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TechTalk

S E R V I N G T H E M I T C O M M U N I T Y

Graduation celebration



PHOTOS / DONNA COVENEY



Happy graduates file out of Killian Court after Commencement (above). Below left, Jonathan Sheffi, who received an S.M. in computer science, dances with his mother Anat. Jonathan's father (not shown) is Yosef Sheffi, professor of civil and environmental engineering and engineering systems.

Atmosphere is sunny and bright

Denise Brehm
News Office

Pastel-colored spring suits and sleeveless summer dresses, bright straw hats and strappy high-heeled sandals, nicely pressed suits and ties—the families in Killian Court wore their own Commencement regalia last Friday, a beautiful spring day for MIT's Commencement.

The thermometer inched its way up to a more-than-cooperative 65 degrees at midday, after weeks of cool and rainy weather. To help guests cope with any unexpected

heat, a 24-ounce bottle of Poland Spring water had been placed on each of the approximately 5,000 beige folding chairs lined up in neat columns and rows like an accounting ledger on Killian Court.

Meanwhile, at 77 Massachusetts Avenue, Kay Jurkiewicz and May Matsamura had parked their little red wagons full of floral bouquets on the sidewalk near the Student Center. Matsamura reckons they sold about 40 bouquets of roses (singles for \$3 and up to \$20 for a larger arrange-

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Zerhouni explains the '50/50 rules of life'

Sarah H. Wright
News Office

Elias A. Zerhouni, director of the National Institutes of Health, urged members of MIT's Class of 2004 to participate in solving public health and environmental problems that developed following the "third Big Bang—the Big Bang of knowledge" in his address at MIT's 138th Commencement on Killian Court.

"Life sciences and their applications will be the defin-

ing challenge of the 21st century, bar none," he said in his 20-minute speech to the 2,157 graduates. "The reason is that we are changing our environment at a speed which will require us to understand life sciences to a degree we do not understand today. And let me tell you, it will require the intelligence and commitment of many classes of graduates like yours."

Zerhouni traced three "Big Bangs"—the birth of the

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A mobile phone application searches profiles of those nearby.

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A fourth-generation MIT graduate sports the family collection of brass rats.

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Alumnus Mike Fincke attends his 15th reunion—from the International Space Station.

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MIT has its share of pioneering newlyweds

Spring is a popular time for weddings, but it was an especially sweet time this year for same-sex couples—including several in the MIT community—who were legally allowed to get married in Massachusetts as of May 17.

Among those from MIT were Lorna Gibson, the Matoulas S. Salapatas Professor of Materials Science and Engineering and chair-elect of the faculty, who married her partner Jeannie Hess in a ceremony at the Arnold Arboretum on May 21; and Bill Fregosi, technical coordinator for theater arts, and his partner Frederic "Fritz" Bell, who



Jeannie Hess (left) and Professor Lorna Gibson leaving their house for their wedding in the Arnold Arboretum on May 21.

married the knot on May 23 in Brookline.

Fregosi and Bell will have a Quaker ceremony and reception party in August, "but we decided to move very fast on the legalities out of distrust for Gov. [Mitt] Romney's possible actions against same-sex marriage," said Fregosi, who has been designing theatrical scenery and teaching for 29 years at MIT. "We picked the 23rd because it was actually our seventh anniversary." The couple had a wedding brunch "in the only place we could get a table that morning—a sports bar, which is pretty funny to those who know us well," he added.

Stephen Pepper, an administrative assistant in the Academic Resource Center, married Sam Goldfarb, a psychologist and partner of six years, on May 21 at the Church of the Covenant and the Arlington Street Church in Boston. They plan a civil ceremony in June.

"This month and the months to come find me happily exercising my new ability to preside at same-sex weddings," said Pepper, who is an ordained minister in the United Church of Christ and acting pastor of Central Congregational Church in Jamaica Plain. "In each case, the couples have lived together for years—one gay couple has been together for 41 years!—and consider themselves already married—society is finally catching up with them."

MIT alumni who are same-sex newlyweds include Marisa Kirschbaum (S.B. 1999), who married Marie Bober, and Sarah A. Russell (Ph.D. 2003), who married Leslie Longo (both changed their last name to Lewis). The



Marie Bober (left) and Marisa Kirschbaum (S.B. 1999) on their wedding day.

latter couple became a complete nuclear family in almost one fell swoop. "We got married on the 17th and had our daughter on the 25th," a tired but happy Russell said. "I think we got to be the first same-sex couple in the state to both be on the birth certificate!"

—Alice C. Waugh



Frederic "Fritz" Bell (left) and Bill Fregosi, technical coordinator for theater arts at MIT, on their wedding day, May 23.

Norris to retire as director of Office of Sponsored Programs

Julie Norris, director of MIT's Office of Sponsored Programs (OSP) for the past 10 years, has announced her retirement, effective Sept. 30.

During her decade of leading OSP, Norris has been one of MIT's senior spokespersons in support of the higher education research enterprise and has contributed significantly to the development of federal policies in support of research.

Commenting on her announcement, President Charles M. Vest said, "Julie's expertise and wisdom in research administration and federal relations have been

of extraordinary benefit not only to the Institute, but to the nation's research universities overall. Her common sense and creativity, combined with a singular talent for bringing diverse parties together in working out solutions to thorny problems, are without peer."

Under Norris' direction, MIT developed the country's premier electronic research administration proposal development and award management system (COEUS). It has now been licensed to more than 100 institutions across the country. She has served as MIT's primary contact with

federal agencies on research administration efforts, and she chaired the Council on Governmental Relations (COGR), a national organization of top research institutions. Norris also chaired the Federal Demonstration Partnership, a cooperative initiative among 10 federal agencies and 92 institutional recipients of federal funds, whose purpose is to reduce the administrative burdens associated with research grants and contracts.

"MIT is extremely fortunate to have benefited from Julie's expertise," Executive Vice President John Curry said. "Her

knowledge, skills, professionalism and nationwide contacts have ensured MIT's leadership in the areas of grants and contracts."

Curry said the Institute would begin an aggressive search immediately for a new OSP director but that Norris will be available on a consulting basis during the transition. Her expertise will come into play during the negotiation for the renewal of the contract for Lincoln Laboratory and in export controls and research compliance. She also will be available to assist the new director as necessary.

Longtime mathematics department head Ted Martin dies at age 92

Professor Emeritus William "Ted" Martin, former head of the Department of Mathematics and chair of the faculty, died May 30 at the age of 92.

Under Martin's leadership from 1947-68, the math department grew from a small service department into one of the major world centers of pure and applied mathematics. During his first year as head, Martin proposed a "postdoctoral instructorship or visiting lectureship" program. The C.L.E. Moore Instructorship Program was launched in 1949 and continues to attract the most promising postdoctorates in mathematics to MIT to develop their research and teaching careers.

Martin collaborated with MIT faculty members R.H. Cameron, Stefan Bergman and Norbert Wiener on analyt-

ic functions of several complex variables and on the Wiener integral or Wiener measure, which Wiener proposed in 1930. During the 1950s he wrote a series of papers with Salomon Bochner, establishing generalizations of classical results in function theory for analytic functions on complex spaces with singularities.

Following his tenure as department head, Martin chaired the faculty from 1969-71 and the Education Division Steering Committee from 1972-73.

A gifted lecturer and teacher, Martin taught first-semester calculus for five years after his official retirement in 1976.

He is survived by four sons, Seelye Martin of Seattle Jim Martin of Bloomfield Village, Mich., William Gray Martin of Brooklyn, N.Y., and Thomas Martin of Ells-

worth, Maine. He is also survived by five grandchildren, a step-grandchild and a brother, James Martin of Lindale, Texas. His wife of 60 years, Lucy Dodge Gray, predeceased him.

A memorial service will be held on July 17 at 11:30 a.m. in St. Dunstan's Chapel, Christ Church, Bloomfield, Mich. Donations in his memory may be made to the Middletown Society of Friends, c/o William D. Foye, 1 Miles Ave., Middletown, CT 06457, or to St. Anne's Mead, 16106 W. 12 Mile Rd., Southfield, MI 48076.

A longer obituary is published at <http://web.mit.edu/news-office/2004/martin.html>.

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The skinny on fat: Researchers establish first link between eating and aging

Denise Brehm
News Office

Forget the drastic reduction in carbs and calories called for by diet dictators. The day when people can eat their favorite foods, stay thin and live to be 120 without getting age-induced diabetes or cancer may be nearer than we think. Researchers at MIT believe they've found the key to a long, lean, healthy life in a single protein that controls whether a mammal stores fat or sheds it.

The work could lead to drugs that mimic that protein, allowing human beings to get the longer life span and other benefits of extreme caloric reduction without the negative side effects, said Professor of Biology Leonard Guarente.

Guarente and other scientists have known for decades that controlled famine can extend the life span of mammals by as much as 50 percent and that those long-lived, lean mammals don't get the diseases of old age. But just how a vastly reduced caloric intake achieves that feat has been a mystery begging for a solution—until now.

"For the first time, this study gives us a glimpse of how calorie restriction works at the molecular level. And it will ultimately lead to health benefits in people," said Guarente, who has been studying the aging process in yeast, roundworms and mice for more than a decade.

In the June 2 online issue of the journal *Nature*, scientists in Guarente's lab, including Frédéric Picard, a research scientist in the Department of Biology who is an

author of the paper, publish their research results about how the Sirt1 mammalian gene promotes fat mobilization in mice.

A mammal generally burns the protein and carbohydrates in its food immediately; it stores fat in special cells called white adipose tissue (WAT). When it reduces its caloric intake, the WAT stops storing fat and begins releasing it for metabolism.

The paper's authors learned that fat is released from or metabolized by the body, rather than stored, when the Sirt1 protein senses short-term famine and turns off the receptors that normally keep fat stored in fat cells. Thus fat cells shed their fat.

They write that this happens because the "Sirt1 protein activates a critical component of calorie restriction in mammals; that is, fat mobilization in white adipocytes. Upon food withdrawal the Sirt1 protein binds to and represses the genes that are controlled by PPAR-gamma, the fat regulator," preventing fat from being stored in the body.

"The ability of fat cells to sense famine [or short-term hunger] and release the fat is regulated by this gene," said Guarente. "We like to think this applies to people as well as mice, but we don't know for sure. If we could make this happen in people, it wouldn't just make them live longer; it might also help prevent diseases of aging, like cancer, diabetes and heart disease."

Because WAT also makes hormones, especially leptin which controls satiety, Guarente speculates that by putting hormones

into the bloodstream, fat cells also tell the body how fast to age.

"Conversely, fewer fat cells tell the body that it's time to hunker down for survival. This means that evolutionarily speaking, fat plays a very important role," he said.

We know already fat or lack of it has vast implications in the lives of people, but putting them on an austere diet just isn't feasible.

"It's easy to put rodents on a spartan diet. With people it's not so easy; they don't want to diet," said Guarente.

In fact, the side effects in a human being whose diet was cut by about 50 percent—down to 1,000 to 1,200 calories a day, the reduction necessary to get the 50 percent extension in the life span—would create a very lean, cold, unhappy person with no sex drive. "It would be like eating every other day," says Guarente.

Unless, that is, you could find a way to mimic the molecular effect of famine without the actual dieting.

"If we could make a drug that would bind to Sirt1 and fool the body into thinking that it needed to release that fat, then maybe people could get the benefits of calorie restriction without the side effects," he said, describing a sort of fountain-of-youth drug that he hopes to create.

How would such a drug work? Would it require vigorous exercise? Might there be additional complications in humans, such as reduced resistance to disease?

"Evolutionarily, you would think it would make humans more resistant to infectious disease," Guarente said. "But you never know."



PHOTO / DONNA COVENEY

Biology professor Leonard Guarente (left) and research scientist Frédéric Picard examine mammalian fat cells to see how the Sirt1 protein affects them.

He suspects that vigorous exercise also will be required. The next step in the process, he added, is to determine if an increase in

Sirt1 in the body leads to a higher rate of metabolism.

This research was funded by the National Institutes of Health.

Technology takes the chance out of chance encounters

(This story was originally published in the April/May issue of *Frames*.)

Ellen Hoffman
Media Lab

Imagine your kindergarten sweetheart is standing next to you on the train platform, or the person sitting next to you in the theater happens to share your avid interest in antique trains. How would you ever know?

Until now, we've relied on chance. But this may not be so in the future, thanks to Serendipity, a mobile phone application that can instigate interactions between you and people you don't know—or think you don't know—but probably should.

Serendipity, a form of next-generation networking, was developed by Nathan Eagle, a graduate student and Media Lab Europe Fellow working with Alex (Sandy) Pentland, the Toshiba Professor of Media Arts and Sciences in the Media Lab's Human Dynamics group.

The system uses Bluetooth, an RF (radio frequency) protocol that works like a low-power radio in most cell phones, sending out a short-range beacon. "Think of it as each person having a 16-foot bubble around them, blinking out a unique ID," Eagle said. "When two or more people running Serendipity come into the same 'bubble,' their IDs are sent to our server, which looks for their profiles. If there's a match, each gets the other's name, thumbnail photo and common interests on his or her cell phone." Then it's only a matter of introductions.

And it's quick. The server scans for IDs every 60 seconds and only takes about five seconds to find a match, so the whole sequence takes about a minute at the most.

How does the server know about your interests? Just like web-based social network systems like Friendster or match.com, Ser-

endipity depends on profiles that users write about themselves. But Serendipity is unique because it allows the user to "weight" his or her profile to emphasize interests that are of greatest importance to the user's current social situation.

Serendipity has implications beyond social or professional matchmaking. It has potential as a tool for knowledge management, with people using the database not only for social purposes but also to find someone who can solve a particular problem, or perhaps to connect within a large company. By tracking interactions, it could also be used to show companies or planners how people are using space. Even its current matchmaking capability could be expanded; "for example, at a conference it could help you find your colleagues who, unbeknownst to you, have ducked out for Chinese food," Pentland said.

"Because Bluetooth is sending out the 'ping,' the only thing we're doing is correlating that unique ID with information about the person, which makes this a very versatile and lightweight system. This is important because to date, there's no universal operating system like Windows for cell phones, which makes it harder to scale," Eagle said.

To learn more, visit <http://www.mobule.net>.

Addendum

In the Awards and Honors column in the June 2 issue of MIT Tech Talk, part of Joel Cutcher-Gershenfeld's title was omitted. He is executive director of the Engineering Systems Learning Center in the Engineering Systems Division as well as a senior research scientist at the Sloan School.

DIGITAL TALK: WHERE IT'S AT



Renew your MIT certificate

Certificates are your key to secure web services at MIT, from ECAT to Employee Self-Service to SAPweb. Personal certificates expire periodically, and renewal is not automatic. Starting today, you can get a new certificate that will last until July 31, 2005. Go to <http://web.mit.edu/ist/topics/certificates> and click on the link "Get MIT Personal Certificate." (Certificates obtained before June 9 will expire on July 31, 2004.)

IS&T is revising the list of web browsers that are supported for obtaining MIT certificates. For the latest information, see <http://web.mit.edu/ist/topics/browsers>.

Be secure with MIT Windows Automated Update Service

The MIT Windows Automatic Update Service (WAUS) lets community members use Microsoft's Automatic Update feature with a more limited selection of patches focused on critical security updates than those available directly from Microsoft's Windows Update site. This service may be used by MIT faculty, staff and students on MIT-owned and personal machines.

Security patches for vulnerabilities that are rated "critical" or "important" by the Microsoft security team will be available via WAUS within 48 hours of their release on Microsoft's site. Otherwise, Information Services and Technology (IS&T) will notify the communi-

ty about why a patch was not included. During the 48 hours before a patch is made available, IS&T will test a suite of applications, evaluate the impact on the central domain, and monitor industry lists for reports of the patch causing problems in other environments. IS&T can post patches more quickly if needed.

WAUS will also be used to deploy service packs. The policy for service pack deployment is being refined, but WAUS currently provides Windows 2000 SP4 and Windows XP SP1.

For details on WAUS and how to subscribe to it, see <http://web.mit.edu/ist/topics/windows/updates>.

Computing for students

New students will soon be arriving on campus, and many are already looking into what computer to bring and how to set up their user name and password. To learn more about computing at MIT, new students—and those who work with them—may want to visit the overview page at <http://web.mit.edu/ist/start/students>. Among other items, this page contains links to recommended computers and operating systems.

Date/time stamp for voice mail messages

If you are reviewing your voice mail messages and want to know the date and time a message was sent, press 5 during or after listening to the message. Along with the date/time stamp, you will get related caller information. For more tips on making the most of voice mail, see <http://itinfo.mit.edu/answer?id=4348>.

Digital talk is compiled by Information Services & Technology.



PHOTO / DONNA COVENEY

Victoria Davis, who received a bachelor's degree in aerospace engineering with information technology, played cards with friends while waiting for Commencement proceedings to begin.

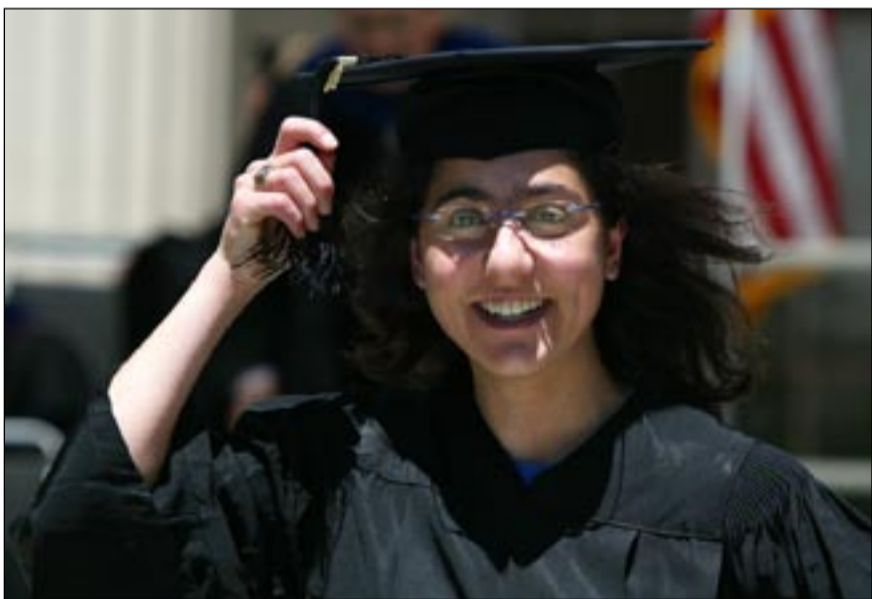


PHOTO / DANIEL BERSAK

Chloe Tergiman turns her tassel after receiving her diploma (S.B. in economics).

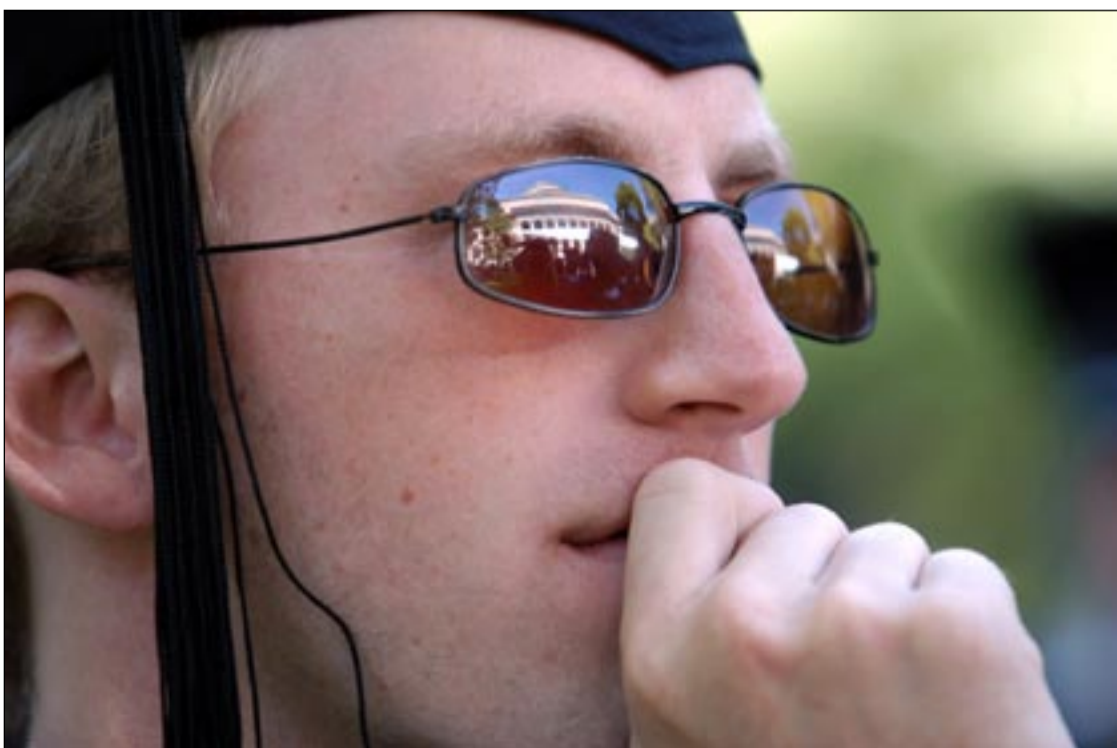


PHOTO / DONNA COVENEY

Ben Aylor, who received his M.B.A. at Commencement, reflects on MIT.



PHOTO / DANIEL BERSAK



PHOTO / DANIEL BERSAK

Students find creative ways to decorate their mortarboards during Commencement. Left: Baris Yukseker (S.B. in mechanical engineering) sports a penguin. Center: Brian Loux (S.B. in mechanical engineering) used his mortarboard to honor his favorite cartoon, AquaTeen Hunger Force. Right: A red goose perches between Cameron Bass (S.B. in electrical engineering) and his mortarboard.



PHOTO / DONNA COVENEY

Katharine Ricke (S.B. in earth, atmospheric and planetary sciences) chose her makeup with MIT's cardinal and gray school colors in mind.



President Charles Vest conducts the Boston Symphony Orchestra with Evan Ziporyn as clarinet soloist.

COMMENCEMENT

Continued from Page 1

ment).
 "When the families see [our flowers], they remember, 'Oh, I should give her something. He or she deserves it for the accomplishment,'" said Matsamura, who lives in New Hampshire.

And those flower bouquets found their way into Killian Court with the families, waiting to place them in the arms of graduates. Parents and grandparents, siblings and children all milled around, chatting, snacking, taking photographs. And then, the voice: "Ladies and Gentle-

man. The academic procession will enter Killian Court."

They rose, looked about expectantly and finally set their sights on the center aisle where familiar faces began to appear. First faculty and staff, and then the faces the families had been waiting for—their own graduates.

R. Erich Caulfield, president of the Graduate Student Council, gave a congratulatory oration to his co-graduates, ending with "Congratulations" perfectly spoken in a dozen or more languages.

Later, diverse languages were heard in the cadence of names called

Brass rat gets raised to the fourth power

James Wolken
Alumni Association

Elizabeth (Ellie) Powers Boyle, garbed like her fellow graduates in black robe and mortarboard, happily accepted her diploma (an S.B. in electrical engineering and computer science) last week. But Boyle wore something else that was unique—four “brass rat” class rings, because she’s a fourth-generation graduate of MIT.

“We thought it would make this special occasion more memorable to have Ellie wear all the family rings from MIT,” said Ellie’s mother, Melanie Powers (S.M. 1977 in management). “Unfortunately, Ellie’s great-grandfather, Melville Powers, graduated before there were brass rats, so Uncle David lent his ring for the occasion.”

The first Powers to attend MIT was Ellie’s great-grandfather, Melville W. Powers, who earned the S.M. in naval architecture during World War I and stayed on at MIT for several years as a teacher. Eventually, he rose to the rank of commander in the U.S. Navy.

Both of Melville’s sons, the late Donald Powers (S.B. 1943 in electrical engineering and computer science, S.M., E.E.) and David Powers (S.B. 1948 in physics), graduated from MIT.

“We’re all very proud of Ellie,” said Elizabeth’s Uncle David. “I think her accomplishment is much more difficult than in my day. Competition to get into MIT is much more fierce, and the student body comprises some of the best scholars in the world.”

The Powers’ third-generation graduate was Ellie’s mother, Melanie Powers. In addition to her Sloan degree, she earned a master’s in education from Harvard as well as a master’s in statistics and a Ph.D. in organizational behavior (both from Stanford).

“It’s a remarkable accomplishment simply to graduate from MIT,” said Beth Garvin, executive vice president and CEO of the MIT Alumni Association. “But a fourth-generation graduate is extremely rare and worthy of a great deal of pride for the Powers family.”

David Powers, who served as his class secretary for several years, has seen a lot of changes at MIT. “The campus sure looks different,” he said. And a look back at family members’ transcripts “reveals how the academic focus of MIT has changed over the years,” said Melanie Powers.

Much has stayed the same, however. “The intense work ethic is still there—that’s the first thing that comes to mind,” Melanie said. “Plus the shared sense of making a great personal sacrifice for the sake of a higher good. Then there’s that profoundly ambivalent love-hate relationship that every undergraduate has with MIT.”

Ellie’s great-uncle concurred. “In my day, the phrase was ‘Tech is hell,’” he said.

“The love-hate relationship is still there,” Ellie said, pointing to the cryptic initials IHTFP on the 2004 version brass rat. “But the love for MIT usually wins out as the line between work and play eventually gets pretty blurry here.”

Despite the tradition, Ellie says her family didn’t exactly encourage her to attend MIT. “I have a lot of interests, so I think my mom thought I would grow to resent the heavy workload,” she said, adding that she didn’t think MIT would appeal to her. “I wanted the full college

experience and I assumed MIT would be all study and nothing else. But that’s not true.”

But visits to campus eventually won her over. “People care about their work here, and particularly their causes. I considered a lot of schools and found the passion among MIT students was very unique—and very appealing,” Ellie said.

And the workload? “Mom was right,” she said with a laugh. “I thought I knew what hard work was until I came here. But the intensity is well worth it. There’s no busy-work here. It’s all applied knowledge. MIT stresses the strategic and the pragmatic as opposed to simply rote skills.”

In looking back over her four years here, Ellie wishes she had had more time for extracurricular activities, though she enjoyed being a member of the Alpha Chi Omega sorority. She also became a member of the Society for Women Engineers and was active in Roadkill Buffet, MIT’s improv comedy troupe. And this year she won the Institute’s Louis Kampf Writ-



PHOTO / DONNA COVENEY



PHOTO / DANIEL BERSAK

their mortarboards
I (S.B. in EECS)
civil and environ-
depict characters
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B. in mechanical



PHOTO / JUSTIN ALLARDYCE KNIGHT

n Pops during last Thursday’s “Tech Night at Pops,” which also featured MIT professor



PHOTO / JUSTIN ALLARDYCE KNIGHT

Elizabeth Powers Boyle sports her family’s four brass rats on her right hand.

ing Prize for her thesis on “The Feminization of Teaching in America.”

Ellie will soon begin work at Microsoft as a program manager. The job, one of five she was offered, will return her to her northern California roots. Eventually she’d like to start her own computer-related business. But if this doesn’t work out, she has a backup plan.

“If the computer field for some reason loses its luster, I will become a world-renowned chocolatier, traveling to the ends of the earth to sample and evaluate the world’s best chocolates. This is something that no computer can do,” she said with a grin.

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Afterwards, Wimla Kothari, who came from India to see her granddaughter, Rachana Oza, receive the S.B. in management, asked: “Who was the young man who was such a good speaker?”

“At first I thought he was speaking in high English,” said her daughter, Rachana’s mother, Abha Oza. “Then I realized he was being entertaining. He certainly kept the crowd’s attention.” Oza, her husband and 11-year-old son Anand had traveled from N. Potomac, Md., for the ceremony. Anand was engrossed in his paperback book.

In the first aid tent, things were quiet. There were requests for ibuprofen, sunscreen and a few baby wipes, said Linda Forgues, the triage nurse at MIT Medical who staffed the tent from 8 a.m. to 2 p.m. with Dr. David Diamond and Dr. David Shein.

“Most of our [medical] requests are weather-oriented, and today is a perfect day,” said Forgues.

Cameron Bass, who received the S.B. in mechanical engineering, carried a large plastic lawn goose under his arm. His mother, Liz Bass, said he had stolen it from a friend’s lawn in the 10th grade.

“Since then it’s been a lot of different places, but I never thought it would graduate from MIT,” she said.

“We left a ransom note,” said Cameron Bass. “And my friend’s mom baked us cookies, but we didn’t give the goose back. We’ve carried it across the country and taken pictures of it in a lot of different places.”

Bass wore the goose strapped to his head during Commencement; the goose wore the mortarboard. Bass also wore a “Cameron” plaid kilt (light green and red) with hiking boots. (For more information about Bass’ dress sense, see

<http://web.mit.edu/newsoffice/2003/makeover-1217.html>.)

The goose tucked under his arm, he and his family and friends headed off Killian Court to a graduates’ luncheon. “I want to get my last bit of free food for my \$160,000 in tuition,” he said.

“I don’t want to talk about,” said his father, Stuart, with a laugh. “I’m just a welder.”

By then, Facilities workers were busy restacking the chairs on the lawn, now littered with Poland Spring water bottles. By 5 p.m., it would all be gone.



PHOTO / DONNA COVENEY

Newly hooded with his Ph.D. in economics, Samer M. Haj-Yehia holds his newborn son Saji as his wife Adan looks on.

200+ receive doctorates

Elizabeth A. Thomson
News Office

Amid beaming friends and family and the cries of many babies, 203 MIT doctoral students received their ceremonial hoods on Thursday, June 3 in the Johnson Athletics Center.

"The faculty recognizes your change from the status of student to colleague," said Chancellor Phillip L. Clay, master of ceremonies. "There is nothing aristocratic or honorary about the status you have gained; it has been earned."

Clay was joined onstage by a slew of professors from many departments, President Charles M. Vest and Dean for Graduate Students Isaac M. Colbert.

Acknowledging the range of academic regalia worn by fellow faculty (every alma mater has a different design), Clay gave a brief primer on the history of the

garments. Although many parts of the regalia must be worn just so, he noted that "there is no standard way to wear your tassel, as one student asked about an hour ago."

He also noted that in 1995, MIT changed the design of its robe. "I see that some of you received that memo," he said, alluding to the fact that only about a third of the new graduates wore the new design (which is voluntary).

Clay went on to invest each graduate with his or her hood, assisted by Dean Colbert and a faculty representative from each department. Samuel J. Keyser, professor emeritus of linguistics and philosophy, read the name of each recipient.

People clapped and sometimes whooped when each graduate came to the podium. The family of Cynthia Perry, who received her doctorate in economics, went a step further, clanging cowbells as she donned her hood.

Class of 2004 by the numbers

Degrees awarded

Doctor's degrees: 203
Engineer's degrees: 10
Master's degrees: 1,137
Bachelor's degrees: 1,088

By school

Architecture and Planning: 117
Engineering: 1,227
Humanities, Arts and Social Sciences: 92
Management: 577
Science: 405

Whitaker College of Health Sciences and Technology: 20

Totals

Degrees: 2,438
Recipients: 2,157

Demographics

Men: 1,740
Women: 698
Minorities: 645
Underrepresented minorities: 196

ZERHOUNI

Continued from Page 1

universe, the beginning of life on Earth and the appearance about 100,000 years ago of the 10,000 human beings from whom the species is descended—to underscore his point that the challenges facing scientists arise from the impact of human intelligence.

"We've been able to change our environment at a velocity that is much faster than what we can adapt to ourselves through our natural mechanisms of natural evolution," Zerhouni said.

He illustrated his point by noting that obesity is an emerging public health threat and is now the second-leading cause of premature morbidity and mortality. Thanks to human knowledge, the food scarcity that was typical throughout human history has been erased in some areas within the past 50 years. But human genes haven't adapted to the newly abundant supply.

"There is a real race going on between our ability to understand how we respond to our environment biologically and our ability to change that environment, and with consequences that we may not always predict," he said.

Zerhouni paused near the beginning of his speech to lead a round of applause for the graduates' families and to introduce his second theme: the necessity of connections among people and collaboration across disciplines in science and other fields.

This aspect of his address arose, he said, from his own experience. "I came from Algeria with \$300 in my pocket, a new wife, and no friends or family. I learned you can't make a contribution unless you're connected to others and you're able to connect to others," he said.



PHOTO / DANIEL BERSAK

"There is a race between our ability to understand how we respond to our environment and our ability to change our environment," said NIH director Elias A. Zerhouni.



PHOTO / DONNA COVENEY

Graduate Student Council president R. Erich Caulfield touted his fellow graduates' "magnificent mental muscles."

Speaking more broadly of innovations, Zerhouni added, "Rarely does the spark of genius appear in those who are completely isolated." For example, Watson and Crick, a zoologist and a physicist, together created the field of molecular biology, he said. The process of discovery and scientific advancement "is admittedly social, it is not an individual process, it is a process you have to participate in."

His own career and life experience could be expressed in a few "50-50 Rules of Life," Zerhouni said.

"First, what you know today is 50 percent wrong and 50 percent right. The challenge for you now is to figure out what part is right and what part is wrong," he said. Secondly, he said, "be aware that many of your contributions will not come from your core discipline ... Read 50 percent of what you read in the area that you're interested in, but make sure that 50 percent of what you read is unrelated to what you have to do."

Finally, Zerhouni said, don't be afraid to look foolish, and have high aspirations. "You can't put a large box in a small box. Well, you cannot put a full life in a small dream box. What you need is to have a box, a dream box, in a life that is as full as the potential you have today," he said.

Zerhouni gave specific acknowledgement to President Charles M. Vest, who is stepping down, describing him as "one of the most influential thought leaders in higher education. He has this rare combination that you don't find a lot in life that combines vision and flawless execution."

R. Erich Caulfield, a graduate student in electrical engineering and computer science and president of the Graduate Student Council, and Maria Hidalgo, president of the Class of 2004, also spoke.

Caulfield saluted the graduate student body with a spoken anthem of praise. Greeting them as an "august and

awe-inspiring assembly of the academically accomplished," he noted the group had flexed their "magnificent mental muscles, made mighty by the methodical mastery of mathematically menacing" and should now enjoy a "more excellent view of a future that is pregnant with a plentitude of possibilities." He also offered congratulations in numerous languages (without the alliterative flourishes).

Hidalgo announced the senior class gift, the HUGE Fund (Helping Undergraduates Gain Excellence) a \$31,000 resource to support undergraduate projects such as UROP projects or theses. She also saluted Vest. "You, too, will soon be a graduate," she said, to widespread applause.

CLASSIFIED ADS

Members of the MIT community may submit one classified ad each issue. Ads can be resubmitted, but not two weeks in a row. Ads should be 30 words maximum; they will be edited. Submit by e-mail to ttads@mit.edu or mail to Classifieds, Rm 11-400. Deadline is noon Wednesday the week before publication.

FOR SALE

Queen-size sleep sofa. Light brown/cream color, \$100/bst. Antique spinning wheel, \$300/bst. Tony, 253-3922.

1967 Gretch Nashville, professionally repainted, refurbished and improved w/OHS case, \$1,395/bst. 1984 Fender Stratocaster Elite, sunburst w/maple neck, mid-boost, noiseless pickups w/HS case, \$995/bst. Photos avail. bjmagoon@mit.edu.

HOUSING

Somerville: Union Sq, 1BR, 2nd flr, lr, hdwd flrs, nr restaurants/groceries/#85 to MIT. Avail 7/1, \$1,150/mo. Lou, 978-658-8555.

Lexington: Garden-style condo. 3BR, 2 upstairs, 1 downstairs, 2b, 1 upstairs, 1 downstairs, washer in hse, no dryer, renov 2 yrs ago. Avail 8/16, \$1,900/mo incl ht/hot water. Contact Nancy, 781-937-8888.

Cambridge: Linden park

condo, Kendall/MIT area, 3BR, 2b, hdwd flrs, renov 2 yrs ago, w/d, 1 prkg space, strtr prkg. Avail 9/2, \$2,100/mo. Contact Nancy, 781-937-8888.

Stoneham: Newly renov 1BR apt, residential neighborhood, off-strtr prkg, nr routes 93/128. Avail now, \$1,200/mo incl ht/hot water. 781-729-2247.

Lexington: 6 rm contemporized cape, master BR suite, study, 2BR's and b upstairs, skylights, hdwd flrs, A/C, 2 car garage. \$599,000. 781-981-2671.

Westford: 6-yr-old hse, 3BR, 2b, 1,450 sq ft, bsmnt, garage, deck on 1/3 acre. Incl. all appliances, yard tools, patio set, more. Avail 8/1 for 1-2 yrs. \$1,950/mo. 978-392-1278.

VACATION

Orleans: Hub of Cape Cod, B&B suite in authentically restored 1852 Greek revival farmhse, nr Pleasant Bay Beach/boat landing, prvt bath and entrance. \$500 or \$700/wk. Sandy, 508-240-6990.

VEHICLES

1990 Buick LeSabre Limited. Gd cond, \$1,400/bst. rosek@mit.edu.

1993 Toyota Corolla. White, 4-dr, A/C, stereo, kill switch, recent tires/brakes, only 88K miles, vry nice/reliable. \$3,900. karageo@mit.edu.

Corporation names 14—including Vest

The MIT Corporation, the Institute's board of trustees, elected three life members—including outgoing President Charles M. Vest—and 11 term members at its quarterly meeting on June 4. Dana G. Mead, chair of the Corporation, announced the election results.

All memberships are effective July 1 except that of Vest, who will begin his term after he ends his duties as president. At that point, the Corporation will consist of 74 distinguished leaders in education, science, engineering and industry, 22 of them life members. An additional 33 individuals

are life members emeriti, participating in meetings but without a vote.

Linda Sharpe (S.B. 1969), senior associate at Cambridge Systematics, Inc., is the 2004-05 president of the Association of Alumni and Alumnae of MIT. A Corporation member since 2000, she serves on the

mechanical engineering and Dean for Student Life visiting committees and is a Black Alumni of MIT life member. Sharpe received MIT's Bronze Beaver Award in 1999 and the Harold E. Lobdell Distinguished Service Award in 1996.

Newly elected Corporation members are:



Gordon Binder
Managing director,
Coastview Capital, LLC

Term: Five years (Corporation member since 2000)
Education: B.S. 1957 (Purdue), M.B.A. 1962 (Harvard)
Current MIT activities: Corporation Committee on the Presidency; Corporation Membership Committee; visiting committees for chemical engineering (chair since 2000), Biological Engineering Division



Anita K. Jones
Lawrence R. Quarles
Professor of Engineering
and Applied Science,
University of Virginia

Term: One year
Education: A.B. 1964 (Rice), M.A. 1968 (University of Texas at Austin), Ph.D. 1973 (Carnegie Mellon)
Current MIT activities: Lincoln Laboratory Advisory Board member



Milton H. Roye
Vice president for sales
and engineering,
Weidmann Plastics
Technology N.A., Inc.

Term: Five years
Education: S.B. 1979 (MIT), M.B.A. 1983 (Harvard)
Current MIT activities: Mechanical engineering visiting committee; educational counselor
MIT honors: Bronze Beaver Award (2001), Harold E. Lobdell '17 Distinguished Service Award (1991)



John Krob Castle
Chair and CEO, Castle
Harlan, Inc.

Term: Life membership (Corporation member since 1995; previous term 1987-92)
Education: S.B. 1963 (MIT), M.B.A. 1965 (Harvard)
Current MIT activities: Campaign Steering Committee; Corporation Development Committee; visiting committees for economics and physics

MIT honors: Henry B. Kane '24 Award (1993), Corporate Leadership Award (1980), Founding Life Sustaining Fellow (1979)



Robert B. Millard
Managing director,
Lehman Brothers Inc.

Term: Five years (Corporation member since 2003)
Education: S.B. 1973 (MIT), M.B.A. 1976 (Harvard)
Current MIT activities: Corporation Development Committee; Corporation Development Committee Advisory Group; visiting committees for physics and linguistics and philosophy



Martin Y. Tang
Asia chair, Asia,
Spencer Stuart

Term: Five years
Education: B.S. 1970 (Cornell), S.M. 1972 (MIT)
Current MIT activities: Sloan School visiting committee.
MIT honors: Founding Life Sustaining Fellow (1979)



Morris Chang
Chair, Taiwan
Semiconductor
Manufacturing Co., Ltd.;
president and chair,
Industrial Technology
Research Institute

Term: Five years (Corporation member since 1999)
Education: S.B. 1952, S.M. 1953, M.E. 1955 (all from MIT), Ph.D. 1964 (Stanford)
Current MIT activities: Visiting committees for economics and mechanical engineering



Paula J. Olsiewski
Program director, Alfred P.
Sloan Foundation

Term: Five years (Corporation member ex officio in 2003-04; alumni nominee)
Education: B.S. 1975 (Yale), Ph.D. 1979 (MIT)
Current MIT activities: Alumni Association president (2003-04), Corporation Committee on the Presidency, ex officio; Corporation Joint Advisory Committee on Institute-wide Affairs ex officio; Corporation Development Committee; Corporation Development Committee Advisory Group; visiting committees for chemistry and Whitaker College

MIT honors: Bronze Beaver Alumni Award (2000), Henry B. Kane '24 Alumni Award (1995)



Susan E. Whitehead
Vice chair, Whitehead
Institute for Biomedical
Research

Term: Life membership (Corporation member since 1997)
Education: B.S. 1976 (Cornell), J.D. 1982 (Yeshiva University)
Current MIT activities: life board member, Whitehead Institute; Corporation Membership Committee; Corporation Committee on the Presidency; visiting committees for biological engineering (chair since 2002), biology, brain and cognitive sciences, Whitaker College



**Gururaj "Desh"
Deshpande**
Founder and chair,
Sycamore Networks, Inc.

Term: Five years (Corporation member since 2000)
Education: B. Tech. 1973 (Indian Institute of Technology), M.S. 1975 (University of New Brunswick), Ph.D. 1979 (Queens University)
Current MIT activities: Corporation Membership Committee; visiting committee for materials science and engineering (chair since 2003)



Sanjay K. Rao
Program manager,
Microsoft Corp.

Term: Five years (nominee from recent classes)
Education: S.B. 2002 and M.Eng. 2003 (both from MIT)
MIT activities: President of the Class of 2002 (1998-2000); president, MIT ACM and IEEE chapters (1999-2002); Eta Kappa Nu Honor Society, 2001-02
MIT honors: Course VI Special Recognition Award (2002)



Barrie R. Zesiger
Founding partner and
managing director, Zesiger
Capital Group LLC

Term: Five years (Corporation member since 1999)
Education: B.A. 1967, J.D. 1974 (both from Stanford)
Current MIT activities: Corporation Committee on the Presidency; Executive Committee; visiting committees for brain and cognitive sciences (chair since 2000), Dean for

Undergraduate Education



Carleton S. Fiorina
President and CEO,
Hewlett-Packard Co.

Term: Three years
Education: B.A. 1976 (Stanford), M.B.A. 1980 (University of Maryland), S.M. 1989 (MIT)

MIT presidential search process continues

The MIT presidential search process is proceeding with determination and focus toward identifying "the best candidate out there" to succeed Charles M. Vest.

So said the chairs of the two committees leading the search for the 16th president of the Institute as they embark on a summer of continuing work of narrowing the field and settling on a single candidate.

"We're very pleased to have this strong set of candidates," said Professor Jerome Friedman, chair of the Faculty Advisory Committee to the Corporation on the presidential search. "The committees will be working through the summer and will be in discussions with fewer and fewer candidates as we go forward."

Search committee members have no specific deadline for finishing their task. "We're going to give it the

time it needs," said James Champy, chair of consulting for Perot Systems Corp., who heads the Corporation Committee on the Presidency.

Since then, a large percentage of the MIT community has been "fully engaged in the process," Champy said. "That activity has been broad and of high quality. From alumni to Lincoln Lab, there has been extensive and very active expression of views. Students have been very insightful, helpful and just superb."

Although there have been rumors and media speculation both on and off campus that the candidate has been found, the committees have been operating from the beginning in closed-door sessions and will continue to do so until a candidate is selected, Corporation members are notified and a vote is taken.

'E.T.' Fincke phones home for reunion

Denise Brehm
News Office

A smiling ambassador of goodwill with a message of international cooperation, Lt. Col. Mike Fincke appeared from outer space on an enormous video screen in Kresge Auditorium on Saturday, June 5 to greet his MIT classmates at their 15th reunion.

"I miss MIT. I really was sad I couldn't come to this year's reunion," said the astronaut alumnus, who is on the International Space Station (ISS) through October.

But there wasn't a touch of sadness about Fincke (who earned S.B. degrees in 1989 in aeronautics and astronautics and in earth, atmospheric and planetary sciences) when he appeared at the Alumni Association's annual Technology Day via a video teleconference call at about 11:45 a.m.

President Charles M. Vest stood at the podium on the Kresge stage, the head and shoulders of Fincke towering behind him on a 30-foot screen. The two chatted about space exploration and MIT for about 15 minutes.

Fincke requested the teleconference so he wouldn't miss his reunion, even if he couldn't be at MIT physically. He has been living on the ISS since April 21 as the Expedition 9 flight engineer and ISS science officer, working with Russian cosmonaut Commander Gennady Padalk.

Fincke and Padalk trained in Kazakhstan before the launch, and Fincke clearly relishes the international aspect of the ISS. His message to the approximately 1,100 alumni gathered in Kresge was one of peace and international cooperation.

"Human beings should work together constructively and not destructively," he said appearing to gently bounce in the zero-gravity atmosphere as though standing chest-deep in water. He wore a blue jumpsuit and his hair was cropped short. He waved several times to the crowd (which he could see) and grinned and laughed often during the call.

"MIT prepared me nicely for this next sphere of globalization. To some people that's a bad thing. But I think it's a really good thing—working together across national borders," he said.

He described the space station as "beautiful, remarkable, an incredible piece of engineering and a great laboratory" in response to a question from Vest. "It's a great place to do science—though it's a little odd to do science in an atmosphere where the surface tension is more of a factor than gravity."

"As for the workload, we're busy, but it's nothing compared to Unified," he said, in a joke that only an MIT crowd would understand. (Unified Engineering in the Department of Aeronautics and Astronautics is described by some students as the most demanding series of subjects at MIT.)

Over the years, Fincke has remained in touch with other members of the Class of 1989, some of whom prepared a care package for him that will travel to the ISS on the next NASA shuttle. Charles Whetsel, head of the Mars robotics division at NASA's Jet Propulsion Lab, included a home movie of a whale watch that Fincke, Whetsel and their wives took in 1998. Martin Serrano of TV Guide Onscreen put together a DVD montage of photos strung together with the Talking Heads' "Naïve



PHOTO / JUSTIN ALLARDYCE KNIGHT

Alumnus Mike Fincke appears at his 15th reunion on a 30-foot screen in Kresge Auditorium via video teleconference from the International Space Station.

Melody" ("Home is where I want to be"), and other favorite songs of Fincke's as background music.

Fincke is the second alumnus to live on the ISS; the first was ISS commander Captain William Shepherd (S.M. 1978), but he's certainly the first to attend his college reunion from space. His broadcast traveled to the Johnson Space Center in Houston and then on to Kresge,

where it was picked up through an ISDN line.

In addition to setting a record for the most miles traveled while attending a reunion, he probably set some sort of record for space acrobatics. He's surely the first alumnus to turn a cartwheel on Kresge's stage during Tech Day, a feat he performed with a grin and a goodbye wave.



PHOTO / DONNA COVENEY

50th reunion get-together

Two friends from the Class of 1954 met at their MIT reunion: Joe McGann (left) and Professor Paul E. Gray, president emeritus of MIT. Gray moderated a special 50th-reunion event on the afternoon of Commencement day—"Bio, Nano and Info: Technologies of Growing Significance," a trio of seminars featuring professors Robert A. Weinberg (S.B. 1964, Ph.D.), Timothy W. Swager and Victor Zue (Sc.D. 1976).

Classes donate \$81M

Reunion classes donated \$81,315,483 to MIT, the third-largest total in the history of the reunion giving program, according to figures announced at the Alumni Association's Tech Day luncheon.

The Class of 1954 led the way with a gift of \$25.5 million. There were record-breaking gifts from the 55th and 45th reunion classes. The Class of 1949, with 48 percent of the class contributing, donated a total of \$5.3 million, and the Class of 1959, with 43 percent of its alumni donating, tallied \$4.6 million. The highest class participation rate was 80 percent from the Class of 1939, which contributed almost \$5.3 million.

Paula J. Olsiewski (Ph.D. 1979), outgoing president of the Alumni Association, also announced that Marilee Jones, Warren M. Rohsenow and Joseph P. Recchio were given honorary membership in the association. Anyone who has rendered outstanding service to the association or the Institute is eligible for the honor.

Jones has been at MIT for more than 20 years and has been dean of admissions since 1998. "Because of Marilee's leadership and passion, the message of 'science in the service of mankind' now resonates among generations of students," her award said. "Marilee has also been visionary in her approach toward admissions strategies and processes, incorporating faculty

and alumni perspectives, and the concerns and interests of prospective students and their parents."

Professor Emeritus Rohsenow retired from MIT in 1985 after 39 years on the mechanical engineering faculty, but "his giving nature is still apparent in the continuing interest he shows to his former students, and they remain devoted to him," Olsiewski said.

Recchio began working for the Alumni Association in 1975 in data entry and is now its director of operations and information systems. "Joe's internal roles in the Alumni Association have tended to hide from alumni and alumni volunteers, yet he has made a substantial impact on the organization's foundation and success over the years," Olsiewski said.

Olsiewski also presented the Alumni Association's Bronze Beaver Award to President Charles M. Vest and Mrs. Rebecca Vest. In addition to everything Vest himself has done for MIT, "Chuck and Becky also have been very generous in opening up their home to alumni, students and parents, hosting Parents Weekends and attending Tech Reunions. They have flown tens of thousands of miles to visit with alumni around the world. They have been an excellent first family of MIT," she said.

Attitudes toward cars must change, speakers say

Denise Brehm
News Office

The developing world must "shift gears" toward policies of car sharing, congestion pricing and urban planning to cope with the crowding and pollution caused by the rise of urban automobile traffic, Professor Ralph Gakenheimer told alumni in Kresge Auditorium at Saturday's Technology Day program focusing on the car.

Pedestrian traffic is decreasing and bicycle traffic is holding steady, while automobile traffic is on the rise in much of China, said Gakenheimer, professor of urban studies and planning and civil and environmental engineering.

"All over China, the government is actively repressing the use of bicycles, which are truly a democratic form of transportation. There are 1.8 bicycles per family in China. And families are small, so that's practically a bicycle for

every person," he said.

"Congestion is not a factor of the number of cars, but of the speed of change in that number," said Gakenheimer. He showed a slide with average commute times for cities including Jakarta (82 minutes) and Manila (120 minutes).

On the other hand, Joseph F. Coughlin, a researcher in the Center for Transportation and Logistics and director of the MIT AgeLab, is seeking ways to keep people in their cars longer, or for more years anyway. Coughlin studies the problems of transportation faced by older adults in the United States.

He described the "longevity paradox"—"Now that you're living longer, what are you going to do? Where are you going to live? How are you going to get around?"

Studies indicate that the words most often used by senior citizens in describing their driver's licenses are freedom and independence. "A driver's license is a critical part of their identity," said Coughlin, who described a

California study that asked people age 65 and over what driving means to them.

"The worst thing they could imagine happening to them was being diagnosed with a fatal disease. The second worst thing: losing their driver's license. And to show you just how the spouse rates, the number-three worst thing was a spouse being diagnosed with a fatal disease," said Coughlin. "One Boston-area man who was interviewed said, 'You can always get another wife, but you can only get one driver's license.'"

Other speakers at "Shifting Gears," which examined some of the challenges and solutions associated with the automobile, were professors Daniel Roos (S.B. 1961, S.M., Ph.D.), John B. Heywood (S.M. 1962, Ph.D.), Ernest J. Moniz and William Mitchell, as well as Anne Asensio of General Motors Design and Dean Kamen, chairman of Segway LLC and founder of FIRST (For Inspiration and Recognition of Science and Technology).