Dean, School of Engineering

Through education, research, outreach, and service, MIT's School of Engineering develops future technological leaders, advances the frontiers of engineering knowledge, influences engineering practice, and models the next generation of engineering innovation. The School strives to make significant contributions in addressing the societal challenges of the 21st century by pursuing a course of leadership through technical excellence and innovation. As it has throughout its history, the School has continued to innovate across various dimensions.

Currently, the School's seven departments and two divisions encompass a community of some of the world's brightest minds and most inventive thinkers—about 38 percent of the Institute's faculty, more than 45 percent of MIT graduate students, and about 57 percent of MIT's undergraduate majors, collaborating in over 22 undergraduate degree programs, numerous graduate programs, and a faculty research base of nearly $208.3M in FY2007. Third-party ratings routinely rank the School of Engineering first in the nation, both at the undergraduate and at the graduate levels. The achievements of the School's departments, laboratories, centers, and programs are extensive. Separate *Reports to the President* submitted by these units highlight their activities and accomplishments over the past year.

With the impending transition to a new dean for the School of Engineering, it seems appropriate in this year's report to provide a retrospective examination of developments in the School spanning the tenure of the current dean that began in January 1999. The report also presents selected highlights of significant accomplishments of the 2006–2007 academic year, during which the School continued its commitment to shaping engineering education and research. Additionally, the report includes information on organizational updates, personnel changes, significant awards, and School statistics.

Renewal of the School's Faculty

Perhaps nothing is more important to an academic institution than the attraction and professional development of its faculty. Hiring new faculty to the School contributes to its renewal and creates a foundation for sustaining excellence in instruction and research. In the past eight and a half years, the School has hired nearly 30 percent of its current faculty, a total of 119 new faculty members. During this period the School has also promoted 257 faculty members. The newly hired and the promoted faculty have permitted the School to renew important areas of traditional strength such as mechanics and controls, and to invest in exciting new areas such as bioengineering, nanotechnology, and engineering systems. In keeping with the importance of faculty diversity as a key initiative of the School, the new hires include 34 women and 9 members of underrepresented minority groups.

Educational Innovation

The School of Engineering has always been at the forefront of education, leading in the introduction of new fields as well as modes of instruction. The list of the School's accomplishments is long and distinguished and includes the creation of a variety of new

courses of study, such as the first courses in electrical engineering and in aeronautical engineering and the creation of entire new fields: chemical engineering, sanitary engineering, naval architecture, and marine engineering.

To sustain its leadership in engineering education, the School has continually invested in crosscutting innovations and emerging technology educational initiatives, including new pedagogical approaches and content areas. These initiatives have been developed through a variety of means, including a major alliance between Microsoft Research and MIT known as iCampus, the Institute's d'Arbeloff Fund for Excellence in Education, School-based funding, and many departmental initiatives. Several departments have made extensive changes to their undergraduate curricula over the past years, and many have developed more hands-on learning and laboratory-based instruction. The School has introduced 11 new graduate and undergraduate degree programs. Most of these educational contributions have been described in previous reports by the School or departments.

The School has also developed a range of directed activities and programs serving special constituencies that include its signature Minority Introduction to Technology Engineering and Science (MITES) program and several new programs introduced in the last eight and a half years. These include a new Undergraduate Practice Opportunities Program (UPOP) that has been enormously successful with students and summer employers. The School launched Women in Technology Programs, one in electrical engineering and computer science and the other in mechanical engineering; the former saw enrollees of its first year graduate from MIT this year. In its efforts to reach younger students, particularly those in traditionally underserved segments of the population, the School developed new middle and elementary school programs modeled after its long-established MITES summer program for high schoolers. This summer, the School's Engineering Outreach Programs Office is launching a new program, the MIT Science of Baseball Program. The School is currently developing a video-focused outreach website that plans to offer a selection of videos on engineering and science geared to a younger audience and supported by social networking tools.

To address the particular needs of adult learners, the School enhanced its professional educational outreach efforts through the creation of the Professional Educational Programs. PEP offers one-week programs, short courses, and joint initiatives with the MIT Sloan School of Management, including a large-scale program for British Petroleum and a new program for mid-career professionals returning to MIT.

An additional initiative has been the introduction of an Office of Education, Innovation, and Assessment and an Engineering Council for Undergraduate Education to provide overall guidance and coordination for many educational initiatives within the School and between the School and other units at MIT.

Office of Engineering Outreach Programs

The School of Engineering, through the Office of Engineering Outreach Programs (OEOP), offers several outreach programs: MITES, the Saturday Engineering Enrichment and Discovery (SEED) Academy, and the Science Technology Engineering and Math

(STEM) program. OEOP draws from the rigor and excellence of the MIT educational experience to create programs in which K-12 students are challenged and encouraged to succeed. In summer 2007, a new program, the MIT Science of Baseball Program (MSBP), will be established to serve middle school boys in the greater Boston area.

The goal of OEOP is to provide traditionally underserved students and student communities with multiple entry points to academic and professional careers in the science, technology, engineering, and mathematics (STEM) disciplines, as well as to give support and instruction to ensure their success on that pathway. OEOP is committed to increasing the number of underrepresented students at MIT and other institutions in the nation, and its programming is critical to enlarging the academic pipeline of successful students who will be qualified to apply for admission to schools like MIT. OEOP hopes to reveal the hidden potential in young students, especially in urban and rural areas where there are few opportunities to succeed in science and mathematics.

OEOP aims to:

- Heighten awareness of the STEM disciplines in underrepresented communities
- Develop partnerships both inside and outside MIT for K-12 student education and enrichment
- Encourage participation from parents and family members to develop support networks for middle and high school students through adult and peer interactions
- Increase the opportunities for underserved communities to engage in rigorous educational enrichment in the STEM disciplines

Minority Introduction to Engineering and Science Program

This year, the MITES program selected 64 high school seniors to participate in its rigorous six-week summer session. The selected students come from 24 states and Puerto Rico. MITES 2007 participants will take courses in calculus, physics, and chemistry, biology, or biochemistry; a writing-intensive humanities course; and a project-based course (genomics at the Broad Institute, digital design, or engineering design). In addition to the traditional curriculum, students in the MITES 2007 program will participate in a set of experiential one-day discovery laboratories in biology, stroboscopic investigation, holography, electronics, and microfluidics. The program receives significant support from several sources— corporations, foundations, MIT alumni, and parents of former participants—all of whom have made major contributions to the 2007 session. Of the 62 high school students who attended MITES 2006, 29 (47 percent) will attend MIT as members of the class of 2011. Now in its 32nd year, the MITES program has provided approximately 1,600 students with the opportunity to study engineering and science at MIT.

Saturday Engineering Enrichment and Discovery Academy

The SEED Academy, an academic enrichment and technical career exploration program for Boston, Cambridge, and Lawrence public high school students, completed its fifth year of programming in 2006–2007. The seven-semester program is designed to strengthen participants' fundamental mathematics, science, and communication skills using an original, hands-on curriculum. To date, the program has served 147 students. In spring 2007, the program graduated its third class of students, 89 percent of whom were accepted into college. SEED Academy will enter its sixth year of operation in AY2007.

Science Technology Engineering and Math Program

Now in its fourth year, the STEM program is a nonresidential, year-round academic enrichment and mentoring program for local public school students entering grades 6 through 9. STEM consists of three components: (1) a five-week summer academic phase at MIT that aims to develop mathematical thinking and problem-solving abilities in preparation for high school "gateway" math and science courses; (2) an academic year mentoring program in which each STEM program student is paired with an MIT student in a monthly series of structured and unstructured social and academic exchanges; and (3) parent workshops designed to empower parents to advocate for and equip their children for school success. Last year, 63 students from Boston and Cambridge public schools completed the 2006 summer academic phase. Of those, 52 (83 percent) elected to participate in the 2006–2007 academic year mentoring program. In addition to maintaining regular weekly contact with their MIT undergraduate mentors, these STEM mentees also took part in monthly Saturday workshops on such topics as safe-cracking, the biology of hearing, and environmentally safe inventions. In the summer of 2007, 80 STEM students will arrive on campus ready to take various challenging academic courses such as descriptive geometry, topology, chemistry, physics, vector mechanics, and probability and statistics. The STEM program is funded by grants from the Lord Foundation, the Charles Hayden Foundation, the Boston Bruins Foundation, and the Dorothy Lemelson Trust.

MIT Science of Baseball Program

The four-week summer enrichment program MSBP will be offered for the first time in July 2007. The program participants will comprise 30–40 middle schools boys (primarily entering the eighth grade) from Boston area public schools. The program is geared toward underserved youth who are not achieving high marks in math and science, but are interested in baseball and might benefit from a program combining math and science lessons with baseball skills.

MSBP features an integrated, experiential curriculum, including both academic and athletic components that link the students' passion for baseball with academic topics. Throughout the program, students work on their baseball skills, develop an understanding of the mathematics, science, and culture behind the sport, and synthesize all of these elements into the strategy of the game through the study of statistics and probability. MSBP ultimately aims to raise participants' achievement in academics by giving them the skills necessary to perform well in high school and beyond.

Undergraduate Practice Opportunities Program

The School's Undergraduate Practice Opportunities Program aims to better prepare MIT's engineering sophomores for the multifaceted nature of engineering practice. The program consists of two major phases: the Independent Activities Period (IAP) Engineering Practice Workshop and the Summer Practice Experience. With assistance from engineering professionals, faculty from the School of Engineering and the Sloan School of Management deliver instruction for the IAP Engineering Practice Workshop on topics including robust engineering design, system dynamics, leadership, and communication. UPOP initiated its sixth year by increasing program enrollment to 244 students, drawn from all seven engineering departments. That figure represents 36 percent of the sophomore engineering class and roughly one-quarter of all MIT's sophomores. Even with the program's rapid growth, the 2006 recruiting effort resulted in 87 percent of UPOP students receiving one or more internship offers, and 84 percent will engage in internships as part of the Summer Practice Experience. Of UPOP's summer employers, 96 percent said they would like to rehire their UPOP intern. Throughout the spring term, UPOP also sponsored several career development workshops that involved the participation of many MIT alumni.

Education, Innovation, and Assessment

The Office of Education, Innovation, and Assessment (EIA) supports education innovation and assessment activities at four levels: School-wide, departments, individual faculty, and with other MIT units, such as the Dean for Undergraduate Education's Teaching and Learning Lab (TLL). Activities include developing and implementing tailored curriculum assessment plans and tools, sharing and disseminating best practices in curriculum and subject assessment, creating and implementing the School's teaching assistant (TA) training program, implementing School-wide surveys, and preparing units for review by the Accreditation Board for Engineering and Technology (ABET). EIA supports the work of the School's Engineering Council for Undergraduate Education (E-CUE) whose role is, through education research projects, to identify areas of School-wide need in undergraduate education, and to develop and disseminate new projects and subjects in these areas. During the past year:

- E-CUE completed a study of undergraduate engineering and math and identified areas of need in student learning. From the results of the study, E-CUE plans to develop a pilot project that integrates engineering and math computation tools for undergraduates.
- EIA worked with the School's TA training working group to identify unit needs for TA training and develop a new training program to be implemented in September 2007.
- EIA developed and implemented the School's first engineering alumni survey that provides alumni feedback on important engineering education goals and learning outcomes.
- EIA fully supported units in completing the ABET-required program evaluation and assessment processes. An upgraded EIA website now guides units, including best-practice assessment tools and longitudinal senior and alumni survey data reviews over several years that support continuous program improvement.

- EIA worked with the Dean for Undergraduate Education's Office of Experiential Programs and the TLL in assessing pilot subjects in project-based learning that were funded following General Institute Requirement (GIR) Task Force recommendations.
- EIA has worked closely with Courses 1 and 3 in full evaluation and assessment of new undergraduate curricula.

Professional Education Programs

In fall 2006, jointly with the Sloan School, Professional Education Programs (PEP) offered the Mid-Career Acceleration Program for the first time to help MIT alumni and other accomplished professionals relaunch their scientific or technical careers. Refer to the separate report submitted by PEP for additional information about this new program and other PEP activities during AY2007.

New Vectors of Research

During the past eight and a half years, the School has undertaken new vectors of research, including numerous developments in four programmatic themes identified six years ago and detailed in past years' reports:

- Bioengineering
- Information engineering (information, computation, and communication)
- Engineering systems (macro engineering)
- Tiny technologies (miniaturization, microtechnologies, and nanotechnologies)

Sometimes referred to as the "Big Four O's" of bio-, nano-, info, and macro engineering, these areas encompass an increasing proportion of the engineering faculty and staff research activities, and evince a significant shift in emphasis compared to that of a decade ago. In addition, the School and Institute have made a significant commitment to research and education in energy and in the convergence of the life sciences and engineering, topics that will draw heavily upon, and overlap considerably with, the Big Four O's.

Industrial and International Partnerships

Over the past eight and a half years, the School created a number of industrial and international partnerships. These include long-standing industrial partnerships with several companies: Hewlett Packard, Microsoft Corporation, DuPont, Nokia, NEC, and Ford Motor Company. These partnerships have provided significant opportunities to bring the fruits of faculty and staff research closer to practice, and afforded valuable opportunities for faculty and students to collaborate with outstanding colleagues in industry.

During this period, the School and Institute also began and expanded major international initiatives, notably the Singapore-MIT Alliance and the Cambridge-MIT Institute. In the past year, the School initiated two additional large-scale international programs, one in Portugal and the other in Abu Dhabi. As do the industrial

partnerships, the School's international programs offer unique professional and scholarly opportunities and valuable support to engineering faculty and students. Just as importantly they provide the chance to work on issues that are of particular importance to the School's international partners and to the world. These international engagements provide our community with a significant lens on the world, the opportunity to collaborate with colleagues on important research and educational issues, and valuable cultural experiences. Currently the School and the Institute are close to completing agreements with the National Research Foundation of Singapore that will lead to another large-scale relationship and to MIT's first research center of this kind outside Cambridge, Massachusetts: the Singapore-MIT Alliance for Research and Technology (SMART) Center. The SMART Center will become MIT's largest international research endeavor to date.

Entrepreneurship and Invention

Entrepreneurship and invention have always been hallmarks of MIT and the School of Engineering. The School placed a renewed emphasis on technological innovation and invention over these last eight and a half years, starting many entrepreneurship-based activities. The School launched a distinctive effort in next-generation technologies, the Deshpande Center for Technological Innovation, which in six years has funded 64 proposals from faculty for exciting research projects totaling about $7M, spun off several projects to commercialization, and seen the creation of 11 new companies. The Lemelson-MIT program joined the School and has flourished and expanded to include not only its signature national prizes and MIT student prize, but also the founding of student prizes at other universities, a high school invention program, and a multiday celebration of invention and innovation called EurekaFest. In addition, the School has continued to support the ongoing entrepreneurship activities of students, including the MIT $50K Entrepreneurship Competition, which grew to become the MIT $100K Entrepreneurship Competition, and a student-run Global Startup Workshop.

Expanded Communications

Through a bimonthly electronic newsletter, an enhanced School website, and other venues, the School has worked to communicate more effectively both on and off campus with alumni, colleagues, and friends. This spring, the School also sponsored the creation of MIT TechTV, a beta site for MIT community–generated videos.

Improvements to the School's Physical Environment

During the past eight and a half years, the School has made many investments to improve and expand its physical infrastructure to support outstanding research and education. These include new department- and center-based teaching and research laboratories, new classrooms, and the opening of the Ray and Maria Stata Center for Computer, Information and Intelligence Sciences. These spaces will serve the School well into the future. The opening of the Stata Center provided a signature creation in the physical landscape of MIT. It also enabled the School to bring Computer Science back onto the campus; provides space for Computer Science and Artificial Intelligence, the Laboratory for Information and Decision Systems, and the Department of Linguistics and Philosophy; and offers a vibrant, new venue for faculty and students to collaborate more flexibly together.

Organizational Changes

Over the last decade, the School has created and nurtured two new divisions, biological engineering and engineering systems, and will soon see one of these divisions (BE) become MIT's first new department in 30 years, and for the School itself, the first in nearly 50 years. The School has effected the merger of the mechanical and ocean engineering departments, the merger of two of our largest laboratories into the Computer Science and Artificial Intelligence Laboratory (CSAIL), and the development of a more flexible organizational structure with the introduction of dual faculty appointments. At this time, 45 engineering faculty hold dual appointments, each, in effect, holding an equal allegiance to two academic units. Two programs moved to the Office of the Dean of Undergraduate Education last July: Concourse and Terrascope. The iCampus program has concluded, its successes lauded at a special symposium in December 2006 entitled "Learning Without Barriers/Technology Without Borders."

Personnel

In September, President Hockfield named Robert Armstrong, the Chevron professor of chemical engineering, and Ernest Moniz, the Cecil and Ida Green professor of physics and engineering systems, to lead the new MIT Energy Initiative

In January 2007, Dedric Carter, who directs the School's Office of Engineering Outreach Programs, received a secondary appointment as a lecturer in the Department of Electrical Engineering and Computer Science (EECS).

Effective September 1, Anantha Chandrakasan, the Joseph F. and Nancy P. Keithley professor of electrical engineering, became the director of the Microsystems Technology Laboratories. He succeeded Professor Martin A. Schmidt of EECS, who had served in the position for seven years.

Professor Lorna Gibson, the Matoula Stavros Salapatas professor of materials science and engineering, stepped down as chair of the faculty to become associate provost as of August 1.

Effective February 1, Klavs Jensen, the Lammot DuPont professor of chemical engineering, became head of the Department of Chemical Engineering, succeeding Robert Armstrong, who had served in the position for 10 years.

Steven R. Lerman, the Class of 1922 distinguished professor of civil and environmental engineering, agreed to serve as chair of the faculty through the academic year. He was also named interim codirector of the Singapore-MIT Alliance as of July 1, 2006.

In October, Daniel Roos, the Japan Steel Industry professor of engineering systems and civil and environmental engineering, became the first director of the MIT-Portugal Program.

In January, Erin Salius joined OEOP as the program coordinator for the MIT STEM program.

In June, Joshua Schuler was named the executive director of the Lemelson-MIT program, succeeding Kristin Finn.

In May, Nicole V. Stark, the program director of SEED Academy, completed five years of service and transitioned to a role outside the Institute.

Awards

Each year, faculty members in the School of Engineering receive numerous honors in recognition of their research and service, many offered by professional societies and the faculty's professional communities. This year was no exception. The reports of the School's departments, divisions, laboratories, centers, and programs make note of many of these awards. Several especially notable awards and School-based awards deserve additional mention here.

The National Academy of Engineering elected four MIT professors and one MIT research scientist in the School of Engineering to membership in the Academy this year. George Apostolakis, Korea Electric Power professor of nuclear science and engineering, was elected "for innovations in the theory and practice of probabilistic risk assessment and risk management"; James Kirtley, professor of electrical engineering and computer science, was elected "for contributions to the theoretical analysis, design and construction of high-performance rotating electric machinery"; Silvio Micali, professor of electrical engineering and computer science, was elected "for contributions to modern cryptography, through the development of zero-knowledge protocols and the theory of pseudo-randomness"; John Tsitsiklis, Clarence J. LeBel professor of electrical engineering and computer science, was elected "for contributions to the theory and application of optimization in dynamic and distributed systems"; and Timothy Berners-Lee, senior research scientist in CSAIL and 3Com Founders chairholder, was elected as a foreign associate member "for development of the World Wide Web." In addition, the National Academy of Engineering awarded Timothy Berners-Lee the 2007 Charles Stark Draper Prize, an annual award that honors engineers whose contributions have significantly benefited society.

Mechanical engineering professor and MIT president emeritus Charles M. Vest was elected president of the National Academy of Engineering, with a term extending from 2007 to 2013.

Silvio Micali was one of five MIT faculty members elected to the National Academy of Sciences this year.

Two of the four MIT professors named fellows of the American Association for the Advancement of Science (AAAS), to recognize their contributions to science and technology, hold appointments in the School of Engineering: Steven Tannenbaum, the Underwood-Prescott professor of toxicology in the Biological Engineering Division; and Mujid Kazimi, the TEPCO professor of nuclear engineering.

For his work in "understanding genomes," Manolis Kellis, Class of 1964 distinguished alumni career development assistant professor in the Department of Electrical Engineering and Computer Science, was among this year's TR35, *Technology Review's* compilation of the 35 best innovators worldwide under age 35.

Ford professor of engineering Subra Suresh was elected as an honorary member of the Spanish Royal Academy of Science and named to receive the 2007 European Materials Medal from the Federation of European Materials Societies. Professor Suresh holds appointments in the Departments of Materials Science and Engineering, Biological Engineering, and Mechanical Engineering.

Institute and School Awards for Achievement, Leadership, Contributions to Education, and Service

Harold Hemond, the William E. Leonhard professor of civil and environmental engineering, received the Amar Bose Award for Excellence in Teaching. Established in 1989 to recognize outstanding contributions to undergraduate education, the award is given annually to a School of Engineering faculty member whose teaching contributions over an extended period are characterized by dedication, care, creativity, and inspiration to students and colleagues.

Francesco Stellacci, associate professor of materials science and engineering and the Finmecchanica career development professor, received the Junior Bose Award, established in 1996 to recognize teaching excellence by junior engineering faculty.

Associate dean Dick K.P. Yue, professor of mechanical and ocean engineering, was named a Class of 1960 fellow. The fellowship is given for a three-year term to faculty members involved in developing innovative instructional programs at either the undergraduate or graduate level.

Graduate Student Council Teaching Awards for excellence in teaching a graduate-level course, given each year to one professor and/or teaching assistant from each school, were awarded this year to Gerbrand Ceder, R.P. Simmons professor of materials science and engineering, and mechanical engineering graduate student Carey Walters.

George Barbastathis of the Department of Mechanical Engineering was honored with the John S.W. Kellett '47 Award, for a commitment to creating a more welcoming environment at MIT, including but not limited to improving the experience of lesbian, bisexual, gay, transgender, and questioning individuals.

Three School of Engineering professors were named MacVicar Faculty Fellows in 2007 out of five fellows named Institute-wide: associate professor Yoel Fink of Materials Science and Engineering; professor Charles Leiserson of Electrical Engineering and Computer Science; and associate professor David Wallace of Mechanical Engineering. The awards are given in memory of former dean of undergraduate education and professor of physics Margaret L.A. MacVicar, and recognize faculty members' excellence in teaching and innovation in education.

Amedeo Odoni, professor in the departments of Aeronautics and Astronautics and Civil and Environmental Engineering, was chosen as the recipient of the Capers (1976) and Marion McDonald Award for Excellence in Mentoring and Advising. The award is presented to a faculty member in the School of Engineering, who, through tireless efforts to engage minds, elevate spirits, and stimulate high-quality work, has advanced the professional and personal development of students and colleagues.

Warren Seering, the Weber-Shaughness professor of mechanical engineering and engineering systems, received the Frank E. Perkins Award in recognition for serving "as an excellent advisor and mentor for graduate students."

Ronald Parker, who holds appointments in Nuclear Science and Engineering and in Electrical Engineering and Computer Science, Carol Livermore-Clifford of Mechanical Engineering, and Frédo Durand of Electrical Engineering and Computer Science, were awarded Ruth and Joel Spira Awards for Distinguished Teaching. These awards are made possible by a gift from Ruth and Joel S. Spira to acknowledge "the tradition of high-quality engineering education at MIT." Awards are made each year to one faculty member in each of the three departments of Nuclear Science and Engineering, Mechanical Engineering, and Electrical Engineering and Computer Science.

Awards Received by Engineering Students

The Albert G. Hill Prize is awarded to minority juniors or seniors who have maintained high academic standards and have made continued contributions to the improvement of the quality of life for minorities at MIT. A former vice president for research, Dr. Hill was an early champion of equal opportunity at MIT. Nancy Diaz, a junior in Mechanical Engineering, received one of this year's two prizes.

Athletics awards went to three engineering students this year. Matthew Williams, a senior in Civil and Environmental Engineering, won the Harold J. Pettegrove Award for outstanding service to intramurals. Doria Holbrook, a junior in Mechanical Engineering, won the MIT Woman Athlete of the Year Award. Julia Zimmerman, a sophomore in Mechanical Engineering, won the Malcolm G. Kispert Award for female scholar-athlete of the year.

Lucia Tian, a junior in Electrical Engineering and Computer Science, was awarded one of two Barry Goldwater Scholarships given to MIT students this year. The award honors students who exhibit outstanding potential and intend to pursue careers in mathematics, the natural sciences, or those engineering disciplines that contribute significantly to the technological advancement of the United States.

Seven juniors and two sophomores from the School of Engineering were selected as Burchard Scholars in the School of Humanities, Arts, and Social Sciences (SHASS). The awards, named after the first SHASS dean, John Ely Burchard, are given to students who demonstrate unusual abilities and academic excellence in SHASS areas. The seven juniors are Raja Bobbili (Electrical Engineering and Computer Science), Daniel Denis (Nuclear Science and Engineering), Ruijie He (Aeronautics and Astronautics), Anthony Jones (Mechanical Engineering), Tala Qusous (Biological Engineering), Jugal Shah

(Nuclear Science and Engineering), Lucia Tian (Electrical Engineering and Computer Science), and Jiao Wang (Chemical Engineering). The two sophomores are Richard Lin (Materials Science and Engineering) and Mahalia Miller (Civil and Environmental Engineering).

The Frederick Gardiner Fassett, Jr. Award is given to Interfraternity Council members who have demonstrated the qualities of spirit, dedication, and service in furthering the ideals of MIT fraternity brotherhood and sisterhood. This year, senior Shannon Nees of Chemical Engineering and junior Daniel Eads of Electrical Engineering and Computer Science received the awards.

The Graduate Student Extraordinary Teaching and Mentoring Award, given to a teaching or research assistant for demonstrating extraordinary teaching and mentoring, was given to Hubert Pham, a graduate student in Mechanical Engineering.

Junior Alia Whitney-Johnson of Civil and Environmental Engineering was named one of 65 Harry S. Truman Scholars in 2007. Whitney-Johnson launched a program to help Sri Lankan victims of rape and incest, and will use her fellowship for graduate studies in sustainable development. The Truman Scholarship is awarded to college juniors who demonstrate a sense of community and who are committed to public service.

Tim Fofonoff, a graduate student in Mechanical Engineering, is the 2007 winner of the Hatsopoulos $50,000 Innovation and Thesis Award. Named for George Hatsopoulos, an MIT alumnus and entrepreneur, the prize is designed to recognize original research that leads to a patentable invention or innovation. Fofonoff won for the development of a 4kW battery powered rope ascender.

Adam Madlinger of Chemical Engineering received the Henry Ford II Scholar Award, which is given to a senior in the School of Engineering who has attained the highest academic record at the end of the third year and who exhibits exceptional potential for leadership in the profession of engineering and in society.

Two School of Engineering students, senior Raja Bobbili and David Danielson, a graduate student in Materials Science and Engineering, have been awarded Karl Taylor Compton Prizes for achievement in citizenship and devotion to the welfare of MIT.

Senior Christine Yu of Chemical Engineering received one of three Laya and Jerome B. Wiesner Student Art Awards, which are presented annually to students, living groups, organizations or activities for outstanding achievement in and contributions to the arts at MIT. Established by the Council for the Arts at MIT in 1979, these awards honor the late president emeritus Jerome Wiesner and Mrs. Wiesner for their commitment to the arts at MIT.

The Laya W. Wiesner Award is given to an undergraduate woman who has most enhanced MIT community life. This year, Jamie Karcesky, a senior in Chemical Engineering, received the award.

Mechanical Engineering graduate student Nathan Ball won the 2007 $30,000 Lemelson-MIT Student Prize for a wide range of inventions, including a rapid-fire needle-free drug delivery technology, the ATLAS Powered Rope Ascender, and an electric scooter.

Olumuyiwa Ogunnika of Electrical Engineering and Computer Science received the first MIT-CIMIT Medical Engineering Fellowship, awarded to graduate engineering students who work in innovative yet underfunded areas of healthcare research.

Two engineering students won the Priscilla King Gray Award for Public Service in 2007: senior Nicki Lehrer of Aeronautics and Astronautics and sophomore Justin Tan of Chemical Engineering.

The Ronald E. McNair Scholarship Award recognizes black undergraduates who have demonstrated strong academic performance and who have made considerable contributions to the minority community. The award was created by the Black Alumni/ae of MIT in honor of Dr. Ronald McNair (PhD 1977), who died in the explosion of the Space Shuttle Challenger. The awards this year went to Nia Beckley, a senior in Chemical Engineering; Etienne Toussaint, a senior in Mechanical Engineering; and Aston Motes, a graduate student in Electrical Engineering and Computer Science.

Four engineering students received William L. Stewart, Jr. Awards this year, out of five given throughout the Institute. The awards recognize contributions by an individual student or student organization to extracurricular activities and events during the preceding year: senior Shannon Nees, senior Isaac Tetzloff of Aeronautics and Astronautics, and graduate students Natalija Jovanovic and Clarence Lee of Electrical Engineering and Computer Science.

Awards to Engineering Staff

Joseph F. Connolly, assistant director for administration in the Research Laboratory of Electronics, received a 2007 MIT Excellence Award in the "Serving the Client" category.

Chris Resto, administrative director of UPOP , received a 2007 MIT Excellence Award in the "Creating Connections" category.

Once again, the School of Engineering continued to recognize the achievements of its exemplary and devoted staff. In May, the School presented 15 Infinite Mile awards at its seventh annual School-wide celebration of excellence. Infinite Mile Awards for Excellence went to Fred Crowley (Controller's Accounting Office), Alina Haverty (Chemical Engineering), Kurt Broderick (Microsystems Technology Laboratories), Jeanette Marchocki (Civil and Environmental Engineering), Rhonda Maynard (Microsystems Technology Laboratories), Ada Ziolkowski (Biological Engineering), Vicky Murphy (Civil and Environmental Engineering), Chris Resto (Undergraduate Practice Opportunities Program), George LaBonte (Materials Science and Engineering), and J. Braun (Materials Science and Engineering). An Infinite Mile Award for Diversity and Community went to Cheryl Charles (Electrical Engineering and Computer Science). Infinite Mile Awards for Sustained Excellence went to Claire Benoit (Electrical

Engineering and Computer Science), Mary Hertema-Miller (Professional Education Programs), Nancy Martin (Center for Transportation and Logistics), and Victoria Palay (Computer Science and Artificial Intelligence Lab).

Statistics for 2006–2007

Undergraduate Enrollment

- 1,749 students
- 38 percent women
- 22 percent underrepresented minorities

Graduate Enrollment

- 2,774 students
- 664 women
- 131 underrepresented minorities

Degrees Awarded, 2007

- 578 bachelor's degrees
- 710 master's and MEng degrees
- 337 PhD, ScD, and professional engineering degrees

Faculty

- 255 professors
- 69 associate professors
- 51 assistant professors

Thomas L. Magnanti
Dean
Institute Professor

More information about the School of Engineering can be found at http://mit.edu/engineering/.