Potential industry partners have been engaged in discussion to serve as MITEI's founding and sustaining members. Amplifying the campus organization, an External Advisory Board that includes industry and academic experts will be chaired by former secretary of state George P. Shultz PhD '49.

The ERC recommendations evolved from discussions with faculty and researchers from all five Schools and lay out four research themes and two campus directions. The research themes envision the development of both technology and policy to improve how we produce, distribute, and consume energy. Innovative technologies will improve current energy sources to make them more efficient and lower their environmental impact, including more efficient and safer nuclear power and the design of fossil fuel technologies to capture and sequester CO_2. Transformational technologies of the future will include solar and energy storage to supplement and, in time, displace fossil fuels. Global systems will bring multidisciplinary systems approaches to integrate policy design and technology development. And strategic basic research will enable improvements in energy technologies and systems. The two campus directions envision new approaches to energy education, including the development of an undergraduate minor in energy, and using the campus as a laboratory to "walk the talk" on energy efficiency and to develop state-of-the art programs and buildings.

The urgent challenge of achieving a sustainable energy future provides enormous opportunities for MIT to serve the nation and the world. These opportunities include helping to strengthen the nation's innovation economy through the development of energy technologies and businesses; developing a portfolio of near-term and longer-term technologies and the policy framework to support them; and inspiring the nation, and particularly the youth of America, to understand the vital role of science and technology in solving these critical problems. MIT faculty recently prepared and presented to the US Congress technology-informed policy reports on the future of geothermal energy and the future of coal. Both have had significant impact on the energy discussion at the level of the federal government.

The enthusiasm for tackling energy challenges sparked numerous activities across campus. Among them, the student-initiated and -driven MIT Vehicle Design Summit brought together student solar car designers from 21 universities to develop vehicles capable of traveling at least 500 miles on a gallon of fuel. Through these and many other efforts, we will capitalize on the MIT community's enthusiasm for energy-related work as MITEI moves forward to implement the ERC's recommendations.

Center for Cancer Research

The 2005 approval to create the Department of Biological Engineering reflected MIT's commitment to the convergence of engineering with the life and physical sciences, which continues now with plans for a new facility to house the Center for Cancer Research (CCR), made possible by a foundational gift from David H. Koch '62, SM '63. Founded in 1974 by Nobel laureate Professor Salvador E. Luria with an all-biology

faculty, the CCR now pursues research frontiers that bring together biologists, chemists, and engineers from across the campus, and clinicians from the neighboring academic medical centers. The new facility will include laboratories for 12 biologists and 12 engineers, from several School of Engineering departments, including Materials Science and Engineering, Chemical Engineering, and Electrical Engineering and Computer Science. It will also include laboratories for faculty from the Harvard–MIT Division of Health Sciences and Technology who share a passion for advancing new approaches to cancer diagnosis and therapy.

The new 180,000-square-foot (net) research building, situated between the David H. Koch Biology Building and the Ray and Maria Stata Center, and across the street from the Whitehead and Broad Institutes, will add to the burgeoning research activities at the corner of Vassar and Main streets. The facility will expressly support cross-disciplinary cancer research and communicate easily with the rest of the MIT campus and the broader Boston biomedical community.

Ludwig Center for Molecular Oncology at MIT

This year, MIT announced the development of the Ludwig Center for Molecular Oncology at MIT, which will be located in and administered by the Center for Cancer Research. Professor Robert A. Weinberg, a pioneer in cancer research and a member of the Department of Biology and the Whitehead Institute for Biomedical Research, will be the center's inaugural director. The Ludwig Center will enable MIT researchers to dedicate significant attention to the fundamental problem of cancer metastasis.

International Initiatives

Singapore

The Institute's legacy of excellence in scientific discovery makes MIT a model university of the future for many nations. Our international programs have flourished and, in July, Singapore's Research, Innovation, and Enterprise Council approved a new concept for a major collaborative research initiative, the Singapore-MIT Alliance for Research and Technology (SMART) Center.

Under the leadership of Provost L. Rafael Reif and Professor Subra Suresh, former head of the Department of Materials Science and Engineering, the SMART Center is a major new research enterprise established by MIT in partnership with the National Research Foundation of Singapore. It will serve as an intellectual hub for research interactions between MIT and Singapore and will enable faculty, students, and postdocs to take part in cutting-edge research in a unique international environment. A formal agreement to establish the SMART Center was approved in March.

Portugal

In October, the Institute announced plans for a long-term collaboration with the Portuguese Ministry of Science, Technology, and Higher Education that will significantly expand research and education in engineering and management across many of Portugal's top national universities. The MIT Portugal Program is part of a major initiative

undertaken by the Portuguese government to strengthen the country's knowledge base to an international level through a strategic investment in people, knowledge, and ideas. It will involve professors, researchers, and students from a consortium of schools of engineering, science and technology, economics, and management at seven Portuguese universities, together with a number of research institutions.

More than 40 faculty members from the five Schools at MIT are expected to participate in the MIT-Portugal Program, which will undertake research and education in several focus areas, including transportation, energy, manufacturing, bioengineering, and management. To design the management segment of the program the MIT Sloan School will collaborate with faculty from Portuguese universities in an exploratory process. The Engineering Systems Division will coordinate the engineering aspect of the new program.

Campus Development

The year saw significant advances in constructing new residential and academic spaces that will enhance the MIT community for years to come. The Institute is deeply indebted to the enormous generosity of the donors who have made these buildings possible.

In October, the Institute held a groundbreaking ceremony for the second phase of the renewal of the Vassar Streetscape Project, which was announced last year and will extend the renovation of the streetscape through the campus west of Massachusetts Avenue.

Groundbreaking also took place at 235 Albany Street (Building NW35), which will be the newest graduate residence in the northwest residential section of campus. Upon completion, it will assume the name of Ashdown House, the current graduate residence at Building W1 that will be transformed into an undergraduate residence. The new Ashdown House will provide housing for more than 550 graduate students, with social facilities and courtyard spaces that will further strengthen the vibrant graduate community emerging in the neighborhood. When the new Ashdown House is complete, more than 1,700 graduate students will live in the northwest campus.

On the east side of campus, a groundbreaking event was held in May for the new 209,000 square-foot Sloan School of Management building. This new building will serve as a gateway to MIT on the east side of campus, extending from Main Street to Memorial Drive. It will consolidate Sloan faculty in one location and provide classroom and group study spaces, as well as an executive education facility. Work also began this spring on the nearby Wiesner Building extension to accommodate several groups from the Media Lab, the School of Architecture and Planning, and the Comparative Media Studies Program. These ambitious and much-needed structures are part of a campus development strategy that will greatly enhance this important area of campus.

As the academic year drew to a close, the construction of the Cecil and Ida Green Center for Physics and the PDSI project (Department of Physics, Department of Materials Science and Engineering, Spectroscopy Lab, and Infrastructure) in Buildings 2, 4, 6, and 8 also neared completion.

Strengthening MIT's Resources

Despite the two significant grants for cancer research, federal funding was generally flat through this year, and over previous years. In addition to a slowing of the growth in research funding overall, an increase in research dollars from foundations and other entities that do not contribute full indirect costs strains our research budgets. Currently, neither federal grants nor foundation funds cover the full cost of research. The decline in indirect cost recovery contributes to the rising cost of higher education and university research. As a result, new initiatives were designed to increase research funding, including amplifying international engagements, increasing industry funding, and engaging more closely with federal agencies.

As the Institute continues to develop the financial resources needed to sustain excellence, private support continues to play a critical role. This is especially important to maintaining financial policies that make MIT accessible to all admitted students, including programs such as the MIT Pell Matching Grant announced last spring. During the past year, we built upon the extraordinary pace in fundraising achieved during the successful Campaign for MIT. Resource Development had a banner year, reaching the second-highest level in the history of the Institute for both cash receipts and new gifts and pledges. New gifts and pledges topped $300 million, up more than 40 percent from the previous year. In a sign of greater engagement with the Institute, and presaging the potential of future gifts, the Class of 2006 broke all previous records with its Senior Gift. More than 50 percent of the class made gifts or pledges, exceeding the previous record of 39 percent participation.

Institute Outreach

In the spirit of service, members of the Institute community have continued to engage in repairing the damage from Hurricane Katrina. A team from the Department of Urban Studies and Planning contributed to these efforts and was recently selected by the US Department of Housing and Urban Development to help plan a new 900-home development in the historic Tremé/Lafitte neighborhood. The $35 million project aims to re-house the former community in a manner that is equitable, affordable, and sustainable.

Cambridge Science Festival

The Institute pioneered new territory in the public appreciation of science this year with the co-creation of the Cambridge Science Festival. Presented by the MIT Museum, the nine-day festival showcased Cambridge's contributions to science and technology and sought to make science accessible, interactive, and enjoyable to the public. In addition to MIT, the City of Cambridge, the Cambridge Public Schools, Cambridge Public Libraries, Harvard University, the Museum of Science, and WGBH Boston played major organizational roles. The Broad Institute and Novartis were among the major sponsors. The festival, which was the first of its kind in North America, will likely become an annual event, offering a unique opportunity to showcase the role of Cambridge as the epicenter of scientific and technological innovation.

Closing Thoughts

This year also brought tragic events at Virginia Tech that shocked and deeply saddened us all. In their wake, we examined our own preparedness for such an unthinkable violence, but more important, the MIT community was reminded of how sacred our lives are and the work that we do with them. It is the aim of MIT to serve the nation and the world through innovation and technology, and we will continue to do so, applying our best abilities to work together so that we can make the world a better place for all.

Susan Hockfield
President