MIT TECH TALK

VOLUME 44 ▪ NUMBER 32

WEDNESDAY ▪ MAY 31, 2000

Construction to begin on new sports and fitness center

■ By Kenneth D. Campbell
News Office

President Charles Vest has anounced $10 million in new gifts that will allow construction to begin on the long-awaited sports and fitness center, which will feature an Olympic-class swimming pool, squash courts, a multiple-activity court, and a health and fitness center. The site is next to the Johnson Athletic Center.

Construction was authorized by the Executive Committee of the MIT Corporation and is expected to begin this fall, pending the necessary permits and approvals from the City of Cambridge. Preliminary summer work will include renovations of the DuPont locker rooms followed by demolition of Briggs Field House. The project is scheduled for completion in June 2002.

"This facility will have a profound impact on the athletics department as well as the broader MIT community," Dr. Vest said. "I am confident it will become a magnet for students, faculty and staff alike. The vision of the Task Force on Student Life and Learning is now becoming a tangible reality. As the task force noted, athletics contributes in important ways to community by helping our students develop their teamwork and leadership skills."

The decision was made possible, Dr. Vest said, "through the magnificent generosity of Al and Barrie Zesiger," who increased their pledge to $12 million, or $4 million above what they initially pledged in 1996. Al Zesiger (SB 1951), a champion of fitness for four decades, is a member of the visiting committee for the Department of Athletics, Physical Education and Recreation. Barrie Zesiger is a member of the Corporation and is on the visiting committees for the Office of the Dean of Students and Undergraduate Education and the Department of Brain and Cognitive Sciences. They are founding partners of the Zesiger Capital Group, LLC in New York.

"I developed an interest in lifetime fitness at MIT through participation in swimming, fencing, sailing and the

(continued on page 16)

Heading in different directions

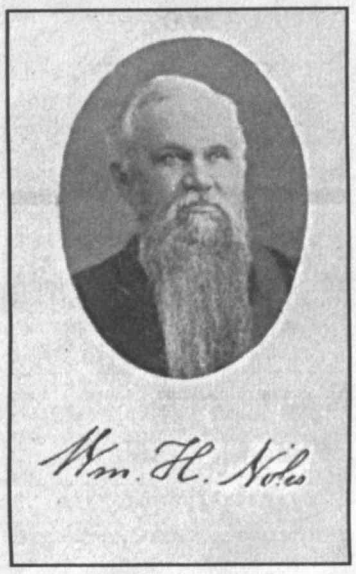

Photo by Gong Ke Shen
Technique

Hair is just one of many things that's changed since the Class of 1900 graduated from MIT, as seen in these pictures from the 1900 and 2000 Technique yearbooks. See story on page 4.

Students may earn the degrees, but Costello puts them in writing

■ By Robert J. Sales
News Office

He has been a presence at MIT Commencement since 1983. During that period, virtually every diploma awarded has carried his imprint, including the 2,575 to be distributed Friday by President Charles M. Vest and Provost Robert A. Brown.

Yet he hasn't ever attended an MIT Commencement.

"The scribe traditionally remains anonymous," explained calligrapher Thomas Costello, who also did not attend his own graduation ceremonies at the University of Massachusetts at Amherst in 1971.

MIT undergraduates and master's degree recipients are handed a diploma with the name and, if applicable, minor field inscribed by hand (the major is preprinted), while doctorate recipients have the thesis title, however lengthy it may be. To accomplish this, Mr. Costello works 16-hour days during the spring in his Brookline apartment and shares the work with two or three other calligraphers as the deadline looms. MIT is the only institution of higher learning for which Mr. Costello does diplomas.

(continued on page 5)

Average starting salary for MIT grads tops $45K

■ By Denise Brehm
News Office

Salaries offered to computer scientists topped the job offers reported by the Class of 2000, followed closely by offers made to electrical engineers.

The highest salary offer reported by a graduating senior—$80,000—was made to a graduate of the School of Engineering (major unspecified) for consulting work, according to a survey compiled by the Office of Career Services and Preprofessional Advising based on 446 salary offers voluntarily reported by June graduates.

A student in the engineering school offered a job working with securities or commodity contracts and a Sloan School graduate tied for the lowest offer reported: $32,000.

The salary survey reported the lowest, average and highest offers received by individuals and grouped them in three ways: according to degrees and majors, by type of employer and by job function. Figures in the report are base salaries

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Commencement Notes

See the web site at <http://web.mit.edu/commencement/2000> for complete and updated information on all aspects of Commencement.

PARKING

The West Parking Garage annex lot on Vassar Street will be open on Thursday, June 1 for guests attending the hooding ceremony. On Commencement day (June 2), parking for families and guests will be in the Pacific lot at Pacific and Albany Streets. Shuttle vans will provide transportation to Killian Court beginning at 7:30am. Return service will run from Killian Court and Ames Street (between the tennis courts and East Campus) until 4pm.

REMOTE VIEWING

The Commencement exercises will be broadcast on MIT Cable TV as well as on the web—there will be a link from the MIT home page at <http://web.mit.edu>. There will be closed-circuit TV viewing sites in Kresge Auditorium, Kresge Little Theater, Rockwell Cage, Lobdell Cafeteria, the Student Center lobby, Lobby 7, Lobby 10, the lobby of Building E52, and Rooms 10-250, 34-101, 26-100, 6-120, 2-131, 2-132, 2-135, 2-136, 2-139, 2-143, 2-146, 2-147, 2-151, E25-111, E51-145, E51-149, E51-345, 4-145, 4-149, 4-153, 4-159, 4-163, 4-231, 4-237, 4-370, 54-100 and 56-114. Tickets are not required for these rooms. Access to Killian

(continued on page 4)

Two teams vie for national titles

Coed sailing team is first in 16 years to go to nationals

■ By Denise Brehm
News Office

Sailing through college at MIT can hardly be a breeze, but three seniors have managed to accomplish that and qualify for the national collegiate coed sailing champion-

(continued on page 16)

Institute's tennis team ranks among top eight in nation

■ By Roger Crosley
Director, Sports Information

Eric Chen, who entered MIT at the age of 16, has not only survived four years to earn the SB in economics—he has thrived, becoming the most decorated tennis player the

(continued on page 16)

Madhulika Jain (left) and Alan Sun practice in their Flying Junior out on Boston Harbor. Photo by Laura Wulf

In Brief

SPECIAL SECTION

"Building Program Update," a special report to the MIT community from the President's Office, is inside this issue of Tech Talk. It offers an overview of campus construction and infrastructure renewal projects as well as some historical perspective and background on campus development.

AWARDS, AWARDS

MIT and its constituent schools and departments have recognized hundreds of students and other members of the MIT community for their accomplishments in 1996-97. Reports from the Awards Convocation and other events begin on page 7.

COPYTECH HOURS

The CopyTech Express Center in the Stratton Student Center will begin summer hours on Monday, June 5. The center will be open Monday through Friday from 11am-10pm, and Saturdays and Sundays from 10am-7pm. Regular hours will resume on August 21.

TOWING REMINDER

Facilities is reminding drivers that Cambridge police will ticket and tow all cars parked on Vassar Street on the morning of Monday, June 5 for street cleaning. Vassar Street is a tow-away zone on the first Monday of every month from 8am-2pm.

Student Notices

* Open to public
** Open to MIT community only

INSTRUCTIONS: Listings for Student Notices should be submitted using the web form at <http://web.mit.edu/newsoffice/tt/calform.html>. If you have questions, please contact <ttcalendar@mit.edu> or x3-2704.

May 31-June 11

■ RELIGIOUS ACTIVITIES

The Chapel is open for private meditation 7am-11pm daily.

Baptist Campus Ministry**—Weekly events: Sunday Nights at the RAC, 6pm, Main Dining Rm, Bldg W11. Home-cooked meal at 6pm (cost: by donation), followed by Bible Study. Tuesday Vespers, 6-6:30pm, chapel. A quiet time for reflection. More info: x3-2328.

Baptist Student Fellowship*—Weekly meetings on Tuesdays, include dinner followed by Bible Study. 5:30-7pm, Bldg W11, small dining room. Sponsored by Baptist Campus Ministry. More info: x3-2328.

Campus Crusade for Christ**—Weekly meeting on Wednesdays, 7:45pm, PDR 1 & 2, 3rd fl Student Center. More info: x5-6204 or <gnelson@mit.edu>.

Chi Alpha Christian Fellowship**—Weekly Organizational Meeting, Tuesdays, 7:3-9pm, Private Dining Room 3 in Stratton Student Center. Christian worship and an examination of the Book of Revelation. Prayer and fasting each Thursday from 12-12:45pm in W11-063. More info: x3-2327, <cacf@mit.edu> <www.mit.edu/activities/xa/main/html>.

Christian Science Organization**—Thursdays at 7pm. More info: x3-8797 or <lnorford@mit.edu>.

Communitas-Life Together**—Protestant Worship Sunday at 11am. Sponsored by: American Baptist Church, United Church of Christ, United Methodist Church, Presbyterian Church (USA). Chaplain John Wuestneck, x2-1780 or <chaplain@mit.edu>.

Graduate Christian Fellowship**—Weekly meetings Fridays at 6pm. Also weekly Bible studies, prayer and volleyball. More info: <http://web.mit.edu/mitgcf/> or <mit-gcf-info@mit.edu>.

Lincoln Laboratory Bible Study*—Thursdays, 12-12:30pm, weekly Bible study in the Division 7 conference room, D-430. More info: Sharon Frigon at 981-7751 or <frigon@ll.mit.edu>.

Lutheran-Episcopal Ministry at MIT*—Regular Wednesday worship 5:10pm, followed by either a brown bag supper or social activity in the Bldg W11 dining room. On the second Sunday of each month, LEM assists at Common Cathedral, a gathering of homeless people on the Boston Common, at 1pm. More info: x3-0108.

Meditation and Discourse on the Bhagavad Gita*—With Swami Tyagananda, monk of the Ramakrishna Mission of India, assoc. minister of Vedanta Society of Boston and MIT chaplain. Fridays, 5:15pm, MIT Chapel. More info: 661-2011, <mehta@cytel.com> or <http://www.cytel.com>.

MIT Hillel**—Tuesdays: 5:30pm Beginning Hebrew ; 6:30pm Intermediate Hebrew . Wednesdays: noon Hebrew Conversation Table in Walker Cafeteria; 7pm Haftorah Class. Thursdays: noon Taste of Torah. Fridays: 6pm Egalitarian Chavurah Services and Orthodox Minyan Services; 7pm Shabbat dinner. Saturdays: 9am Orthodox Minyan Services; 12:45pm Shabbat lunch. More info x3-2982.

MIT Muslim Students Association*—Five daily prayers, Bldg W11; also Friday congregation 1:10-1:45pm, Rm W11-110. More info: x8-9285.

MIT Orthodox Christian Fellowship**—Wednesdays at 5:30pm in Student Ctr DR 1 for dinner and Chapel Vespers. John Kymissis x5-7649 or Costa Sapuntzakis x5-7683.

Protestant Eucharist/Holy Communion*—Wednesdays, 5:10pm in Building W11. Lutheran-Episcopal Ministry at MIT. More info: x3-2325 or <lutheran@mit. edu>.

Taize Prayers*—Fridays, noon-12:30pm in W11, the Board Room. All invited. Sponsored by students from the Protestant Ministry at MIT, Tech Catholics and the Lutheran-Episcopal Ministry. Taize Prayers, coming from the Taize community in France, are a form of Christian meditation based on singing and silence.

Tech Catholic Community**—Sunday Masses 9:30am, 1pm and 5pm. Weekday Masses Tuesdays and Fridays 12:05pm when classes are in session. More info: x3-2981 or <catholic@mit.edu>.

United Christian Fellowship (UCF)**—A member of Intervarsity Christian Fellowship. Weekly Large Group meetings Fridays at 7:15pm, 3rd floor of Student Center. Weekly dorm-based bible studies on campus. More info: 576-5157, <mitucf@mit.edu>, <http://web.mit.edu/ucf/>.

■ VOLUNTEERS

The MIT Public Service Center (PSC) has compiled the following volunteer opportunities. Please contact the PSC for more information (Rm W20-547, x3-0742).

ABCD Head Start seeks volunteers to help out with their second annual "Good Guys" basketball tournament and Family BBQ Day on Saturday, June 10. All volunteers receive a free t-shirt. Contact Christopher Sadac at 357-6000, ext. 286 or at <sadac@bostonabcd.org>.

Cambridge School Volunteers seeks volunteers age 55 and over for their Intergenerational Literacy Program to tutor a first grader twice a week during the school year. All tutors are trained, supported and supervised by program staff. Interviews are going on now for the fall. Call 349-6794 or e-mail <CSV@cps.ci.cambridge.ma.us>.

Young Adult Male with Cerebral Palsy needs help practicing with a voice recognition system for computer access, in Canton, MA. Training provided. Flexible schedule. Call Ellen at 781-821-1386, ext. 502 for more information.

Crimewatch

The following incidents were reported to the MIT Campus Police from May 1-8. This summary contains most incidents reported, but does not include incidents such as medical shuttles, ambulance transfers, false alarms and general service calls.

May 1: *Amherst Alley:* suspicious vehicle. *Bldg. 26:* two attempted break into office. *Bldg. E23:* fire. *Bldg. 54:* room broken into. *Bldg. 14:* suspicious person. *Student Ctr.:* bike stolen, $100. *DuPont gym:* check an inquiry of individual. *Ford Lot:* check and inquiry of individual.

May 2: *Bldg. 26:* attempted break into room. *Bldg. 54:* cloth bag and computer items stolen, $130. *77 Mass. Ave.:* bike stolen, $20. *Killian Court:* damage to property. *Bldg. 3:* report of suspicious person, gone upon arrival. *Bldg. 4:* report of woman screaming; same discovered to be female practicing for a play. *Bldg. W61:* well being check. *Bldg. 7:* check and inquiry on juveniles.

May 3: *Random Hall:* noise complaint from neighbors. *New House:* loud music. *Bldg. 54:* attempted break-in to office. *Bldg. E52:* 1) suspicious activity; 2) wallet stolen, $70. *Hayward Lot:* malicious damage. *East Garage:* vehicle damaged. *Bldg. E15:* Computer stolen. *MacGregor:* annoying phone calls. *President's garden:* animal complaint. *Student Ctr.:* check and inquiry.

May 4: *Bldg. 16:* bicycle stolen, $300. *Bldg. N52:* employee problem. *Bldg. 14:* suspicious activity. *Bldg. 7:* bike stolen, $500. *Burton:* fraudulent use of checking account.

May 5: *Bldg. W59:* audio visual equipment stolen, $8,025. *Bldg. 4:* attempted break into room. *Bldg. E51:* bike stolen, $900. *Boston, Phi Delta Theta:* 1) student problem; 2) noise complaint. *Phi Kappa Theta:* noise complaint. *Bldg. E52:* complaint of skate boarders.

May 6: *100 Memorial Dr.:* noise complaint. *Brookline, Zeta Beta Tau:* malicious damage. *DuPont gym:* student problem. *Ames St.:* check and inquiry of individual.

May 7: *Bexley:* obscene phone call. *Eastgate:* noise complaint. *MacGregor:* noise complaint. *Bldg. E15:* complaint of skate boarders.

May 8: *Bldg. 6:* room broken into. *E23 plaza:* pocketbook stolen containing cell phone and wallet, $250. *Bldg. W34:* bike stolen, $250. *Albany Garage:* animal complaint. *Bldg. N52:* suspicious vehicle. *Killian Court:* suspicious person.

Apple to include MIT's Kerberos in new Macintosh operating system

MIT announced on May 18 that it has been working with Apple to bring a full implementation of its Kerberos network security system to Mac OS X, the newest Macintosh computer operating system.

Kerberos, an established open security standard, will allow users of Mac OS X to safely access Internet-based services while also protecting their data in transit. Kerberos was created by MIT in the mid-1980s as part of MIT's Project Athena and provides a solution to network security problems.

The Kerberos protocol uses strong cryptography so that a client can prove its identity to a server (and vice versa) across an insecure network connection. After a client and server have used Kerberos to prove their identity, they can encrypt all of their communications to assure privacy and data integrity as they go about their business. Kerberos optionally provides integrity and confidentiality for data sent between the client and server.

"The Macintosh has been an important platform to MIT for many years," said James D. Bruce, vice president for information systems. "We're looking forward to working closely with Apple to bring a key component of the security infrastructure of MIT and many other institutions to Mac OS X."

"Mac OS X, with its advanced operating system kernel, Darwin, is the most reliable and robust Apple OS ever," said Clent Richardson, Apple vice president for worldwide developer relations. "We're very excited to work with MIT to bring Kerberos to Mac OS X, adding a key component of network security for our important customers in higher education and government organizations."

Gavin Eadie, director of strategic technologies at the University of Michigan, commented, "we applaud Apple and MIT's collaboration to bring Kerberos to Mac OS X. Kerberos authentication is essential for computers deployed in higher education, and this work will make our adoption of Mac OS X much easier."

MIT Kerberos for Macintosh, expected to be freely available for Mac OS X, emphasizes scalability and security. It uses strong cryptography to provide encryption and integrity-checking of network data, and secure authentication between Internet clients and servers. It is compatible with Kerberos implementations from other vendors.

MIT Kerberos for Macintosh includes support for both Kerberos v4 and Kerberos v5 protocols, along with the KClient and Generic Security Service (GSS) APIs.

MIT Libraries post their summer hours

The libraries' summer hours, effective May 20 through September 5, are as follows.

- **Administrative offices**—Monday-Friday, 9am-5pm; Saturday-Sunday, closed.
- **Aero/Astro**—Monday-Friday, 9am-5pm; Saturday-Sunday, closed.
- **Barker**—Monday-Thursday, 9am-8pm; Friday, 9am-6pm; Saturday, 11am-6pm; Sunday, 1-8pm.
- **Computerized Literature Search Service**—Monday-Friday, 10am-6pm; Saturday-Sunday, closed.
- **Dewey**—Monday-Thursday, 9am-8pm; Friday, 9am-6pm; Saturday, 11am-6pm; Sunday, 1-8pm.
- **Document Services**—Monday-Friday, 9am-5pm; Saturday-Sunday, closed.
- **Humanities**—Monday-Friday, 7am-midnight; Saturday, 8am-midnight; Sunday, 10am-midnight.
- **Institute Archives**—Monday-Friday, 11am-4:30pm. Other hours available by appointment by calling x3-5136.
- **Lewis Music**—Monday-Friday, 10am-6pm; Saturday-Sunday, closed.
- **Lindgren**—Monday-Friday, 9am-5pm; Saturday-Sunday, 1-5pm.
- **Reserve Book Room (Hayden)**—Monday-Friday, 9am-5pm; Saturday-Sunday, closed.
- **RetroSpective Collection**—Monday-Friday, 9am-5pm; Saturday-Sunday, closed.
- **Rotch**—Monday-Thursday, 9am-8pm; Friday, 9am-6pm; Saturday-Sunday, closed.
- **Rotch Visual Collections**—Monday-Friday, 9am-5pm; Saturday-Sunday, closed.
- **Schering-Plough**—Monday-Friday, 9am-5pm; Saturday-Sunday, closed.
- **Science**—Monday-Friday, 7am-midnight; Saturday, 8am-midnight; Sunday, 10am-midnight.

Special schedules will be posted for holidays. Libraries' hours are also available on the web at <http://libraries.mit.edu/hours.html>.

Institute Calendar

* Open to public
** Open to MIT community only

(For arts-related listings, see page 15.)

INSTRUCTIONS: Seminars & Lectures must be submitted to the online Events Calendar at <http://events.mit.edu>. If you have questions about using that calendar, please see the help page at that web site, contact the I/S Computing Help Desk (Mac: x3-1101, PC: x3-1102) or send e-mail to <computing-help@mit.edu>.

Listings for Community Calendar should be submitted to the News Office using the web form at <http://web.mit.edu/newsoffice/tt/calform.html>. If you have questions, please contact <ttcalendar@mit.edu> or x3-2704.

Events must be MIT sponsored and take place on the MIT campus or at an MIT affiliate (Draper Labs, Lincoln Laboratory, etc.).

Next deadline for all types of listings is noon Friday, June 2, covering events from Wednesday, June 7 through Sunday, July 16.

May 31-June 11

■ SEMINARS & LECTURES

WEDNESDAY, MAY 31

Double-Diffusive Control of the Temperature-Salinity Relationship*—Ray Schmitt, WHOI. Physical Oceanography Sack Lunch Seminars. 12:10pm, Rm 54-915. More info: x3 2922, <markus@ocean.mit.edu>, <http://www.mit.edu/~mjochum/sack.html>.

Building Value Through Entrepreneurship*—Howard Anderson, moderator, Sloan School. Sponsored by MIT Enterprise Forum. 7-9pm, Kresge Auditorium. Registration from 6pm. Reception at 9pm. Advance registration at <https://alumweb.mit.edu/mitef/register/>. More info: x3-0015, <plingard@mit.edu>, <http://web.mit.edu/entforum/www/SBS>.

■ COMMUNITY CALENDAR

Events Calendar Quickstart Demonstrations—May 31:** 9am, 10am and 2pm; **June 5:** 10am and 2pm; **June 7:** 2pm; **June 8:** 2pm and **June 13:** 10am and 11am. Sponsored by I/S. N42 Demo Center, 211 Mass. Ave. More info: <events-team@mit.edu>.

Phys. Ed Class Registration—Begins June 5.** Register for summer aerobics and other classes (dance, olf, tennis, scuba, yoga, etc.) in Rm W32-125. For information regarding class times and fees go to <http://web.mit.edu/athletics/www/physed.html>. More info: x3-4291.

MIT Community Plant Swap—Friday, June 9,** noon-1:30pm, under the trees near the MIT Chapel (next to Bexley Hall). Swap houseplants, potted perennials and annuals, garden tools, clay and decorative pots for vouchers, which can be traded for plants and supplies brought by other gardeners. More info: <gardeners-sc@mit.edu> or x3-2269.

Spouses and Partners@MIT Group—May 31:** Barbecue at East Campus, 4-6 p.m., spouses and children are welcome. Bring a dish to share and chairs. **Summer meetings:** 1st and 3rd Wednesdays in June, July and August, 3-5 pm. Meet on Student Center steps. A support network for the partners and spouses of MIT students, staff and faculty. More info: x3-1614.

■ MITAC

*The MIT Activities Office (MITAC) serves the cultural and recreational needs of the MIT community, including retirees. Two locations: Walker Memorial, Rm 50-005, 9:30am-3:30pm, Wednesday-Friday; and Lincoln Lab, Rm LL-B-210, 1:15-4pm, Thursday and Friday only. More info: x3-7990, <dtavit@mit.edu>, <http://web.mit.edu/oscs/mitac>. MITAC accepts cash, checks and MasterCard and Visa ($20 minimum). **MIT IDs must be presented.***

Father's Day Barbecue at SixFlags New England (Agawam, MA). Sunday, June 18, 10am-10pm. Ticket: $28 (Regular admission is $34.99.) Children under 36" are free. Purchase by 6/9.

An afternoon at Tanglewood (Lenox, MA). Saturday, July 8. Bus leaves Lincoln Lab (main lot) at 7am and Campus (Hayward Lot) at 7:30am; returns approximately 7:30pm (campus) and 8pm (Lincoln Lab). Includes shed seats, lunch at Lenox's 218 Restaurant, bus and bus tip. $60.00/pp. Purchase by 6/23.

Discount movie tickets: Brattle Theatre, $5.25; General Cinemas, adult $5.50, and child (12 and under), $3.25; Landmark Theatres (Cambridge and Waltham), $6.50; Showcase Cinemas, $5.50; Loews/Sony Theatres (staff only), $5.50.

Other discount tickets: Canobie Lake ($3.00 off Mon-Fri), June 19-Sept. 1; Children's Museum, $4; Museum of Science, $4; New England Aquarium, $6;New England Golfguide ($15.50), Museum Coupon Book ($6.75).

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Printed on Recycled Paper

Friedman receives Killian Faculty Achievement Award

■ By Robert J. Sales
News Office

Institute Professor Jerome I. Friedman, a 1990 Nobel laureate in physics and a member of the MIT faculty since 1960, has been named winner of the Killian Faculty Achievement Award for 2000-2001.

"This is a great surprise," Professor Friedman said after Professor Jean P. de Moncheaux, chair of the Selection Committee, made the announcement at the May 16 faculty meeting. "It's a great honor. I'm quite overcome by this experience."

"Jerry Friedman is one of the giants of physics, and, in his self-effacing manner, one of the gentle giants of MIT," Professor de Moncheaux said. "His extraordinary accomplishments make him a worthy recipient of the James R. Killian Jr. Faculty Achievement Award."


Friedman

Established in 1971 as a tribute to MIT's 10th president and former chair of the Corporation, the award recognizes extraordinary professional accomplishments by an MIT faculty member. The winner delivers a lecture in the spring.

Dr. Friedman, who became an Institute Professor in 1991, shared the 1990 Nobel prize for physics with the late Professor Henry W. Kendall, also of MIT, and Dr. Richard E. Taylor of the Stanford Linear Accelerator Center.

They were key members of a research team that conducted a series of experiments on the scattering of electrons by protons, deuterons and heavier nuclei in the late 1960s and early 1970s. These experiments gave the first clear evidence for charged point-like constituents inside the nucleon. The interpretation of the data gave strong support to the quark model and provided the experimental underpinnings for the development of quantum chromodynamics.

Professor Friedman has made far-reaching contributions to undergraduate education at MIT. His tenure as head of the Department of Physics from 1983-88 was marked by the development of strong faculty support for the physics core courses and recruitment of first-rate junior faculty. He led the effort to pay the full academic-year salary of junior faculty from department funds, an action hailed as a major improvement in the quality of life for junior faculty. In addition, he embarked on a program to put all academic salaries in the department on "hard money."

Professor Friedman, a longtime member of the Dr. Martin Luther King Special Celebration Committee, has made major contributions to the education of minority students. With his support as department head, the National Association of Black Physics Students was started at MIT. He is viewed as one of the key figures responsible for the fact that MIT educates 15 percent of the underrepresented US minorities studying physics.

Professor Friedman served on the committees that studied the status of women faculty in the School of Science from 1995-99. He also has made contributions to the arts at MIT as a member of the Creative Arts Council.

He earned the AB (1950), MS (1953) and PhD (1956) from the University of Chicago and was a research associate at Chicago (1956-57) and Stanford University (1957-60) before joining MIT. Professor Friedman was director of the Laboratory for Nuclear Science from 1980-83. He is a fellow of the American Association for the Advancement of Science and the American Physical Society and a member of the National Academy of Sciences and the American Academy of Arts and Sciences. He is past president of the American Physical Society and chair-elect of the Council of Scientific Society Presidents.

In addition to Professor de Moncheaux, members of the Killian Committee were Professors Sylvia T. Ceyer, Bengt Holmstrom, Mujid S. Kazimi and Jiang Wang.

Toyoichi Tanaka, physicist who discovered "smart" gels, dies at 54

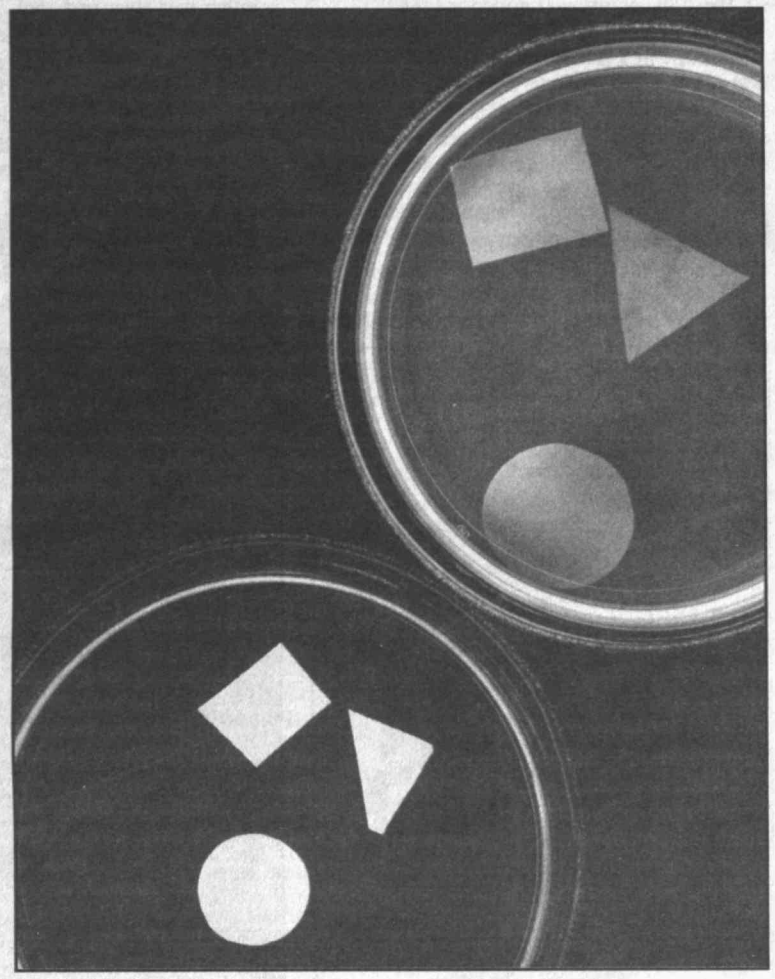
Physics Professor Toyoichi Tanaka, recognized worldwide for his revolutionary discovery of "smart" gels, the phase transition in polymer gels, died of heart failure on May 20 while playing tennis. He was 54. The wake was held on May 24.

"Professor Tanaka's pathbreaking work on gels exemplifies the spirit of innovation and the interaction between fundamental scientific curiosity and practical applications that is so important at MIT. He will be deeply missed by colleagues here and around the world," said President Charles M. Vest.

"Toyo was a great physicist and a superb teacher," said Professor Marc Kastner, head of the Department of Physics. "His demonstrations of the miraculous properties of gels were spellbinding and showed young and old that even commonplace materials can behave in wondrous ways. He was a personal friend and I will miss him greatly."


Tanaka

Professor Tanaka was the inaugural holder of the Otto and Jane Morningstar Professorship of Science in the physics department and a principal investigator at the Center for Materials Science and Engineering. His pioneering research on "smart" gels led to applications ranging from cleaning up pollutants and releasing pharmaceuticals in the body to finding the origins of life on earth.


"Smart" gels in petri dishes in Professor Tanaka's laboratory form into basic shapes of circle, triangle and square. Professor Tanaka said, "My belief is that science has to be beautiful, and has to be simple."
Photo by Felice Frankel, copyright 1999

SMART GELS

"Smart" gels are a class of materials that expand or contract when triggered by tiny changes in temperature, light, a solvent or other stimulus. The ability of the gels to undergo huge but reversible changes in volume allows unique new systems to be made that can encapsulate and release materials. Gels can be engineered to clean up pollutants or oil spills. Even in cosmetics, gels could hold and then release key ingredients like fragrance in response to factors like skin pH. Gels can be used as soft valves or act as artificial muscles.

"That's the beauty of it," Professor Tanaka once said. "Depending on what a gel interacts with, it will have different behaviors."

A gel is a polymer—a long chain of monomers, or molecules, that are cross-linked like a web of fibers. It is those links, which allow a gel to capture water within them, that give gels their elasticity and fluidity. The fundamental principles that govern the swelling equilibrium and dynamics also turned out to be a powerful paradigm for understanding the molecular basis of polymer behaviors in general. Professor Tanaka was exploring the idea that gels may provide a clue to the baffling puzzle of how life on Earth began.

"By understanding the phase transitions of gels, we can better understand protein functions, the molecular basis of life," he said. Life boils down to amino acids. Made up of different sequences of 20 amino acids, proteins twist into shapes that they "remember;" they recognize certain molecules and can store and release them as necessary; they help life-sustaining chemical reactions take place. They line up in chains called polymers. Scientists can determine the sequence of amino acids that make up specific proteins, but they don't know how to make one from scratch.

Professor Tanaka's laboratory is working on synthesizing a gel with characteristics similar to those of proteins capable of recognizing a target molecule. What's more, this can be done without specifying the gene sequences to "build" the protein artificially.

"This may be a crude model of 'prebiotic polymerization,' which is a key step in the origin of life and prebiotic evolution," he said. "Some sort of prearrangement of the individual amino acid or nucleotide molecules that join together in a certain shape and sequence to make the polymer, possibly in the presence of some target molecule, can be easily imagined to exist in the primordial soup."

The current theory holds that back in the Earth's early days, amino acids swimming around in a primordial soup randomly came together in a viable sequence. This theory didn't hold much water with Professor Tanaka. For one thing, he said, there hasn't been enough time since the beginning of the universe to try all the possible combinations. With 20 existing amino acids and 400 possible working sequences, that is a mind-boggling number.

"There is no way that amino acids happened upon the one particular sequence for a protein such as hemoglobin by accident," he said.

Professor Tanaka was born in Nagaoka-city, Niigata Prefecture, Japan in 1946. He received his BS in (1968), MS (1970) and DSc (1973) in physics from the University of Tokyo. He joined the MIT physics faculty in 1975 after working for the department as a sponsored research staff member. He married Tomoko Tahira in 1970.

In 1992, Professor Tanaka co-founded GelMed Inc., a Bedford company. GelMed and its sister company, Gel Sciences Inc., explore medical, cosmetic, commercial and industrial applications for gels. More recently, he co-founded Buyo-Buyo, Inc. to bring to fruition medical solutions for enhancing and extending human lives.

AWARDS AND HONORS

Professor Tanaka was the winner of the 38th Toray Science and Technology Prize from the Toray Science Foundation in Japan and the 1994 Inoue Prize for Science, awarded for outstanding achievements in basic sciences in general and given each year to a scientist under age 50. He was awarded the Vinci d'Excellence in France for his work in 1993. His other honors include the Award of the Polymer Society of Japan in 1986 and the Nishina Memorial Prize in 1985. He also received an R&D 100 Award and a Discover Award from Discover magazine. He became a fellow of the American Physical Society in 1992.

Professor Tanaka is survived by his wife, Tomoko; his parents, Toyosuke and Shizu; a son, Kazunori, a physics graduate student at MIT; a daughter, Ayako; and a sister, Noriko.

In lieu of flowers, gifts may be sent to the Toyoichi Tanaka Memorial Fund, c/o Isabel Cunha-Vasconcelos, Department of Physics, MIT Room 6-107, 77 Massachusetts Ave., Cambridge, MA 02139.

Faculty members hear about ROTC courses

■ By Robert J. Sales
News Office

MIT continues to increase the opportunities for non-cadets to benefit from military expertise in leadership courses, the ROTC Oversight Committee reported at the May 17 faculty meeting.

Leadership development "is an area where the military can make and has made significant contributions," said Professor Phillip L. Clay, associate provost and chair of the committee. "It is also an area of increasing campus priority."

Thirty-five students took Leadership and Management (15.328) in the Sloan School; three of the six non-cadets who enrolled completed the course. Military faculty took the lead in designing and teaching the course, which was offered for the first time.

The committee believes that non-military enrollment for this course was hampered by late and limited publicity, the Sloan School bid system and the fact that the MIT Bulletin did not specify that it was an undergraduate course. "These should not be a problem in the coming year," Professor Clay said.

Thirty students—16 ROTC students and 14 non-cadets—took National Security Management (17.471) in the fall. Some 15-20 students enrolled in a two-day leadership seminar sponsored by the Sloan School Leaders for Management students and ROTC.

In the fall, Professor of Air Science Col. John E. Kuconis will teach a nine-student freshman seminar on leadership. It will have three non-cadet associate advisors.

Discussing the "don't ask, don't tell" policy regarding gays in the military, Professor Clay said, "No new legal or judicial flexibility has been introduced" in the past year. "The current situation... remains largely unchanged."

Professor Clay added that it was hard to ascertain the campus climate on sexual orientation issues, although the "You Are Welcome Here" campaign sponsored by the Office of the Dean of Students and Undergraduate Education was well received by the gay, lesbian, bisexual and transgender communities.

He also expressed disappointment that MIT's peer institutions are not paying attention to the issue of discrimination based on sexual orientation. "Many of them, quite frankly, are not inclined to raise the issue even when they strongly agree with the need to challenge existing law and prejudice," he said.

President Charles M. Vest noted that the issue is viewed as political rather than values-related on other campuses, which may explain those schools' reluctance to assume a leadership role. "There's a different tone on this campus," he said.

In other actions, the faculty:

- Was told that the New England Association of Schools and Colleges (NEASC) had reaccredited MIT through 2010 (see story on page 12).
- Applauded heartily for Institute Professor Jerome I. Friedman, the Killian Faculty Achievement Award winner for 2000-2001 (see story on this page).
- Voted to establish an SB program in physics aimed at undergraduates who plan to pursue careers in other fields, a new 12-month MEng in materials science and engineering, and two graduate degrees in the Division of Bioengineering and Environmental Health—an MEng in biomedical engineering and an SM in bioengineering (MIT Tech Talk, April 26).
- Adopted a resolution that honors retiring Professors Carl E. Hewitt, Thomas F. Weiss and George W. Pratt of electrical engineering and computer science, Satoru Masamune of chemistry, James R. Munkres of mathematics, and John E. Southard of earth, atmospheric and planetary sciences.
- Conferred *ex officiis* faculty status for 2000-01 on Associate Dean Jeffrey A. Meldman, Senior Associate Dean Robert A. Randolph, Ombudspersons Mary P. Rowe and Clarence G. Williams, and Sloan School Senior Associate Dean Alan F. White.
- Accepted the report of the Committee on Nominations.

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Times have changed since graduation of last millennium class

■ By Robert J. Sales
News Office

The 20th century was good for MIT.

Dramatic change started with the move to Cambridge in 1916. Over the years, the student body and faculty grew larger and more diverse, the curriculum expanded, mining gave way to nuclear engineering, and naval architecture was overshadowed by aeronautics and astronautics. Cell phones, television and computers arrived. Slide rules disappeared.

With all that, the spirit and mission remain intact, not to mention the students' creativity and talent for good-natured hijinks.

What the well-dressed MIT undergrad is wearing has undergone some evolution over the last century. (At right is Jessica Hinel, a sophomore in music).

Photo at right by Leo Hochberg/Technique

Starting with Commencement, here's how the community and the class of 1900 compares with 2000:

One hundred years ago, MIT President James M. Crafts awarded degrees to 178 members of the Class of 1900, four of them women.

On Friday, President Charles M. Vest and Provost Robert A. Brown will present diplomas to 2,117 members of the Class of 2000, 705 of them women.

The top students in the 1900 graduating class—among them one woman, Grace Langford in physics—summarized their theses at Commencement. Hewlett-Packard president and CEO Carly Fiorina delivers this year's Commencement address.

In 1900, President Crafts told the graduates, "All our records show that you are more likely to remain more faithful to your training than graduates of any other kind of professional school, be it law, medicine or divinity."

In his message to the Class of 2000 in Technique, MIT's yearbook, President Vest said, "I have no doubt that, like the generations of graduates who have preceded you, you will indeed make the world a markedly better place. Some of you already have."

The 1900 exercises took place on June 4, a Tuesday, in Huntington Hall, one of five buildings on the expanding Back Bay campus. The weather was clear and cool. The 2000 exercises will be held on Killian Court in the midst of MIT's expanding 154-acre campus in Cambridge. This Friday's forecast: cloudy and cool.

The Class of 1900 included 142 engineering majors, among them 20 mining engineers and four sanitary engineers. The most popular courses were mechanical engineering with 33 graduates, civil engineering with 31, electrical engineering with 22 and architecture with 21. The class of 2000 includes 1,258 engineering majors, including 368 in electrical engineering and computer science.

The Class of 1900 included three biology majors and 16 chemistry majors. The Class of 2000 has 116 students who majored in biology and 30 in chemistry, among the 368 degrees awarded in the School of Science.

Professor Crafts, MIT's fourth president who was presiding at his final Commencement, awarded nine degrees in naval architecture. President Vest will award 30 bachelor's degrees in aeronautics and astronautics.

Athletes in the Class of 1900 had a new gymnasium for women, as well as track and baseball teams (each class fielded its own team), the Technology Wheelmen for cyclists, the Tennis Association and the Tech Yacht Club. The Class of 2000 has two boathouses, 41 varsity teams, 20 intramural programs with more than 1,000 teams participating, and the promise of a new athletic complex. The varsity football team compiled a 1-7-1 record in 1900, compared to 6-4 last season.

FROM BANJOS TO ROBOTS

For diversion, members of the Class of 1900 joined the Banjo Club, the Mandolin Club and the Chess Club. The Class of 2000 could join the Assassin's Guild, Roadkill Buffet and the Robotics Club.

Students who could carry a tune joined the Glee Club in 1900. Today they can choose among the Musical Theatre Guild, the MIT Gilbert and Sullivan Society, the Logarhythms, the Chorallaries, the Toons, the Muses, Techiya, Tech Jazz Singers and Cross Products.

Students and faculty wore starched shirts and ties to class in 1900. No comparison.

Members of the Class of 1900 hailed from 16 states, three foreign countries and Hawaii. Forty-six states, Puerto Rico, the Virgin Islands and 101 foreign countries are represented by the Class of 2000. In 1900, MIT had 1,171 students from 38 states and 13 foreign countries enrolled in 13 courses. In 2000, MIT has 9,885 undergraduate and graduate students from all 50 states, the District of Columbia and 102 foreign countries.

In 1900, 1.5 percent of MIT students came from foreign countries, including seven from Mexico and three each from England and Turkey. In 2000, 23 percent hail from overseas, including 259 from the People's Republic of China, 192 from Canada and 148 from India.

A hundred years ago, MIT had 58 female students. In 2000, the Institute has 1,768 female undergraduates (41 percent of the total) and 1,519 graduate students who are women (27 percent). There are 1,996 undergraduates from US minority groups and 673 minority graduate students.

In 1900, MIT had 164 instructors and lecturers, including 52 professors (all male), 51 of whom had beards and/or moustaches, as seen in the photos for that year's Technique. The number of men on the faculty in 2000 who sport facial hair was not available.

In 2000, there are 584 professors, 178 associate professors and 169 assistant professors on MIT's faculty. Of this group, 144 are women and 121 are members of American minority groups (including 15 women). There are also 423 senior lecturers, lecturers and professors emeriti, 102 instructors, six adjunct faculty, and 705 teaching assistants and graduate instructors.

Photo courtesy Technique

CAMPUS FUNDS

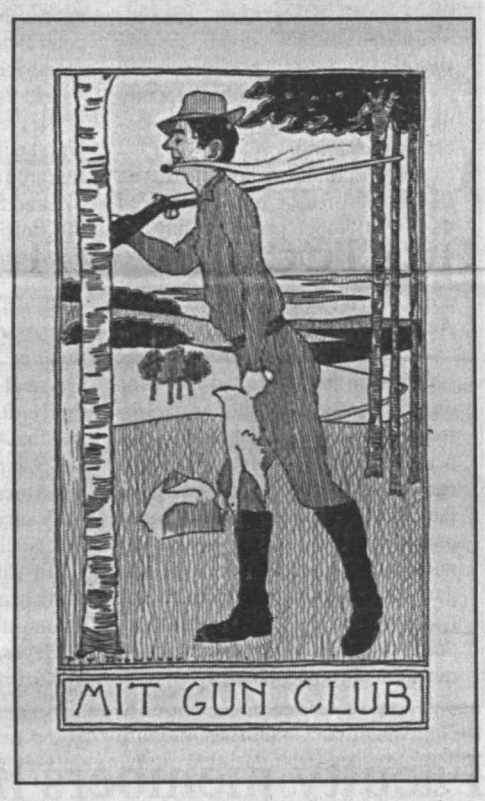
The buzz on campus in 1900 centered on donations, financial aid and student housing. Augustus Lowell presented "the munificent gift of $50,000 to serve as the nucleus of an endowment fund for the benefits of the instructing staff," Technology Review reported in its June 1900 issue. The Institute had also earmarked $24,000 annually "for specific aid of worthy students."

The administration, while acknowledging the benefits of a campus in downtown Boston, was concerned about students living in rooming houses acquiring bad habits while members of the class chronicled romps through Scollay Square in the yearbook. It was suggested that they seek lodging with "nice families" in suburban homes. Even though Scollay Square has vanished from today's Boston, views of urban life have undoubtedly evolved in the last century.

The Class of 1900 included many students with colorful nicknames. (Nicknames for member of the Class of 2000 are being withheld to protect the living.) There was Albert Charles "Cy" Dart, whose 1900 classmates teased him for arriving late for sophomore year because he trained and rode a horse named Whitenose in the Illinois State Fair. (Whitenose was an also-ran.)

There were also Wilbert Wilberforce "Lengthy" Stone, Ralph "Shorty" Plumb, Paul "Oom" Brooks, George Anthony "Almighty" Hall, Frank David "Brindle" Chase, and Edwin Hibbert Dimock, known for wearing his gray sweater for weeks, perhaps even months, at a time. His nickname is unrecorded, since MIT students were gentlemen in those days.

The Class of 1900 adopted a quotation from Cicero as its motto: *Vacare culpa magnum est solatium* (it is a great consolation to be free from blame). How does one say IHTFP in Latin?



MIT riflery is practiced indoors nowadays (left), and the targets no longer consist of live game, as was apparently true for the MIT Gun Club of 1900.

Schedule and other information for Commencement given

(continued from page 1)

Court will be by ticket or staff badge only.

PUBLICATIONS

Campus publications, apart from the Commencement program, will not be available in Killian Court. Publications will be available at their usual distribution points in the corridors.

FLOWERS

Flowers used to decorate the Commencement stage will be sold to the community as in years past. The sale will begin Friday at 3:30pm in Killian Court. New Guinea impatiens, scaveola, Marguerite daisies, geraniums and scabiosa will be available at bargain prices. These flowers are donated by the Commencement Committee and proceeds of the sale benefit the MIT Community Service Fund. Volunteers to help with the sale are needed. To sign up, call x3-1989.

SCHEDULE

Thursday:

1pm—Chancellor Lawrence S. Bacow and Dean for Graduate Students Isaac M. Colbert preside at a special hooding ceremony for 400 PhD recipients at the Johnson Athletic Center.

Friday:

8:15am—Graduates report to the robing/assembly area in the Johnson Athletic Center while guests are admitted to Killian Court.

9:40am—Procession leaves Kresge Oval.

9:58am—Academic procession arrives at Killian Court.

10am—Chief Marshall Brian G.R. Hughes, president of the MIT Association of Alumni and Alumnae, leads the stage principals, members of the MIT Corporation, the faculty and the Class of 1950 into Killian Court.

10:10am—Graduates enter Killian Court.

10:42am—Rev. Jane Gould, MIT's Episcopal chaplain, offers the invocation.

10:45am—Phillip Lima of the Benefits Office sings the National Anthem.

10:47am—Alex d'Arbeloff, chair of the MIT Corporation, welcomes guests to the platform and introduces principal speaker Carleton "Carly" Fiorina, president and CEO of Hewlett Packard Co.

10:48am—Ms. Fiorina delivers her address.

11:09am—GSC President Luis Ortiz offers a salute to MIT and Senior Class President Hugo Barra presents the class gift.

11:13 am—President Vest delivers the charge to the graduates.

11:33am—2,413 diplomas are presented to 2,117 undergraduate and graduate students by President Vest and Provost Robert A. Brown.

1:33pm—Mr. d'Arbeloff announces that the Commencement exercises are concluded, and the MIT Chorallaries sing the MIT song.

1:38pm—Chief Marshall Hughes leads the academic recession out of Killian Court.

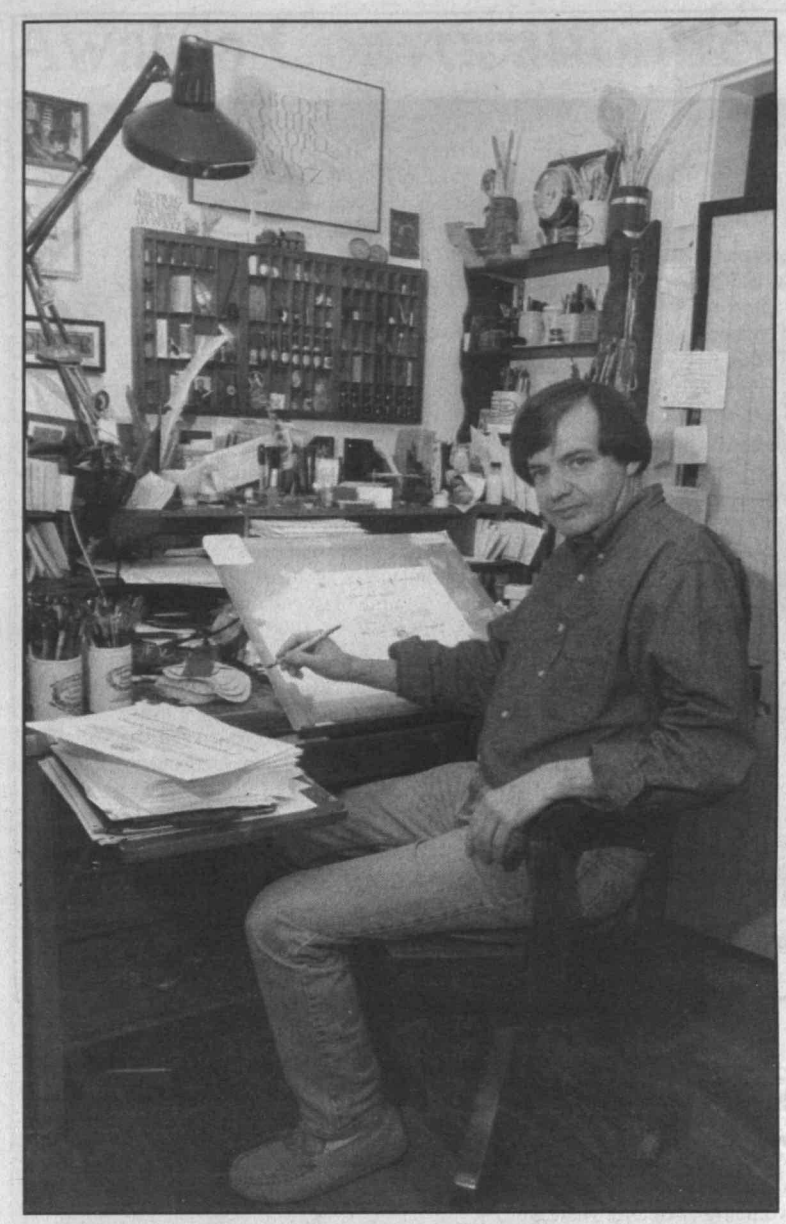
Saturday:

9am—Technology Day speakers will focus on "The Future of Atoms in an Age of Bits" in Kresge Auditorium. Speakers are Dean William A. Mitchell of the School of Architecture and Planning, and Professors Yossi Sheffi, Rodney A. Brooks and Rosalind W. Picard.

12:30pm—Technology Day luncheon in the Johnson Athletic Center.

3-5pm—Panel discussions in locations around campus:

- "The New Neighborhood—Living and Working in Virtual Communities," Rm 6-120. Moderator: Assistant Professor Judith S. Donath (SM 1986), director of the Social Media Group in the Media Laboratory. Panelists: Associate Professor Mitchel Resnick (PhD 1992) and William S. Kazman (SB 1985), president and CEO of Global Telemedix, Inc.
- "Clicks and Mortar—The Future of Physical U," Kresge Little Theater. Moderator: David Warsh, columnist for the Boston Globe. Panelists: Professor Merton C. Flemings (SB 1951), director of the Singapore-MIT Alliance; Professor Richard C. Larson (SB 1965), director of the Center for Advanced Educational Studies; Jonathon A. Winder, senior vice president, education division, Harvard Business School Publishing.
- "Emerging Innovations and Entrepreneurship," Rm 10-250. Moderator: John W. Poduska Sr. (SB 1959), chair of Advanced Visual Systems. Panelists: Keith E. Camhi (SM 1991), CEO and co-founder of Fitlinxx; Marina Hatsopoulos (SM 1993), CEO of Z Corp.; Henry N. Holtzman (SB 1986), founder, president and CEO of Presto Technologies, Inc.; and Jonathan D. Albert (SB 1997), principal engineer and co-founder of E-Ink Corp.



Calligrapher Tom Costello at the drawing board. **Photo by Laura Wulf**

Calligrapher puts MIT degrees in writing

(continued from page 1)

"I like the idea of doing original work for one worthy recipient who has earned it," he said. "I like the thought that my work is on a piece of paper that will be treasured for the rest of the person's life."

Mr. Costello inscribes the student's name in gothicized Italic, a cross between the blackletter of the late Middle Ages and Chancery Italic, which developed during the Renaissance. "The blackletter style imparts formality and the Chancery a certain grace," said Mr. Costello. "The hand is not widely used and my particular version is unique to MIT." The minors and thesis titles are in compressed foundational style, which has a modern, easy-to-read quality although it is based on a 10th-century miniscule (lower-case letter).

Using a steel-nibbed, chisel-edged tool for consistency and special lightfast ink (a brand coincidentally called Dr. Martin's TECH Waterproof Drawing Ink), he inscribes about 3,500 diplomas. Some are discarded—thesis titles change, students don't graduate, "and hard as it may be to believe, I make mistakes," said Mr. Costello, 50, who uses turkey and goose quills when working on calf or sheepskin. "I'm getting older, and the hours are getting longer."

The diplomas, printed on Crane's Cover Ivory Wove 901 paper, are printed in an unnamed typeface cut in the early 1900s. They cost about $5 apiece. Mr. Costello receives $2.50 for each name and minor field and $3 for thesis titles, which are longer and more time-consuming.

Mr. Costello, who studied English in college, became a calligrapher by accident. He taught at the Boardman School in Roxbury from 1971-72 before spending five years as an insurance claims specialist. When the company went out of business, his wife noted his interest in calligraphy and suggested that he try to make it a career. He took several courses, including one with Donald Jackson, scribe to Queen Elizabeth of England.

He spends summers inscribing honorary degree citations for Boston University and Emerson College. Among other recent projects, he created a Quaker wedding certificate with illuminated initials in 24K raised gold on a floral background and worked with a bookbinder on a memorial book for Boston College.

"MIT is special," said Mr. Costello, who was a supporting scribe on the MIT diplomas for a year before becoming the primary calligrapher. "It's in the forefront of technology and yet remains humanistic and traditional. I like to think my work preserves that. I'm proud to do it."

MIT thinks Mr. Costello is special.

"He does exquisite work," said Registrar Mary Callahan. "My office takes great pride in the fact that the diploma is beautifully done, accurate and in the hands of the happy graduate at the actual Commencement ceremony."

Although he doesn't attend Commencement, Mr. Costello has visited Killian Court several times. "I enjoy the flowers," he said.

"He does exquisite work. My office takes great pride in the fact that the diploma is beautifully done, accurate and in the hands of the happy graduate at the actual Commencement ceremony."

—Registrar Mary Callahan

Conductor Isaacson revises plans for music at MIT Commencement

A little more Bach, Mozart and Handel, a lot more John Phillip Sousa, Brahms' *Chorale* and the *Triumphal March* from *Aida* by Verdi.

Lawrence Isaacson, director of the MIT Brass Ensemble from 1990-99, has revised the repertoire for Commencement, replacing MIT-related compositions with more familiar works.

Some traditional favorites survive, including *In Praise of MIT* (John Wilbur, Class of 1926), *Pomp and Circumstance* (Edward Elgar), *Auld Lang Syne* and the *El Capitan March* (Sousa).

"I hope the audience finds this program enjoyable," said Mr. Isaacson, who will be conducting on Killian Court for the first time, succeeding John Corley, who reigned on the podium for 40 years. Mr. Isaacson prepped for the Killian Court gig by leading the MIT Brass Ensemble on Massachusetts Avenue in previous Commencements.

Philip Lima, assistant benefits manager in Human Resources, will sing the national anthem at Commencement for the second time in four years (the last time was in 1997). Mr. Lima, a baritone, sang with the Boston Prism Opera Company, the Handel and Haydn Society and Lyric Opera Cleveland last year, and he will sing a major role in *The Crucible* at Lyric Opera Cleveland in July. He also performed in a program of American spirituals in Rome earlier this month.

Mr. Isaacson has assembled a group of outstanding freelance musicians to play during the Commencement activities, among them two MIT employees. Members of the two quintets and 12-person brass ensemble have performed with the Boston Symphony Orchestra, the Boston Pops Esplanade Orchestra, the Boston Ballet, and the Handel and Haydn Society as well as symphony orchestras throughout New England. Among them are several former members of the Empire and Atlantic Brass Quintets.

Isaacson

Two trumpet players, a trombonist, one tuba player and one French horn player will play at the doctoral hooding ceremony in the Johnson Athletic Center on Thursday and on the steps at 77 Massachusetts Ave. as the procession assembles Friday morning.

In Killian Court, Mr. Isaacson will conduct four trumpets, three trombones, two French horns, a tuba and a euphonium. Two of these musicians have day jobs at MIT—Robert H. Marlatt is an administrative assistant in the Aga Khan Program, and Mike Epstein is a senior library assistant.

"I'm looking forward to the view of the Boston skyline," said Mr. Marlatt, an MIT employee for eight years who will be performing at Commencement for the first time. He is a member of the horn section of the Boston Ballet Orchestra and has performed in a chapel recital and with the MIT Choir. Mr. Epstein, who has been at MIT for a year and a half, played trombone with the MIT Symphony Orchestra from 1988-91 while he was a student at the Boston Conservatory. He performed at Commencement last year.

In addition to teaching at MIT, Mr. Isaacson, a trombonist, is on the music faculty of the Boston Conservatory of Music and Tufts University. He has been second trombonist for the Boston Pops Esplanade Orchestra for the past 13 years. Before that, he was principal trombonist of the San Francisco Symphony and the Empire Brass Quintet. He has conducted orchestras in Massachusetts and Rhode Island for 11 years.

Professor Emeritus Samuel J. Keyser and the Intermission Trio Plus will perform at President Vest's post-Commencement reception.

Robert J. Sales

Graduating seniors tell how their outlook on MIT and life has changed

The following four students, who entered MIT as freshmen in August 1996, were among several chosen at random and asked about their expectations of college. Now that they've completed their degrees, MIT Tech Talk approached them to get their thoughts on the Institute. Here's what they said:

ELSIE HUANG
West Lafayette, IN

1996—

Major/career plans: Architecture and perhaps civil engineering as well.

Possible extracurricular activities: Intramural sports with her living group, Chinese Students Association, Freshman Leadership Program.

Easiest: "Just having fun. [Here in the city] I can do something different every night."

Hardest: "To do everything I want, because there's so much to choose from."

2000—

Degree: Architecture with a minor in civil engineering.

Were your expectations met? "My only expectations of college were to have fun, figure out what I want to do in life and keep off those freshman 15 [pounds]. I definitely had fun while I was here; I figured out that I want to continue having fun throughout the rest of my life, but nothing much beyond that. I did manage to keep off the freshman 15, but my sophomore 20… that's a whole 'nother story.

Huang

Things you loved or hated about MIT: "I loved that anybody could pursue any activity here. I loved that I could join the cheerleading squad my senior year without any prior experience. I also loved the freedom of choice and the sense of responsibility the Institute instilled in the students.

"I don't like the sense we now feel that the administration doesn't trust us any more—like they did only four short years ago. I don't like how apathetic people are when it comes to forming an MIT community. I don't like how people complain that we don't have school spirit and don't have school pride, but won't take the initial step and participate in community-building events."

Most fundamental lesson learned outside of school work: "Love is the only thing that matters in life. Without people to love and people loving you, nothing is quite worth it. My friends are the essential element in my life."

How have you changed? "I don't think my fundamental character has changed, but I have strengthened and reevaluated my personal values system. I have also gained more confidence in myself as a person and in my leadership abilities."

NATHAN KELLEY
Strafford, PA

1996—

Major/career plans: Biochemistry and possibly medical school; starting or working for a company to design pharmaceuticals.

Possible extracurricular activities: Crew, winter track, pole vaulting.

Easiest: "Getting good food with the MIT Card."

Hardest: "The work. I'm a little worried in that area."

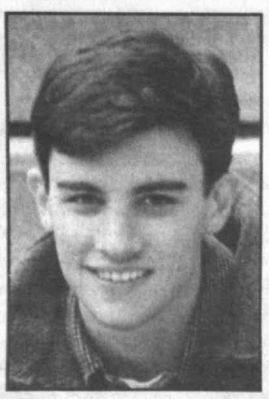
2000—

Degree: Double major in chemical engineering and biology, with a minor in economics.

Were your expectations met? "I came to MIT for its academic reputation and therefore expected the workload to be difficult and the social side to be small. I was surprised my freshman year by the large number of parties and social events held every weekend, with so many people from all over Boston having fun. Sadly, the social scene has diminished greatly since then.

"Academically, I was surprised by the ease in acquiring research positions with the faculty. Although I didn't consider that an important factor when deciding to come here, I now believe that to be one of the Institute's best programs."

Things you loved or hated about MIT: "The best part of MIT has been the people here. There is a definite 'us-against-them' attitude that the students take here, which makes the often overwhelming workload more bearable. Group suffering tends to build bonds.



Kelley

"On that note, the aspect of MIT that I have hated the most has been the disregard of student life that seems to appear so frequently in administrative decisions. Such decisions have greatly damaged the pride that I and my friends have for the school."

Most fundamental lesson learned outside of school work? "If you want something, you have to go after it yourself. After drifting through my freshman year, I realized that I had to apply this lesson to be successful academically and professionally."

How have you changed? "Quite a bit. Although I was involved in many organizations and athletic teams in high school, I was always just a participant. At MIT, and especially within my fraternity, I was able to take on more responsibility and develop better social and leadership skills."

SONIA RANGANATH
Lake Almanor, CA

1996—

Major/career plans: Undecided; possibly biology.

Possible extracurricular activities: Undecided (planned

(continued on page 6)

Seniors choose school, jobs or their own firms

■ By Denise Brehm
News Office

While an MIT education brings in the bucks, salary doesn't appear to be the primary motivation behind job choice for many graduates; most place job satisfaction higher.

Douglas Heimburger, a senior in management, took a job with Amazon.com. He had four other offers, he said, but chose the "e-tailer" for the "upward potential" it offered.

"Amazon offered me the job where I could have the biggest impact," he said. "It's no longer a startup, but it's a young company with a lot of challenges ahead. That's a good place to be in your first job." Although Amazon.com topped his salary offers by a small margin, that's "not the reason I chose it," said Mr. Heimburger, who will do data mining for the Internet retailer using electronic data collected from customers to affect the company's marketing, operations and financial decisions.


Heimburger

Anna Benefiel, a biology major with a minor in music, has accepted a management consulting position with Booz Allen Hamilton in Manhattan. She'll begin work there next fall after spending the summer in India teaching HTML and Java through the MIT-India Program.

Ms. Benefiel based her job decision on factors other than salary. In fact, during last fall's career fair, she selected the two companies she wanted to pursue, and got comparable offers from both. "The other offer was from a biotech firm and it was a hard decision to make," she said. "I decided my most valuable contribution would be in management consulting due to the experience I had with student activities at MIT. I enjoyed [biology] lab, but I've chosen to spend my free time organizing student activities. If I'd chosen to spend my time with a UROP, them I might have gone into biology."


Benefiel

Ms. Benefiel is one of 116 seniors who signed the Graduate Pledge Alliance, which states: "I pledge to explore and take into account the social and environmental consequences of any job I consider and will try to improve these aspects of any organizations for which I work."

"It just seemed like the right thing to do," she said. Although she signed the pledge only this spring after interviewing for jobs, she said her interests do align with environmentally friendly and socially conscious causes.

The pledge, which started at Manchester College in Indiana several years ago, is now distributed on 50 campuses across the nation. At MIT, the College Democrats, a student organization, offered to distribute the pledge, which comes with a green ribbon for graduates to wear on their ceremonial robes.

"We hope for a better-educated workforce and hope that employers will start making changes," said Aaron Strauss, a sophomore in computer science with a minor in political science, who spearheaded this year's pledge drive. "Going from MIT to the workplace is a big jump. Solving problem sets has no impact, but building weapons or making chemicals... all of a sudden your work is having an impact, and we want people to be aware of that."

Cecily Ryan, a materials science and engineering major, also signed the pledge. But she's going to graduate school at Caltech next year, so her signature won't have immediate impact. "I'm from Montana and so environment has always been really important to me. It was pretty natural for me to sign the pledge," she said.


Ryan

Hugo Barra, another GPA signer who earned two degrees (electrical engineering and computer science and management) decided not to take a job. Instead he's starting a company with four other MIT graduates.

Lobby 7, as they call their "software-focused firm," will specialize in the "custom development of wireless solutions" for companies who want sophisticated interaction between their home base (whether that's a web site or a building) and handheld electronic devices such as cell phones and Palm Pilots, said Mr. Barra. He turned down a job with McKinsey and Co., one of the largest consulting firms in the world.


Barra

"We haven't decided how much we're going to pay ourselves. It'll probably be less than we'd make if we had taken other jobs," he said. "But this gives us a chance to build something of our own. If the company does well, we're the founders and that will more than compensate for the [initial] low salary."

Natural sunroof

Trees in full leaf provide shade at the edges of Killian Court, which will contain quite a few more people on Friday. **Photo by Laura Wulf**

Seniors reflect on changes since '96

(continued from page 5)

to visit Activities Midway).

Easiest: "Just enjoying myself."

Hardest: "Juggling rigorous academics and having fun at the same time, getting a balance and taking care of myself."

2000—

Degree: Materials science and engineering. "I planned to study biology, but I majored in materials science and engineering. Still, not all of my interests have changed; I've worked in the medical device industry and plan to stay in healthcare-related fields."


Ranganath

Were your expectations met? "I expected college to be a lot of work. MIT certainly met my expectations with respect to the workload, but I've had a lot of fun too. People do get out and socialize here."

Things you loved or hated about MIT: "People often become so focused on their own life that they don't even make time for other people, or even to smile and say hello."

Most fundamental lesson learned outside of school work? "That none of life's lessons have anything to do with academics."

How have you changed? "I've become much more cynical."

BILLIE WANG
New Canaan, CT

1996—

Major/career plans: Some field of engineering.

Possible extracurricular activities: Frisbee, community service.

Easiest: "Getting along with people, because there are a lot of people here with the same interests as I have."

Hardest: "Staying focused, because there are a lot of things pulling at your time. For instance, I've never used the web before, but all of a sudden I get a free [Athena] account."

2000—

Degree: Double major in materials science and engineering and mathematics. "I planned to understand how things worked. This was predominately focused on common-day things... so I decided that materials science was a good field of study. Because I enjoyed it, I also majored in math, for no real reason."


Wang

Were your expectations met? "I expected that college people would be different from my small suburban town. I found that there are just more people at college—more good, more bad. I've met my share of both here. I've also become more computer-literate than I ever expected."

Things you loved or hated about MIT: "I've particularly loved having the chance to work with my lab group on a real project. I've particularly loved collecting a bunch of friends I refer to as my MIT family. I've particularly hated how MIT has a very patchwork system for dealing with the student body. I've particularly hated watching MIT slide into the 'on par with peer institutions' mentality."

Most fundamental lesson learned outside of school work? "Sometimes life sucks. You just have to deal."

How have you changed? "I haven't."

Denise Brehm

Computer science, electrical engineering grads top salary offers

(continued from page 1)

only and do not include bonuses, which in many industries constitute a significant portion of employees' earnings. The Schools of Engineering, Management, and Humanities and Social Sciences (economics only) are included in the report. The small number of students participating from the Schools of Science and Architecture did not constitute a valid sampling.

For the graduating class, the second-highest offers went to students earning an SB in computer science or management ($75,000), followed by electrical engineers at $70,000; mechanical engineers at $62,000; chemical engineers, materials scientists and engineers, and economists at $60,000; and $58,500 for those in aeronautics and astronautics (aero/astro).

Average offers for graduates ranged from $46,200 to $63,900. Average offers per major were computer science—$63,900; electrical engineering—$57,500; materials science and engineering—$54,300; unspecified engineering majors with offers in financial or consulting services—$51,800; mechanical engineering—$51,300; chemical engineering—$50,800; aero/astro—$50,500; management—$49,300; and economics—$46,200.

EMPLOYER TYPE

Although the report didn't break out e-commerce as a category, jobs with Internet firms would fall into the computer systems design/consulting/programming category, which on average offered the second-highest salaries. Only software publishers offered more.

Average offers per employer type were software publishers—$61,000; computer systems design—$58,600; computer and electronic products—$57,900; electrical equipment, appliance and component manufacturing—$55,900; chemicals—$53,000; management consulting—$52,800; environmental consulting—$51,800; aerospace products and parts—$49,700; transportation equipment—$49,700; other consulting—$48,000; pharmaceuticals and medicine—$45,700; banking—$44,600; and financial services—$43,700.

JOB FUNCTION

When classified according to job function, computer scientists were in the lead again. The highest offers were for jobs in software design and development and consulting at $80,000. High offers in systems programming and computer programming came in at $75,000.

Average salaries were led by software design and development at $65,300; hardware design and development—$61,300; computer programming—$57,400; and systems/programming—$55,000. Others by job function were consulting—$53,400; research and development and chemical engineering, both at $50,400; production engineering—$50,200; project engineering—$49,400; manufacturing/industrial—$47,700; portfolio management/brokerage and investment banking (corporate finance)—$45,000; and investment banking (sales and trading)—$43,600.

GRADUATE DEGREES

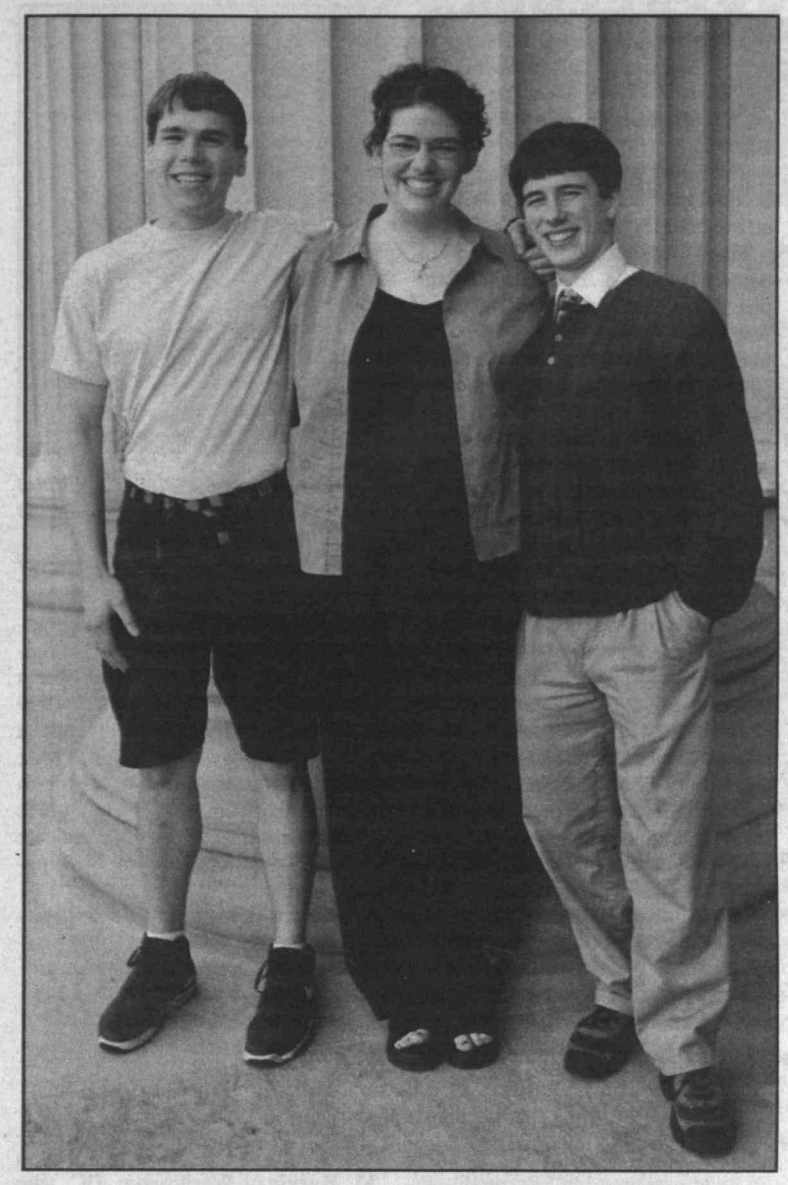
For people earning graduate degrees, the highest salary offers went to PhDs in the School of Engineering (major unspecified) going into financial or consulting and PhDs in electrical engineering and computer science, at $110,000. Other offers at or above $100,000 were for MEng degrees in computer science and MEng or PhD degrees in electrical engineering and computer science, SM degrees in the Leaders for Manufacturing Program (LFM) or the Technology and Policy Program, and SM and MEng degrees from the School of Engineering (major unspecified) going into financial and consulting work. PhDs in mechanical engineering and LFM received high offers of $96,000.

Average reported offers for individuals earning the PhD ranged from $71,000 to $96,700.

Across all degrees, the highest salary offers by job function were made to individuals with PhDs hired to do research and development ($110,000) or technical/scienctific research ($105,000), SM degrees to do consulting ($103,000), and MEng degrees to do software design and development or computer programming ($100,000).

The full salary survey report can be found at <http://web.mit.edu/career/www/salary.html>.

Awards Convocation recognizes accomplishments of many



Karl Taylor Compton Award winners were (left to right) Christopher A. Spohr, a graduate student in economics; Jennifer A. Frank, a senior in biology; and Matthew L. McGann, a senior at the Sloan School.
Photo by Donna Coveney

The Awards Convocation on May 2 in Huntington Hall honored the achievements of many in the MIT community in 1999-2000. The awards and the recipients are as follows.

• William L. Stewart Jr. Awards, which recognize contributions by an individual student or student organizations to extracurricular activities and events during the preceding year—**Susan Dacy**, a graduate student in electrical engineering and computer science (EECS) from Dunedin, FL; **Elsie Huang**, a senior in architecture from West Lafayette, IN; **Sam Jahanmir**, a junior in biology from Germantown, MD; **Sarah L. McDougal**, a senior in civil and environmental engineering from Rochester, NY; **David F. McGill**, a senior in EECS from Baltimore; and **Sanith Wijesinghe**, a graduate student in aeronautics and astronautics from Padukkah, Sri Lanka.

• The Edward L. Horton Fellowship Award, given to any student group that fosters fellowship within the graduate student community—**Ashdown House**. The award is named for a graduate student in physics to honor the contributions he made to graduate student life at MIT before his death in 1992.

FSILGS

• The James R. Killian Jr. Community Service Award, presented to the fraternity with the most outstanding community service program—**Phi Delta Theta** (which also won the award in 1999).

• Order of Omega New Member Education Award, which recognizes the Interfraternity Council member organization that has implemented the most outstanding pledge/new member education program—**Phi Kappa Theta**.

• The D. Reid Weedon Jr. '41 Alumni/ae Relations Award, given to the independent living group that has promoted the greatest interactions between its members and alumni/ae—**Lambda Chi Alpha**.

• Frederick Gardiner Fassett Jr. Awards, presented to the male and female members of the Interfraternity Council who have unselfishly demonstrated the qualities of spirit, dedication and service in furthering the ideals of MIT fraternity brotherhood and sisterhood—Delta Tau Delta's **William R. Dichtel,** a senior in chemistry from Roanoke, VA; and Alpha Phi's **Vicky W. Lin,** a junior in management from Vienna, VA.

EDUCATION

• The Irwin Sizer Award for the Most Significant Improvement in MIT Education, named for the dean of the Graduate School from 1967-75—Professor **Jan Wampler** of the Department of Architecture.

• The Frank E. Perkins Award, given to a professor who has served as an excellent advisor and mentor for graduate students—Professor **Hiroshi Ishii** of the Program in Media Arts and Sciences.

• Graduate Student Council Teaching Awards, given for excellence in teaching, particularly with respect to the teaching of and interaction with graduate students—**John Doll**, a graduate student in biology from Barrington, RI; **Yusaku Horiuchi**, a graduate student in political science from Chiba-Ken, Japan; and **Axel Kilian**, a graduate student in architecture from Ulm, Germany.

• The Goodwin Medal, presented to a graduate student whose performance of teaching duties is "conspicuously effective over and above ordinary excellence"—**Megan W. Yakeley** of Cambridge, England (architecture) and **Catalin Zara** of Suceava, Romania (mathematics).

Yakeley

Zara

• The Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching—Professor **Alan Guth**, the Weisskopf Professor of Physics.

• The Bose Award for Excellence in Teaching, recognizing outstanding contributions to undergraduate education by members of the School of

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53 elected to Phi Beta Kappa

Fifty-three graduating seniors have been elected members of Phi Beta Kappa. A lecture and initiation ceremony will take place on Thursday, June 1 at 3pm in Bartos Theater. Associate Professor Daniel Kryder of political science will speak on "Reparations or Statute of Limitations? The Role of American History in Current Debates about Race Policy."

Founded in 1776, Phi Beta Kappa honors those undergraduates who have performed most outstandingly in their course of studies in the liberal arts and sciences.

The new members are: **Danielle Adams** of Claremont, NH (biology); **Omar Aftab** of Lahore, Pakistan (economics, electrical engineering and computer science [EECS]); **Lawrence Aller** of Santa Barbara, CA (mechanical engineering); **Amy Ashbacher** of Urbandale, IA (brain and cognitive sciences [BCS]); **William Beebee** of Acton, MA (biology, computer science and engineering); **David Berry** of Mt. Kisco, NY (BCS); **James Berry** of Dover-Foxcroft, ME (economics, political science); **Petros Boufounos** of Dionyssos, Greece (economics, EECS); **Christopher Brocoum** of Las Vegas, NV (economics); **Angela Butts** of Loudonville, OH (mechanical engineering).

Jasper Chen of Shoreline, WA (BCS, linguistics and philosophy); **William Chen** of Plymouth, MN (biology); **Lily Cheng** of Plainsboro, NJ (chemical engineering); **Paul Crowley** of Von Ormy, TX (biology, anthropology); **Elizabeth Demicco** of Scarborough, ME (biology); **Daniel Dwyer** of St. Charles, MO (physics); **Victoria Gomez** of Wayne, PA (chemistry, mathematics); **Alison Harris** of Washington, DC (BCS); **Hau Hwang** of Carmel, IN (mathematics, computer science and engineering); **Mihai Ibanescu** of Piatra Neamt, Romania (physics); **Nicholas Ingolia** of Lexington, MA (biology); **Madhulika Jain** of Richardson, TX (biology, computer science and engineering); **Anupam Jena** of Richmond, VA (biology, economics).

Candice Kamachi of Los Angeles (mathematics); **James Kang** of East Brunswick, NJ (biology, electrical science and engineering); **Carly Klein** of Framingham, MA (biology); **Daniel Kokotov** of Baltimore (mathematics, computer science and engineering); **Jason Krug** of Indianapolis (music and theater arts); **Paulina Kuo** of Great Falls, VA (physics, materials science and engineering); **Amy C. Lee** of Columbia, MO (biology, chemical engineering); **Spencer Liang** of Clark, NJ (biology, chemical engineering); **Eric Liu** of Ellicott City, MD (mechanical engineering); **Connie Lu** of Miami (chemistry); **Anne McLeod** of Monroe, CT (civil engineering).

Kay Paelmo of Union City, CA (architecture); **Sumita Pennathur** of Foxborough, MA (aeronautics and astronautics); **Catherine Reyes** of Miami (materials science and engineering); **Lia-Cristina Rodriguez** of Key Biscayne, FL (biology); **R. Krishna Sanka** of Baltimore (EECS); **Stacey Schreiber** of New York, NY (political science); **Lucy Shen** of Gaithersburg, MD (biology, chemical engineering); **Kyoung Shin** of Waterbury, CT (economics); **Soojin Son** of Naperville, IL (chemical engineering); **Rachel Stanley** of Waban, MA (chemistry).

Corissa Thompson of Broken Arrow, OK (urban studies and planning); **Jantrue Ting** of Lexington, MA (civil and environmental engineering); **Simon Tisminezky** of Miami (economics, chemical engineering); **Aaron Ucko** of Kansas City, MO (mathematics, computer science and engineering); **Shivkumar Venkatasubrahmanyam** of Mumbai, India (biology); **Alice W. Wang** of Sylvania, OH (chemistry); **Benjamin Wieland** of Wynnewood, PA (mathematics); **Juwell Wu** of Tustin, CA (mathematics, materials science and engineering); and **Angela Yu** of North Brunswick, NJ (BCS, mathematics, computer science and engineering).

Architecture students receive recognition

The Department of Architecture presented a number of awards to seniors and graduate students in the department.

GRADUATE STUDENTS

The AIA Medal, given to the top-ranked Master of Architecture (MArch) student, went to **Juintow Lin** of Paxton, MA. The AIA Certificate of Merit recognizing the second-ranked Master of Architecture student went to **Ryan Chin** of Riverwoods, IL. **Junko Nakagawa** of Yokohama, Japan won the Sydney B. Karofsky '37 Prize for the outstanding MArch student with one further year of study. **Ann Vollman Bible** of Tolland, CT, received the Kristen Ellen Finnegan Memorial Fund Award.

The Master of Science in Architecture Studies Prize for outstanding graduating students in that degree program went to **Michelle Hoeffler** of Providence, RI; **Garyfallia Katsavounidou** of Veria, Greece; **Axel Kilian** of Ulm-Lehr, Germany; and **Mimi Levy** of Köln, Germany. The Francis Ward Chandler Prize for the outstanding MArch student for achievement in architectural design went to **Jae Kim** of West Vancouver, British Columbia.

Aga Khan Program Summer Travel Grants were presented to **Panayiota Pyla** of Larnaca, Cyprus; **Sunitha Raju** of Bangalore, India; and **Marianne De Klerk** of Pretoria, South Africa. Recipients of Ann Macy Beha Travel Awards were **Talia Braude** of Los Angeles; **Henry Chang** of San Francisco; Bianca Nardella of Bologna, Italy; and **David Sledge** of Norlina, NC. **Omar Khan** of Fresh Meadows, NY and **Amina Razvi** of Chicago received Louis C. Rosenberg Travel Awards.

Luke Yeung of Vancouver, British Columbia, Canada and **Jorge Otero-Pailos** of Madrid, Spain received Schlossman Research Fellowships for research on contemporary issues in architecture. **Juintow Lin** was also a Skidmore Owings and Merrill Foundation Urban Design Traveling Fellowship Nominee, as was **Li Lian Tan** of Singapore.

Jae Kim also won the Imre Halasz Thesis Award, given for a thesis demonstrating excellence in architecture that best addresses issues of designing communities of buildings for rapidly developing environments.

Marvin E. Goody Awards of $5,000 for promise of excellence in a master's thesis in the building arts were given to graduate students **Daniel Arons** of Somerville; **Laurie Griffith** of Granville, OH; and **Takwing Louie** of Hong Kong.

Michelle Apigian of San Francisco won the Alpha Rho Chi Medal, given by the national professional fraternity of architecture to a graduating student for service, leadership and promise of professional merit.

Ritu Bhatt of New Delhi, India was named a Woodrow Wilson Postdoctoral Teaching Fellow. **Alona Nitzan-Shiftan** of Haifa, Israel received the Mary Davis Fellowship and also the Arthur Goldreich Trust Research Award. John Coolidge Fellowships went to **Adnan Morshed** of Chittagong, Bangladesh and **Fernando Alvarez** of Asturias, Spain. Mr. Alvarez also received an Edilia and Francois-Auguste de Montequin Fellowship. **Junko Nakagawa** was awarded a Renzo Piano Workshop Internship. **Thomas Beischer** of Durham, NC received a Fulbright Fellowship.

UNDERGRADUATES

Kay Paelmo, a senior from Union City, CA, won the Outstanding Undergraduate Award. Seniors **Lucy Fang** of Albany, GA and **Ian Ferguson** of Cary, NC won Faculty Design Awards for excellence in architectural design. **Minna Ha**, a senior from La Cañada, CA, won the William Everett Chamberlain Prize, given to an outstanding graduating BSAD (bachelor of science in art and design) student for achievement in design.

SCHOOL-WIDE AWARDS

The School of Architecture and Planning also announced the winners of the 1999 Lawrence B. Anderson Award: **Scott Raphael Schiamberg** (MArch 1996, MCP 1996), now a visiting scholar at MIT, for *Take Me Out to the Ballpark for a Glimpse of Green in the Last of the Golden Age Ballparks,* and **Kairos Shen** (MArch 1991) for *The Wegner Chair.*

The award was initiated by two of Professor Anderson's former students, I.M. Pei (BAr 1940) and William E. Hartmann (BAr 1939), as a tribute to their teacher and former dean of the school. The biennial award, established in 1987, supports creative documentation as a valuable form of learning and is open to applicants who have professional-level degrees and have been in full-time residence in the School of Architecture and Planning for two years. Professor Anderson, a world-renowned architect, died in 1994.

Chemistry awards given to 13 seniors

Thirteen seniors in the Department of Chemistry have been recognized by the department for their achievements over the past year.

The Alpha Chi Sigma Award for achievement in research, scholarship and service to the department went to **Connie C. Lu**, a senior from Miami, and **Rachel Stanley** of Waban, MA. The American Institute of Chemists Foundation Award was given to **Cynthia H. Liang** of Lexington, MA for outstanding achievement, ability, leadership and character.

Chemistry Undergraduate Service Awards, presented for significant service to the department, went to **Isabelle J. Halphen** of Bethesda, MD and **Clifton D. Leigh** of Little Rock, AR.

Merck Index Awards for outstanding scholarship went to **Eric M. Ferreira** of Sonora, CA; **Mark Stoykovitch** of Dover, NH; and **Alice W. Wang** of Sylvania, OH.

Thomas A. Baker of Des Moines, IA won the Hypercube Scholar Award for outstanding achievement in computational chemistry. Frederick D. Greene Teaching Awards were presented to **Victoria A. Gomez** of Wayne, PA, and **Alice W. Wang** for outstanding contributions in teaching.

Chemistry Undergraduate Research Awards were given to **Qinghao Chen** of Exeter, NH; **Daniel J. Crawford** of Newark, DE; Andrew B. Greytak of Newton, MA; and **Krzystof J. Rybak** of Racine, WI, for outstanding research in chemistry.

Convocation honors achievements of students and others

(continued from page 7)

faculty—Professor **Gareth McKinley** of mechanical engineering.

• The Arthur C. Smith Award, presented to a faculty member for meaningful contributions and devotion to undergraduate student life at MIT—Professor **Graham C. Walker** of biology.

WOMEN AND MINORITIES

• The Albert G. Hill Prize, awarded to minority juniors or seniors who have maintained high academic standards and made continued contributions to the improvement of the quality of life for minorities at MIT—**Danielle A. Hinton** of Yorktown, VA, a senior in EECS; and **Zhelinrentice L. Scott** of Long Beach, CA, a junior in management. A former vice president for research, Dr. Hill was an early champion of equal opportunity at MIT.

• The Laya W. Wiesner Award, presented to the undergraduate woman student who has most enhanced MIT community life—**Katherine Cherry Liu** of Park Ridge, NJ, a senior in urban studies and planning. The award, established in 1980 by the MIT Women's League, honors Mrs. Wiesner's contributions to women's activities during her time as first lady of MIT.

• The Ronald E. McNair Scholarship Award, which recognizes black undergraduates who have demonstrated strong academic performance and who have made considerable contributions to the minority community—**Carla M. Merritt**, a junior in chemical engineering from Raleigh, NC; and **Stephanie C. Espy**, a junior in chemical engineering from Decatur, GA. The Black Alumni/ae of MIT created the award in honor of Dr. McNair (PhD 1977), who died in the explosion of the space shuttle Challenger.

• The Association of MIT Alumnae (AMITA) Senior Academic Award, given to senior women who have demonstrated the highest level of academic excellence through coursework and related professional activities at MIT—**Jonna B. Anderson**, a graduate student in urban studies and planning from Vancouver, WA, and **Lucy Qing Shen**, a senior in biology from Gaithersburg, MD.

SERVICE

• The Priscilla King Gray Award for Public Service—**Anne T. McLeod** of Monroe, CT, a senior in civil and environmental engineering. The award was established by the Undergraduate Association and the Public Service Center to recognize an undergraduate exceptionally committed to public service at MIT and its surrounding communities. The recipient clearly demonstrates a personal dedication to social change, prolonged and in-depth involvement, and leadership initiative.

• The Laya Wiesner Community Award, presented to a member or friend of the MIT community for conspicuously effective service that reflects Mrs. Wiesner's concerns for enhancing life at the Institute and the world at large—**Bonnie Walters**, associate dean for undergraduate academic affairs.

Bonnie Walters, dean of undergraduate academic affairs, received the Laya Wiesner Community Award. **Photo by Donna Coveney**

• The James N. Murphy Award, given to an employee whose spirit and loyalty exemplify inspired and dedicated service, especially with regard to students—**Howard L. Brown** of the Campus Activities Complex. The award was established in memory of a staff member who made an immeasurable contribution to community life at the Institute.

• The Gordon Y Billard Award, presented to a faculty member, nonfaculty employee or one not necessarily affiliated with the Institute, for special service of outstanding merit performed for the Institute—Registrar **Mary R. Callahan**, co-director of academic services, and **Donna R. Savicki**, assistant dean of engineering for administration. The award was established by Mr. Billard, a member of the Class of 1924.

• Karl Taylor Compton Prizes, given in memory of MIT's ninth president, are the highest awards presented by the Institute to students and student organizations in recognition of achievements in citizenship and devotion to the welfare of MIT. They reflect outstanding contributions to the MIT community as a whole, sustained over a significant number of years. The 1999 recipients are **Jennifer A. Frank**, a senior in biology from Sharon, MA; **Matthew L. McGann**, a senior in management from Hampton Bays, NY; and **Christopher A. Spohr**, a graduate student in economics from Washington, DC.

Howard L. Brown of the Campus Activities Complex won the James N. Murphy Award. **Photo by Donna Coveney**

Gordon Y Billard awardees were Donna R. Savicki, assistant dean of engineering for administration (left), and Mary R. Callahan, co-director of academic services and registrar. **Photo by Donna Coveney**

Mechanical engineering students gain recognition

At an awards luncheon on May 11, the Department of Mechanical Engineering recognized 17 students for their accomplishments.

The Mechanical Engineering Service Award for dedicated service to the department went to **Roger S. Cortesi**, a graduate student from Washington, DC. **Jason Lawrence**, a senior from Manhasset, NY, and **Fritz Pierre Jr.**, a senior from Nyack, NY, were awarded the Rheinhold Rudenberg Memorial Prize for outstanding undergraduate theses related to energy conservation.

Maribel Vazquez, a graduate student from Brooklyn, NY, was awarded the Meredith Kamm Memorial Prize for outstanding performance in the mechanical engineering graduate program. The Carl G. Sontheimer Prize for excellence in innovation and creativity in design was awarded to **Eberhard Bamberg**, a graduate student from Gaildorf, Germany.

The Padmaker P. Lele Student Award for outstanding and dedicated service as an undergraduate teaching assistant was awarded to **Ahmed M. Elmouelhi**, a junior from Granger, IN. **Nicoli M. Ames**, a senior from Olympia, WA, was awarded the Luis De Florez Award for outstanding ingenuity and creativity.

The AMP Inc. Award for outstanding performance in 2.008 (Design and Manufacturing II) went to **Jonathan D. Rohrs**, a junior from S. Deerfield, MA, and **Klint A. Rose**, a junior from Falcon, CO. The Whitelaw Prize for originality in design in 2.007 (Design and Manufacturing I) was awarded to **Brian Chan**, a sophomore from Millbrae, CA, and **Ayr Muir-Harmony**, a senior from Bernardston, MA.

Wunsch Foundation Silent Hoist and Crane Awards for outstanding performance in an undergraduate thesis or project related to materials handling were presented to the following seniors: **Aimee B. Angel** of Portland, OR; **Sean M. Brennan** of Livermore, CA; **Sawyer B. Fuller** of Los Osos, CA; **Scott K. Hiroshige** of Mililani, HI; **Jennifer D. Navarro** of Las Vegas, NV; and **Theresa M. Power** of Watertown, MA.

UROP recognizes work of five students

The Undergraduate Research Opportunities Program (UROP) has recognized five students with awards.

Four undergraduates have received Peter J. Eloranta Summer Undergraduate Research Fellowships, given each year to students planning a summer research investigation or creative study in virtually any field. The $6,000 fellowships went to **Helen Y. Lee**, a senior in architecture from Parsippany, NY for her project (entitled "Glass"); freshman **Margarita Marinova** of Tornonto, Ontario ("Understanding Mars' Climate though Studies of Mass Wasting in the Arctic"); **John McBean**, a junior in mechanical engineering from Rothesaym New Brunswick, Canada ("Fusing Art and Engineering: Design and Construction of an Aqua-Kinetic Sculpture") and **Laurel P. Smith**, a senior in electrical engineering and computer science from Oakton, VA ("Fusing Two Contrasting Musical Worlds: Bringing Classical and Techno Music Together").

First awarded in 1969, the Eloranta fellowships are a gift from the late Dr. Edwin H. Land, founder and president of the Polaroid Corp., and were established in memory of the late Peter J. Eloranta, an employee of Polaroid and a member of the Class of 1968.

The Randolph G. Wei UROP Award is given each spring to an undergraduate who has made the most outstanding contribution in undergraduate research at the interface of the life sciences and engineering. The award was established in 1986 in memory of Randolph G. Wei, a member of the Class of 1987 who majored in biology and chemical engineering and was an active UROP participant.

This year's recipient is **Cynthia Reinhart**, a senior in biology from Newtown Square, PA. She is second author of a paper (with her advisor, Professor Douglas Lauffenburger, and others) that will be submitted to the Journal of Cell Biology.

Brain and cognitive sciences department cites students

The Department of Brain and Cognitive Sciences bestowed awards on undergraduates and graduate students in the department for 1999-2000.

Three graduate students received the Angus MacDonald Award for Outstanding Teaching Assistance: **Rutledge Ellis-Behnke** of Canton, MA; and **Serkan Oray** and **Tessa Warren** of Cambridge.

Walle Nauta Awards for Outstanding Teaching Assistance went to graduate students **Wael Asaad** and **Albert Lee** of Cambridge and **Cynthia Kiddoo** of Somerville.

Song-Yee Yoon of Kyungi-do, Korea, who is receiving the PhD this week, won an award for Best Student Paper at the Agents2000 meeting in Barcelona in June. Her paper was titled "Motivation-Driven Learning for Interactive Synthetic Characters."

UNDERGRADUATES

The Walle J.H. Nauta Award for Excellence in Research in Brain Science was given to **Amy K. Ashbacher**, a senior from Urbandale, IA. **Alison M. Harris** of Washington, DC, who received the SB degree in February 2000, received the Hans-Lukas Teuber Award for Excellence in Research in Cognitive Science. The Award for Excellence in Scholarship in Brain Science went to **Angela Yu**, a senior from Somerville, NJ. **Lucila Ramirez**, a senior from Mission, TX, received the Award for Excellence in Scholarship in Cognitive Science.

Recognitions for Outstanding Academic Record were given to seniors **David A. Berry** of Mt. Kisco, NY; **Jasper J. Chen** of Shoreline, WA; **Jaemi R. Keith** of Raleigh, NC; and **Hannah S. Kwon** of Bloomfield Hills, MI.

Recognitions for Outstanding Research Contributions went to seniors **Susanna B. Mierau** of Wichita, KS; **Sharmin Ghaznavi** of Ann Arbor, MI; **Carolyn M. Dunbar** of Norwell, MA; and **Genevieve S. Yu** of Irvine, CA.

CEE bestows awards on five

Five awards and prizes were announced at the Department of Civil and Environmental Engineering senior dinner on May 5. All recipients are seniors in the department.

The Steinberg Prize, awarded to an undergraduate for academic achievement and demonstrable interest in construction management, went to **Nathan L. Burnham** of Skowhegan, ME. The Richard Lee Russel Award was given to **Yat Lun Wesley Choi** of Hong Kong. The award recognizes an outstanding undergraduate in civil and environmental engineering who plans to continue with graduate study at the Institute or elsewhere.

Amber E. Crabbe of St. Louis and **Nathaniel J. Grier** of Eugene, OR, received the Leo '24 and Mary Grossman Award, given to an undergraduate with a strong interest in transportation and a strong academic record.

A special award from the Department of Civil and Environmental Engineering was given to **Anne T. McLeod** of Monroe, CT, in recognition of academic achievement and outstanding service to the Institute.

First LFM award given

On May 10, the first Charles "Harrison" Smith III Memorial Award was given to **Terence Emmert**, a graduate student in civil and environmental engineering and a member of the Leaders for Manufacturing (LFM) Class of 2001. The $1,000 scholarship was established in memory of Mr. Smith (SM 1999 in LFM), who was killed in a car accident last June shortly after graduation while en route to his new job at Dell Computer Corp. in Austin, TX.

The award (a $1,000 scholarship) was conceived by a group of Mr. Smith's classmates. "As a peer award, it gives the class the opportunity to recognize the efforts of those classmates that have really improved the LFM experience both within and outside of the program," said Samantha Smith, Mr. Smith's widow.

Mr. Emmert, a US Navy officer for 11 years, served as LFM plant tour committee chairman and will do his LFM internship at Intel in Arizona.

Building Program Update

MIT

Massachusetts Institute of Technology

A Special Report from the Office of MIT President Charles M. Vest

June 2000

Building the Future:

A message from President Charles M. Vest

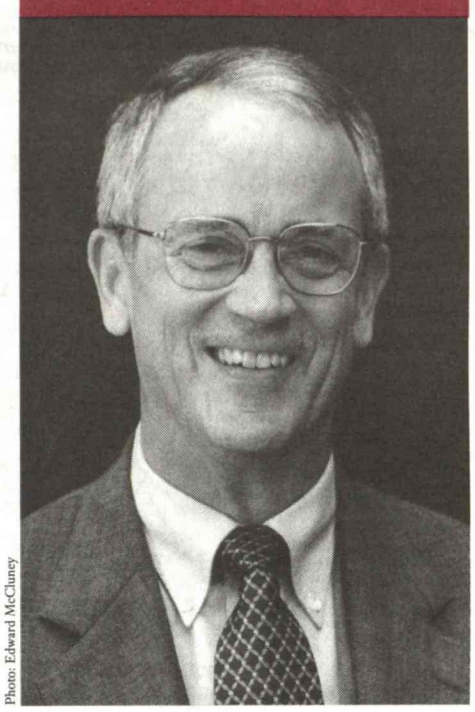


Photo: Edward McCluney

President Charles M. Vest

As a community, a campus and a culture, MIT has always been defined by the ideals of innovation and improvement. While other schools may have cultivated (or inherited) an atmosphere of timelessness and serenity, the Institute has grown and thrived in an atmosphere of ferment and activity. All of us at MIT believe that we are moving relentlessly forward into a future of our own making — a future that we are determined to make better than our past, both for our students and for society as a whole.

In short, we believe in the idea of *progress*. We also therefore accept the necessity of change, since, as the historian Henry Steele Commager once observed, "Change does not necessarily assure progress, but progress implacably requires change."

Our physical campus is, in many ways, a visible manifestation of MIT's commitment to a better future through innovation and the development of new knowledge. Though never entirely quiescent, there are times when our campus building program is particularly ambitious — times of intense intellectual ferment, creativity and opportunity. This is one of those times. *(See related story on historical trends in campus development, "Space Over Time.")*

We are now embarked on the most ambitious plan to improve and enhance our physical campus and infrastructure in more than 30 years. It is a plan that, both in its broad outlines and specific details, closely mirrors our intellectual agenda and our commitment to enhance the quality of student life and learning.

Strategic Initiatives

Over the past several years, the MIT community has collaborated in the development of major strategic initiatives in research, education and campus life. These initiatives have been defined through several recent studies and planning processes, including those conducted by the Task Force on Student Life and Learning, the Committee on the Undergraduate Program, the Committee on the Freshman Year and the Residence System Steering Committee. These initiatives are now being further refined through strategic planning by each School and each department.

Many of these initiatives were articulated in the *Report of the President, 1997–98*. Entitled "The Path to Our Future," that report summarized the case for change in MIT's academic and research program, outlined our long-term plan and addressed the central question of how that plan would be financed, including the role of our capital campaign.

These ventures range from residential and campus life to communication and information sciences, to the brain and neurosciences, to the arts, to entrepreneurship and management, to name just a few examples of what lies ahead.

These initiatives, as well as the broad strengthening of support for our faculty's research and teaching, carry major implications for our campus buildings and infrastructure. In order to support this agenda, MIT must therefore move forward on several construction fronts at once:

Renewal of Facilities

First, we have dramatically increased and accelerated our program to refurbish and

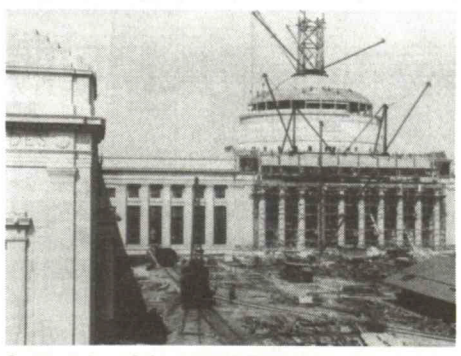
(continued on page 4)

Space Over Time at MIT:

The 1910s, '50s, and '60s were prior decades of major change and growth

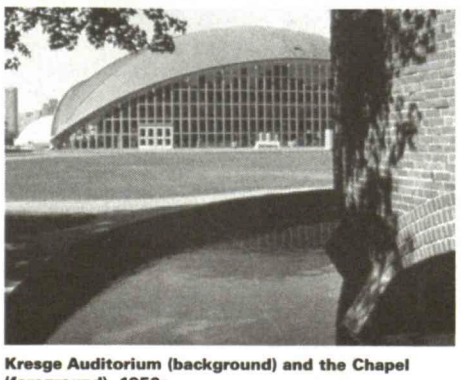
Throughout the last century, MIT never stopped building for the future, but some decades have been busier than others.

The Institute's first great surge in construction began in 1913, when MIT was still located in Boston's Back Bay. In that year, ground was broken for the series of integrated buildings that would frame what would one day be known as Killian Court. Designed by architect W. Welles Bosworth (Class of 1889), the new core campus was ready for occupancy in 1916 — and the entire MIT community relocated to its new home under Bosworth's classical dome and friezes.



Construction of the original Cambridge campus, 1910s.

A second major spurt of construction activity on the MIT campus began during the 1950s, when the Institute's faculty began to expand on the extraordinary advances in science and technology made during and just after World War II. Most of the 11 buildings dating from this decade were designed to house research and teaching programs, but perhaps the most notable were the creations of the renowned Finnish architect Eero Saarinen; his designs for the MIT Chapel (1955) and Kresge Auditorium (1956) remain compellingly contemporary even today.

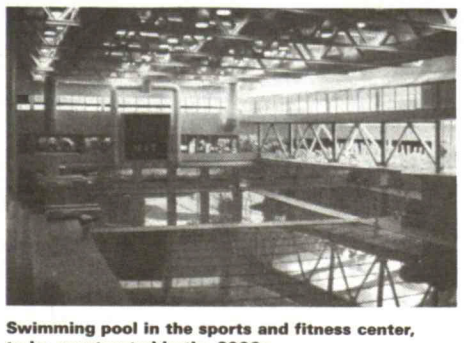


Kresge Auditorium (background) and the Chapel (foreground), 1950s.

Dreyfus Chemistry Building, constructed 1960s, renovated 2000s.

In the 1960s and the 1970s, MIT continued its growth as a global research university and, as in the 1950s, much of the new activity was driven by steady growth in research support from the federal government. Indeed, because most institutional structures require renovation every 30 years or so, the fact that 23 MIT buildings date from the 1960s has created the need for a major renovation effort today — as in the current rehabilitation of Building 18, a creation of I.M. Pei (Class of 1940) that first opened in 1969.

Of course, the need to renovate and upgrade '60s and '70s-era infrastructure is only one facet of MIT's building program for 2000 and beyond. With its blend of residential, athletic, recreational, academic and research facilities, the new program promises to be one of the most ambitious in MIT history — and to spur a level of physical development and activity not seen on the Institute campus for 30 years. ■



Swimming pool in the sports and fitness center, to be constructed in the 2000s.

Campus Housing and Community Housing: A Shared Goal

It has long been a goal of the Institute to provide more housing for our students, particularly our graduate students. At the same time, the City of Cambridge has as one of its highest priorities an increase in the supply of housing affordable to diverse populations in Cambridge. These goals are coming together in a new housing initiative by MIT.

This initiative will create housing for more than 1,100 undergraduate and graduate students in new and renovated buildings and thereby free up additional rental units within the overheated housing market in Cambridge.

Campus Housing

One of the major emphases of MIT's Task Force on Student Life and Learning was to create a stronger sense of campus community. The housing initiative will mark a big step in this direction — by making it possible for all first-year students to live on campus and by providing housing for a significant number of graduate students.

The three campus housing projects include:

- the 350-bed undergraduate residence on Vassar Street;
- renovation of the building at 224 Albany Street — a former storage warehouse — into housing for 120 graduate students;
- construction of a new building on the lot at Sidney and Pacific streets for approximately 600–700 graduate students.

When these new residences are occupied, MIT will be able to house nearly 50 percent of its graduate students in Institute-sponsored housing.

We are eager to get all three of these projects underway. Plans for the graduate projects are moving forward; we have recently hired architects and are refining the program, based on the substantial consultation that took place with graduate students in 1997 about plans for graduate housing. The undergraduate residence, unfortunately, is delayed by an appeal of the special permit granted to the project by the city's planning board, and we are working to resolve this matter as quickly as possible.

We are very pleased to be able to enhance our campus community in this way at a time when the demand for housing in Cambridge is particularly high. Many of the students who will live in our new residences are now renting in Cambridge, and this initiative should help reduce the pressure on the housing market and thus help to achieve one of the city's highest priorities.

Affordable Community Housing

MIT's commitment to enhancing the affordability of housing follows from a history of contributions made over the past three decades.

In the 1970s, MIT constructed 700 turnkey units of housing for the elderly in three neighborhoods in Cambridge.

During the 1980s and 1990s, as part of the University Park development, MIT made a commitment to build 400 units of housing, including 150 units of affordable housing. The total number of units has climbed to 650 — over 50 percent more units than originally proposed. The affordable units are distributed among the buildings along Brookline Street.

The Institute continues to explore ways to help relieve housing pressures in Cambridge as we enter a new decade.

This housing initiative is the first step in what we expect to be a multi-pronged program to address the need for affordable housing by members of the MIT and greater Cambridge communities. ■

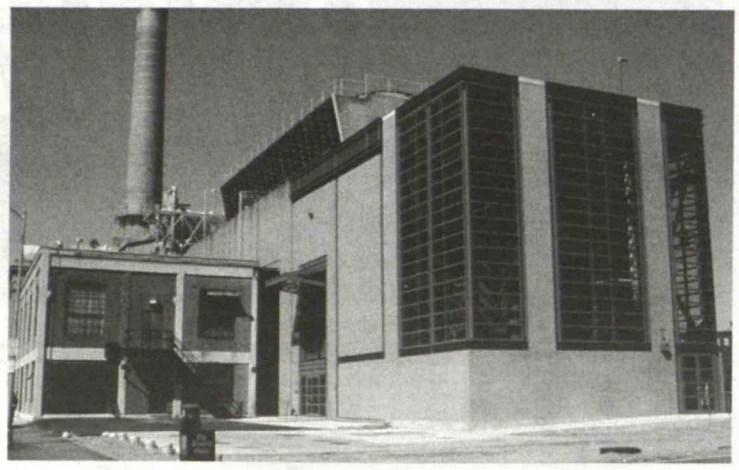
Overview of Campus Construction

inside...

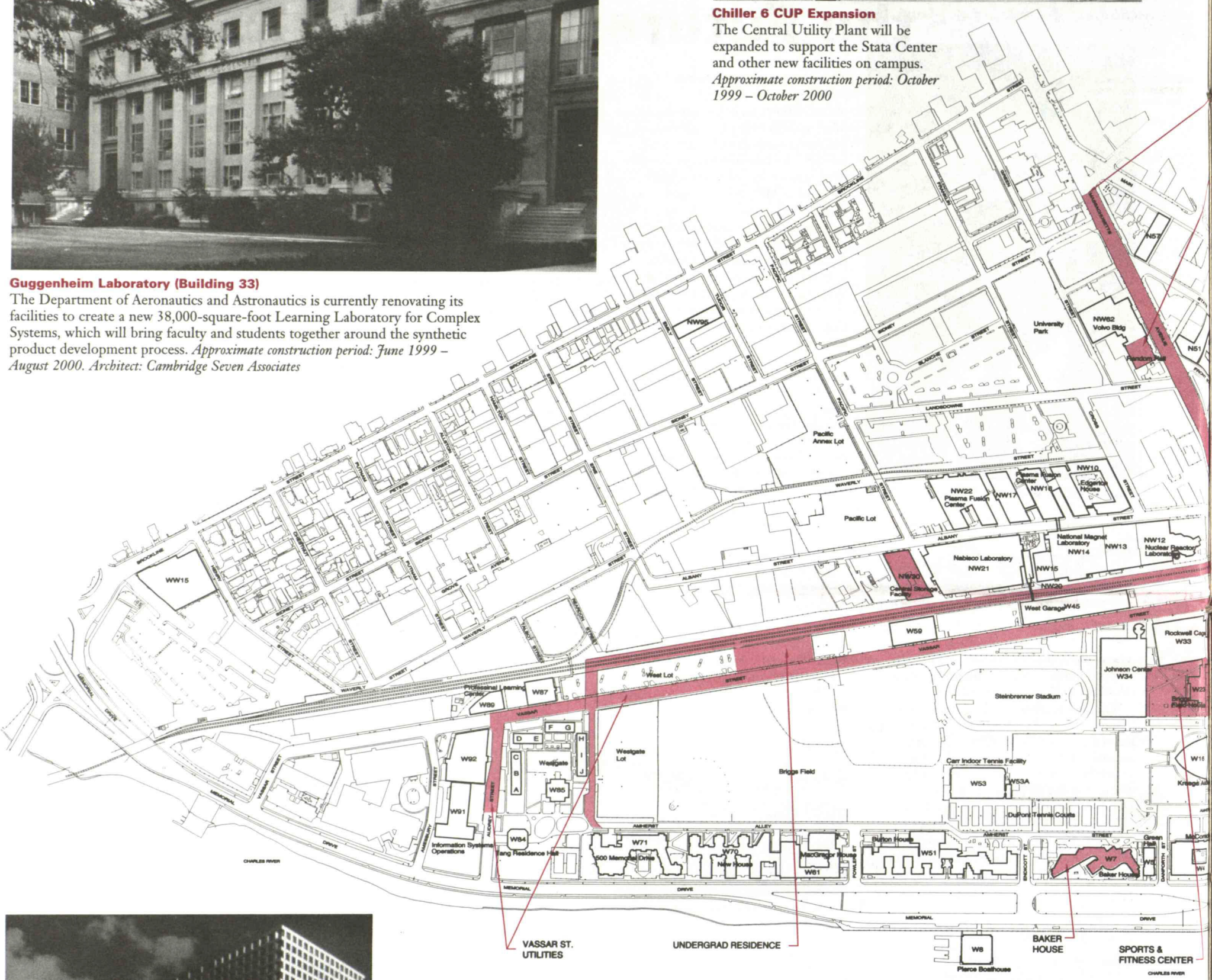
Campus construction overview:

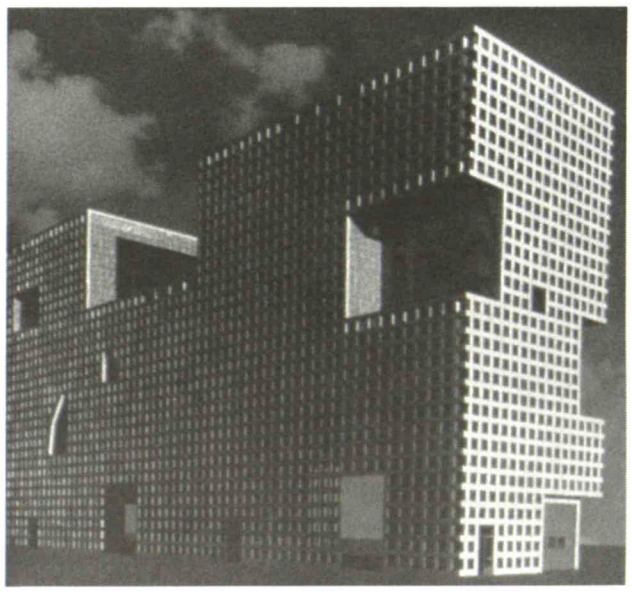
infrastructure renewal and new buildings

Guggenheim Laboratory (Building 33)
The Department of Aeronautics and Astronautics is currently renovating its facilities to create a new 38,000-square-foot Learning Laboratory for Complex Systems, which will bring faculty and students together around the synthetic product development process. *Approximate construction period: June 1999 – August 2000. Architect: Cambridge Seven Associates*



Chiller 6 CUP Expansion
The Central Utility Plant will be expanded to support the Stata Center and other new facilities on campus. *Approximate construction period: October 1999 – October 2000*





Undergraduate Residence
This Progressive Architecture Award design winner will house 350 undergraduates. Incorporated into the design are public and private spaces for the residents including study lounge areas and computer rooms. The building is designed in an open plan — open to light and air, and open to the residents who will live, work, eat, study, and be entertained within its welcoming spaces. *Approximate construction period: September 2000 – August 2002. Architect: Steven Holl Architects and Perry Dean Rogers & Partners*

Baker House
This undergraduate residence, designed by Alvar Aalto, has been comprehensively restored on the occasion of its fiftieth anniversary. The replacement of all windows will take place in the next phase of construction in the summers of 2001 and 2002. *Approximate construction period: April 1996 – August 2002. Architect: Perry Dean Rogers & Partners*

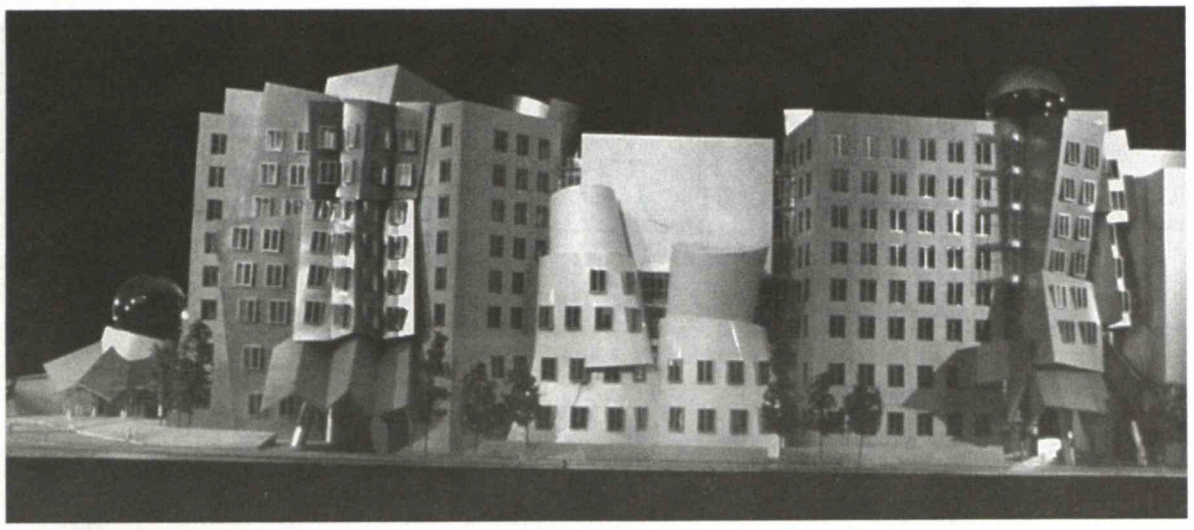
Vassar Street Utilities
The installation of new utility lines (steam, chilled water, fire protection, electrical and telecommunications ducts) will support the new undergraduate residence, the new sports and fitness center, and the Stata Center. *Approximate construction period: February 2000 – October 2002. Engineering firm: S E A Consultants Inc.*

Sports and Fitness Center
A sports and fitness center, to be built between the existing Johnson Athletics Center and the Stratton Student Center, will include a 50-meter pool, seating for approximately 450 spectators, recreation and team locker rooms, a health fitness center, a sports medicine training facility, an equipment desk, and a laundry room. The barbecue pits currently on the site will be relocated for future use. *Approximate construction period: Fall 2000 – May 2002. Architect: Roche & Dinkeloo and Sasaki Associates*

Random Hall
This undergraduate residence will undergo a renovation as part of the Fire Safety Systems Renewal Program. The safety program will upgrade, where necessary, all fire alarms, sprinklers, fire stops, doors, and egress lighting to ensure better safety on campus. *Approximate construction period: June – August 2000*

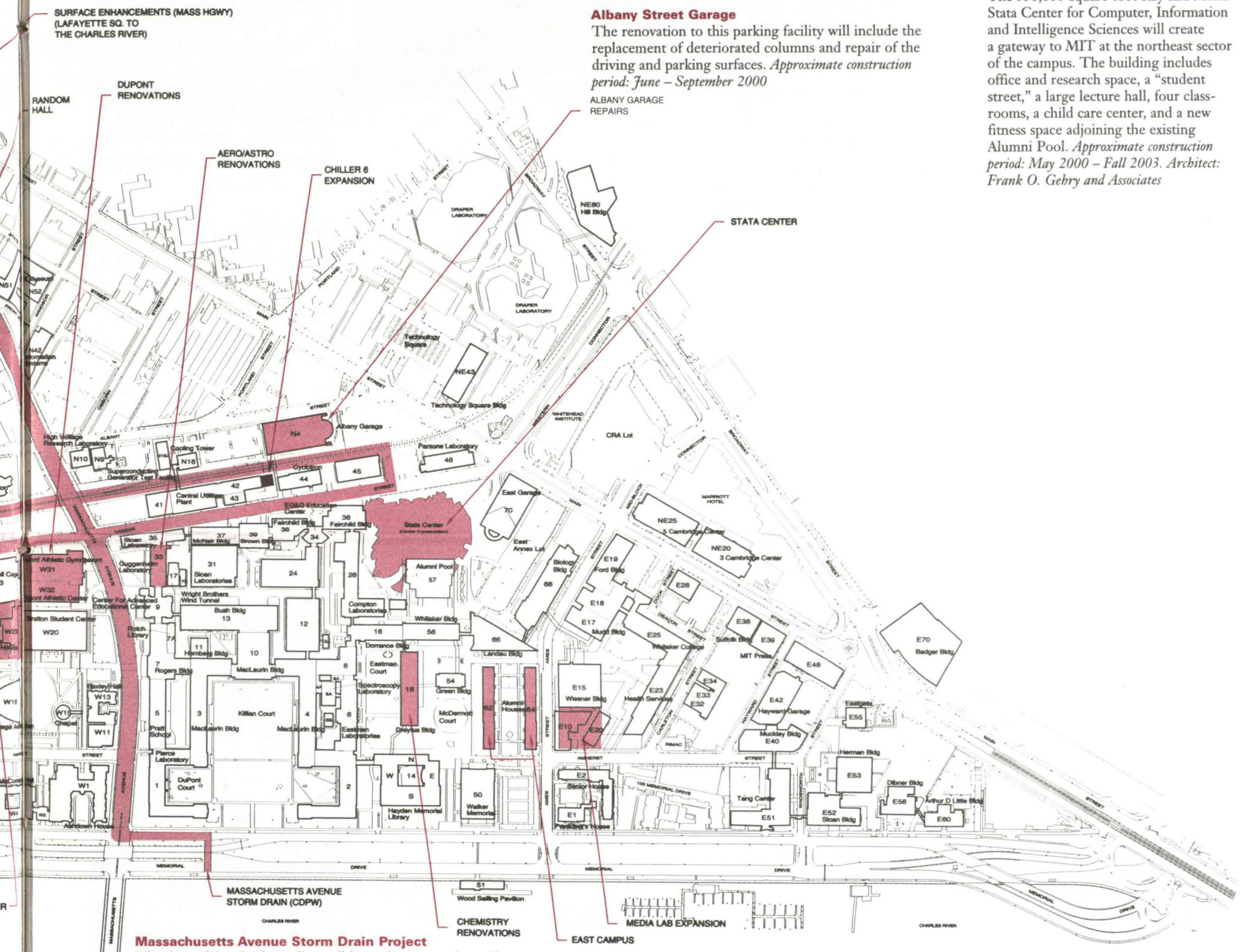
duPont Athletic Center
The renovation to the duPont main locker rooms will accommodate athletes during the construction of the new sports and fitness center. *Approximate construction period: June – August 2000. Architect: Sasaki Associates*

Surface Enhancement Project
This resurfacing project continues the state's enhancement of Massachusetts Avenue. Construction plans include a new pedestrian plaza in Lafayette Square at the intersection of Massachusetts Avenue and Main Street. *Approximate construction period: Spring 2001 – Fall 2001. Sponsor: Massachusetts Highway Department*



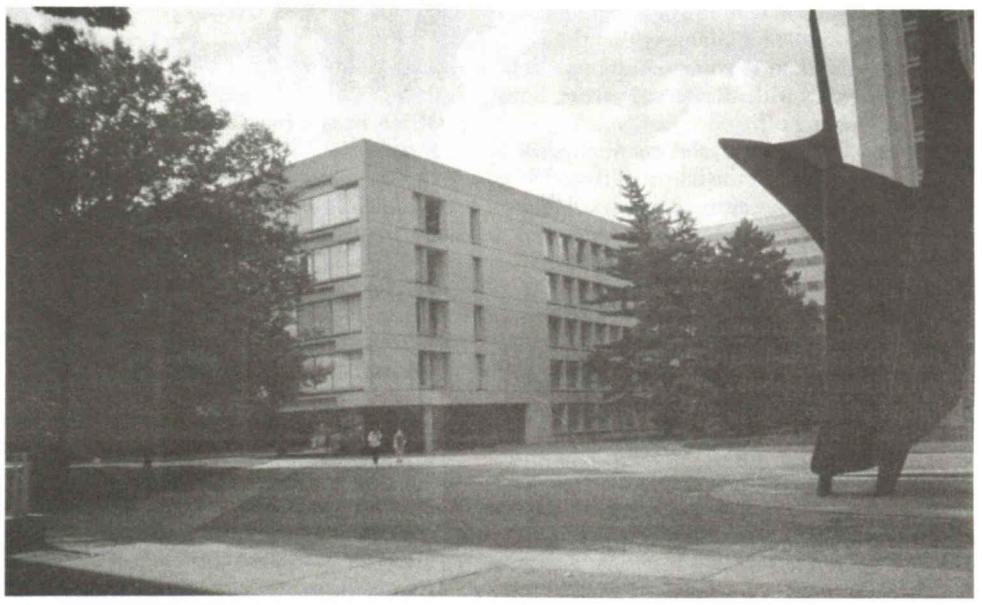
Stata Center
The 350,000-square-foot Ray and Maria Stata Center for Computer, Information and Intelligence Sciences will create a gateway to MIT at the northeast sector of the campus. The building includes office and research space, a "student street," a large lecture hall, four classrooms, a child care center, and a new fitness space adjoining the existing Alumni Pool. *Approximate construction period: May 2000 – Fall 2003. Architect: Frank O. Gehry and Associates*

Albany Street Garage
The renovation to this parking facility will include the replacement of deteriorated columns and repair of the driving and parking surfaces. *Approximate construction period: June – September 2000*

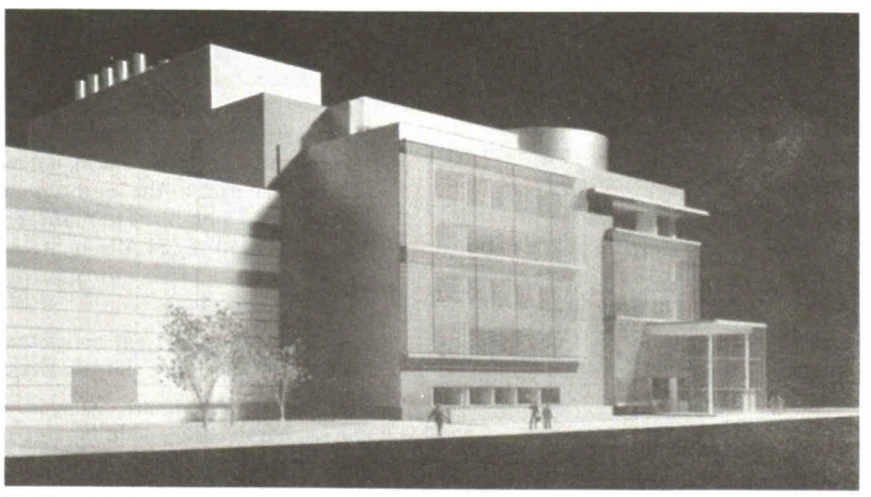


Massachusetts Avenue Storm Drain Project
The City of Cambridge will install large drainpipes that will provide significant drainage improvements over the existing system. The improvements should relieve overflow problems during heavy rain storms. *Approximate construction period: June 2000 – Spring 2001. Sponsor: Cambridge Department of Public Works*

East Campus
This undergraduate residence will have renovations to its fire alarms, sprinklers, fire stops, doors, and egress lighting as part of the infrastructure renewal effort to improve safety in campus buildings.



Dreyfus Building (Building 18)
Laboratory facilities and infrastructure in this Department of Chemistry building will be renovated and modernized in order to meet today's research demands and to enhance life-safety systems. *Approximate construction period: Summer 2000 – August 2003. Architect: Goody, Clancy & Associates*



Media Lab Expansion
The Media Laboratory will expand on a site adjacent to its existing facilities in the Wiesner Building. The new structure will house a range of research and educational programs relating to the future of information and learning technologies and their application for both everyday life and creative expression. Prior to construction, utility relocation will occur in the adjacent streets. *Approximate construction period: Spring 2001 – December 2003. Architect: Fumihiko Maki & Associates, with Leers Weinzapfel Associates*

Q and A with the Director of Facilities

Victoria V. Sirianni

Q How long will this period of significant construction work last and what are the plans to minimize the disruption? Also, what methods will you use to keep the campus community informed?

A Over the next decade, MIT will add approximately 10 percent to the total square footage of buildings on campus. During this construction, the visual appearance of parts of our campus will be severely affected, and there certainly will be dirt, noise and some disruption. We hope that the community is patient because the end result of all this work will be a wonderful transformation of the campus.

We will do our best to keep the community informed. For example, we're working with the Chair of the Faculty for input on ways to let faculty know about developments in a timely way and to minimize the inconvenience to them and their students. We've already begun to include a "Campus Construction Updates" box in *Tech Talk*, and that information, and more, will be included in a web site linked to the Facilities' home page. That web site is currently being developed. We're also trying to communicate with the students by advertising in *The Tech* and working through other student information channels.

In addition, we'll be holding meetings with the campus neighbors of the various projects. We feel that it's very important that people be able to voice their questions and concerns. A harder audience to reach is those who are not directly associated with a building but may be affected by the construction. That's why we try to have neighbors' meetings. This process was quite successful when we were constructing the Tang Center.

Also, signage is critical to helping people navigate around the construction sites. We're paying a lot of attention to signage, which will soon increase around campus.

All of our communications efforts will expand as time goes on. We welcome any suggestions in this regard.

Q Who decides what new buildings will be constructed?

A The Building Committee is the primary decision-making group. Chaired by Executive Vice President John Curry, the committee's objective is to guide the overall development of the campus and its facilities. Although the Building Committee has existed for many years, it was revitalized after the report from the Task Force on Student Life and Learning revealed the need for major building initiatives.

In order to involve the community in the planning for new facilities, the Building Committee establishes a client team for each project. With some of the larger projects, a member of the client team is invited to be a member of the project team, which is the group that determines uses of the building. That way, they have first-hand involvement with the decisions made about their space.

Q Who's in charge of managing the new construction projects, and are there principles of campus development that are guiding the work?

A We just hired two outstanding people to lead our construction efforts: Deborah Poodry, director of capital project development, and Paul Curley, director of capital construction. Both have a wealth of background in building design and construction. Currently, they're in the process of establishing and coordinating a construction management team.

One of their top priorities is to develop a policies and procedures manual for our capital projects, and that work has begun.

Q Our campus is obviously in an urban setting, so we didn't have a lot of green space to begin with. Now, the construction work has eliminated even more of it. When the new buildings are finished, will MIT be paying attention to making those areas green again?

A Yes, we are developing an integrated landscape plan that will not only provide green spaces but also will connect the campus more effectively. There will be places for people to congregate outside and spend time in a relaxed way, something we need more of at MIT.

In the meantime, the construction work will temporarily consume some of the grassy areas on campus. When that occurs, it will be kept to a minimum and plans for restoration and enhancement of that space will be an explicit part of the project.

Photo: Ruth T. Davis

Director of Facilities Victoria V. Sirianni

Q Traffic around campus has been heavier lately, both because of MIT's construction work and the city's projects. Do you have any suggestions for commuters?

A It's true that our campus projects as well as the city's work on the Massachusetts Avenue storm drain will affect traffic patterns and inconvenience drivers. MIT's utility work on Vassar Street also will create delays. For these reasons, I encourage more members of our community to use public transportation, if that's an option for them.

Q There also seems to be a lot of renovation work being done on campus. Who makes the decisions about which of those projects are funded and the schedule on which they'll be renovated?

A The Committee for Review of Space Planning, often referred to by its acronym of CRSP, makes those decisions. Chaired by Chancellor Larry Bacow, CRSP is charged with space planning and capital budgeting to ensure the most strategic allocation and use of the Institute's physical and related financial assets.

The deans and vice presidents assist in prioritizing the requests for space changes from academic and administrative areas, and CRSP respects those priorities. The committee then guides the allocation of Institute funds for approved projects. CRSP is actually responsible for the assignment and allocation of all space on campus.

Recently, MIT's senior officers and the Executive Committee of the Corporation made a commitment to significant infrastructure renewal in order to preserve the integrity of our older buildings. This work isn't always as visible as new construction, but it's no less important. ■

Building Committee Members:

Executive Vice President
John R. Curry, Chair

Director of Facilities
Victoria V. Sirianni, Staff to the Committee

Chairman of the Corporation
Alex d'Arbeloff

Chancellor
Lawrence S. Bacow

Dean of Architecture and Planning
William J. Mitchell, Architectural Advisor to the President

President
Charles M. Vest

Provost
Robert A. Brown

Treasurer
Allan Bufferd

Vice President for Resource Development
Barbara G. Stowe

Committee for Review of Space Planning (CRSP)

Chancellor
Lawrence S. Bacow, Chair

Executive Vice President
John R. Curry, Vice Chair

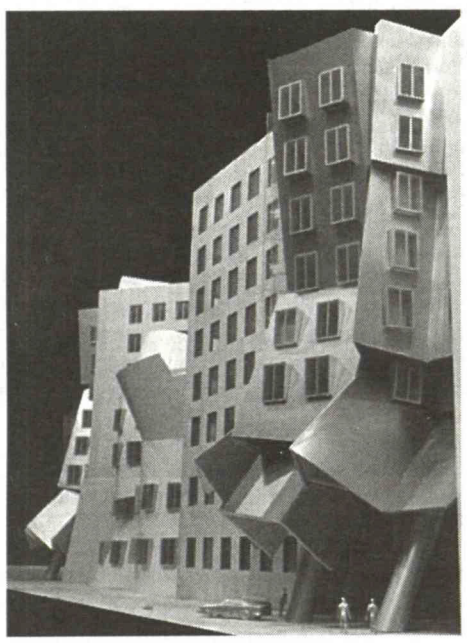
Space Administrator
John P. Dunbar, Secretary and Staff to the Committee

Advisors:

Provost
Robert A. Brown

Assistant Provost for Administration
Doreen S. Morris

Director of Facilities
Victoria V. Sirianni



The Alexander Dreyfoos Building in the Stata Center.

Photos courtesy of the Department of Facilities

Building the Future (cont. from page 1)

improve our existing physical plant. In such projects as the rehabilitation of Building 33 for the Department of Aeronautics and Astronautics, a systematic renovation of classrooms throughout the original Bosworth buildings, and a thorough upgrading of the Chemistry Department's Building 18, we are working to provide faculty and students with the facilities they need to support cutting-edge educational and research activities into a new century. This commitment to physical renewal also extends to our residence halls — where we have made significant investments in projects at Baker House and Senior House — as well as to less visible but equally vital areas such as our campus-wide safety systems.

New Academic Facilities

Second, we are working to provide new facilities designed to support the emerging multidisciplinary activities that will drive our academic agenda for decades to come. Notable among these new facilities is the Ray and Maria Stata Center for Computer, Information and Intelligence Sciences. Work has already begun on this 350,000 square-foot facility, which, in a link to MIT's innovative past, is rising on the site of Building 20. Upon completion, it will house the Laboratory for Computer Science, the Artificial Intelligence Laboratory, the Laboratory for Information and Decision Systems, and the Department of Linguistics and Philosophy. In addition to the Stata Center, we are in the planning stages for new facilities to support activities in the Media Lab, the Sloan School of Management, and the neurosciences.

New Campus Life Facilities

Third, and of equal importance, MIT is committed to the construction of several buildings that significantly enhance the Institute's residential, athletic and recreational resources. Foremost among these are: a new undergraduate residence hall on Vassar Street on West Campus; a major new sports and fitness center adjacent to the Johnson Athletics Center; and at a later phase in the construction plan, a new graduate residence hall. In the meantime, we are moving ahead with plans to renovate Building NW30 at 224 Albany Street in order to provide housing for approximately 120 graduate students.

Information on these projects and more may be found in the centerfold of this special report.

The Challenges Ahead

The pursuit of such a wide-ranging program requires us to exercise special care in the phasing and coordination of all construction activity, and to remain alert to the impact of public and private construction projects adjacent to the MIT campus. There is no question that it will prove challenging to our everyday lives — and we will do our best to mitigate the inconvenience it causes.

At the same time, however, the campus-wide scale of this construction and renovation program gives us a once-in-a-generation opportunity to foster a stronger sense of shared purpose and community, and to strengthen our relationships among ourselves and also with our off-campus neighbors.

The fulfillment of this unparalleled opportunity will require all of us to give generously of our patience, creativity, cooperation and good will. It will require those of us responsible for administering the building program to communicate regularly and effectively with all affected parties, both on campus and off.

In the end, however, this era of physical change is crucial to the future of the Institute. It is a necessary part of our preparation for a new century of innovation and progress — and we owe it the benefit of our participation and our informed support.

No one should be in doubt about the potential for problems along the way: a transformation of this magnitude is certain to create disruptions and inconvenience for all of us. On the other hand, the end result will be worth the difficulties — and the stewarding of our campus in this time of change is a privilege that we should all embrace with determination and enthusiasm. ■

MIT

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Left to right: Jesse Boehm, Carly Klein, Lucy Shen and Shivkumar Venkatasubrahmanyam won awards from the Department of Biology. **Photo by Paula Lerner**

Biology recognizes achievements of five

The Department of Biology presented the following awards to students in the department at its annual senior dinner on May 5.

The John L. Asinari Award was given to **Marie P. Shieh**, a senior from Clovis, CA, and **Jesse S. Boehm**, a junior from Concord, MA. The award was established in memory of John L. Asinari (SB 1975) to recognize outstanding undergraduate research in the life sciences.

Carly R. Klein, a senior from Framingham, MA, was the recipient of the Salvador E. Luria Prize, which recognizes outstanding scholarship and research of publication quality.

Shivkumar Venkatasubrahmanyam, a senior from Mumbai, India, received the Whitehead Prize, which is awarded for showing outstanding promise for a career in biological research as demonstrated by academic scholarship and contributions to research and the MIT community.

Lucy Q. Shen, a senior from Gaithersburg, MD, received the Ned Holt Prize, which is given to a biology major who demonstrates excellence in scholarship and service to the department and the MIT community.

Students win prizes in writing competition

The Ilona Karmel Writing Prizes Competition, chaired by Dr. Edward Barrett, senior lecturer in the Program in Writing and Humanistic Studies, recognized the writing achievements of 12 seniors, nine juniors, six sophomores and two freshmen. The winners were chosen from 174 entries by 95 students in the categories of essay, drama, poetry, short story, fiction, science fiction, and scientific and technical writing.

BOIT MANUSCRIPT PRIZE

In drama, first place went to "Sandcastles; Empty" by **Thomas Cork**, a senior in theater arts and chemistry from Tampa, FL. In second place was "Even the Cha-Cha" by **Debora Lui** of Great Neck, NY, a sophomore in electrical engineering and computer science (EECS). Honorable mention went to "Museum" by **Sarah G. Gensheimer** of Wharton, NJ, a senior in chemical engineering.

First place in the essay category was "The Last Road to Boston" by **Yanni Kosta Tsipis**, a junior in civil engineering and urban planning from Chestnut Hill, MA. **Soyoung Jung**, a senior in materials science and engineering from Flushing, NY, won first prize in the fiction category for "The Green Sunrise and Other Stories."

In the poetry category, "Lilikoi" by **Moana Minton** of Laie, HI, a junior in writing, was awarded first prize, and "Inside Pandora's Box" by **Rodin O. Entchev**, a sophomore in aeronautics and astronautics from Brookline, was awarded second prize.

DEWITT WALLACE PRIZE FOR SCIENCE WRITING FOR THE PUBLIC

First place was awarded to "Suppose You Were in Hell: A Paper on Infinite Sets" by **Candice Shizu Kamachi**, a senior in mathematics from Los Angeles. Second place went to "Message in a Bottle" by **Samidh Chakrabarti**, a junior in civil engineering and EECS from Corvallis, OR, and honorable mention went to "I Shall Please" by **Paul Peng**, a freshman in chemistry from Wilmington, DE.

ROBERT A. BOIT WRITING PRIZE

In the contest's essay category, first place was awarded to "The Traitor" by **Albert Chan**, a junior in mechanical engineering from Syracuse, NY. In second place was "Islam and Islamic Geometric Art" by **Carl Steinbach**, a junior in EECS from Sudbury, MA. Third place went to "Developing Haiti" by **Sanjay Basu**, a sophomore in brain and cognitive sciences from Lisle, IL. Honorable Mention went to "Should We Allow the Sale of Transplantable Organs?" by **Ying Zhang**, a senior in EECS from Atlanta.

In the poetry category, "Freestyle" by **Talia Kingsbury**, a senior in mechanical engineering from Sierra Vista, AZ, won first prize. Second prize was given to "Ronen" by **Hilarie C. Tomasiewicz** of Milford, CT, a junior in biology. "Salt, Clay and Polymers" by **Soyoung Jung**, a senior in materials science and engineering, won third prize, while "Tender Works" by **Helen Y. Lee**, a senior in architecture from Parsippany, NY, earned an honorable mention.

In the short story category, "Winters" by **Ehren Foss**, a sophomore in EECS from Mequon, WI, was awarded first prize, and "Integrity" by **Kris Schnee**, a sophomore in biology from York, PA, took second place. "To Chopped-Up Frogs" by **Jennifer K. Son**, a sophomore in biology from Essex Junction, VT, won third prize. Honorable mention went to "Coming Around" by **Talia Kingsbury**, and "Ladybug" by **Robert P. Ziemian**, a senior in environmental engineering from Westwood, MA.

OTHER PRIZES

A short story titled "Refugee" by **Margaret Douglass**, a freshman in biology from Lutherville, MD, won the Ellen King Prize for Freshman Writing.

In the Louis Kampf Prize in Women's and Gender Studies contest, "Ordinary" by **Rebecca Loh**, a junior in brain and cognitive sciences from Seoul, South Korea, won first place, and "The Shadow Woman: Who is Mary Gordon? A Discussion on an Author's Feminist Identify" by **Megan Galbraith**, a junior in mathematics and computer science from Clearwater, FL, took second place.

"Seed's Day" by **Kris Schnee** took first place in the Prize for Writing Science Fiction contest. Second Place was "Childcare Providers" by **Clifton Leigh**, a senior in chemistry from Brookline. Honorable mention went to "Broken" by **Anthony Julian**, a senior in writing from Baxter, TN.

First place in the competition for the S. Klein Prize for Scientific and Technical Writing was accorded to "Curtailing Tobacco's Global Threat" by **Jason H. Wasfy**, a junior in chemical engineering from Great Falls, VA. **Abraham Flaxman**, a senior in mathematics from Evanston, IL, took second place for "Randomized Vertex Cover."

In the contest for the WHS Prize for Engineering Writing, "Modeling of Drag Reduction by Polymers in Crude Oil Pipelines: Effect of Injection and Mixing of the Polymeric Additive" by **Sarah G. Gensheimer** took first prize. "Ultrasound Elasticity Imaging: A Review of Non-Invasive Techniques to Observe Mechanical Characteristics of Biological Tissues" by **Sripriya Natarajan**, a senior in EECS from Timonium, MD, came in second.

Students, professor in EECS receive awards

The Department of Electrical Engineering and Computer Science gave out the following awards.

Four graduate students were recognized for teaching excellence. The Carlton E. Tucker Teaching Award went to **Maya R. Said** of Damascus, Syria. **Mohammed Saeed** of Andover, MA received the Harold L. Hazen Teaching Award. Frederick C. Hennie III Teaching Awards went to **Albert M. Chan** of Ontario, Canada and **Amy N. Englehart** of Cambridge.

George M. Sprowls Awards for outstanding doctoral research contributions in computer science have been given to alumni/ae **Daniele Micciancio**, PhD 1998 ("On the Hardness of the Shortest Vector Problem"), and **Dawson Engler** ("The Exokernal Operating System Architecture"), **Andrew Myers** ("Mostly Static Decentralized Information Flow Control") and **Matteo Frigo** ("Portable High-Performance Programs"), all of whom received the PhD in 1999. Mr. Engler's and Mr. Myers's theses were also nominated by MIT for the ACM Doctoral Dissertation Awards in Computer Science for 1998-99.

The Northern Telecom/BNR Project Award for the best 6.111 laboratory project (spring 1999) went to "TA Hunt" by graduate students **Charles B. Lee** of Arcadia, CA; **Sandia Ren** of Beijing, China; and **Xiaolan Qian** of Princeton, NJ. The award for fall 1999 was presented to juniors **Nisha Checka** of Plano, TX and **Yanlok Charlotte Lau** of Kwun Tong, Kowloon for "Digital Music Synthesizer."

The Morris Joseph Levin Award for Best MasterWorks Oral Thesis Presentation (spring 2000) went to graduate students **William Adjie-Winoto** of Surabaya, Indonesia; **Eladio C. Arvelo** of Miami, FL; **Matthew S. DeBergalis** of Greenwich, CT; **Dario Gil** of Cambridge; **Shawn M. Hwang** of Richardson, TX; **Christopher Lin** of Flushing, NY; **Yu-Ming Lin** of Taipei, Taiwan; **Karen Livescu** of Marlboro, NJ; and **Shayan Mookherjea** of Calcutta, India.

The George C. Newton Undergraduate Laboratory Prize for the best 6.111 laboratory project (spring 1999) was presented to "Dancing Robots" by **Jason Timpe**, a graduate student from Cherry Valley, IL; **Nicholas C. Homer**, a junior from Dushore, PA; and **Philip W. Juang**, a senior from Cincinnati.

Peggy B. Chen of Cypress, CA won the David Adler Memorial Thesis Prize. **Jeremy J. Lilley** of Medford, OR took first place in the competition for the Charles and Jennifer Johnson Thesis Prize, while **Ian R. Schechter** of Oceanside, NY took second place. **Kenneth Lu**, a senior from San Francisco, won the David A. Chanen Writing Award. **Peter M. Ju** of Winchester, MA received the William A. Martin Memorial Thesis Prize.

In the competition for the Ernst A. Guillemin Thesis Award, first place went to **Brian B. Graham** of Seattle, and second place went to **Serena Chan** of Brooklyn, NY and **Tommy Ng** of Maracaibo, Venezuela.

Raffi C. Krikorian, a senior from New City, NY, and freshman **Bradley Kaanta** of Colchester, VT won Robert A. Fano UROP Awards. The Anna Pogosyants UROP Award went to **Michael Tsai**, a junior from Etna, NH.

The Department Head's Special Recognition Award for outstanding service to the department was bestowed on seniors **Chee We Ng** of Singapore and **Jacob Strauss** of Needham, MA. The Ruth and Joel Spira Award was given to Professor **Leonard McMillan**.

R. Krishna Sanka of Baltimore, a senior in EECS with minors in theater and biology, has won one of the four Kawamura Fellowships awarded this year. The program, limited to MIT and Harvard students, sponsors four students for a five-week stay in Japan during which they live with Japanese families and meet government and business officials.

Eta Kappa Nu, the national electrical engineering honor society, bestowed its Norman R. Carson Outstanding Junior Award honorable mention on **Ishwar Sivakumar**, a junior from Plainsboro, NJ, in recognition of his leadership, scholarship and service.

Tau Beta Pi, the national engineering honor society, has awarded one of 10 scholarships to **Erick N. Tseng**, a junior from Hingham, MA. The awards are made on the basis of high scholarship, campus leadership and service, and promise of future contributions to the engineering profession. The organization also gave its National Outstanding Advisor award to **John A. Tucker**, chief advisor to MIT's chapter of Tau Beta Pi. He is a lecturer in electrical enginering and computer science and director emeritus of the department's VI-A internship program.

Bioengineering division presents research awards

The Division of Bioengineering and Environmental Health made the following undergraduate research awards in 1999-2000. The stipends were awarded on a competitive basis to support research in bioengineering.

Fall 1999—**David A. Berry**, a senior in brain and cognitive sciences from Mt. Kisco, NY; **Princess I. Imoukheude** of Matteson, IL, a sophomore in chemistry and chemical engineering with a minor in biomedical engineering (BE); **Fadilah A. Khan**, a sophomore in chemical engineering and BE minor from Bloomfield Hills, MI; **Amy C. Lee** of Columbia, MO, a senior in chemical engineering and biology plus a BE minor; **Tetsuya Matsuguchi**, a sophomore in chemistry with a BE minor from Saitamaken, Japan; **Dyanne M. Phillipe**, a senior in chemical engineering with a BE minor from Chicago; **Analeah O'Neill**, a senior in biology and chemical engineering with a BE minor from Claremont, CA; **Vinod Rao**, a sophomore in biology from Monroeville, PA; and **Mohummad M. Siddiqui**, a junior in chemical engineering with a BE minor from Woodridge, IL.

Spring 2000—**James J. Kang**, a senior in biology from East Brunswick, NJ; **Gavin S. Miyasato**, a junior in chemical engineering with a BE minor from Pearl City, HI; **Analeah O'Neill**; **Yuri Shona Pek**, a junior in materials science and engineering with a BE minor from Singapore.

Summer 2000—**Christopher J. Bettinger**, a freshman in chemical engineering and biology with a BE minor from Lake Jackson, TX; **Benson Fu**, a senior in electrical engineering and computer science from Lexington, KY; **Juyong Kim**, a senior in chemical engineering from Seoul, Korea; **Wan Chieh Lee**, a sophomore in chemical engineering with a BE minor from Flushing, NY; **Tetsuya Matsuguchi**; and **José Manuel Otero**, a junior in chemical engineering with a BE minor from Greenwich, CT.

Student government gives awards to undergrads

The Undergraduate Association (UA), MIT's undergraduate student government, presented two 1999-2000 awards to members.

The John S. Hollywood Award, presented annually for outstanding service to the UA, went to **Edgar H. Martinez**, a senior in economics from LaBelle, FL. The Jeremy D. Sher Award, given annually to the outstanding member of the UA Council, was bestowed on **Christopher M.R. Rezek**, a senior in philosophy from Darien, CT.

Aeronautics/astronautics honors students, faculty at senior dinner

Twenty-seven students and faculty were honored for their accomplishments in aeronautics and astronautics over the past year at the department's senior recognition dinner on May 8. David E. Thompson (SB 1977), chair and CEO of Orbital Sciences Corp., was the guest speaker. He also gave a lecture that day on "Commercial Space Applications: The Next 10 Years."

The student chapter of the American Institute of Aeronautics and Astronautics (AIAA) presented the department's undergraduate teaching award to Professor **Daniel Frey**. Professor **S. Mark Spearing** again received the chapter's departmental advising award. Professor **Earll Murman** was awarded the Sigma Tau Society's graduate teaching award.

The Yngve Raustein Award was presented to **Ayanna T. Samuels**, a sophomore from Kingston, Jamaica, as the student who best exemplified the spirit of Yngve K. Raustein by her scholarship, team work and community building within and beyond MIT.

The Unified Engineering Award was presented to graduate teaching assistants **Torrey O. Radcliffe** of Cambridge and **Marcos (Erik) Carreno** of Tulsa, OK, for outstanding service and creativity in advancing the educational objectives of Unified Engineering during 1999-2000.

The Apollo Program Prize, awarded to an aero/astro student who conducts the best undergraduate research project on the topic of humans in space, was presented to **Dana M. Forti**, a junior from Tynsboro, MA, for research and outreach on the tactile feedback parabolic flight experiments.

The David J. Shapiro Memorial Award for designing, building and flying a high-speed electric-powered model aircraft in the 2000-01 AIAA/Cessna/ONR Student Competition was given to an eight-student team: graduate students **Larry Baskett** of Pleasanton, CA and **Carol C. Cheung** of Woodbury, MN; seniors **Allen Chen** of Newtown, PA and **Jacob Markish** of Chelmsford, MA; juniors **Bernard F. Ahyow** of Irvine, CA and **Lawrence O. Pilkington** of Hyannis, NE; and freshmen **Daniel J. Benhammou** of Colorado Springs, CO and **Adam J. Diedrich** of Petoskey, MI.

The Thomas B. Sheridan Prize For Creativity in the Improvement of Human-Machine Integration or Cooperation was presented to **Katherine H. Zimmerman**, a senior from Sandy Hook, CT, and **Kamla A. Topsey**, a senior from Brooklyn, NY, in recognition of their development and testing of a naturalistic driver interface for an automoblile GPS guidance system.

The Leaders for Manufacturing Prize was awarded to **David E. Carpenter**, a senior from Tyler, TX, for his design of the SPHERES structure in the "Conceive, Design, Implement and Operate" Capstone course. The James Means Memorial Award for Excellence in Flight Vehicle or Space Systems Engineering was presented to **Allen Chen**, a senior from Newtown, PA, for his contributions to that course.

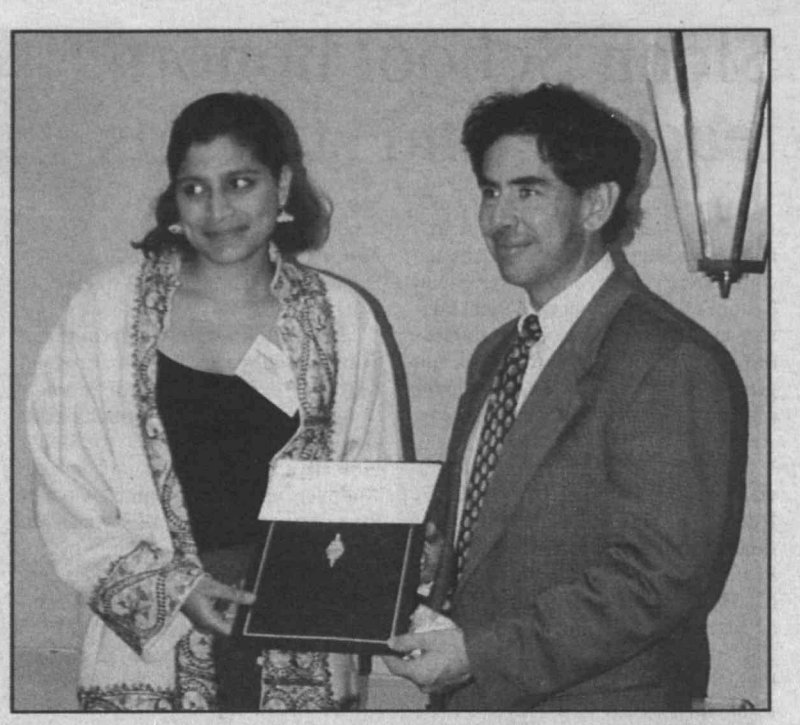
The James Means Memorial Award for Excellence in Space Systems Engineering was presented to **Sumita Pennathur**, a graduate student from Foxborough, MA, for initiative, leadership and accomplishments on the Mission PreMISS project (Precipitation Measuring Instrument for a Space System). The James Means Memorial Award for Excellence in Flight Vehicle Engineering was presented to **Jacob Markish** for technical excellence in the design, development and analysis of a high-capacity long-range cargo aircraft.

Pratt and Whitney Awards for outstanding achievement in the design, construction, execution and reporting of an undergraduate experimental project were presented to seniors **Brian D. McElwain** of Phoenix, AZ and **Erin F. Noonan** of University City, MO, for characterizing the buckling response of pressurized fuel tanks for micro launch vehicles, and to **Paul Eremenko**, a junior from W. Lafayette, IN, for characterizing the performance and design of the inner-loop control for an unmanned air vehicle.

The Admiral Luis De Florez Award for Original Thinking or Ingenuity was presented to seniors **Christopher Gouldstone** of Herefordshire, England and **Ryan E. Peoples** of Medford, NJ for a novel testing methodology for fracture testing of composite materials in cryogenic environments.

The Henry Webb Salisbury Award, established by the family and friends of Henry Salisbury, was presented to **Jacob Markish** for outstanding work in completing the aero/astro undergraduate degree program.

Marie Stuppard, Aero/Astro



Sophomore Sumita Pennathur receives the James Means Memorial Award for Excellence in Space Systems Engineering from Professor Edward Crawley, head of the Department of Aeronautics and Astronautics.
Photo by John Kane

Chemical eng. ceremony honors department members

At the Department of Chemical Engineering's annual awards ceremony on May 8, awards were presented to 18 students, faculty and staff members in the department.

In conjunction with the Student Financial Aid Office, the James E. Cunningham '57 Scholarship was given to **Akaniyene E. Umoh**, a junior from Providence, RI; the John H. Dessauer Scholarship went to **Deepa R. Patel**, a junior from Katy, TX.

Merck Fellowships were acknowledged for **Nganfong Huang**, a sophomore from Brooklyn, NY, and **Luwam G. Semere**, a junior from Buffalo, NY.

The Dow Chemical Co. Outstanding Junior Award recipient was **Agnieszka N. Stachowiak**, a junior from Ann Arbor, MI, for her balanced record of achievement in academics and campus professional and social organizations, as well as work experience. The Robert T. Haslam Cup was awarded to **Matthew J. Alvarado**, a senior from Raymore, MO, for outstanding professional promise in chemical engineering. The Roger de Friez Hunneman Prize, the oldest prize in the department (begun in 1927), was awarded to **Lin Shi**, a senior from El Monte, CA, in recognition of outstanding scholarship and research.

Edward W. Merrill Outstanding Teaching Assistant Awards were presented to graduate students **Michael J. Buchanan** of Farmington Hills, MI, and **Caroline P. Chen** of Englewood, CO, for excellence in teaching in an undergraduate subject (subject 10.37, Chemical Kinetics and Reactor Design, spring 2000).

Chemical Engineering Department Special Service Awards for unselfish contributions to the success of departmental activities were given to graduate students **Brian D. Harms** of Prior Lake, MN; **Daniel D. Burkey** of Doylestown, PA; and **Geoffrey D. Moeser** of Burlington, Ontario, Canada; **Bryant R. McLaughlin**, a senior from Santa Ana, CA; and graduate administrator **Janet E. Fischer**.

The Chemical Engineering "ROCK" Award for outstanding athletics, as voted by the graduate students of the department, went to **Joshua D. Taylor**, a graduate student from Rancho Cordova, CA.

The Outstanding Employee Award was presented to **Patricia A. Sampson**, an administrative assistant in chemical engineering headquarters, for her exceptional service to the departmental faculty, staff and students.

The Outstanding Faculty Award from the graduate students was presented to Professor **Daniel Blankschtein**. Undergraduates in the department presented an Outstanding Faculty Award to senior lecturer and undergraduate officer **C. Michael Mohr**.

An Individual Accomplishment Citation was presented to **Christina M. Wilbert**, a junior from Ada, MI, for her outstanding contributions to departmental life.

Several students in the department also won Institute awards at the MIT Awards Convocation on May 2 (see article on page 7).

Michael J. Buchanan and Caroline P. Chen receive their Outstanding TA Awards from Professor Robert C. Armstrong (left), head of chemical engineering.
Photo by Janet Fischer

Urban studies and planning gives awards

The Department of Urban Studies and Planning (DUSP) has recognized a number of students, faculty, staff and alumni/ae with awards at year's end.

Graduate students **Laurie Goldman** and **Brent Ryan**, both of Brooklyn, NY, received awards for Outstanding Contribution to the Intellectual Life of the Department. Departmental Service Awards went to graduate students **Carolyn Lee** of San Leandro, CA; **LaTonya Green** of Berkeley, CA; and **T. Luke Young** of Stillwater, NY. **Jeffrey W. Rapson**, a graduate student from Maitland, FL, won the Wallace Floyd Award for City Design and Development.

Michelle Apigian, a graduate student in both city planning and architecture from San Francisco, received the Department of Architecture's Alpha Rho Chi Medal for service, leadership and promise of professional merit. Awards for Outstanding Master of City Planning Thesis went to graduate students **Richard Cho** of Edison, NY and **Benjamin Schonberger** of Portland, OR. **Katrina Simon** of Stone Mountain, GA received the Carroll Wilson Award.

Graduate student **Dulcy Anderson** of Oswego, IL won the Flora Crockett Stephenson Award for her paper, "'The Greatest Change That Ever Happens is When People Change Their Minds'—Charlotte Perkins Gilman's Herland and the Utopian City Plan." The Ida M. Green Fellowship, given to a female senior, went to **Jonna Anderson** of Vancouver, WA.

Assistant Professor **Eran Ben-Joseph** received the MIT Wade Award. Administrative assistant **Kathy Larson** received an award for Outstanding Professional Service by Support Staff.

AWARDS FROM OUTSIDE MIT

Several people associated with DUSP also received awards from outside MIT. The Society for American City and Regional Planning History gave its John Reps Prize for Best Dissertation to graduate student **Thomas J. Campanella** of Brooklyn, NY for his dissertation titled "Republic of Shade: The Emergence of the American Elm as a Cultural and Urban Design Element in 19th-Century New England."

The Association of Collegiate Schools of Planning (ACSP) named Professor Emeritus and Senior Lecturer **Lisa R. Peattie** as Outstanding Planning Educator, and Professor **Karen R. Polenske** received the organization's Margarita McCoy Award for Outstanding Service to Women Faculty. **Sumila Gulyani**, a graduate student from New Delhi, India, won ACSP's Barclay Jones Award for Best Dissertation of the Year. Administrator officer **Rolf Engler** received the ACSP Presidential Service Award.

The American Planning Association's Massachusetts chapter gave honorable mention in its Outstanding Planning Award student project category for 1999 to a team comprising Adjunct Associate Professor **Terry Szold** and 1999 master's degree recipients **Eryn Deeming**, **Kristen Harol**, **Adair Smith**, **John Soininen** and **Margaret Super**. The American Institute of Certified Planners bestowed its Outstanding Student Award on **Josh Sevin**, a graduate student from Wynnewood, PA.

Administrative assistant **Marjorie Noack** received the Distinguished District Award from Toastmasters International. Associate Professor **Lawrence J. Vale**, associate department head, was named the 1999 Place Research Award Winner in the EDRA/Places Awards competition for "Three Public Neighborhoods: Assessing Public Housing Redevelopment."

RESEARCH AWARDS

A number of graduate students won research fellowships and scholarships. The MIT Martin Society of Graduate Fellows for Sustainability awarded a Martin Fellowship and Scholarship to **Ali Shirvani-Mahdavi** of Trabuco Canyon, CA. **Farzana S. Mohamed**, a senior from Nairobi, Kenya, received an Aga Khan Foundation International Scholarship/Fellowship. **Meghan Horl** of San Francisco received a Provost's Fellowship for Women and Minorities. **Anthony Townsend** of Brooklyn, NY received a School of Architecture and Planning Harold Horowitz (1951) Student Research Fund Award.

The American Planning Association awarded a Private Practice Division Scholarship to **Benjamin Schonberger** of Portland, OR, and the 1999-2000 Charles Abrams Scholarship Award to **La Tonya Green**. **Daniel Serda** of Kansas City, KS received a Lincoln Institute of Land Policy Dissertation Fellowship. A HUD Doctoral Dissertation Research Grant went to **Jennifer Johnson** of State College, PA. **Madhu Malini Raghunath** of India received an American Association of University Women International Fellowship. **Sylvia Dohnert** of Caracas, Venezuela won an award from the National Council for Technology and Science Research in Venezuela.

Jason Corburn of New York, NY received an Environmental Leadership Program Fellowship for 2000-03 and also a 2000-01 dissertation fellowship from the Harvard Law School Program on Negotiation. **Lou Baker** of Espanola, NM received a 1999-2000 award from the Hispanic Scholarship Fund. **Eric Cahill** of San Diego was awarded a Hugh Hampton Young Leadership Fellowship. Inter-American Foundation Doctoral Field Research Fellowships went to **Raquel S. Gomes** of Potomac, MD; **Nichola J. Lowe** of Davis, CA; and **Rodrigo Serrano** of Buenos Aires, Argentina.

Santiago Garcia-Moreno of Mexico City received a Fulbright-Garcia Robles Scholarship and a MacArthur-Ford-Hewlett Graduate Fellowship. **Ciro Biderman** of São Paulo, Brazil received a Lincoln Institute of Land Policy Dissertation Fellowship and was also named a DUSP Special Program for Urban and Regional Studies (SPURS) Fellow.

Graduate students **Ambika Prokop** of Sunnyvale, CA and **Anyeley Dzegede** of Deerfield Beach, FL received Summer Student Program awards from the consulting firm EDAW. **Vinit Mukhija** of Haryana, India and **Jennifer Johnson** won Fannie Mae Foundation Student Travel Awards.

Sloan School honors teachers and students

Six teaching awards, three Outstanding TA (teaching assistant) awards and 15 graduate student merit scholarships were given out at the Sloan School of Management's annual Faculty and Student Appreciation Awards on May 4. In addition, a student startup group received an award acknowledging the importance of entrepreneurship at MIT.

Excellence in Teaching awards went to faculty members **Kevin F. Rock**, visiting associate professor of finance; **Roberto Rigobon**, Assistant Professor of Management; **Rebecca M. Henderson**, the Eastman Kodak LFM Professor of Management; and **Paul Asquith**, the Nanyang Technological University Professor of Management. Teacher of the Year honors were shared by **Lawrence M. Weiss**, visiting professor of accounting, and **Robert M. Freund**, the Theresa Seley Professor of Management Science.

The three TA award-winners—graduate students **George Lordos** of Larnaca, Cyprus; **Carla Huffman** of Newport Beach, CA and **James (Jack) Busta** of Akron, OH—were cited for "their firm grasp of their material, clear teaching, and great patience and availability."

Graduate student award winners were singled out by their peers, faculty and staff for outstanding performance as leaders, motivators, change-agents, role models and exemplary citizens.

Rami Habal of Syria received the E. Pennell Brooks Fellowship for contributions to the Sloan community. **Mark Wohlfarth** of St. Louis, MO and **Ben Ackerman** of Atlanta got Petersen Awards for contributions to student life and excellence in academics. Martin Trust Community Fellowships for contributions to the community went to **Matthew Schwartz** of San Antonio, TX; **David Lam** of Pasadena, CA, **Salvador Paiz** of Miami; **Kimberly Markert** of Washington Depot, CT; and **Dan Wheeler** of Wichita, KS.

Joyce Pinkham of Cambridge and **Simon Hughes** of Epsom, England were awarded Henry Ford II Scholarships for academic achievement, leadership and contributions to Sloan. **Kristina Fernandes** of North Andover, MA and **Hernan Rissola** of Buenoas Aires, Argentina received Miriam Sherburne Scholarships for academic achievement and leadership, with emphasis on contributions to student life.

Jack Busta won the Henry B. DuPont III Scholarship for academic achievement, demonstrated leadership and contributions to the community. **Philippe Regnault** of The Hague, Netherlands and **Homayoun Hatami** of Paris, France received Seley Scholarships for outstanding leadership, professional promise, academic achievement and contributions to Sloan.

The Patrick J. McGovern Award aims to attract and motivate future leaders of entrepreneurial activities. Given for the second time this year, the award was established by MIT's most generous philanthropist (last year Mr. McGovern, SB 1959, pledged $350 million to MIT). The winner was **e-MIT**, a student-run portal that aims to aggregate, at a single web site, all entrepreneurship activities within MIT, and to connect outside interested parties (venture capitalists, angels, incubators and alumni/ae) to those resources.

Thirteen second-year MBA students received checks for helping to start e-MIT, and three first-year students who will co-chair e-MIT next year won an additional sum to support their effort.

Interim Dean of Science Robert J. Silbey (center) presented the 1999-2000 School of Science Teaching Prizes on May 24. Professors Tania Baker of biology (second from left) and Gregory C. Fu of chemistry (second from right) each received Undergraduate Teaching Prizes. Professors Ann M. Graybiel, the Walter Rosenblith Professor of Neuroscience (far right), and Mriganka Sur, the Sherman Fairchild Professor of Neuroscience and head of the Department of Brain and Cognitive Sciences (far left), received Graduate Teaching Prizes. Their complete citations and past winners are available at <http://web.mit.edu/science/teachingprize'00.htm>.

Photo by Laura Wulf

Students recognized for sports achievements

The Athletics Department recognized a number of students for their sports achievements during their years at MIT.

Malcolm G. Kispert Awards are presented to the male and female scholar/athlete of the year. This year's winners are **John C. Olsson**, a senior in electrical engineering and computer science (EECS) from Closter, NY; and **Mealani K. Nakamura**, a senior in mechanical engineering from Mililani, HI.

The Howard W. Johnson Award for male senior athlete of the year went to **Eric L. Chen**, an economics major from Topeka, KS.

The Betsy Schumacker Award for excellence in athletic competition by a female undergraduate went to **Caroline M. Purcell**, a sophomore in civil and environmental engineering from New York, NY.

The Pewter Bowl Award goes to a female senior who has shown the highest qualities of inspiration and leadership in intercollegiate athletics. This year's recipient is **Deborah S. Won**, a senior in EECS from Seoul, Korea.

The Admiral Edward L. Cochrane Award recognizes a male senior who has shown the highest qualities of humility, leadership and inspiration in intercollegiate athletics. The 2000 recipient is **Alan A. Sun**, a senior in management from St. Croix, Virgin Islands.

The Harold J. Pettegrove Award for outstanding service to intramural athletics was presented to **Helen J. Huang**, a junior in materials science and engineering from Greer, SC.

The Phillip Trussell Prize for male and female athletes who demonstrate skill, sportsmanship, and levity went to **Kevin B. McKenney**, a senior in mechanical engineering from Falmouth, MA, and **Alyssa S. Thorvaldsen**, a senior in civil and environmental engineering from Hingham, MA.

The Straight "T" Award, the highest award given for athletic excellence at MIT, went to students in the following sports:

Fencing—**Oliver J. Chadwick**, a sophomore in chemistry from London, England; **Evangelos L. Efstathiou**, a senior in management from Atlanta; **Benjamin M. Vandiver**, a senior in EECS from Lexington, MA; **Diane K. Allen**, a senior in chemistry from College Park, MD; **Caprice L.R. Gray**, a senior in chemistry from Burke, VA; and **Caroline M. Purcell**.

Field hockey—**Theresa M. Power**, a senior in mechanical engineering from Watertown, MA.

Gymnastics—**Sonja J. Ellefson**, a junior in earth, atmospheric and planetary sciences from Edina, MN.

Sailing—**Sean C. Fabre**, a senior in management from Mill Valley, CA; **Madhulika Jain**, a senior in EECS from Richardson, TX; **Erin K. Shea**, a senior in physics from Dublin, OH; and **Alan A. Sun**.

Skiing—**Jessica M. Kleiss**, a senior in mathematics from Shoreview, MN.

Tennis—**Eric L. Chen; Kelly J. Koskelin**, a sophomore in EECS from Pleasant Hill, CA; and **Mealani K. Nakamura**.

Indoor track and field—**Sean J. Montgomery**, a junior in mechanical engineering from Greentown, PA.

Water polo—**Jeffrey J. Colton**, a sophomore in materials science and engineering from Garden Grove, CA.

Physics students win awards

The Department of Physics has announced winners of the 2000 Orloff Awards for excellence in undergraduate physics research, scholarship and service. The $1,000 awards were established by Dr. and Mrs. Daniel Orloff in memory of their son Joel, who died in an automobile accident shortly after receiving his degree in physics from MIT in 1978.

The research awards were presented to **Mihai Ibanescu**, a senior from Piatra Neamt, Romania, for "research involving the development of a radically new all-dielectric waveguide that can reproduce the TEM mode previously associated only with metallic coaxial cables;" and **Daniel Dwyer**, a senior from St. Charles, MO, for "his perseverance and skill in evading apparently inevitable numerical instabilities and thereafter doing a masterful and thorough first study of the physics of collision-induced decay of metastable solitons." Both winners have submitted articles on their work for journal publication.

The scholarship awards for the highest GPA in physics went to graduate student **Dawen Choy** of Singapore and senior **Humberto Valdes** of Miami.

Service awards were given to seniors **Rafael Dinner** of Highland Park, IL, for his contributions as president elect of the Society of Physics Students; and **Gabriel Rockefeller** of Rochester, NY, for playing an essential role in the success of CyberTutor (a web-based physics tutor) and for his activities as president of Burton-Conner House and vice president of the Dormitory Council, particularly for his contributions to 1999 Freshman Orientation.

Eleven from School of Engineering are honored

The School of Engineering made the following awards to students and faculty in its 10 departments for 1999-2000.

Jennifer T. Law, a junior in electrical engineering and computer science (EECS) from Palo Alto, CA, and **Christopher H. Chou**, a sophomore in physics from Athens, GA, won Barry Goldwater Scholarships. The Barry Goldwater Scholarship and Excellence in Education Program was established by Congress in 1986 to pay tribute to Sen. Goldwater and to foster and encourage excellence in science, mathematics and engineering.

Chee We Ng, a senior in EECS from Singapore, received the Henry Ford II Award, presented to a senior engineering student who has maintained a cumulative grade point average of 5.0 at t™™he end of their seventh term and who has exceptional potential for leadership in engineering and in society.

Reinhold Rudenberg Memorial Fund Awards went to seniors **Fritz Pierre Jr.** of Nyack, NY (mechanical engineering); **Jason Lawrence** of Manhasset, NY (mechanical engineering); **David Earl Robison** of Sierra Madre, CA (Laboratory for Electromagnetic and Electronic Systems [LEES]); and **Warit Wichakool** of Thailand (LEES). The award was established in 1983 by Mr. and Mrs. Robert T. Howard to memorialize Professor Rudenberg (Mrs. Howard's father) and is given to students with outstanding undergraduate theses relating to energy conversion.

Four faculty members in engineering also received awards. The Junior Bose Award was presented to Professor **Paula Hammond** of Chemical Engineering. The award, established in 1995-96, is presented to the outstanding contributor to education from among the School of Engineering faculty members who are being proposed for promotion to associate professor without tenure.

Professors **Gareth H. McKinley** of mechanical engineering, **Leonard McMillan** of EECS and **Jacquelyn Yanch** of Nuclear Engineering received Ruth and Joel Spira Teaching Awards for Distinguished Teaching. The awards have been given since 1991-92 to one faculty member in EECS, mechanical engineering and nuclear engineering. The award is funded by a gift from the Spiras to acknowledge the tradition of high-quality engineering education at MIT.

Professor **Gareth H. McKinley** also received the Bose Award for Excellence in Teaching at the Institute's awards convocation (see article on page 7).

Awards bestowed for international studies

Fifteen research awards were made through MIT's Center for International Studies.

MacArthur Predoctoral Summer Grants on Transnational Security Issues were awarded to the following graduate students (all are in the Department of Political Science unless otherwise noted):

Danny Breznitz of Jerusalem, Israel—"Managing the Flood: The Politics of High-Tech Industry in the Global Economy." **Kelly Greenhill** of Lincoln, MA—"Forced Migration as an Instrument of Coercion: The Case of the United States and Cuba." **Heather Gregg** of Boston—"On Religion and War." **Natasha Iskander** of McLean, VA (urban studies and planning)—"Transnational Investment, Local Labor Markets, and Working Conditions: The Case of Tehuacan, Mexico." **Alan Kuperman** of New York, NY—"Tragic Challenges: How and Why Communal Groups Provoke Genocidal Retaliation."

Ali Lejlic of Skokie, IL—"Does History Matter?" **Jenny Lind** of Aptos, CA—"Contrition, Historical Memory, and Threat Perception in International Relations." **Sarah Lischer** of Somerville—"Refugees and the Spread of Conflict: Assessing the Evidence from the Great Lakes Crises." **Jeremy Pressman** of Somerville—"Lemmings or Leashes? Alliances as Restraining Devices." **Trudy Wilcox** of Cambridge—"Intellectual Property Rights in a Global Economy."

MacArthur Predoctoral Fellowships on Transnational Security Issues for the academic year 2000-01 also were awarded to **Jeremy Pressman** and **Trudy Wilcox.**

Mellon-MIT Inter-University Program on Non-Governmental Organizations (NGOs) and Forced Migration gave awards to **Ray Bonoan** of Tenafly, NJ ("The Cessation Clause: Principles and Practice") and **Daniel Metz** of Cambridge ("Relief for Internally Displaced People: The Performance of Indigenous vs. International NGOs"). Both are graduate students in political science.

A Luce Scholarship for work and travel in Asia went to Dr. **Sandhya Vasan** (SB in mechanical engineering, 1992) for work with international NGOs on health care policy.

The Social Science Research Council gave an International Predissertation Award to **Dean Karlan** of Cambridge, a graduate student in economics, for research and training in South Africa on the effects of credit and savings and village banking and microbusinesses on movement in and out of poverty.

ESG recognizes teaching

The Experimental Studies Group recognized eight students associated with the program.

Todd Anderson ESG Teaching Awards for sustained excellence in teaching by undergraduates at ESG were presented to **Jessica M. Kleiss**, a senior in mathematics from Shoreview, MN; **Alicia J. Hardy**, a senior in mechanical engineering from Philadelphia; and **Connie C. Lu**, a senior in chemistry from Miami. Dr. Anderson (PhD in chemistry, 1995) taught chemistry and supervised undergraduate chemistry tutors at ESG from 1991-95. He won the Goodwin Medal for excellence in graduate teaching in 1995.

The Peter and Sharon Fiekowsky ESG Community Award is the first annual monetary award for outstanding or sustained dedication to the ESG community. It was established by ESG alumnus Peter Fiekowsky (PhD in physics, 1979) and his wife Sharon to reward students who have exhibited dedication to bettering the ESG community. This year's recipients are **Caprice L.R. Gray**, a senior in chemistry from Burke, VA; **Jesse D. Wodin**, a senior in physics from Los Angeles, CA; **Jimmy A. Rising**, a freshman from Lowell, MA; **Toh Ne Win**, a sophomore in management from Ann Arbor, MI; and **Nirav B. Shah**, a junior in aeronautics and astronautics from Jericho, NY.

Mathematics awards go to five

The Department of Mathematics has given awards to five students.

The Jon A. Bucsela Prize in Mathematics, which recognizes distinguished scholastic achievement, professional promise and enthusiasm for mathematics, was awarded to senior **Benjamin Wieland** of Wynnewood, PA. The prize was created as a memorial by the parents of Mr. Bucsela, a member of the Class of 1984 from Atlanta, who died as a result of congenital heart problems during his senior year.

Graduate students **Alexander Perlin** of St. Petersburg, Russia, and **Catalin Zara** of Suceava, Romania, received the Housman Award for skill and dedication in undergraduate teaching. The award is supported by the Charles L. and Holly Housman Fund.

Bojko Bakalov of Karlovo, Bulgaria, and **Kiran Kedlaya** of Silver Spring, MD, both of whom expect to receive the PhD this week, received the Charles W. and Jennifer C. Johnson Prize for an outstanding research paper accepted in a major journal by graduate students in mathematics, established by the support of Charles and Jennifer Johnson (Mr. Johnson earned the Building Engineer degree from MIT in 1955).

Mr. Bakalov co-authored a paper in November 1999 entitled "On the Lego-Teichmuller Game" which will be published in a forthcoming issue of Transformation Groups. Mr. Kedlaya's article, entitled "The Algebraic Closure of the Power Series Field in Positive Characteristic" and written in March 1999, is to be published soon in the Proceedings of the American Mathematical Society.

11 in materials science honored

The Department of Materials Science and Engineering (DMSE) gave out awards to 10 students and a faculty member.

Outstanding Senior Thesis Awards went to **Billie Wang** of New Canaan, CT ("First Principles Study of the Magnetic Ground State and Thermodynamic Properties of Li_xMnO_2") and **Michael Tarkanian** of Brockton, MA ("3,500 Years Before Goodyear: Rubber Processing in Ancient Mesoamerica"). **Paulina Kuo** of Great Falls, VA won the Best 3B Internship Report Award ("Dynamic Tuning of Fiber Gratings with Thin Film Heaters").

Certificates of honor for achieving a perfect 5.0 grade point average were given to seniors **Harald Hoegh** of Oslo, Norway; **Paulina Kuo**; **Garry Maskaly** of New Milford, PA; and **Aaron Raphel** of Dedham, MA. Foundry Education Foundation Scholarships for Outstanding Students with an Interest in Metals Casting were presented to juniors **Robin Ivester** of Charleston, SC and **Nicole Zacharia** of Hinsdale, IL.

Juniors **Melissa Light** of Parkland, FL and **Albert Hung** of Los Altos, CA received Awards for Outstanding Service to the DMSE Community. **Pauline Kuo** was named Outstanding Student in the DMSE Class of 2000.

The John Wulff Award for Excellence in Teaching went to graduate student **Erin Lavik** of McLean, VA.

Nuclear engineering recognizes nine

The following awards were announced at the Department of Nuclear Engineering/American Nuclear Society's international dinner on April 26.

The Manson Benedict Fellowship, awarded to a graduate student for excellence in academic performance and professional promise in nuclear engineering, went to **Jacopo Buongiorno** of Milan, Italy.

The Roy Axford Award for academic achievement by a senior in nuclear engineering was given to **Amanda Johnsen** of Carlisle, PA. The Irving Kaplan Award for academic achievement by a junior in nuclear engineering went to **Winnie Yong** of Bogota, Colombia.

The Outstanding Student Service Award for exceptional services to the students, the department and the entire MIT community was bestowed on graduate students **Daniel Caputo** of Alder Creek, NY; **Julian Lebenhaft** of Deep River, Ontario; and **Richard Weil** of Glencoe, IL; and senior **Randi Cohen** of Jericho, NY.

The Outstanding TA Award for exceptional services to education by a teaching assistant went to **Li Lu**, a graduate student from Beijing, China.

The Ruth and Joel Spira Award for Distinguished Teaching to acknowledge "the tradition of high-quality engineering education at MIT" went to Associate Professor **Jacquelyn C. Yanch**. The PAI Outstanding Teaching Award (awarded by the student chapter of the American Nuclear Society) was given to Associate Professor **Kim Molvig**.

Accrediting body finds MIT 'extremely commendable'

■ **By Kenneth D. Campbell**
News Office

MIT has been reaccredited by the Commission on Institutions of Higher Education of the New England Association of Schools and Colleges, Inc.

The commission, in a letter received last Thursday by President Charles Vest, said continuation of MIT's accreditation "is based upon the commission's finding that the institution's fulfillment of the Standards of Accreditation is extremely commendable in virtually every respect.

"It is clear that the Institute, already peerless because of its impressive faculty, outstanding academic programs and capable leadership, is consciously and successfully reshaping itself in a rapidly changing technological and human landscape," the commission said upon completing the review begun in November 1999. The previous review was in 1989, and the next comprehensive evaluation is scheduled for fall 2009.

The commission said a fifth-year report (a requirement for all institutions) should emphasize at MIT, "matters related to our standards on student services, library and information resources, and physical resources."

The commission letter, the evaluation team's report, MIT's response and MIT's self-study are available on the web at <http://web.mit.edu/accreditation/>.

The commission said, "Central institutional planning, grounded in a strong mission statement, embraces both annual budget cycles and an episodic series of long-range plans. The Institute has also very ably managed the shift from a funding base largely dependent on federal monies to support from industry, other academic institutions and foreign governments, and has succeeded in stabilizing its extramural revenue stream."

The commission praised "efforts to diversify the student body and the faculty, as well as to respond to recently documented gender inequities.

"A particularly striking achievement is the positive outcome of the varied attempts to create a sense of community on the Institute campus; this has been accomplished through the efforts of the Task Force on Student Life and Learning, aided by the strong commitment of the central administration to this initiative, which have resulted in measures to develop integrated living-learning environments for undergraduates, and an impressive series of campus-wide events involving faculty, students and staff."

"A particularly striking achievement is the positive outcome of the varied attempts to create a sense of community on the Institute campus."
—Accreditation report

Stating that MIT "more than fulfills our standard on student services," the commission noted, "As the Institute itself recognizes, perhaps even more could be done through closer coordination between the administrative offices that oversee undergraduate education and student life, and by implementing additional strategies for involving graduate students and faculty in campus events."

LIBRARIES LAUDED

Regarding library and information resources at MIT, the commission said it was pleased to acknowledge "several initiatives designed to correct perceived deficiencies." It cited the recent completion of a library strategic plan; increased coordination between the libraries and the administrators responsible for information systems; and the development of a digital library. It also commended MIT's "plans to create a central, technologically advanced interdisciplinary library facility."

It said the visiting team (headed by Thomas Everhart, president emeritus of Caltech) cited "several specific areas that are now potentially inadequate, including digital library resources for graduate students and faculty, the computer infrastructure and the physical facilities, some of which are less than fully functional."

The commission added that "we were heartened to learn that the Institute has begun to respond in a productive way" to these concerns. It said MIT's current facilities "present a serious deferred maintenance challenge. The visiting team was surprised to discover, at such a distinguished institution, evidence of neglect and disrepair in several of the older buildings. We recognize that the Institute is well aware of the problem and has given it high priority."

Accreditation is "a continuing relationship that is reconsidered when necessary," according to the commission. It specified no length or term for the accreditation.

MIT humanities school adds 'arts' to its name

■ **By Sarah H. Wright**
News Office

HASS has changed its name—and the new name is HASS.

The School of Humanties and Social Science will be known as the School of Humanities, Arts and Social Sciences as of July 1. The change was approved by the Academic Council and the Executive Committee of the Corporation to more fully recognize the breadth and contribution of the arts at the Institute. It will be officially announced during the School's 50th anniversary celebration in October.

"From its beginning, MIT has been a place where creativity flourishes, no matter what the field, and the last several years have seen an even fuller blossoming of the arts within both the School and the wider MIT community," said President Charles M. Vest. "This change in the name of the School signals formally that the arts are essential to a complete educational environment and experience and are a vital part of the Institute."

Philip Khoury, dean of the School of Humanities, Arts and Social Sciences, said, "The addition of 'Arts' to our School's name recognizes the growth and success of MIT's academic programs in music, theater arts and creative writing. At long last, the arts will appear on MIT's marquis along with humanities, social sciences, architecture, planning, management, science and engineering. My colleagues in the School are delighted by this name change."

Noting the "vibrant development of the arts at MIT over the past 15 years," Associate Provost for the Arts Alan Brody said, "The change of our School's name to Humanities, Arts and Social Sciences sends a message to students, faculty and staff, as well as to the world at large, that we value and support the same serious pursuit of artistic inquiry and excellence that we see in the humanities and social sciences."

The School includes the departments of Economics, Linguistics and Philosophy, and Political Science, as well as autonomous sections in anthropology, foreign languages and literatures, history, literature, music and theater arts, and writing and humanistic studies. The School also includes the program in Science, Technology and Society; the Program in Women's Studies; the Program in Comparative Media Studies; and the Center for International Studies.

Mary Haller, director of communications in the Office for the Arts, commented, "While the arts are practiced and celebrated throughout MIT, the School of Humanities, Arts and Social Sciences clearly is home to many of the Institute's undergraduate curricular offerings in the arts, particularly those in music, theater and creative writing.

"The School is also home to our finest faculty artists in these three fields. Having the word 'arts' in the School's title will help raise awareness of this vibrant aspect of campus life and learning. The name change also underscores the Institute's commitment to the arts as a natural and important part of an MIT education," she said.

In the spirit of interdisciplinary and multimedia studies, HASS also hosts the Long Bow Video Internet Archive, a multimedia research and education tool about China produced by historian Peter Perdue, professor and head of the history section, and the Shakespeare Electronic Archive, an international multimedia resource directed by Professor Peter Donaldson, head of the literature section.

For more information on HASS and on its 50th anniversary celebration, contact Joseph Coen in the Information Center at x3-4796.

Shin death is ruled a suicide

The Suffolk County Medical Examiner's Office has concluded that the death of MIT sophomore Elizabeth Shin on April 14, four days after she suffered extensive burns, was a suicide. The immediate cause of death was a stroke and the effect of third-degree burns over 60 percent of her body, the medical examiner's office reported Tuesday.

Cambridge Fire Department Acting Chief Gerald Reardon said Tuesday his department had conducted extensive tests which concluded that the April 10 fire was caused by Ms. Shin deliberately igniting her clothing in her locked dormitory room. Chief Reardon said no accelerant was used in the fire.

Center for Learning and Memory tackles the brain

Miller probes individual neurons for clues to learning and memory

■ By Deborah Halber
News Office

Finishing college, saving for a down payment on a house or learning to play the cello all have something in common: they take years to accomplish. In that sense, they are uniquely human pursuits.

To figure out how our brains guide us through long-term projects in the face of endless distractions and disappointments is one of Earl Miller's goals. Dr. Miller, associate professor of brain and cognitive sciences in MIT's Center for Learning and Memory, studies the prefrontal cortex, the part of the brain most central to high-level cognitive function.

In humans, the prefrontal cortex is proportionally huge. This "most human" part of the brain is also called the brain's executive because it oversees all voluntary activity.

"The main thing we are interested in is the deepest issue in cognitive science, called executive or cognitive control. It governs how you decide what behaviors to engage in, how you make decisions, how you decide what to pay attention to, what to do with your life," Professor Miller said.

His laboratory is one of handful in the world to make strides in developing hypotheses about how the prefrontal cortex does its job.

"When I started graduate school, if you had told somebody, 'I'm going to tell you a little bit about how voluntary, goal-directed behavior works,' he or she would have said, 'You can't study that. That's a crazy topic.' But just in the past few years, we've actually developed some real hypotheses about how this all works."

Professor Miller, who studied psychology before undertaking neural science, said his team may some day be able to identify the roles played by specific neurons in learning and memory, although "the brain is arguably the most complex thing we know of. We've learned a lot in the past 50 years and certainly in the last 10 years, but I think we've just scratched the surface," he said.

BACK TO BASICS

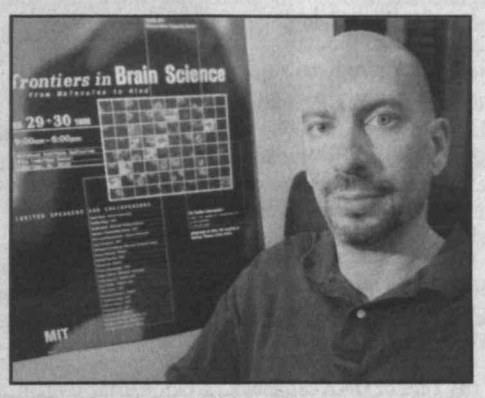
To figure out how the overall system works, Professor Miller looks at how single neurons communicate. Single neurons are the brain's most basic units, like the ones and zeroes on which computers are based.

"We're starting from the premise that the most important feature for neurons is their ability to extract information from experience," he said. "They need to be sculpted by experience, because virtually all voluntary behavior—everything we're saying and doing right now—is learned."

For example, when you enter a restaurant, you know from previous experience what to expect and what actions are appropriate. While memories of dining in a specific restaurant on a specific night are probably stored in the hippocampus, the prefrontal cortex extracts the general features of previous restaurants to give you a general rule of what it means to dine in a restaurant.

Understanding how different types of information are processed and mapped out all over the brain is important but difficult, because one needs to study millions of neurons simultaneously to see the whole picture. Based on knowledge of which functions are lost by people whose prefrontal cortex is damaged by disease or accident, Professor Miller has chosen 50 or 100 neurons to study at a time.

By recording the electrical activity of these groups of neurons in rhesus monkeys, he studies the ability of the prefrontal cortex to play a role in the monkeys' ability to direct their attention and their ability to bring a visual image to mind from long-term memory.



Earl Miller **Photo by Laura Wulf**

The monkeys are trained to perform specially designed computer games, which Professor Miller has used in a variety of experiments on recall, rule-learning and spatial sense in short-term memory. The games are designed to engage the monkeys' ability to pay attention, recall information from long-term memory, learn new rules and make decisions.

Some of the games test their ability to hold a particular goal in mind and persist in that goal through distractions. This ability is missing in people with neural psychiatric disorders. Individuals with disorders involving the prefrontal cortex lose the capability to guide their behavior in accordance with their goals.

If Professor Miller can identify which neurons or groups of neurons are responsible for this ability, it may be possible to design drugs that can address its loss.

THE BINDING PROBLEM

Another central question in cognitive neural science is the binding problem. Researchers know that information about what an object looks like and where the object is are stored in two separate sections of the brain and analyzed in separate parts of the visual system. The question is, where and how does this information come together?

"To develop representations of rules, of little models of behavior and tasks, requires piecing together a whole bunch of different information," Professor Miller said.

"We did an experiment that required monkeys to put together 'what' and 'where' in their minds. What we found is that neurons in the prefrontal cortex had activity that exquisitely represented and integrated both 'what' and 'where.' This provides a first clue on how this information, and perhaps even more diverse information, comes together in the brain."

Professor Miller and colleagues are the first to address this question in detail. While early results seem to flag the prefrontal cortex as a prime binding location, it also is possible that the information could be coming together elsewhere in the brain first.

"We're starting to march back through the brain, doing the same test from the highest level of the prefrontal cortex and going back into the brain in lots of different places to figure out where this comes together for the first time," he said.

This knowledge would allow us to understand how normal perception and cognition work, which could lead to drug therapies designed to alleviate the disruption of normal perception and cognition by neuropsychiatric diseases, Professor Miller said.

This work is funded by the National Institute of Neurological Disorders and Stroke, the National Institute of Mental Health, the RIKEN-MIT Neuroscience Research Center, the Pew Charitable Trusts, the McKnight Foundation, the Whitehall Foundation, the John Merck Fund and the Alfred P. Sloan Foundation.

Nedivi studies the importance of ongoing neural connections

■ By Deborah Halber
News Office

For a long time, researchers thought that if neural connections in the brain weren't built during a certain critical developmental period, they weren't built at all. By adulthood, our brains were thought of as hard-wired computers with no ability to change.

But Center for Learning and Memory researcher Elly Nedivi, who is seeking to zero in on the exact genes used in learning and memory, points out that we are made of biological materials that do not last a lifetime. The brain makes new proteins all the time, and she has found molecules in the mature brain that clearly have to do with structural rearrangements.

These changes are not as dramatic as those that take place during early development, but they are there. This means that even as adults, the more we use our minds, the more robust they can be. In the long run, scientists may be able to "turn on" specific genes to allow parts of the brain to fill in for those that have been damaged by accident, congenital problems, surgery or senility.

"If you could identify genes that are expressed at much lower levels in, say, older brains, you can say that maybe part of the deterioration you see in older, diseased brains has to do with the fact that specific genes are not there. Then you could try to see if there's any way that you could increase their expression or compensate for them," said Dr. Nedivi, assistant professor in brain and cognitive sciences.

CEMENTING CONNECTIONS

When we practice an action such as riding a bike or playing the piano or studying for the SATs, the connections between brain cells called synapses become stronger. Connections that do not get used eventually dwindle and disappear.

But Professor Nedivi wanted to know what is happening physically in these connections, and what makes a synapse that knows it's being used respond more strongly.

"What does it mean when we say that a connection is strong? Does it mean that there are more contact points between the neurons? Does it mean that with each signal there's more transmitter going out? Does it mean that the receiving side, the post-synaptic side, is more sensitive to this signal now? We want to understand the mechanism that creates strong synapses," she said.

"When we started, we had actually no idea of what we would be looking for. But we said we'll find out which molecules get turned on through brain activity, and through the kind of functions that these molecules carry out, we will be able to learn something about the mechanism."

PINPOINTING 'ACTIVE' GENES

Professor Nedivi and her research team thought long-term changes must involve "turning on" a single gene or handful of genes. The driving force for the changes must be the electrical activity that occurs when neurons are sending a signal or "talking" to other neurons. This activity can come from either sensory stimulation or from thinking.

The team looked for molecules that only give a signal when the neurons are active. The test they conducted, which turned out to be an order of magnitude more sensitive then conventional screens of this type, gave Professor Nedivi a big surprise: she found a whopping 360 genes that are turned on by brain activity, some of which might be involved in learning and memory.

"This made us change the way we thought about the problem. We realized that when synapses or connections were getting strengthened, you actually turned on this whole ensemble or gene set," she said.

"It would easier if there were just one gene involved, but I think that finding 360 makes more sense. Something as complex as learning and memory may need more than one type of threshold to be crossed in order to achieve a result. You may need different triggers for different genes or different levels of triggers.

"We found out that even though we were getting really a huge amount of genes turned on, it was not like every gene in your brain gets turned on at the same time when these neurons are active. It could be that the first stimulus turns on a subset of this group of genes that are kind of trigger-happy. Then, if you get a second stimulus within a certain amount of time, you get a second wave that could lead to longer term changes."

The type of molecules they saw the most were related to structural change, such as adding membrane and other synaptic components, or using proteases to eat away at the matrix to make room for growth.

"You have growth factors that induce the neurons to grow and signaling molecules that are related to that," Professor Nedivi said. "These things hinted to us that maybe what was happening, as a result of activity, was that there was actually structural change—that when the synapse is getting strong, it means that it's actually building more contact. You can imagine how a synapse would be stronger if there were more contact points between the pre- and post-synaptic cells."

Out of the 360 genes, Professor Nedivi zeroed in on a handful, which she called candidate plasticity genes or CPGs. She experimented with overexpressing one of these in frogs and saw that it led to obvious structural changes in neurons. The research team is now setting up experiments in a mammalian system.

Elly Nedivi **Photo by Laura Wulf**

THE BIOLOGICAL COMPUTER

The fact that Professor Nedivi had uncovered structural changes in an adult brain was "a little bit surprising and somewhat controversial in the sense that for a long time, people have been thinking that the adult brain is hard-wired—that any of these changes that we think about as learning and memory are happening at a diffused network level rather than as outright growth and new connections, new processes," she said.

Unlike a computer, the brain is made of proteins. "It cannot be that a connection that you are born with is going to be that same connection exactly for your whole life," Professor Nedivi said. "It means that even just to keep the connection as it is, you have to maintain it by making new proteins."

Like a well-used highway that gets repaired and widened more frequently than a quiet country lane, the maintenance appears to be regulated by the level of activity. An active neuron gets more general maintenance to the point where connections are actually increased.

While researchers agree that the adult brain has some plasticity—there are examples of stroke victims recovering function in spite of brain damage—seminal work has indicated that most of this gets established during the critical period, which for humans is the first few years of life.

Professor Nedivi says that while this period is indeed critical for setting up some of the brain's basic wiring, "there is probably just a little more degree of freedom than was previously thought," she said. "The good news is that you can induce that high level of activity reminiscent of the critical period.

"The more active you are, the more you're exposed to sensory stimulation and the more you use your mind, the more you can actually influence the strengthening of connections in your brain, even as an adult," she said.

This work is funded by the National Eye Institute, the National Science Foundation and the Ellison Foundation.

Gardeners invited to annual plant swap on June 9

Gardening enthusiasts are invited to bring their flora to the fourth annual MIT Community Plant Swap on Friday, June 9 from noon–1:30pm under the trees near the MIT Chapel.

The swap brings together MIT community members with a common interest in gardening and allows them to share extra plants, garden supplies and advice with one another. Participants can bring perennial plants that have spread or need to be divided, extra annuals (including vegetables) that don't fit in their gardens, house plants, or excess garden tools or decorative and clay pots.

Plant swap participants receive "vouchers" in exchange for what they bring to the swap and then use their vouchers for plants and supplies that others have contributed, so they can get new plants without spending any money. (Sorry, no vouchers for empty plastic pots.)

An added benefit is the participation of some of MIT's own gardening experts from Grounds Services in Facilities and from Endicott House, who will be on hand to answer questions and give advice.

Participants may drop off plants and pick up vouchers starting at 8:30am on June 9, but the swapping won't begin until noon. Plants left over at the end of the swap will be given away.

The plant swap is sponsored this year by the MIT Gardeners' Group (under the auspices of the MIT Women's League). The Gardeners' Group, which has a web site at <http://web.mit.edu/womensleague/gardeners>, is open to all members of the MIT community. An e-mail alias for gardeners has been established; anyone who would like to be added to the list or who have questions about the plant swap may e-mail <gardeners-sc@mit.edu> or call x3-2269.

Final phase of genome sequencing launched

Sixteen genome centers around the world, including the Whitehead Institute/MIT Center for Genome Research, have launched the final phase of the Human Genome Project. The milestone marks the transition from the initial phase of generating a "working draft" of the human DNA to the final phase of producing the complete "finished" sequence.

Phase One was launched in March 1999 and has produced coverage of the vast majority of the human chromosomes in 14 months, at a total cost of about $300 million. The last remaining DNA from this first phase is already in the centers' sequencing pipelines and is flowing into public databases at a rate of 10,000 DNA letters per minute; they will all be deposited by mid-June.

Phase Two will involve producing a "finished" sequence of the human genome, by filling the gaps in the sequence and by increasing the overall sequence accuracy to 99.99 percent.

"The progress in human DNA sequencing has been stunning," said Professor Eric S. Lander, director of the Whitehead Institute Center for Genome Research, who attributed the acceleration to advances in automation, informatics and organization at the various centers. "The early projections have been left in the dust. The result has been an information explosion that is fueling a revolution in biomedical research."

The goal of the first phase was to create a "working draft" covering 90 percent of the euchromatic portion of the human DNA, by sequencing large "clones" representing segments from the genome. Draft sequence allows scientists to directly identify the vast majority of the human genes, although the sequence itself still contains gaps and uncertainties.

The "working draft" is assembled in a two-step fashion. Each clone is first "assembled" from its sequence information. The various clones can then be "assembled" together into a "layout" on the human genome, based on their chromosomal location.

The first comprehensive "layout" of the human genome was constructed in mid-April by scientists in the Human Genome Project international consortium. The layout shows the chromosomal positions and the detailed relationships among the more than 20,000 large clones used to sequence the genome; it also spotlights the remaining segments to be covered. The clones in the layout also have immense value beyond their immediate role as an aid in sequencing: they provide a permanent resource for human genetics because they can be used for direct biological studies of gene function.

"The progress in human DNA sequencing has been stunning. The early projections have been left in the dust. The result has been an information explosion that is fueling a revolution in biomedical research."

—Prof. Eric Lander

The sequence information from the "working draft" has been immediately and freely released to the world, with no restrictions on its use or redistribution. The information is scanned daily by scientists in academia and industry, as well as by commercial database companies providing information services to biotechnologists.

The "working draft" has allowed human geneticists to find genes responsible for dozens of inherited diseases—including breast cancer, hereditary deafness, stroke, epilepsy, diabetes and various skeletal disorders. The draft sequence is also being used as a resource by the SNP Consortium, an industry-academia collaboration, to identify sites of DNA sequence variation in the human population. Finally, it has propelled many basic biological studies. For example, researchers have recently used it to discover the molecular basis of the sense of taste.

The process involves two activities: (1) performing additional sequencing from the clones used in Phase One and (2) selecting and sequencing some additional clones from chromosomal segments not covered in Phase One.

Although the "working draft" sequence allows for the recognition of genes themselves, the higher accuracy and completeness of the "finished sequence" makes it a gold-standard reference that can be readily compared to individual patients' DNA to identify specific single-letter mutations causing hereditary diseases.

Cambridge First to honor local arts groups

The eighth annual Cambridge First Day at MIT celebration will honor four Cambridge institutions on Tuesday, June 6 for their commitment to the advancement of the arts in the community.

Awards will be presented to the Dance Complex, the Cambridge Multicultural Arts Center, the Community Art Center and the Cambridge Community Chorus for their role in advancing the arts in Cambridge. Each will receive a $1,000 check and a framed Cambridge First Day 2000 certificate.

The program begins at 11am in the Mezzanine Lounge of the Stratton Student Center. Alan Brody, associate provost for the arts, will be the keynote speaker. Cambridge City Manager Robert W. Healy will present the 2000 awards. Mayor Anthony D. Galluccio will also speak. The awards ceremony will be followed by an informal buffet luncheon.

Established in 1993 by President Charles M. Vest, Cambridge First Day provides an opportunity for MIT to express its appreciation to the Cambridge community for the vital partnerships that exist among MIT and local businesses, public officials and residents of Cambridge. The event symbolizes the Institute's and the City's shared vision for the community.

Jointly planned and hosted by MIT and the City of Cambridge since 1997, Cambridge First Day focuses on a different theme every year. In 1993, MIT honored Cambridge businesses with whom the Institute has been working for 50 years or more; in 1994, minority-owned and women-owned businesses; in 1995, small businesses; in 1996, biotechnology companies; in 1997, entrepreneurship; in 1998, culinary arts; and in 1999, architecture.

Event offers journalists an inside look at Whitehead

Imagine being able to look into a crystal ball to see what the new millennium holds for science and medicine. Will gene therapy revolutionize the way physicians treat disease? Will police officers arrive at crime scenes sporting handheld DNA sequencers? Will xenotransplantation, cloning and tissue engineering offer solutions to today's shortage of available organs?

The Whitehead Institute's fifth annual press seminar, "Beyond the Scientific Frontier," offered local and national reporters an opportunity to gaze into that crystal ball. Leading scientists shared their predictions at the May 10 event about the hottest trends at the frontier of biomedicine and separated myth from reality on cutting-edge topics such as DNA arrays, stem cells, forensics and cloning.

Speakers included George Daley of the Harvard/MIT Division of Health Sciences and Technology; Jill Mesirov, associate director for informatics at the Whitehead/MIT Center for Genome Research (CGR); Professors of Biology Richard Young, Paul Matsudaira and Rudolf Jaenisch (all of whom do research at Whitehead); Laurence Young, the Apollo Program Professor of Astronautics; Robert Langer, the Germeshausen Professor of Chemical and Biomedical Engineering; Richard Mulligan of Children's Hospital; Valina Dawson of the Johns Hopkins University School of Medicine; and Christiane Ferran of Beth Israel Deaconess Medical Center.

In a luncheon talk, Professor of Biology Eric Lander, director of the CGR, described the challenges of sequencing the human genome as well as the road ahead for the growing field of genomics. The day culminated with a tour of the sequencing center—the largest publicly funded center in the world—where reporters had the opportunity to see firsthand a biology lab of the 21st century.

Participants in the press seminar included reporters and editors from the Boston Globe, the Wall Street Journal, US News and World Report, the Los Angeles Times, Nova, Newsday and the Associated Press. The seminar serves a dual purpose for these journalists, providing them with a better and more in-depth understanding of the future of biomedicine, and giving them new ideas and resources for their stories.

Looking for old Tech Talk articles?

All issues of Tech Talk published since 1990 are available on the web. Go to:

http://web.mit.edu/newsoffice/tt

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INSTRUCTIONS: Ads are limited to one (of about 30 words) per issue and may not be repeated in successive issues. Ads may be resubmitted after skipping a week. Ads/renewals are not accepted via telephone or fax. All must be accompanied by full name and extension (or proof of MIT affiliation).

- **E-mail address (return address must be mit.edu): <ttads@mit.edu>**
- **Interdepartmental/Walk-in address: Calendar Editor, Rm 5-111.**

Please note that all Tech Talk ads are provided to the Internet on the date of publication, which makes them accessible world-wide.

All extensions listed below are campus numbers unless otherwise specified, i.e., Dorm, Lincoln, Draper, etc.

MIT-owned equipment may be disposed of through the Property Office.

Deadline is noon Friday before publication.

■ FOR SALE

New black iron F-sz canopy bed w/new top-of-line double sided padded matresses, all linens incl, asking $900 or bst. Jill x8-5309 or 781-289-1939.

Two orchestra seats for "A Moon for the Misbegotten," 6/14/00 evening performance, Walter Kerr Theatre in NYC, best offer takes them. Alan <arostoff@mit.edu>, x3-9359.

Indigo Girls concert tickets, Sat, June 10, Fleet Boston Pavilion, section 3, row CC, seats 19-24, will sell for my cost, $42.50/ea. Patty x8-6744 or <pattys@mit.edu>.

M's bike, 1996 Trek, Cross Model #730, ridden 5 times or less, $200. Contact: 781-646-9487.

Stereo amplifier, NAD 304, like new, original box and all papers, $200. Paul, x8-6763 or <bethge@mit.edu>.

Drumset, Cannon Percussion, incl 2 mounted toms, floor tom, snare and bass drum-hardware, hi-hat stand, snare stand, tom mounts, bass drum pedal, $300. Scot 781-246-1139, <dmcgurl@mit.edu>.

9 x 12 blue rug, indoor/outdoor, exc cond. Donna 617-625-8569.

Westinghouse 18 cu. ft. frost-free refrigerator w/ separate freezer on top, almond color, you pick up in W. Newton, Mass., $100. Call 781-444-0424 after 6pm.

Stanley #78 rabbet plane, $55. Call 617-547-5357.

12" Craftsman band saw, good cond, $75; double ss sink 22x32x7"deep, good cond, $25. Ray 978-681-1812.

New Kunnan graphite golf clubs, 3 woods w/covers, 8 irons, bag, glove, Etonic shoes 8 1/2 M, white sneaker style, water skis, wet suit, fishing equip, Sharpcamcorder. Stan x3-2767 or 617-471-6071.

■ ANIMALS

Free: two beautiful black and white kittens, about 6 wks old. Contact: 225-7636 or <ishut@mit.edu>.

■ VEHICLES

1986 Toyota Camry Dx, gd cond, 11.6K, runs grt, auto, a/c, Edmund trade-in value $1275, askg $1000. Contact: 617-629-0309 or <wangzhe@asia.com>.

1989 Jeep Wrangler, blue/grey int, 5-sp, 96K, org 6 cyl, hard/soft top, $6500 or bst. Contact: <mmurphy@mit.edu or 776-5848.

1990 Honda Civic DX, 2-dr htchbck, a/c, 5-sp standard, 64K mostly hwy grt cond, 30-36 mpg, $4500 or bst (Blue Book $4735). Contact: <cshm@mit.edu>.

1990 VW GTI red, 5-sp, a/c, sunrf, AM/FM/cass, 105K, alloy rims, nw shocks/brks, recent exh, exc cond, $3800 or bst. Sheila, Draper x8-1519 or 978-369-9370 or <sflory@alum.mit.edu>.

1993 Geo LSI red convertible, 2-seater, showroom cond, AM/FM/cass, askg $3300. Contact: x3-4286 or 781-933-6741.

1995 Ford Explorer XLT, 4-dr, 4WD, auto, 6 cyl, 65K, ps, pb, pw, a/c, AM/FM/cass, CD, sun rf, roof rack, alloy wheels, new tires, grt cond, $12,900. Contact: 617-776-4224.

1995 Dodge Stratus sedan, 58K, 5-sp, AM/FM/cass, 2 air bags, cc, a/c, exc cond, reliable, $5500 or bst. Carsten x3-5681, 617-441-3039 or <steffin@mit.edu>.

1995 Mazda 626 LX, exc cond, white, 4-dr, 65K, auto, a/c, ABS, pl, pw, alarm, CD, nw trw, muffler, battery, book $9110, askg $8200. Contact: 617-576-6796 or <jgan@mit.edu>.

1997 Coachman Catalina 364 travel trailer, 36' w/slide out, fully equipped, 1 ownr, slps up to 9, mint cond, askg $16,000. Tony x3-3922.

1998 Dodge Neon Sport, 2-dr, 41K, 150HP, auto, all pwr, sunrf, a/c, cc, nw snow tires, free tire changes (for sale at end of June), askg $7,200. Nelly Vlisma 978-682-4568, <georgiap@mit.edu>.

■ HOUSING

Belmont: furn oversized 4BR apt, gracious Colonial Revival, high ceilings, hdwd, W/D, d/w, disp, prkg, minutes to T, Cambridge, avail Aug or Sept, $3,400/mo+. Contact: 617-489-2403.

Cambridge: Cent Sq, 1BR in lux 3BR apt, quiet, laundry, cable, hdwd, $800//mo. Contact: 617-576-2674, 617-491-5465, 646-382-8233, <rvos@mit.edu>, <mmaisel@mit.edu>.

Cambridge, W: condo townhouse, lrg 2BR, furn, spacious, 2 decks, garage, access to pool, jacuzzi, sauna, opposite park, golf, tennis, play area, avail May 19, $2000//mo. Phone 781-646-8545.

Cambridge: spacious apt to sublet 9-1/2 Center St, June 15 -Aug 31, can house family w/ children or 3-5 single people. Contact: <abizer@mit.edu> or 617-576-3911.

Cambridge: Central Square area, 1BR apt, $750/mo incl all utilities, avail June 1. Call 617-864-6210.

Cambridge: furn rooms in single home, walk to Draper, MIT, & subway, $250/wk, $875/mo, $75/night, prkg extra. Jan Blair, Draper x8-2843 or 617-576-5125.

Cambridge: furn rm for rent in single home, located in Hvd Sq, 3 blocks from subway, 30 min walk to MIT, lrg room, beaut wood flrs, yd, deck, avail 6/1, $795/mo. Contact 617-497-0425.

Cambridge: 1BR, completely furn, good stuff, v comf, enclosed yard, laundry, bicycles, 10 min walk to Kendall Sq, avail 6/1, $1350. John 781-665-4836, <johnnatale@aol.com>.

Lake Winnepesaukee, NH: chalet for rent, 2BR w/loft, slps 8, 5 min walk to private beach, $450/wk. Mary or John 617-328-3175.

Truro: wonderful, secl 3BR, 2b house, porch, fplc, outdr shower, on hill overlookg water, $1200-1700/wk, May-Oct. Call x3-3461 or <alcohen@mit.edu>.

Venice, Italy: 2BR, nr San Marco Sq, shops, transp, gd light for artists, US$750/wk, US$1,250/mo, see <www.venice-rentals.com/v141.html>. Jill <jilstudio@libero.it> or 39-0347-8515202.

White Mts, NH: Waterville Estates, 3BR, 2b, vw, pond, htd pools, hot tub, tennis, biking, hiking, 5 mins to golf, no pets, non-smkg unit, avail July & Aug, $545/wk. Chuck, Draper x8-2957.

York, Maine: 3BR house w/ocean vw & beach access, slps 6, quiet setting on dirt road, idyllic retreat, VCR, equipped kitchen, laundry facilities, avail June, July, Aug. Call x3-7558.

■ WANTED

New faculty seeking 3-4BR home for rent from Aug/Sept 2000 for extended period. Email <rbatista@mit.edu>.

Stop binge eating: Clinical Research Ctr sks volunteers for free appetite control study. If snacking at night makes losing weight by day impossible, we may be able to help. Call x3-3096 or <janine@mit.edu>.

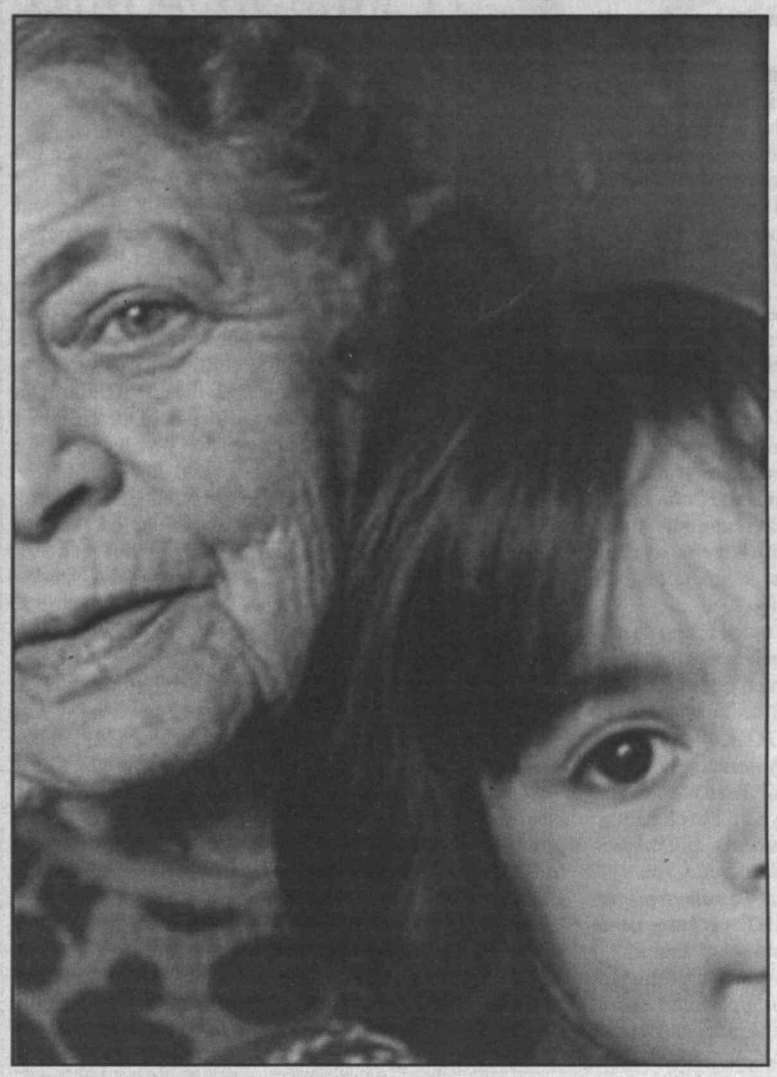
Manual typewriters wanted (donations or minimal price) for a missionary project in Haiti. Mary Kowal, Linc x7712.

Visiting prof looking for summer sublet nr MIT, furn 2BR apt pref, 7/15-8/30. Contact <yjkim@wow.hongic.ac.kr>.

Participants wanted for experiment dealing w/attention & memory for rapidly presented words, $10, 40-60min, normal or corrected-to-normal vision. Daniel, x3-5756, <mollylab@psyche.mit.edu>.

Wanted: copy of "MIT Lincoln Laboratory: Technology in the National Interest," by Freeman, 1995. Contact: <klund@LL.mit.edu>.

32 students recognized for their achievements in the arts



Untitled, *by Vitaly Napadow, who took second place in the Schnitzer Prize in the Visual Arts competition.*

A total of 32 MIT students were recognized for their accomplishments in the arts at various ceremonies held on campus.

Thomas Cork, a senior in theater arts and chemistry from Tampa, FL, received the Louis Sudler Prize in the Arts, presented to a graduating senior who has demonstrated excellence or the highest standards of proficiency in music, theater, painting, sculpture, design, architecture or film. The prize is made from a fund established by Louis Sudler, a performer in the arts and an arts patron from Chicago.

Laya and Jerome B. Wiesner Awards went to **Gábor Csányi**, a graduate student in physics from Budapest, Hungary; **Jason W. Krug**, a senior in music from Indianapolis, IN; and **Sean J. Sutherland**, a senior in electrical engineering and computer science (EECS) from Edinboro, St. Vincent and The Grenadines. The award, honoring Dr. and Mrs. Wiesner for their contributions to the arts at MIT, was established in 1979 by the Council for the Arts at MIT. They go to students, organizations and/or living groups for achievement in the creative and performing arts.

The Harold and Arlene Schnitzer Prize in the Visual Arts recognizes artistic talent and creative concepts based on a body of work and written personal statements. The 2000 recipients are **Hiep Nguyen**, a graduate student in civil and environmental engineering from Quincy, MA; **Vitaly J. Napadow**, a graduate student in the Harvard-MIT Division of Health Sciences and Technology from Timonium, MD; and **Changhuei Yang**, a graduate student in EECS from Singapore. The winning works are on view through June 10 at the Wiesner Student Art Gallery in the Stratton Student Center.

MUSIC AWARDS

Gregory Tucker Memorial Awards in recognition of exceptional ability in composition, performance and/or music historical studies went to **Damon M. Lewis**, a graduate student in EECS from Woodbridge, VA; and **Laurel P. Smith**, a non-graduating senior in electrical engineering and computer science and music from Oakton, VA.

Ragnar and Margaret Naess Awards in recognition of exceptional talent and commitment to private performance study went to **Bonny M. Lee**, a freshman from Woodbury, MN; **Youssef M. Marzouk**, a graduate student in mechanical engineering from Warson Woods, MO; **Dawn Perlner**, a junior in math and music from Acton, MA; and **Jo Marie G. Sison**, a junior in management from Aurora, IL.

Philip Loew Memorial Awards, which recognize creative accomplishment in music, went to **Daniel S. Jochelson**, a senior in music and EECS from Dallas; **Jeff I. Lieberman**, a senior in physics and math from Vero Beach, FL; **John Z. McKay**, a senior in music and chemical engineering from Easton, PA; and **Ivan D. Middleton**, a junior in mathematics and music from Adrian, MI.

Oladotun A. Fashoyin, a senior in computer science and engineering from Delran, NJ, and **Rosalind K. Takata**, a senior in mechanical engineering from Arlington, MA, won Brad and Dorothea Endicott Awards in recognition of distinguished service and musical contribution to the program in world music.

The MIT Symphony Orchestra held a concerto competition on April 22 in Killian Hall. **Jonathan Lee**, a sophomore in EECS from Salt Lake City, UT, won first place for his rendition of Tchaikovsky's *Piano Concerto*. He will perform this concerto with the orchestra during the upcoming academic year. Second place went to **Rachel Levinson**, a junior in materials science and engineering from Highland Park, IL, and third place went to **Mary Farbood**, a graduate student in media arts and sciences from Somerville, MA. **Ivan Middleton** was awarded a Special Mention.

THEATER AWARDS

The Joseph D. Everingham Award, which recognizes a single creative outstanding performance or notable creative accomplishments in theater arts by a graduating senior, went to **Sarah R. Cohen**, a senior in biology from Davis, CA, and **Marketa Valeterova**, a senior in biology from Prague, Czechoslovakia.

Ms. Cohen was honored for her performances in the Shakespeare Ensemble's *Macbeth* (playing Banquo), *Measure for Measure* (Mariana/Francisca/Elbow/Provost), *Pericles* (Gower) and *A Midsummer Night's Dream* (Bottom); and as Mme. Parnelle in Dramashop's production of Moliére's *Tartuffe*.

Ms. Valeterova was cited for her varied dramatic and comic roles in the Shakespeare Ensemble's *King John* (Prince Henry/Chatillon), *Macbeth* (Lady Macduff), *Fuente Ovejuna* by Lope de Vega (Laurencia), *Measure for Measure* (Isabella/Julietta), *Pericles* (Marina) and *The Taming of the Shrew* (Bianca), and in Dramashop's production of Brecht's *The Good Person of Sezuan* (Shen-Teh).

The Edward S. Darna Award, presented to a graduating senior who has demonstrated excellence in theater arts and made a substantial contribution to the life of theater on the MIT campus, went to **Patrick Anderson**, a graduate student in EECS from Anchorage, AK.

Theater Arts also recognized a graduate student whose "dedication to the performing arts at the Institute has been exceptionally brilliant." A special plaque was presented to **Kortney Adams** of Cambridge, a master's candidate in civil and environmental engineering. The award praises her performances in several productions as well as her work in the MIT Costume Shop, where she produced "craftsmanship of particular distinction."

OTHER AWARDS

I. Austin Kelly III Essay Prizes, awarded to MIT undergraduates for scholarly or critical essays judged to be outstanding in one of the humanities fields or some interdisciplinary combination, went to **Will Koffel**, a senior in computer science and engineering and music from Framingham, MA, for his essay, "Fortitude of Ideals—Aaron Copland's Changing Styles"; **Jason W. Krug** for his essay, "Bartók's Concerto for Orchestra: Pinnacle of a Genre;" and **Jason H. Wasfy**, a junior in chemical engineering, for his essay, "Curtailing Tobacco's Global Threat."

Kelly-Douglas Traveling Fellowships, presented to MIT juniors for travel which supports study in the humanities or arts, were awarded to **Delphine Nain**, a junior in EECS from St. Antoine, France for travel to Paris to work on her project, "Nature and Culture in the Modern Parisian Landscape" and to **Philip Osafo-Kwaako**, a junior in chemical engineering and economics from Accra, Ghana, for travel to Ghana to work on "Gender Discrimination in Ghana: To What Extent Do Ashanti Parents Favor Their Sons Over Daughters?"

The 2000 Vera List Prize Competition in Art and Writing, presented by the List Visual Arts Center in recognition of exceptional expression on some aspect of contemporary art, was awarded to **Carl W. Steinbach**, a junior in EECS from Sudbury, MA, for his essay on "Islam and Islamic Geometric Art."

Arts at MIT

■ Arts News

■ Associate Professor **Brenda Cotto-Escalera** directs the Theater Offensive's production of *Immaculate Infection*, the play that asks, "How can a spicy Latina housewife and cranky Jewish diva cure AIDS? It might take more than chicken recipes." The show runs Thursdays and Fridays from June 8-24 at the Boston Center for the Arts' Black Box Theater. For more information, call 426-5336.

■ On June 30, the Rockport Chamber Festival will present a preview of *Song of the Silkie*, a work for string quartet and baritone, with text by playwright **Laura Harrington** and music by **Elena Ruehr**, both lecturers in the music and theater arts section.

■ "When you consider that maybe one in four of MIT's students might just as well have qualified for admission to the New England Conservatory, the anecdotal correlation between music and the sciences acquires evidentiary weight," wrote Boston Globe correspondent Michael Manning in his review of the **MIT Symphony Orchestra**'s May 12 concert. Mr. Manning praised the orchestra's "solid musical values," conductor **Dante Anzolini**'s "simple, unaffected direction," and noted that pianist **David Deveau** (soloist for Beethoven's *Emperor* concerto) "stressed lyricism over grandeur... [taking] pains to illuminate, even manipulate the harmonic rhythm, exposing chordal contours submerged in the texture, stressing leading tones and upbeats to gild the stately masterpiece with flecks of detail."

Institute ■ Arts

For more arts-related information call the 24-hour hotline at 253-ARTS or consult the World Wide Web at <http://web.mit.edu/arts>.

* Open to public
** Open to MIT community only

May 31-June 11

■ MUSIC

2000 MIT Artists Behind the Desk Concert*—May 31: Pianist Sally Honda, senior secretary, Technology and Development Program, peforms informal salon music including pieces by Beethoven, Debussy and Ginastera. **June 5:** Greg Sands, administrative assistant, chemical engineering/materials science and engineering performs with his Sax Quartet. **June 6:** Anne Rhodes, senior office assistant in architecture, in a traditional yet eclectic classical recital, including art songs by Brahms and Satie, cabaret and show tunes by Kurt Weill and an aria and a duet from Mozart's *Don Giovanni*. All at noon, Killian Hall. x8-0777.

MIT Summer Philharmonic Orchestra Auditions. George Ogata '92, founder, music director and conductor. Now in its fifth season, the 100-member orchestra will perform Mahler's Symphony No. 9 in a concert on Aug 5. Rehearsals held Wednesdays, June 28-Aug 3, 7-10pm, Kresge Aud. Schedule an audition with George Ogata, 236-2178 or <gogata@mitspo.org>.

■ READINGS

2000 MIT Artists Behind the Desk Literary Arts Series*—June 1. Storyteller Raelinda Woad. noon, Killian Hall. x8-0777.

■ EXHIBITS

List Visual Arts Center* (E15): Premier of *Flying: Practical Training for Beginners*. New film, installation, drawings, sculptures & an artist's book by NY-based artist Luca Buvoli. ***Experiments in the Everyday: Allan Kaprow and Robert Watt—Events, Objects, Documents*.** More than 80 works by two artists at the forefront of the 1960s American avant-garde. Both shows run through July 2. Hours: Tues-Thurs & Weekends 12-6pm; Fri 12-8pm; closed holidays. x3-4680.

MIT Museum* (N52): *Flashes of Inspiration: The Work of Doc Edgerton*. Long-term installation celebrates the life & work of Prof Harold ("Doc") Edgerton (1903-1991), whose work with stroboscopic light redefined photography. **Ongoing Exhibits:** *Gestural Engineering: The Sculpture of Arthur Ganson*; *LightForest: The Holographic Rainforest*; *Holography: Artists and Inventors*; *MIT Hall of Hacks*; *Light Sculptures by Bill Parker*; *Math-in-3D: Geometric Sculptures by Morton C. Bradley, Jr.*; *MathSpace*. Admission: $5; $2 students/seniors; $1 children 5-18; free with MIT ID. 265 Mass Ave. Tues-Fri 10-5, Weekends 12-5. x3-4444.

Compton Gallery—*Observing the Observers...* Exhibition by MIT Artists in Residence (Haystack Observatory) Susan Gamble and Michael Wenyon, who employ imaging technologies and mapping methods used by astronomers to document the astronomers themselves and their environment. Through June 16. Compton Gallery (Rm 10-150). Weekdays 9am-5pm. x3-4444 or <http://web.mit.edu/museum/exhibits/compton.html>.

The Dean's Gallery—*Every Shadow Has a Name*. Gelatin silver landscape photographs by David Akiba. Through June 14. The Dean's Gallery, Sloan School of Management, E52-466. Weekdays 9-5pm. x3-9455 or <http://web.mit.edu/deans-gallery/www/>.

Institute Archives and Special Collections Object of the Month. May: *Photograph of Corona by Harrison W. Smith*. MIT men availed themselves of Southern hospitality in rural Georgia during the 1900 total solar eclipse. **June: Sonar chart from Harold Edgerton's 1964 search for Spanish Armada wreck.** Hallway exhibit case across from Rm 14N-118. x3-5136 or <http://libraries.mit.edu/archives/>.

Rotch Visual Collections: *Ralph Adams Cram - an Apollonian Architect*. Photographic exhibit by Russell Lovell of selected ecclesiastical works in New England. May 15-July 31. Rotch Visual Collections, MIT Libraries (Rm 7-304). Display cases next to Rm 7-304. x3-7098.

Schnitzer Prize Winners' Exhibition. Featuring the three student winners of the 2000 Schnitzer Prize in the Visual Arts: first place—Hiep Nguyen, second place—Vitaly J. Napadow, third place—Changhuei Yang. Through June 10. Wiesner Student Art Gallery, Stratton Student Ctr. x3-7019.

***SEAt*, a kinetic sound sculpture by Diane Willow.** Willow, currently an Artist in Residence at MIT, explores our relationship with nature and technology in the urban environment. Hosted by the Alumni Association. May 31-June 5. Sala de Puerto Rico. x3-8089.

■ OTHER

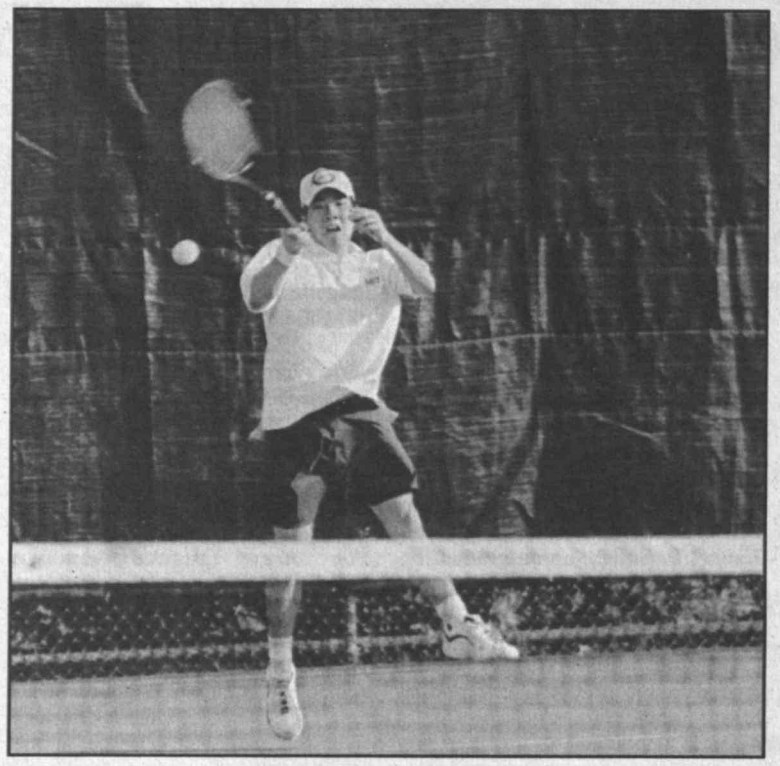
Applications for Wiesner Student Art Gallery.** All students welcome to apply to put up an exhibit. x3-7019.

Tech Night at Pops features MIT East African ensemble

Although Boston's Symphony Hall is far from sub-Saharan Africa, the famed auditorium will pulse to East African rhythms as MITCAN, MIT's East African performance ensemble, makes its Boston Pops debut on Thursday, June 1 at 8pm.

Boston Pops laureate conductor John Williams will conduct the program for the 103rd annual Tech Night at Pops, which also features works by Mr. Williams, Aaron Copland, the overture to Frank Loesser's *Guys and Dolls*, a Hoagy Carmichael Suite and a tribute to Frank Sinatra, concluding with MIT's alma mater, *In Praise of MIT (Arise, All Ye of MIT)*. A post-Pops reception will be held at Symphony Hall.

Any tickets still available for Tech Night at the Pops will be sold on a first-come, first-served basis on Thursday, June 1 at La Sala de Puerto Rico from noon-6pm (limit 10 tickets per person). Contact Amy Seybold-Burke at x3-8216.



Eric Chen in game action. **Photo by Al Porreria**

Tennis team ranks among top eight

(continued from page 1)

Institute has ever produced and leading the Engineers to a place in the top eight teams in the nation.

At the NCAA national tournament in Kalamazoo, MI two weeks ago, Mr. Chen only added to his many laurels. In the team competition, he defeated the University of California at Santa Cruz's best player, who was ranked first in the country in Division III. In the individual portion of the tournament, Mr. Chen advanced further than any MIT player ever has, winning two rounds and earning All-America status for the third consecutive year. And finally, he topped off his stellar collegiate career by earning the national Arthur Ashe Award for Sportsmanship.

Mr. Chen arrived on campus as a freshman from the Hotchkiss School in Connecticut and stepped right into the number one singles and doubles position at MIT. The Topeka, KS native had toyed with the idea of attending a tennis school, but the lure of an MIT education and the prodding of his parents tilted the scales in MIT's favor.

"Sports is parallel to other things in life," said Mr. Chen. "You work hard, you meet challenges, you become a better competitor, and you learn to keep your temperament in check. Tennis has helped me keep balance."

"Eric was very mature when he came to MIT, and he has consistently displayed that," said Associate Professor of Physical Education Jeff Hamilton, the men's tennis coach and winner of the Division III Coach of the Year Award.

Mr. Chen's other awards include the GTE College Sports Information Directors Academic All–America team, and the MIT Athletic Department's Howard Johnson Award given to the male senior athlete of the year. Twice he has been named to the New England Women's and Men's Athletic Conference (NEWMAC) All-Conference team as number one in singles. He was the number two ranked player in Division III in the East Region, and MIT has nominated him for a prestigious NCAA postgraduate scholarship.

"Eric's development has been amazing. We threw him to the wolves as a 16-year-old and he has improved every year," said Coach Hamilton, referring to the older and larger competitors Mr. Chen faced on the court.

The men's tennis team finished the season with a 23-2 record, winning its first 21 matches. It was the runaway winner of the NEWMAC regular season and tournament championships, not losing a set in any conference match for the second consecutive year. MIT was the number one ranked Division III team in the east, and this year for the first time, hosted the regional round of the NCAA Tournament.

During that and other tournaments, Mr. Chen displayed the sportsmanship that has earned him much respect. For instance, last fall when MIT hosted the New England Division III Rolex Tournament, he stuck with the team long past the call of duty.

"It was Homecoming weekend and Eric's matches were long since finished," said Coach Hamilton. "That evening he had plans to attend a semiformal with his girlfriend. As the tournament wound down for the day, a pair of our freshmen were playing an extended doubles match which was lasting well into the night. Eric not only attended the match to lend his support, but he stayed until the very end, delaying his social plans for the evening. It was one of the most selfless acts I have seen from any team captain in my time at MIT."

As Mr. Chen has developed and improved, so has the team. His freshman year, the team was ranked in the top 20 in the country; in his sophomore year it was 19th, then 18th his junior year and now in the top eight.

"It's rewarding to work hard and achieve at a high level. I'm very proud of the fact that we have gone from just an above average team to a very good team," said Mr. Chen.

Like their male counterparts, the women Engineers have done remarkably well this year. They won the NEWMAC championship and qualified for the NCAA National Championship tournament. Despite losing to Williams College in the first round, their 18-4 final record was the best in the 25-year history of MIT's women's tennis program.

Mealani Nakamura, a senior in mechanical engineering, helped lead the women to their best season ever and was named winner of the East Region Arthur Ashe Award. She also was named the Intercollegiate Tennis Association East Region Senior Player of the Year.

Coed sailing team heads for nationals

(continued from page 1)

ships to boot—the first time in 16 years an MIT sailing team has attained that goal.

Sean Fabre, Madhulika Jain, Alan Sun and a fourth team member, sophomore Erin Shea, will head to King's Point Merchant Marine Academy near Queens, NY on June 5-7 to vie for the national title and possible All-American status, which will be determined based on their performance at the championship regatta.

While MIT holds more national titles in sailing than any other school in the nation, the Institute hasn't won the big trophy since 1957 when pre-college sailing caught on in the United States and many skilled young sailing competitors began opting for college education at NCAA Division I schools. Before that, MIT was on an even keel with other colleges that took their novice freshmen sailing teams and brought them "up to national level in four years," said head coach Fran Charles, who has coached the sailing squad for the past eight and a half years.

The coed team has won 14 trophy regattas this year alone and received numerous other decorations. They took second in the Harry Anderson and the Schell Trophy regattas and fourth in the Atlantic Coast Championships, all of which throw together the top teams in the nation.

The team is also the first MIT winner of the Thompson Trophy, taken by Mr. Sun, a management major from St. Croix, Virgin Islands, and Ms. Jain, a biology and computer science major from New Delhi, India. The two (skipper and crew) received the MIT team's Most Valuable Player award three times, and have been nominated for the national award for sportsmanship in sailing by Harvard, Yale and several other competitors.

Mr. Sun was awarded the Senior Trophy of the New England Intercollegiate Sailing Association, and he received MIT's Admiral Edward L. Cochrane Award for "humility, leadership and inspiration in intercollegiate athletics."

DYNAMIC DUO

Mr. Sun and Ms. Jain, who have sailed together three years, are an interesting multicultural mix of sailing experience. Mr. Sun, the skipper, grew up in the Virgin Islands (his father is from Hong Kong), where he learned to sail in the Caribbean at age eight and started racing at age nine. Before that he competed in swimming meets starting at the age of six.

During high school, he spent four years racing as the youngest crew member on a five-man team that made an unsuccessful Olympic bid. At the same time, he played varsity soccer and did well in that, too.

When he got to MIT, he wanted to play soccer and sail, but conflicting game/race schedules made that impossible. He realized within the first week on campus that he'd have to make some decisions about how to spend his time.

"I chose sailing because it's nondivisional. So when you're racing against the best, you're racing against the best in the country," said Mr. Sun, who plans to work for a firm on Memorial Drive after graduation. "Every school I applied to had a sailing team."

Ms. Jain, on the other hand, learned sailing in a Physical Education course her freshman year. She had rowed in rowboats in India and punted in Oxford, England when visiting relatives, but never sailed.

Coach Kyle Welch, who taught Ms. Jain that first year, was keeping his eye out for a partner for Mr. Sun.

"Kyle invited me to join the team and I said, 'Sure. No one's ever asked me to join a team before,'" said the 108-pound student, who plans to continue sailing during her graduate studies in biology at the University of California at San Francisco. "I think he asked me because of my weight—both people combined need to weigh 260 to 270 pounds—and the fact that I wasn't scared. Spring sailing is cold and really windy and scares away a lot of people."

It was the spring sailing that scared away Mr. Sun's crew his freshman year, clearing the way for Ms. Jain to join him. "It was a long learning process to get [Ms. Jain] to the point where she is. Now she's one of the best crews in the nation," said Mr. Sun.

TOURNAMENT TIME

If the two win the national championship, they'll almost certainly be the first Caribbean-Indian team to hold the title, and the first African-American man and Indian woman to gain All-American status.

The other MIT boat in nationals will be skippered by Mr. Fabre, who will earn his degree in management, and Ms. Shea, a physics major. The two have proved themselves on the water over and over this year, taking number one in the A Division. (Each school sends two boats to races, categorized as either A or B division. At the highest levels of competition, differences in skill level between the two divisions are negligible, said Coach Charles.)

Eighteen schools will be in New York next week for the championships. "Harvard has the most talent in the country right now. St. Mary's from the mid-Atlantic region and the Naval Academy—these are the players," said Mr. Charles. And this year, after a 16-year hiatus, MIT is back among them.

Donations boost new sports center

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myriad activities of the Outing Club," Mr. Zesiger commented. "Barrie and I continue this interest by regularly swimming, skiing and fitness training. It has become a meaningful part of our lives, and something we enjoy together. We are delighted to be a part of establishing a state-of-the-art facility at MIT where fitness can become an important part of campus life and sociability."

The new Zesiger gift, said Dr. Vest, "was matched by an extraordinary contribution" of $4 million from Alex d'Arbeloff (SB 1949), chair of the Corporation, and Brit d'Arbeloff (SB 1961).

"Recently, at a dinner of the Department of Athletics, Physical Education and Recreation Visiting Committee, the members discussed the very significant impact sports facilities have on the entire MIT community," Mr. d'Arbeloff said. "When I got home, Brit and I talked about the new sports and fitness center. We wholeheartedly agreed this was an important effort for us to support."

Thomas P. Gerrity Jr., co-founder of Index Group and a faculty member at the Wharton School of Management at the University of Pennsylvania, also a member of the athletics visiting committee, donated $2 million for a health and fitness center with weight training and exercise equipment.

Mr. Gerrity said, "I have always believed that a great sports and fitness program at MIT goes hand in hand with student excellence and academic accomplishment, adding a healthy balance to the total experience."

"These generous gifts will help to create a sports and fitness center worthy of our students," said Chancellor Lawrence Bacow.

Richard A. Hill, director of athletics, expressed his gratitude to the donors and administrators who have pursued the quest for a new facility. "We enter the new millennium with a renewed commitment to MIT's motto of 'mind and hand,' and the sports/fitness center project, along with numerous other capital improvements and renovations to the existing athletic facilities, serves as the cornerstone of this philosophy," he said. "I am elated at our department's opportunity to enhance student and community experiences through increased flexibility for providing recreation spaces and program opportunities."

The pools (50 meter and teaching) are located in the center of the building in a space three stories tall, allowing for optimum climate and sun control. At the same time, the pool will be visible from the Stratton Student Center and from a major north-south public corridor on the first floor.

On the second floor, health/fitness areas will surround the pool on two sides; the athletics department administration offices will also overlook the pool and Kresge Auditorium to the south. Six squash courts and a multiactivity court will be located on the third floor, and also will have views into the pool. Locker room facilities will serve the pool directly, and team training and equipment rooms will be located on the first and second floors as well as in DuPont Athletic Center.

The community barbecue pits on the site will be moved to a new location to be determined, Chancellor Bacow said.

The exterior of the building will allow views into the pool and into the health fitness areas. A large wall of glass will enclose the multiactivity court and the squash courts.

The glass will be a type that will appear opaque during the day, but will allow some view into the interior at night, and it will offer a wall of glowing light to that part of campus.

The design is by Roche & Dinkeloo and Sasaki Associates. Total project cost is $45 million.

Albany garage to be repaired

During the week following Commencement, the Albany Street garage will begin to undergo major repairs to its support columns and parking spaces.

The Department of Facilities commissioned the engineering firm of Simpson Gumpertz & Heger Inc. to investigate the structural problems in the garage. Repairs will address concrete problems on all of its floors and ceilings.

To manage the project effectively, the contractor (Walsh Brothers, Inc.) will close off 75 parking spaces at a time. "Using statistics from previous construction jobs, we estimated that the removal of this number of spaces should not pose a great problem for users of the garage," said John McDonald, director of the Parking and Transportation Office.

However, Mr. McDonald warns that all drivers in the garage should be prepared for dusty and noisy conditions for the duration of the project. Those who don't wish to park in the Albany garage during construction may use West Garage instead. Parking Office staff will redirect traffic if and when the Albany garage fills to capacity.

The repair work will continue through the summer with completion expected in early fall.

Ruth T. Davis
Facilities Communications

Mass. Ave. road work starts after MIT Commencement

Construction on a nine-month project to replace storm drains under Massachusetts Avenue will start this month after MIT's Commencement.

Beginning on Memorial Drive in front of Killian Court, the project will progress northward up Massachusetts Avenue to the intersection with Main Street.

Most of the work will take place in the two center traffic lanes of Massachusetts Avenue. During construction hours (Monday-Friday, 7am-3:30pm), there will be only enough space for one lane of traffic in each direction. After 3:30pm, an additional lane will be opened. During construction, the MIT community is encouraged to use public transportation and seek alternate routes.

For more information, see the MIT Tech Talk article published May 3 or the Cambridge web site at <http://www.ci.cambridge.ma.us/~TheWorks/sewerstorm/program_overview.html>.