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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

MIT readies for 139th Commencement

Sasha Brown
News Office

MIT's 139th Commencement exercises will be held on Friday, June 3, at 10 a.m. in Killian Court. During the ceremony, 2,177 undergraduates and graduate students are scheduled to receive 1,094 bachelor's degrees, 1,078 master's degrees, 257 doctorates and 12 engineer degrees.

Admission for ticketed guests begins at 7:30 a.m. Graduates will robe and assemble in the Johnson Athletics Center, on the second floor, at 7:30 a.m.

Irwin M. Jacobs, co-founder, chairman and CEO of Qualcomm Inc. and an MIT

alumnus (S.M. 1957 and Sc.D. 1959), will deliver the principal address. President Susan Hockfield will charge the graduates. Other speakers will include Barun Singh, president of the Graduate Student Council, and Rohit Gupta, president of the Class of 2005, who will present the class gift. Hindu Chaplain Swami Tyagananda will deliver the invocation.

Jacobs is known as an innovative entrepreneur and engineer who greatly values research. He advocates improving U.S. math and science education.

"The extraordinary technological contributions of Irwin Jacobs have transformed global telecommunications. Dr. Jacobs' career, which began with gradu-

ate study and a first faculty position at MIT, has changed countless lives, not only through invention and entrepreneurship, but also through remarkable support of secondary math and science education, and of the arts," said Hockfield. "We are honored and delighted that he is returning to MIT to inspire our graduates and their families, and to share his unique perspective on technology and education."

San Diego-based Qualcomm holds nearly 1,400 patents and has more than 2,000 patents pending. The company has been compared to a think tank with thousands of employees.

Hockfield will present the following degrees: bachelor of science; bachelor of

science/master of science; bachelor of science/master of engineering; and advanced degrees in the School of Science, the Woods Hole Oceanographic Institution and the Whitaker College of Health Sciences and Technology. Provost Robert A. Brown will award advanced degrees in the Schools of Architecture and Planning; Engineering; Humanities, Arts, and Social Sciences; and in the Sloan School of Management.

Following the exercises, a reception will be held for graduates and their guests on the West Campus Plaza.

A special hooding ceremony for Ph.D.

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Institute Professor Cohen dies

Sarah H. Wright
News Office

Morris Cohen, a world-renowned metallurgist and MIT institute professor who received both the National Medal of Science and the Kyoto Prize for Advanced Technology, died May 27 at his home in Swampscott, Mass. He was 93.

Cohen made major contributions to the understanding of the structure of matter and the ways in which materials such as

iron and steel can be processed. His work has been central to the development of modern high-strength steels.

"This gracious gentleman transformed the discipline of metallurgy via his intellect, vision and personal effort into modern materials science and engineering.

The modern catholic view of materials science and engineering he fostered at MIT continues to influence the materials field worldwide to this day," said Edwin L. Thomas, the Morris Cohen Professor of Materials Science and Engineering and director of the Institute for Soldier Nanotechnologies.

A native of Chelsea, Mass., Cohen became interested in metals as an outgrowth of his family's business in producing and refining the lead-based alloys used in type and solders.

Cohen received the S.B. and Sc.D. degrees in metallurgy from MIT in 1933 and 1936, respectively.

He joined the MIT faculty in 1936, becoming a full professor of physical metallurgy in 1946. He retired in 1987.

"MIT is favored with many great intel-

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Morris Cohen



PHOTO / DONNA COVENEY

Vitaliy Pereverzev has come a long way from his childhood in Kazakhstan to achieve success in tennis and, finally, at MIT. The electrical engineering and computer science major will graduate Friday.

MIT fulfills dreams for Kazakh grad

Sasha Brown
News Office

When Vitaliy Pereverzev dons his cap and gown on Friday, June 3, he will be fulfilling a dream that began seven years ago when he first emigrated from Kazakhstan to play tennis and study in the United States.

"Growing up I looked up to my father," said Pereverzev whose father holds a Ph.D. in physics. "My dream became to go to MIT."

Born in St. Petersburg, Russia, in 1981, Pereverzev spent most of his childhood either playing tennis or studying. By the time he graduated from high school at 16, he was both the valedictorian and a junior champion tennis player. In the spring of 1998, Pereverzev decided to pack up, leave his family behind in Kazakhstan and go to the Palmer Tennis Academy in Florida.

With very little English, Pereverzev struggled during his first months in the United States. After spending the summer back home, Pereverzev returned to Florida even more determined. Eventually, he became one the top 10 juniors in Florida.

While playing at Palmer, Pereverzev was living with a host family and enrolled in a local high school. He quickly rose to the top there as well, graduating as valedictorian for the second time. When he started to think about schools, his host family encouraged him to look at MIT.

"They told me MIT was the best," said Pereverzev. "I knew it was for me. I thought one day God would give me a chance, and I would be able to get in."

In the meantime, Pereverzev focused his search on state schools with strong tennis programs. He was accepted at the

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Sturtevant's artworks challenge the artist's role.

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AgeLab chief gets Bush post

President George W. Bush has selected Joseph F. Coughlin, director of MIT's AgeLab, to serve as a member of the Advisory Committee to the 2005 White House Conference on Aging.

The conference, which only occurs once every 10 years, provides recommendations to the president and Congress to help shape aging policy for the next 10 years. Past conferences have led to the passage of Medicare and Medicaid, the Supplemental Security Income program and the Older Americans Act.

The 22-member Advisory Committee will advise the president and Congress on a variety of policy areas, including technology, economic security, transportation, housing, health care and other issues of concern to the nation's aging population. Committee members were appointed on May 13.



Joseph Coughlin

With more than 76 million baby boomers turning 50 at a rate of one every seven seconds, the stakes are high.

"We may not have enough time to introduce a number of the innovations already developed," Coughlin said. For example, new technology designed to adapt cars to the needs of older drivers can be applied in two to three years by automakers, but it may take a further 10 years for these changes to percolate through the national fleet, he said.

Coughlin, who joined MIT's Center for Transportation and Logistics and Engineering Systems Division in 1997, is also director of the U.S. Department of Transportation's New England University Transportation Center.

The first research facility of its kind, the Age Lab brings together the public and private sectors to craft solutions for an aging population.

Math optimizes kidney matches

Elizabeth Thomson
News Office

Many more people could get kidney transplants thanks to new mathematical techniques designed to optimize a novel matching program at the national level, according to MIT graduate student Sommer Gentry and her husband, a transplant surgeon at Johns Hopkins.

More than 60,000 patients are awaiting kidney transplants in the United States. About one-third of patients with willing live donors will be excluded from the surgery because of blood type and other incompatibilities.

Gentry, who will receive the Ph.D. from MIT this month in electrical engineering and computer science, her husband, Dr. Dorry Segev, and Johns Hopkins colleagues have demonstrated that a national matching program for kidney paired donation, or KPD, would ensure the best possible kidney for the greatest number of recipients who have incompatible donors. Currently KPD is practiced only on a local or regional level.

Key to the work is a new algorithm they developed to optimize the selection process. The work was reported in the *Journal of the American Medical Association*.

KPD provides organs to patients who have a willing, designated donor who is not compatible. A kidney from such a donor is matched to—and transplanted into—the recipient of a second incompatible donor-patient pair and vice versa. The transplants are performed simultaneously.

"Our findings demonstrate that a national pool of kidney donors and recipients, combined with new mathematical techniques for sorting through them to find the best possible organ matches, will not only allow more people to get the transplants they need, but will dramatically cut health-care costs, reduce disruptive and unnecessary travel for patients, and ensure that transplanted kidneys have the best possible chance of survival," said Segev, lead author of the paper.

"Even if only 7 percent of patients awaiting kidney transplantation participated in an optimized



PHOTO / DORRY SEGEV

MIT doctoral student Sommer Gentry and her husband, surgeon Dorry Segev, are working to improve the system of matching kidney donors with recipients.

national KPD program, the health-care system could save as much as \$750 million," he said.

The team's new algorithm for making the most—and best—KPD matches is based on a technology called optimization. Optimization, a part of Gentry's thesis work, has already proved successful in facilitating such tasks as airline scheduling and online driving directions.

"Dorry came to me with just a description of the problem and a notion that there must be an optimization procedure in it somewhere," Gentry said.

The team then tested the new algorithm against the algorithm currently used to match KPD patients. After applying each to simulated pools of incompatible donor/recipient pairs, they found that a national KPD program using the new algorithm would indeed result in more transplants, better matches and more transplanted kidneys surviving at five years.

The researchers have developed an interactive web site, www.OptimizedMatch.com, that provides more details and interactive demonstrations of the algorithm and its use in transplantation.

The research was funded by the American Society of Transplant Surgeons and a Computational Science Graduate Fellowship to Gentry from the U.S. Department of Energy.

Chemical spill spurs brief evacuation

MIT Campus Police, the MIT Environment, Health and Safety Office and the Cambridge Fire Department evacuated Building E25 following a chemical spill around 1 p.m. on Wednesday, May 25. There were no injuries, and no significant medical effects were reported. There was a bad odor.

The chemical, acrylic acid, is a colorless, corrosive liquid; it is neither a carcinogen nor considered allergenic. The spill occurred when a 1-gallon

glass container of the acid slipped off a cart and broke on a third-floor hallway of E25.

Hazardous materials teams from EHS and the Cambridge Fire Department evacuated the building and monitored the initial cleanup of the spill. Occupants returned to their offices during the afternoon.

Anyone with medical questions should contact Occupational Medicine at MIT Medical 617-253-8552.

Faculty elects slate of new officers

Sasha Brown
News Office

Elections were held for officers as well as for members of the standing committees as the faculty gathered in Kirsch Auditorium for their last meeting of the academic year on May 18.

The meeting also included reports on both the proposed faculty housing program and on the advising and mentoring of undergraduates. Institute Professor Isadore Singer was named MIT's James R. Killian Jr. Faculty Achievement Award winner for 2005-2006 (see story, Page 3), and retiring faculty members were recognized.

Associate Professor Bruce Tidor was elected associate chair and Associate Professor Diana Henderson was elected secretary. Professor Lorna Gibson, who has been serving as chair-elect this year, will become chair effective June 15. The slate for the officers and for all but three of the standing committees was approved by voice vote.

Because additional nominations for three of the committees were submitted after last month's presentation of the slate by the Nominations Committee, the election for these committees was done by ballot. Although the Rules and Regulations of the Faculty allows for balloting, this was the first time in memory that that provision was used. For more details, please visit the faculty meeting web site at web.mit.edu/dept/libdata/libdepts/d/archives/facmin/050518/050518.html. Details will be available by June 6.

Professor Hazel Sive presented the report on advising and mentoring on behalf of the Committee on Student Life, which she chairs, and the Committee on the Undergraduate Program.

She used a fabric metaphor to describe the current state of upper-class undergraduate advising and mentoring. "The fabric of the system is a little thin," she explained. While there is some excellent advising going on at MIT, she said the system as a whole could be strengthened and the faculty could "weave in stronger threads and new colors."

The report recommends advisor training on both the Institute and department level, and suggests the faculty "think about advising in formal and informal ways," said Sive. Additionally, departments may wish to consider limiting the number of advisees per advisor to allow for better relationships.

On the Institute level, the committee recommended advising periods—times when students would be encouraged to meet with their advisors—and more recognition for those advisors who go above and beyond for their students. "Presently, advising and mentoring are not taken into account in the tenure review process," said Sive. The faculty accepted the report and will hear during next year's May meeting about the steps taken and progress achieved in improving advising and mentoring.

Later in the meeting, Associate Provost Claude Canizares gave an update on the faculty housing program presented during the March 16 meeting. This program is intended to help faculty purchase homes in the Greater Boston area. The program is not limited to a particular period of time.

Since the March meeting, several faculty members have offered advice and comments on the proposed program, said Canizares. Based on those comments, the plan will now offer a 10-year Contingent Interest Mortgage Program for junior faculty up to \$100,000. Additionally, faculty hired or tenured after July 1, 2000, who were first-time homebuyers will have two years of special eligibility to refinance using one of the options.

Canizares noted that three-quarters of MIT faculty using the current Housing Assistance Loan Program (HALP) will qualify for the new program. For the remaining quarter, there is a refinance option. The changes were based on the feedback from the past two months. "It was very helpful to have the faculty comments," said Canizares. The Corporation Executive Committee will now review the plan.

Retiring faculty

Attendees applauded the following colleagues who are retiring this year: Professors Paul L. Penfield and Henry I. Smith of electrical engineering and computer science; John B. Vander Sande of materials science and engineering; Kenneth Keniston of science, technology and society; William B. Watson of history; Lotte Bailyn of management; A. Nihat Berker, Jerome I. Friedman and Jeffrey Goldstone of physics; Alan Davison of chemistry; Robert D. Rosenberg of biology; and Jeffrey Hamilton and Gordon Kelly of athletics, physical education and recreation.

Ex officio faculty

The faculty also approved the following individuals as ex officio members for 2005-06: Jeffrey A. Meldman, associate dean in the Office of the Dean for Undergraduate Education; Robert M. Randolph, senior associate dean for students; Mary P. Rowe, special assistant to the president and ombudsperson; and Alan F. White, senior associate dean at the MIT Sloan School of Management.

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Isadore Singer wins faculty Killian Award

Sasha Brown
News Office

Institute Professor Isadore Singer, a world-renowned mathematician known for his work covering a broad spectrum of geometry, analysis and algebra, is MIT's James R. Killian Jr. Faculty Achievement Award winner for 2005-2006.

"His work is fundamental in differential geometry, topology, in function and operator algebras and in partial differential equations," said Music and Theater Arts Professor Marcus Thompson, chair of the Killian Award Committee. Thompson announced the award during the May 18 faculty meeting.

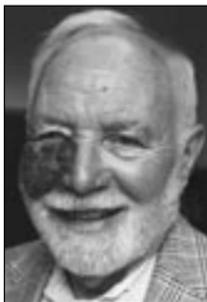
Established in 1971 as a tribute to MIT's 10th president, the Killian Award recognizes extraordinary professional accomplishment by an MIT faculty member. The winner is asked to deliver a lecture in the spring term.

"One comment on [Singer's] work at the time of his appointment to the National

Academy of Sciences was that 'probably no other living American mathematician has made basic contributions in so many fields,'" said Thompson, reading from the committee's citation. "[Singer] is one of the rare mathematicians who are able to communicate with theoretical physicists in their own language, and engage with them in genuine collaborations."

Smiling, Singer thanked his fellow faculty. "MIT is an amazing institution for faculty as well as students," he said. During his time at MIT, Singer said he has been most grateful for "the support and enthusiasm from both my colleagues and the institution, and I am sure that will continue."

Born in Detroit in 1924, Singer received his undergraduate degree from the University of Michigan in 1944. After obtaining his Ph.D. from the University of Chicago in 1950, he joined the faculty at MIT. In 1987, he was named Institute Professor,



Isadore Singer

the highest honor awarded by the faculty and administration at MIT.

A member of the American Academy of Art and Sciences, the American Philosophical Society and the National Academy of Sciences (NAS), Singer has served on the Council of NAS, the Governing Board of the National Research Council and the White House Science Council.

In 1992 he received the AMS's Award for Distinguished Public Service. The citation recognized his "outstanding contribution to his profession, to science more broadly and to the public good."

Last year, Singer was awarded the Abel Prize, a mathematics award often likened to the Nobel Prize, for a series of papers he co-authored with Michael Atiyah. The Atiyah-Singer index theorem was a crowning achievement built on more than 100 years of ideas. The papers also earned the

Bôcher Prize from the American Mathematical Society in 1969.

In 2000, Singer was awarded the Steele Prize for Lifetime Achievement, also from the AMS. Previously, Singer won the Eugene Wigner Medal (1988) and the National Medal of Science (1983).

Despite his many achievements outside the Institute, Singer has always retained "his pedagogic itch," the Killian Committee said in its citation. "He is perhaps the only American mathematician to hold a Distinguished University Professorship who regularly teaches ordinary (as opposed to honors) first semester calculus."

In addition to Thompson, members of this year's Killian Award Committee were Dimitrios J. Bertsimas, the Boeing Professor of Operations Research in the Sloan School of Management; Magnet Lab Director Robert G. Griffin, professor of chemistry; Erich P. Ippen, the Elihu Thomson Professor of Electrical Engineering and professor of physics; and Associate Professor Rosalind Picard of the Program in Media Arts and Sciences.

DuPont funds MIT alliance with \$25 million

MIT President Susan Hockfield and Provost Robert A. Brown joined DuPont Chief Technology Officer Thomas M. Connelly Jr. on May 18 to announce continued funding of the DuPont MIT Alliance (DMA), a research program focused on creating innovative, next-generation materials.

Originally funded in 2000 with a five-year, \$35 million investment, the alliance will receive another \$25 million from DuPont to continue funding through 2010, Connelly announced. This 10-year, \$60 million commitment makes the DMA the largest corporate R&D investment at MIT.

"The successes and experiences of the alliance warrant our continued funding," Connelly said. "In 2000, we asked MIT scientists to give us their best ideas on science that could enhance our everyday lives. The response and resulting research has led to significant scientific achievements. These first five years focused on inventing new materials using nature and biology as the design roadmap." In this second stage, the alliance will expand beyond bio-based science to work with nanocomposites, nanoelectronic materials, alternative energy technologies, and next-generation safety and protection materials, he said.

"Here at MIT, we are very proud of our long tradition of strong working relationships with world leaders in key industries. The DuPont MIT Alliance takes such partnerships to a new level, providing a model of successful university-industry collaboration not just for our two organizations, but nationally as well," Hockfield said.

"The DuPont MIT Alliance is an example of academic-industry collaboration at its best, with MIT faculty and DuPont colleagues working together to define exciting research opportunities, to create wonderful new science and technology, and to educate graduate students in science and engineering in the midst of the excitement generated by the collaboration," Brown said.

Research showcase

Four top DMA research programs were showcased on May 18 to demonstrate the goals of the alliance: to advance basic science; to create commercial potential for novel scientific applications; and to develop enabling technologies that directly relate to the strategic direction of DuPont research and development. The featured MIT scientists and their programs were:

—Professor Gregory Stephanopoulos: next-generation advances in metabolic engineering, including genome-wide analyses and modeling for the production of chemicals and intermediates from renewable bio-feedstocks;

—Professor Mriganka Sur, head of the Department of Brain and Cognitive Sciences: an early stage research program to develop a novel biopolymer-based nervous system implant that could replace nonfunctional brain tissue following traumatic brain injury;

—Professor Linda Griffith, director of the Biotechnology Process Engineering Center: a device for tissue-like culturing of liver cells, designed to provide early assessment of the toxicity of new pharmaceuticals;

—Professor Michael Rubner, director of the Center for Material Science and Engineering: a novel material similar to the naturally water repellent surface of the lotus leaf. Potential applications include self-cleaning fabrics, water-repellant windshields, or plumbing that resists the growth of harmful bacteria by preventing water from accumulating on its surface.

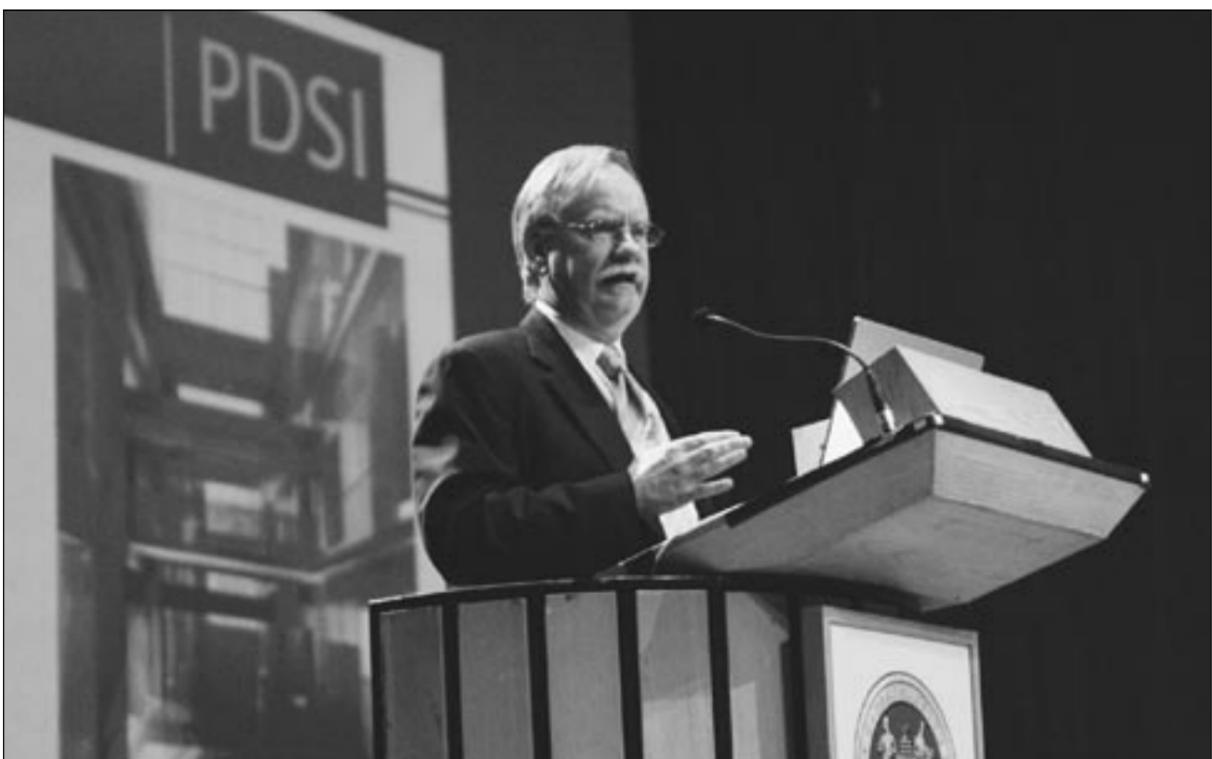


PHOTO / DONNA COVENY

Provost Robert A. Brown cited historic academic developments and extraordinary change in campus life in his remarks at the State of the Institute Forum, held May 23 in Kresge.

Forum celebrates Institute's strengths

Sasha Brown
News Office

The Institute is enjoying a period of renewed strength in many different areas, MIT's administrative team told the hundreds of people who gathered in Kresge Auditorium for the State of the Institute Forum on May 23.

Sponsored by the Administrative Advisory Committee, the forum consisted of an hour-long talk—roughly 20 minutes each for President Susan Hockfield, Provost Robert Brown and Executive Vice President John Curry—followed by an hour of questions and answers.

Just five months into the job, Hockfield spoke of the future of academics at the Institute. "I feel fortunate to have arrived at MIT at a time when there is great Institute-wide strength, and so much promise in new areas that cut across disciplines," she said.

During the economic downturn of the past two years, administrators had to make some tough choices, Hockfield said. Now that the economy is stronger, MIT is "positioned very well going forward," she said. She noted she sees several challenges ahead for MIT, including declining federal support for research and greater competition from peer institutions. "We do face competition for the very best faculty and students," said Hockfield.

A life scientist herself, Hockfield

said she is intrigued by the new areas of study and research involving a convergence of engineering and the life sciences. She predicted that this convergence will have the same kind of transformational effect as occurred with the incorporation of physical science into engineering 50 years ago.

The president also noted that MIT has a unique role to play in energy research—a critical issue for the nation and the world—by bringing together expertise across the whole spectrum from science and engineering to public policy, international relations and urban planning. She and the provost are working with faculty to launch a new Institute-wide initiative in this area.

"I feel enormously optimistic," she said.

The provost commented on three new areas of study that are indicative of the cross-cutting initiatives in the educational realm: the chemical-biological engineering major offered by the Department of Chemical Engineering, the biological engineering major offered by the Biological Engineering Division slated to start this fall and the undergraduate minor in management also starting this fall. These are all indicators that show the Institute is undergoing historic academic developments, said Brown.

As the academic programs continue to evolve, the campus itself must evolve to meet new needs. Brown noted the importance of com-

mon space, citing the opening of the Stata Center as a perfect example and the "extraordinary change that has occurred by building truly common space in our midst."

One of the most exciting projects on the horizon is the new Green Center for Physics, which will be anchored by an "infill" structure in the Building 6 courtyard. The four-story building will have 50,000 square feet connected to Buildings 4 and 6 on the third and fourth floors by walkways and by a two-story-high research lab on the ground floor. Currently, the physics department is spread across 13 different buildings, including Building 6.

John Curry spoke of the budget woes that MIT had weathered over the past couple years and the promise of the future. "We made some hard choices, but are now better positioned to move forward and we can, therefore, steer a more normal course," he said.

The Institute is moving apace toward electronic transaction processing and eliminating paper as "we continuously upgrade administrative IT," said Curry. "For example, the web-based Employee Self Service system, which allows MIT employees to input demographic data as well as track and change their benefits, is now used by nearly all employees. A new payroll system will go live in January of 2006. There are several other projects on the horizon as well," Curry said.

Alumnae, grads look back at MIT

Sarah H. Wright
News Office

Alumnae celebrating their 25th reunion year on Friday did problem sets in a different world from those graduating today. The Class of 1980 was 16 percent women; in 2005, the graduating class is 42.5 percent women, and Susan Hockfield is MIT's president.

The Class of 2009 is expected to be 49 percent women. As this new generation of MIT women prepares to walk the Infinite Corridor for the first time, current and former women students offered some highlights from their experiences.

Most often, they focused on an inspiring and thoughtful advisor or the help of labmates or teammates.

Katherine C. Lin, a senior majoring in civil and environmental engineering, said Jenny Jay, her supervisor in the Ralph M. Parsons Laboratory, was both the "listening ear I really needed" and the scientific guide who helped her see how "what I studied in the classroom and the laboratory could be relevant to the world outside," she said.

Joan Griffin (S.B. 1980) majored in civil engineering and is now a senior vice president at the Royal Bank of Scotland in New York City. She credits her advisor, the late Professor Frank Perkins, with being the "greatest influence on me while at MIT and afterward; he suggested I think about business school."

A mother of three, Griffin also noted, "One of the first things I taught my 10-year old daughter to say was, 'Girls are good in math!'"

Like Griffin, Catherine White (S.B. 1980) recalls her mentor, Pat Melaragno, who was coach of the MIT Varsity Pistol Team, as especially helpful. She has also stayed in contact with her teammates.

"Joining the pistol team was the best thing I did at MIT. A sport that I had never previously tried became a lifelong avocation. My pistol team friends have pretty much remained friends. We get together once a year in April at the varsity vs. alumni match," said White, a tax accountant.

For California native Sandhya Sitaraman, a brain and cognitive sciences major graduating this week, life at MIT was all about the women's dorm, McCormick Hall, where she was a resident academic

advisor for three years.

"McCormick was a great experience, and I would do it again in a heartbeat. The dorm creates an atmosphere that encourages women at MIT to pursue the toughest challenges and to be the best at whatever they choose," she said.

"When I was accepted to MIT, many boys were surprised that a girl could get accepted to this institution. Many even said that the reason I got in was because I was a girl," she said.

But Sitaraman found encouragement to "excel in any field," she said. "My four years here have been absolutely wonderful in terms of helping me grow as an individual, and I leave this place with many fond memories."

Women critical of aspects of MIT credited the courage and tenacity of faculty women who spoke up to improve things.

For Karen Sachs, graduate student in biological engineering, the MIT faculty who inspired her are the "brave awesome women who worked hard and took the flak" for the 1999 report on the status of women in science. Their work "caused a ripple effect in the science world and tangibly improved things for women," she said.

CEREMONY—

Continued from Page 1

recipients will take place on Thursday, June 2, at 1 p.m. in the Johnson Athletics Center. Chancellor Phillip L. Clay will preside.

New policy

A new policy on the protocol for demonstrations at Commencement and other academic exercises has been finalized.

The policy is designed to accommodate the free expression of ideas while ensuring that Commencement runs smoothly. Commencement exercises require complex and precise planning and the coming and goings of guests—as well as the ceremony itself—must be free of obstruction or interference.

In accordance with this policy, Killian Court will only be accessible to members of the graduating class, faculty, stage assembly and ticket-holders. Access to Johnson Athletics Center, where robing will occur, will also be limited.

For more specific details, please see the Statement by the Chancellor's Committee on Protocol for Demonstrations at Commencement and other Academic Exercises at: web.mit.edu/commencement/2005/ProtocolforDemonstrations.html. Questions regarding locations for demonstrations may be directed to Gayle Gallagher, Executive Officer for Commencement, at gayle@mit.edu.

For those unable to get into Killian Court, a live online webcast of the Commencement exercises will be available on and after June 3.

Parking

For guests attending the Commencement exercises on Friday, complimentary parking will be available in the West Parking Garage on Vassar Street. Paid parking will also be available in the Marriott Hotel Parking Garage (entrance at corner of Ames Street and Broadway) and the Technology Square Parking Garage (entrance on Broadway) on Thursday and Friday.

Following Commencement, the MIT Community Service Fund will host its annual fund-raising sale of the plants displayed on the Commencement podium and surrounding stage at 3 p.m. on Killian Court. Proceeds from sales of the plants, which are made available by the Office of Conference Services and Special Events, support service to the local community by MIT staff and student volunteers.

In the event the Commencement exercises in Killian Court are canceled due to severe weather conditions, the speeches will be held in Rockwell Cage for the stage assembly and graduates only. Guests may view the speeches on closed-circuit television at various campus locations.

Complete Commencement information, including the complete schedule, is available at web.mit.edu/commencement/2005.



PHOTO / L. BARRY HETHERINGTON

Officers, from left, Robert Molino, Kevin O'Connor and William Smith represent the MIT Campus Police Honor Guard at President Hockfield's inauguration. The honor guard will be leading the Commencement procession on Friday.

Honor guard marches with pride

Sarah H. Wright
News Office

The Campus Police Honor Guard will lead the procession through Killian Court on Commencement morning, exhibiting one of MIT's newer traditions for the second time this spring.

Five of the 11 drill team members will guide members of the Class of 2005 to their seats. Two will carry M1 rifles as the other three carry flags of the United States, Massachusetts and MIT. Members' uniforms feature a cross belt and garrison hat designed especially for the team.

The honor guard also participated in the inauguration of President Susan Hockfield on May 6.

The guard is a source of pride to the group and to the Institute, and that's exactly what MIT police Chief John DiFava had in mind when he supported forming the team in 2002.

The guard gives participants and the police department as a whole "a positive sense of unity and identity," DiFava said.

The 2005 team members, all volunteers, are Patrol Officers William Smith,

Kevin O'Connor, Duane Keegan, Mark Kelleher, Robert Molino, Brian Sousa, Sgt. Cheryl Vossmer, Det. Willard Boulter, Sgt. Michael Carey and Lt. Daniel Costa.

"We take great pride in representing not only the men and women of the department but MIT as a whole. We have been very fortunate to march in various big parades throughout the state and have been very well received by all. The great thing about being in the honor guard is meeting the people and other honor guards," said Smith, a founding member of the team.

The team's off-campus appearances have included Memorial Day parades in Cambridge, Patriot's Day parades in Lexington and St. Patrick's Day parades in Boston.

Vossmer enjoys both the MIT and off-campus experiences, she said.

"It is so awesome to hear comments like 'That's MIT? Wow!' or 'I didn't know they had an honor guard' or, after a funeral, to have people thank us for our professionalism," Vossmer said.

When the team was first formed, they practiced rifle drills and flag presentation twice weekly at the Black Falcon Terminal in South Boston. With experience, they

"try to practice once a month, with more the week before an event," said Smith.

Costa, a former Marine Corps drill instructor and a former member of the Massachusetts State Police drill team, has coached the MIT honor guard team since 2002.

From their very first Commencement, Costa said, the team "looked sharp" and had "determination and enthusiasm."

Of course, precision drilling isn't mastered overnight. The team uses "close order marching, which means we're shoulder to shoulder, and the challenge is keeping in step," said Smith.

"For me, the biggest challenge is some of the drills. When we're told to 'glide,' it's much harder than it looks," said Vossmer.

The final product—an honor guard that moves as one and glides through its maneuvers—symbolizes more than any single event, no matter how exciting or solemn.

"As you see the police, fire and military honor guard units pass by you in a parade—applaud! It is due to the dedication of the men and women in these careers that America is such a wonderful and safe place to live," Vossmer said.

Erratum

Due to a production error, the following awards do not appear in their entirety in the preprinted Institute Awards pullout. Tech Talk regrets the error.

Urban Studies and Planning

Marsha Ritzdorf Award—for the best student work on diversity, social justice and the role of women in planning

— Tara Kumar, M.C.P. 2004, Columbus, Ga.

Chemistry

ACS Analytical Chemistry Award—for achievement by a junior in analytical chemistry

— Sarah Mahlstedt '06, chemistry, Boulder, Colo.

Brain and Cognitive Sciences

Dean's Educational and Student Advising Award

— Monica Linden G, brain and cognitive sciences, Fort Lauderdale, Fla.

Tech Day spotlight is on bioengineering

Nancy DuVergne Smith
MIT Alumni Association

MIT's expertise in measuring, changing and designing biological systems at the molecular level has ushered in a new era for engineering the building blocks of life. At Technology Day this Saturday, June 4, leading bioengineering faculty will explain the Institute's role in developing breakthroughs from creating liver tissue to challenging the drug resistance of cancer cells.

The audience for Technology Day, the intellectual core of Tech Reunions, includes MIT graduates and guests from the classes of 1930 to 2000 on campus June 2-5 to reconnect with friends and learn about MIT advances.

Discussions on this year's Technol-

ogy Day topic, "Bioengineering at MIT: Building Bridges Between the Sciences, Engineering and Medicine," will begin 9 a.m. in Kresge Auditorium with an overview by Douglas Lauffenburger, director of MIT's Biological Engineering (BE) Division. Three division faculty will introduce their work: Linda Griffith, a mechanical and biological engineering specialist who works on tissue engineering; Angela Belcher, a materials chemist who focuses on the interfaces of materials; and Ram Sasisekharan, who studies the role of sugars in cell functions. Martha Gray (Ph.D. '86), director of the Division of Health Sciences and Technology, will describe how emerging biomedical technologies are changing medicine.

The moment is ripe for exploring bioengineering since MIT is launching the nation's first biological engineering field of

study that fuses molecular and cellular bio-science with engineering. "MIT has built a new curriculum based on modern molecular life sciences with application to a range of problems in pharmaceuticals, health care, environment and biology-based synthesis of new technologies," said Griffith, chair of the undergraduate BE committee.

Thomas Magnanti, dean of the School of Engineering, noted that the molecular and genomic revolutions have placed biology as a new foundational science for engineering, joining physics, chemistry and math. "At MIT, engineers are working with their counterparts in MIT's renowned biology department to meld biology with a design-oriented engineering approach," Magnanti said. "The new bioengineering looks at the problem and asks: What if we could regenerate living tissue itself? Or develop innovative gene therapeutics? Or

build new devices using biological components?"

This research is improving the practice of medicine, according to Gray, a medical and electrical engineering specialist who focuses on diagnosis and treatment of arthritis.

"In an idealized world, medical strategies are built on a full understanding of the underlying molecular/cell/tissue/organ-level physiology, so problems or potential problems can be unambiguously diagnosed and a preventative or therapeutic strategy specifically targets the problem," Gray said.

In addition to Technology Day, the 3,000 alumni and reunion guests can choose from more than 100 activities, including the traditional Tech Night at the Pops on Thursday. The 50th class reunion group will lead the Commencement procession.



PHOTO / DONNA COVENEY

Burst of color

A rhododendron blossom makes the most of May showers to brighten up an otherwise gloomy day last week.

Faculty members awarded tenure

The Corporation's Executive Committee approved 25 faculty members for promotion to tenure on May 16.

Those who received tenure, all associate professors unless otherwise noted, are Eran Ben-Joseph of urban studies and planning; David L. Darmofal of aeronautics and astronautics; Scott R. Manalis and Bevin P. Engelward of biological engineering; Bernhardt L. Trout of chemical engineering; Charles F. Harvey and Martin F. Polz of civil and environmental engineering; Krste Asanovic, Isaac L. Chuang and Muriel Medard of electrical engineering and computer science; David Autor and Victor Chernozhukov (promoted from assistant professor) of economics; Emma J. Teng of foreign languages and literatures; Chappell Lawson of political science; Georgia Perakis, Antoinette Schoar, Andreas S. Schulz, Jesper B. Sorensen and Ezra W. Zuckerman Sivan of the Sloan School of Management; Michael B. Yaffe of biology; Jianshu Cao, Catherine L. Drennan and Andrei Tokmakoff of chemistry; Andras Vasy of mathematics; and Max Tegmark of physics.

Individual photos and profiles, including any additional members of the faculty who receive tenure before the end of the academic year, will appear in a fall issue of MIT Tech Talk.

Additionally, the following 22 have been promoted from associate professor with tenure to full professor: Mark Jarzombek and Terry W. Knight (effective Sept. 1, 2004) of architecture; Rosalind Wright Picard of media arts and sciences; David Ben Schauer of biological engineering; Bruce Tidor of biological engineering and electrical engineering and computer science; Paul I. Barton of chemical engineering; Heidi M. Nepf of civil and environmental engineering; William T. Freeman, Daniel N. Jackson, Franz X. Kaertner and Steven B. Leeb of electrical engineering and computer science; Angela M. Belcher of materials science and engineering and biological engineering; George Haller and Douglas P. Hart of mechanical engineering; Peter T. C. So of mechanical engineering and biological engineering; Ronald G. Ballinger of nuclear engineering; James Buzard of literature; David Mindell of science, technology and society; Dan Ariely of Sloan School of Management; Edward Gibson of brain and cognitive sciences; Pavel I. Etingof of mathematics; and Krishna Rajagopal of physics.

Twenty-four faculty members were promoted from assistant professor to associate professor without tenure: John E. Fernandez, Wendy Jacob, Heghnar Watenpaugh and J. Meejin Yoon of architecture; Cynthia Breazeal of media arts and sciences; Balakrishnan Rajagopal of urban studies and planning; Zoltan S. Spakovszky and Karen E. Willcox of aeronautics and astronautics; Michael J. Collins, Erik D. Demaine, Michael D. Ernst and Pablo A. Parrilo of electrical engineering and computer science; Leonid A. Mirny of health sciences and technology; Yoel Fink, Nicola Marzari and Christopher A. Schuh of materials science and engineering; George Barbastathis and Samir Nayfeh of mechanical engineering; Xavier Gabaix of economics; Noel B. Jackson of literature; Patricia Tang of music and theater arts; Peter D. Wysocki of the Sloan School of Management; Julian P. Sachs of earth, atmospheric and planetary sciences; and Igor Pak of mathematics.

All promotions will take effect on July 1, 2005, unless otherwise noted.

Fourth wins Fulbright

MIT has a fourth winner of a U.S. Fulbright Fellowship, Marc Schwartz, a second-year graduate student in media arts and sciences. As a Fulbright Fellow, Schwartz will do research next year at the Keio University Center for Foreign Language Education in Japan, on ways to provide an Internet-based, peer-to-peer element in English language acquisition programs.

The other three winners were announced in a story in the May 19 issue of Tech Talk.

GRAD

Continued from Page 1

University of North Carolina at Wilmington where he received a full athletic scholarship.

During his sophomore year at North Carolina, Pereverzev learned of the Diversity Visa Lottery, a program through the U.S. Immigration and Nationalization Service committed to diversifying the country. His mother entered the lottery and her name was drawn. The interview for acceptance into the program was scheduled for January 2001 and in December 2000, Pereverzev headed home for Christmas.

A couple weeks into his break, Pereverzev learned that the interview had been rescheduled for May 2001 and that he and his family were not allowed to return to the United States until then. While detained, he missed a semester of school and a full season of tennis.

Back in North Carolina, his coach and academic advisors began a letter writing campaign to get him back into the country. Finally, in August 2001—just one month shy of the Sept. 11 attacks—Pereverzev and his family were allowed in. "Had it been just one month later, we never would have been allowed back in the country," he said.

Once his family was with him, and he had permanent resident status, Pereverzev decided to pursue his dream of coming to Cambridge and to MIT. "It was the perfect opportunity."

In May 2002, Pereverzev learned that he had been

accepted as a transfer student. He received need-based federal, state and MIT scholarships that have almost fully funded his education.

Over the course of his years at MIT, Pereverzev became the first tennis player from MIT to advance to the national semifinals. Now he is the assistant head coach of the MIT tennis team. "MIT pushed me to the horizons of my ability," he said. "I found the limits, and now I know how much I can carry on my plate."

His interests expanded as well. During his first year at MIT, Pereverzev took a management psychology class, which sparked an interest in business. That interest continued to grow as he spent two summers at internships in New York City, first at Deutsche Bank in institutional equity sales and then at Access Industries Inc., a private equity firm.

At the beginning of May, the electrical engineering and computer science major learned that he had been accepted to Harvard Business School. Eventually, he would like to work on Wall Street in investment banking or credit risk.

Always true to his roots, Pereverzev plans to go back to Kazakhstan eventually to use his skills to help his home country. "I feel very fortunate and I have to share it with others," he said.

Every opportunity has been a blessing, said Pereverzev. "I am extremely grateful to MIT for letting me know where my boundaries are," he said. "I promise to keep expanding them as far as I can."

Healing cells aid cancer's growth

David Cameron
Whitehead Institute

Scientists have known for the last decade that a link exists between wound healing and cancer. Now scientists led by MIT Professor Robert Weinberg, a member of the Whitehead Institute, have discovered the process by which tumors hijack normal wound-healing processes for their own purposes.

The research, reported in the May 6 issue of the journal *Cell*, began when Akira Orimo, a postdoctoral scientist in Weinberg's lab, investigated the nature of stromal cells in breast cancer tumors.

Stromal cells form the connective tissue in a mammal's organs and glands. They also form the connective tissue inside tumors, which are composed mostly of cancer cells and stromal cells. Researchers wondered if the stromal cells simply hold the tumor together or if they work

with cancer cells to promote the tumor's growth.

"It turns out the cancer cells are not acting alone," said Weinberg. "These stromal cells play an important role in helping these cells, and therefore tumors, to grow."

Orimo found that a particular protein produced by the stromal cells, called SDF-1, is a key player in helping tumors grow. SDF-1 interacts with a class of cells called endothelial precursor cells.

Found primarily in the blood, endothelial cells travel throughout the body and aid wounded tissue by enabling new blood vessels to form, a process called angiogenesis.

The stromal cells in the breast cancer tumor produce SDF-1, which in turn persuades these endothelial precursor cells to enter the tumor. Once they do, they help the tumor to form its own robust network of blood vessels, weaving a circulatory system throughout the tumor mass. The

tumor can now access the nutrients present in the host's circulating blood and can then grow unchecked.

"Essentially, these stromal cells opportunistically exploit the normal wound-healing process to benefit the tumor," said Weinberg.

Orimo plans to further investigate this process by disturbing the interactions between the stromal cells and the cancer cells, work that may yield new therapeutic insights.

Additional co-authors of the *Cell* paper are from the Brigham and Women's Hospital, Harvard Medical School, Massachusetts General Hospital, Baylor College of Medicine and the Institut Pasteur.

This work was funded by Merck/MIT, the National Institutes of Health, the Ludwig Trust, the Breast Cancer Research Foundation, Uehara Memorial Foundation, Sankyo Foundation of Life Science and a U.S. Army Predoctoral Breast Cancer Fellowship.

InvenTeams event slated

What could a team of high school students invent with \$10,000? How about a robotic tennis ball retriever or children's soap dispenser? Students and teachers from the 2005 Lemelson-MIT InvenTeams will come to MIT for the InvenTeams Odyssey, an event to highlight their work. Through the Lemelson-MIT InvenTeams initiative, 13 teams of high school students nationwide received grants of up to \$10,000 to address a problem of their choosing during the 2004-2005 school year.

Teams will display and demonstrate inventions on Thursday, June 9, from 10 a.m. to noon at Stata Center Student Street. Presentations on the invention process will be given on Thursday, June 9, from 1:30 to 5 p.m. in Room 34-101 and on Friday, June 10, from 9 a.m. to noon in Room 34-101.

Lemelson-MIT InvenTeams is an outreach component of the Lemelson-MIT Program. For more information, visit www.inventeams.org.

COHEN

Continued from Page 1

lects and people who impact the world. Morris Cohen was both. He was a very modest person, and one who has had enormous impact on the field," Thomas said.

Cohen paved the way for materials science and engineering to emerge from its roots in metallurgy, thanks to the influential report, "Materials and Man's Needs," which he wrote for the National Academy's Committee on the Survey of Materials Science.

His faculty colleagues recognized his achievements by awarding him a Ford professorship in 1962; an Institute professorship, the faculty's highest honor, in 1974; and the James R. Killian Faculty Achievement Award in 1974.

The Killian selection committee described Cohen as a "major force" whose place in science history was "ensured."

He received numerous national and international awards and honors during his career. The National Medal of Science, this country's most prestigious scientific award, was presented to Cohen in 1976. He was awarded the Kyoto Prize, Japan's highest scientific honor, in 1987.

Cohen was an inspiring figure to all who knew and worked with him. In celebration of his 75th birthday, individual and corporate donors established the

Morris Cohen Professorship in Materials Science and Engineering, announced at the department's centennial celebration in June 1988.

An oil portrait of Cohen, which hangs in the Chipman Room (8-314), also reminds the MIT community of his contributions to science and education. Commissioned by the materials science and engineering department and painted by Marblehead artist Anthony Iarrobino, the portrait shows Cohen with items of personal significance in the background—a bust of Moses Maimonides, the 12th-century Hebrew scholar; a crystal structure of cementite; and a text on martensite, a hardening material of steel that Cohen studied.

Cohen's wife, Ruth (Krentzman) Cohen, and a daughter, Barbara (Cohen) Nordwind, predeceased him.

He is survived by a son and daughter-in-law, Joel and Sara Cohen of San Rafael, Calif.; two sisters, Louise Plansky of Los Angeles and Charlotte Freed of Chestnut Hill, Mass.; three grandchildren and five great-grandchildren.

Cohen was a founder and past president of Temple Sinai in Marblehead, Mass.

Memorial week will be held at his late residence through Sunday. Donations in Cohen's memory may be made to the Jewish Federation of the North Shore, 21 Front St., Salem, MA 01970.

OBITUARIES

ANDREA NICHOLS

Andrea Nichols, shutdown coordinator in facilities, died May 20 after collapsing at work. She was 64. Nichols started her career at MIT in the Planning Office. She joined the repair and maintenance staff in 1996. She is survived by her mother, of Arizona, and her sister, Marsha Breitenicher of East Braintree. Memorial donations may be made to: Animal Hospital, 300 Broadway, Route 1, North Saugus, MA 01906 or an animal shelter of your choice.

EDWARD E. HUNT

Edward E. Hunt, an engineer at MIT's Lincoln Laboratory for 18 years, died May 13 at his home in Northborough, Mass., after a long illness. He was 83. He retired in 1984. He leaves his wife of 59 years, Esther M. (Prada) Hunt; three sons, Daniel, James and David; a sister, Louise Waldron; seven grandchildren; and one great-grandson. He was predeceased by his son Geoffrey.

THOMAS E. SHEPHERD JR.

Thomas E. Shepherd Jr., former associate director of the Physical Plant (now called the Department of Facilities), died May 7 in Wayland from com-

plications of Parkinson's disease. The Weston resident was 78. He was an MIT employee for 25 years, retiring in 1993. He leaves his wife of 55 years, Beverly (Hastings) Shepherd; a daughter, Deborah; a son, David; four grandchildren; a sister, Jeanne Carroll; and a brother, Robert. A memorial service will be held Saturday, June 25, at 11 a.m. in the Episcopal Parish of the Messiah, 1900 Commonwealth Ave., Auburndale, Mass. Donations may be made to the Parkinson's Research Fund, Massachusetts General Hospital Department of Neurology, c/o Dr. John Growden, 15 Parkman St., Suite 830, Boston, MA 02114.

WALTER VECCHIA

Water Vecchia, a retired project manager at Lincoln Laboratory, died April 15 after a long battle with pancreatic cancer. He was 74. He was hired in 1952 and retired 46 years later. He is survived by his wife of 48 years, Matilda (DeMartino) Vecchia, of Saugus, and three daughters: Marie-Elena DeLuca, who also works at Lincoln Lab, Janine Leach and Cynthia Doucette. Memorial donations may be made to Massachusetts General Hospital Cancer Fund, Development Office, 165 Cambridge St., Cambridge, MA 02114.

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

2 window A/C units, 6000 BTU, 60 lbs. Never used, one in box. \$75 each. siggia@mit.edu.

Liftoff effervescent energy drink. Stay alert, reduce mental fatigue, pump up concentration. Ignite-Me-Orange or Lemon-Lime Blast. Free sample: dragonl@mit.edu.

Sofa, chair & ottoman \$225; dining room table, chairs, buffet \$350; maple kitchen table, chairs \$75; mahogany slant front secretary desk \$125; mahogany end tables, \$20 each. 617-253-4617 or lohehir@mit.edu.

Emerson upright piano, \$800/bst. Great cond., original ivory keys, 53 inches tall. Has a very good sound. Nicole Hennig at hennig@mit.edu.

Entertainment wall unit, 3 sections, 7' L x 6' H, cherry wood, glass shelves, recessed lighting, extra storage below. Brand new. Asking \$1,500. 978-223-3548.

Japanese Red Maples. Potted, ready for planting. Approx. 6 ft. 781-861-6105

Sears sewing machine, \$20. Kettler Vario Stepper, \$50. Conair travel hair dryer, \$10. Porter Cable Profile Sander w/attachments, case, extra sanding sheets, \$30. Ruth at 253-4716 or trometer@mit.edu.

2 bikes. 1 does not need tools. Best offer. 781-395-7265.

VEHICLES

1994 SAAB 900S. Stnd, sunroof, 140K, well maintained. \$1,800. 617-253-4177.

1995 Dodge Caravan, 101.5K, \$1,500/bst. Green exterior/gray interior; runs well; tires less than 5K. 781-981-3744 or earlew@ll.mit.edu or 617-232-1698.

1989 Jeep Wagoneer limited sport utility, 4D, 6-cyl liter, auto, ac, pw, pl, tilt wheel, leather, dual power seats, roofrack, woodgrain, alloy wheels. \$1,000/bst. Joe, days at 781-893-5224.

1997 Volvo 850 GLT Sedan. Blue w/black leather interior. 78K. \$6,600. 617-253-9694 or mbc@mit.edu.

HOUSING

Wellfleet, Cape Cod: 2BR cottage, sleeps 5, walk to beach, bike trails, cable TV/VCR, large deck, BBQ. Avail. all June (\$800/week), July 9-16 (\$1,100). Heidi at ganss@rcn.com or 617-923-2223.

Inman Sq.: Furnished single room for visiting faculty/postdocs. Kitchen, laundry privileges, all utils, cable, wireless LAN, linens, supplies included. One month min. 617-625-9839.

Chatham, Cape Cod: Clean, bright vacation cottage near town, beaches. 3BR, 1b, deck, gas grill, outdoor shower, washer/dryer. \$1,000 - \$1,250/week. 617-253-3951 or ctoro@mit.edu.

2/1 condo in Cambridge, Sidney Street, close to MIT (15 min. walk), Harvard, BU. Quiet neighborhood/building. \$299,000. chryseis@mit.edu.

Summer rental, Newport, RI. Weekends in June, by the week in July/Aug. www.mit.edu/djmartin/ or Dan Martin at 781-383-3279.

Arlington Hgts: 1BR, kitch, bath, \$900 incls HT/HW & ELEC, avail 6/1 n/s. 781-643-8152.

Newton, sabbatical home avail. 9/05, period negotiable, bright contemporary, 4BR, 2.5 b., study. Hrdwd flrs, no lead paint. \$3,000/mo.

dennism@mit.edu or 617-527-1466.

Lincoln, NH: 2BR, 2b, multilevel townhouse. Equipped kitchen, linens provided. 2 outside swimming pools, 2 inside swimming pools, 2 jacuzzi, sauna, weight room, locker room. 781-862-3856.

2BR, sunny 6RM, 1st floor, near T, hardwood floors, natural gumwood woodwork, no fee, smoking or pets, owner occupied. Arlington, avail. June 1. Ellieh36@aol.com.

Eastham, Cape Cod: 3BR, short walk to beach, W/D, phone, June/Sept. \$700/week; July \$850/week. 781-729-4619.

Medford: 2BR apt, near T stop, no pets, no smokers, \$1,300. Melody at 781-874-2103.

Chestnut Hill: 1BR, Near T, supermarket, movies. \$990/mo. Incl heat, all utils, parking, cable. Rental start Sept. 1, 1-1.5 yrs.

Orleans, MA: 2BR, 2b, antique house. 1.5 miles to Nauset Beach. Sleeps 3-4, \$950/wk. Polly at 253-9456 or 617-718-7704.

Southern Maine: 3BR lakefront cottage. Porch/deck for relaxation. Golf/Kennebunkport close by. Weeks in July \$800. maturner@mit.edu.

Craigville Beach: 3BR Cape w/ all amenities. 1/2 mile to beach. July/Aug.: \$1,000/wk.; June/Sept.: \$700/wk. dhanly@comcast.net or 978-276-0158.

Attleboro: 2BR, 1.5b, waterfront townhouse. 1 mile to comm. rail. www.c21edpariseau.com/detail_4.aspx?id=228&src=0

MISCELLANEOUS

Yard Sale, June 4, 9 a.m.-3 p.m. at Eastgate (E-55) Front Yard and Playground. Furniture, baby and household items. Rain location - Eastgate Penthouse Lounge.

SpainOn TOURS. Your Travel Tour Agency for

Custom Tours of Spain. Experience the authentic Spain in our exclusive escorted tours. www.spainon.com. sacinas@mit.edu or 253-7516.

WANTED

Want to get out of the office a bit this June, July and August? Female administrator seeks partners for informal, occasional lunchtime walks near campus, around the river. 112233@yahoo.com.

College professor seeks house-sit w/family for all/part of summer. Responsible, non-smoking, references available. 914-271-9695 or rosen8637@aol.com or ninadm@mit.edu.

Summer sublet wanted: Studio or 1 BR wanted for the Aug., Sept. amd poss. Oct. On or near campus. Mature female, admin. staff employee at MIT. Pam at 617-699-6893.

STUDENT POSITIONS

Positions for students with work study eligibility.

Media and Technology Charter High School seeks English/math tutors for summer academy, 7/18-8/19, M-Th, 7:45 a.m.-1 p.m. Trainings: 6/7 and 6/21. \$17/hr. www.matcheschool.org.

"College prep" program seeks Residential Assistants for male floor and Science Teacher. Must live at Wellesley College. M-F. upwardbound@mit.edu.

Cambridge Community Center seeks group leaders for summer. Responsibilities: supervision of children, classroom activities, recreational games. M-F, 8:30-4:30, \$12/hr. Miss Kay Kendrick at 617-547-6811.

The Margaret Fuller House seeks 2 teachers/counselors for summer program of (9-10 weeks). Teach arts, crafts, sports, math. Teaching experience helpful, Spanish or Haitian useful. 617-547-4680 or fax resume: 617-497-0166. \$10-12/hr.

Tech Night to premiere Machover work

The Boston Pops Orchestra will perform "Jeux Deux," a new concerto for HyperPiano and orchestra composed by Media Lab Professor Tod Machover, at Tech Night 2005 on Thursday, June 2, at 8 p.m. in Symphony Hall. Keith Lockhart will conduct.

Machover is a world-renowned composer of innovative music that synthesizes acoustic and electronic sound. "Jeux Deux" was commissioned by the Pops to celebrate MIT's 108th Tech Night with the Pops this year. The title is a playful reference to Debussy's "Jeux" and a near translation from the French for "two-person game."

Machover's concerto will feature pianist Michael Chertock, who will play a Yamaha Disklavier grand instead of a traditional piano, and it will include live images projected onto a large screen above the Pops orchestra.

Media Lab graduate student Marc Downie produced the images using video close-ups of Chertock's fingers and hands that morph into colorful, abstract forms or recognizable human shapes depending on changes in the music. The result is a real-time illustration of the dialogue between piano and orchestra and between soloist and "hyperized" piano.

Lynn Heinemann of the Office of the Arts talked to Machover about his latest composition.

Q. How did the Pops commission come about?

A. The Pops contacted me out of the blue for this commission. They were interested in having something exciting and fun, that used interesting new technology, that was about 15 minutes long and that would not be too hard to rehearse. I decided on a concerto because this allows for extra rehearsal with a soloist, who can then easily fit into the orchestra. I decided on piano so I could use one of Yamaha's new generation Disklavier 9-foot concert grands, which are magnificent instruments with computer playback and recording built in. I wanted the piece to be purely acoustic—but also wanted to use next-generation hyperinstrument technology to add to the soloist's virtuosity.

Q. How will the Disklavier become a "hyperpiano"?

A. Yamaha—a longtime sponsor and collaborator—is providing the Disklavier piano from their New York studio. The "hyper" part is ours. Mike Fabio (SB '04, and poised to become a Media Arts and Sciences master's student) has designed a hyperinstrument software system that analyzes what the pianist is playing and transforms and enhances various parts—sometimes monumentally

so—according to the pianist's interpretation. So, we added a Mac Mini computer to the Yamaha Disklavier that does all the software processing, and a parallel visual system that translates the music and the performer's movements into image.

Q. Does the music have regular notation?



Tod Machover

A. The piece is notated fairly traditionally, which is essential if one wants to have efficient orchestral rehearsals. There are several "Mini-Cadenzas" and "Textures" where the piano soloist has a certain amount of latitude and where I use freer notation. Besides the Disklavier, there is a second small two-octave keyboard on the piano, easily accessible to the pianist's left hand. The pianist plays silent notes on this keyboard at specific moments of the piece in order to change the state of

the hyperinstrument software. This allows the whole technical aspect of the piece to be completely controlled by the soloist, using music keyboards instead of alphanumeric ones.

Q. Describe the visual component of the piece.

A. Marc's visuals are based on video taken from the pianist playing sections of this piece and turned into a repertoire of colors, lines and shapes that can morph in and out of representation much as the music mutates in and out of textural focus. As with Marc's recent collaborations with prominent choreographers such as Merce Cunningham, Bill T. Jones and Trisha Brown, the "image choreography" always suggests and relates to what is being performed live, but often in subtle and mysterious ways.

Q. Will "Jeux Deux" have a life after its Pops performances?

A. Just as I wanted "Jeux Deux" to be relatively easy to rehearse and to work equally well on Pops and non-Pops concerts, I also wanted it to be as simple as possible technically while still pushing the sophistication of our hyperinstruments to the next level. This should make it extremely easy to bring the piece to other venues, and there is already significant interest in performing the piece both here and abroad.

Tech Night at Pops is sold out, as tickets were purchased by this year's graduates and alumni returning to campus for reunions and Tech Week. Machover's "Jeux Deux" will also be performed at Boston Pops concerts on Wednesday, June 22, and Thursday, June 23.



PHOTO COURTESY / MUSEUM FÜR MODERNE KUNST, FRANKFURT AM MAIN

'Gonzalez-Torres Untitled (Go-Go Dancing Platform)' (1995) is one of several Sturtevant works on display at the List Visual Arts Center. Dancing hours are limited.

List exhibit spotlights Sturtevant's artwork

With "Sturtevant: The Brutal Truth," the List Visual Arts Center presents MIT's first comprehensive museum exhibition by the Paris-based American artist Elaine Sturtevant.

Sturtevant's work, which replicates other artists' work, is said to have caught the eye of the late Andy Warhol for its exacting technique. When someone asked the pop art guru about his own copying process, he supposedly replied, "I don't know. Ask Elaine," according to a 2004 article in the Village Voice.

List Visual Arts Center staff members will conduct a series of gallery talks about the exhibition. LVAC Curator Bill Arning will lead a talk today (June 1) at noon; LVAC Education and Outreach Coordinator Hiroko Kikuchi will conduct tours on June 5 and June 26 at 2 p.m.; and on June 29, LVAC Director Jane Farver will lead a talk at noon.

Sturtevant, a former visiting professor in the MIT Visual Arts Program, is known professionally simply as "Sturtevant."

She has produced replicas of works of art by Marcel Duchamp, Jasper Johns, Felix Gonzalez-Torres and Warhol. Her goal in duplicating the efforts of others, she has said, is to expand the definitions of originality and authorship, to widen the role of the creator and to broaden the meaning and purpose of art.

"My work has nothing to do with

'appropriation,' the refocusing of history, or the death of art, or the negative questioning of originality," Sturtevant said in a catalog essay by Christine Leigh. "Rather, just the opposite. It involves the power and autonomy of originality and the focus and pervasiveness of art."

Sturtevant is involved in all stages of her art production and often teaches herself different artistic techniques to create the "originals." She initially focused on works by such American artists as Roy Lichtenstein, Claes Oldenburg, Johns and Warhol.

In the late 1960s, Sturtevant concentrated on replicating works by Joseph Beuys and Duchamp. Since the early 1980s, she has focused on the next generation of artists, including Robert Gober, Anselm Kiefer, Paul McCarthy and Gonzalez-Torres.

"The Brutal Truth" at the List Center consists of selections from the original larger exhibition in Frankfurt, Germany. The MIT community will see "Lichtenstein Hot Dog" (1965/66), "Duchamp Ralâche" (1967), "Johns Flag Above White Ground" (1967/68), "Warhol Flowers" (1990) and "Gonzalez-Torres Untitled (Go-Go Dancing Platform)" (1995).

The show is accompanied by a set of catalogs designed by Sturtevant and will be on view through July 10.

For more information, call 253-4680 or visit web.mit.edu/lvac/www.

Check it out in New York

Clay Ward, program coordinator of MIT's Student Art Association, is the only American among 18 artists in a New York show examining the power, ubiquity and legitimacy of personal identity systems.

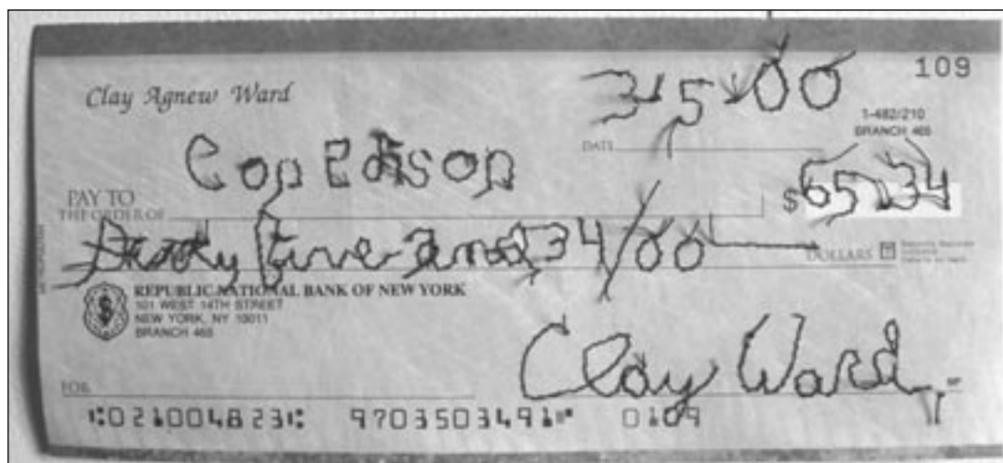
The show, "ID Troubles—US Visit," will be on view at the NURTUREart Gallery and Emerging Curators' Resource Center, 475 Keap St., in the Williamsburg section of Brooklyn, New York, until June 24. The show opened May 20.

Ward's installation for "ID Troubles" is titled "Sewn

Checks," and his medium is personal bank checks signed with stitches, rather than ink.

"Every check (except for one) was honored by the bank even though some of them got caught in the machine that was used to process them," said Ward. Ward is selling each cancelled check for its face value.

NURTUREart Gallery is dedicated to nurturing the careers of emerging artists and curators from around the world. For more information, visit www.nurtureart.org.



Clay Ward used stitches instead of ink to sign personal checks for his installation 'Sewn Checks,' now on exhibit in a New York gallery as part of a show titled 'ID Troubles—US Visit.'

MIT EVENT HIGHLIGHTS JUNE 1-5

 Science/ Technology	 Performance	 Architecture/ Planning	 Humanities
 Music	 Exhibit	 Reading	 Special Interest
 Business/ Money	 Film	 Sports	 Featured Event

WEDNESDAY
June 1

 **"COLLISION-box"**
Exhibit mixing art and technology with a duo of interactive video-based displays. \$5, free with an MIT ID. MIT Museum. 10 a.m.-5 p.m. 253-4444.

THURSDAY
June 2

 **"Constructing Stata: Photographs of Richard Sobol"**
A collection of unpublished photographs captures the construction process that brought MIT and the world the Frank Gehry-designed Stata Center (Building 32). 9:30 a.m.-5 p.m. Room 10-150. 253-4444.

FRIDAY
June 3

 **Commencement Reception**
Reception for graduates and guests. Following Commencement, approximately 1:30 p.m. West Campus Plaza.

SATURDAY
June 4

 **Screening of Three of Robert Breer's animated films**
Three playful and humorous cartoons explore the simple delights of life. 24 hours. Media Test Wall, Whitaker Building 56. 253-4400.

SUNDAY
June 5

 **Gallery Talk by Hiroko Kikuchi**
Hiroko Kikuchi will be leading a tour of MIT List Visual Arts Center's exhibition, "Sturtevant: The Brutal Truth." 2-3 p.m. MIT List Visual Arts Center.

 **Gallery Talk by Bill Arning**
Tour of MIT List Visual Arts Center's exhibition, "Sturtevant: The Brutal Truth." Noon. MIT List Visual Arts Center.

 **"Schizo (Redux)"**
Swiss artist Christoph Draeger merges Gus Van Zandt's 1996 color film "Psycho" with Alfred Hitchcock's black-and-white original (1960) so that corresponding scenes are aligned directly on top of each other. 7 p.m. Bartos Theater. 253-4400.

 **MIT Anime Club Weekly Showing**
Showings of the best of both recent and classic Japanese animation. 7 p.m. Room 6-120.

 **Eastgate Yard Sale**
Furniture, baby items, electronics, household appliances and goods. 9 a.m.-3 p.m. Eastgate front yard and playground. Rain location: Eastgate penthouse lounge.

 **International Folk Dancing (participatory)**
Dances from Eastern Europe (Bulgaria, Romania, Serbia, Croatia and others) as well as other parts of Europe and the world (Israel, France, Russia, even England and the United States). 8 p.m. Room 5-217. 253-FOLK.

 **Angel Groups in Action: Funding Early Stage Innovation**
MIT Enterprise Forum Inc. presents an insider's look into angel investing. \$20-\$30 in advance, free for students. 5:30 p.m. Kresge Auditorium. 253-0015.

EDITOR'S CHOICE

TECH NIGHT AT POPS

June 2

Generations of MIT alumni, guests, degree candidates and families come together for an exclusive concert conducted by Keith Lockhart.

Boston Symphony Hall
8 p.m.

159th MIT COMMENCEMENT

June 3

Irwin Jacobs, Qualcomm's co-founder and CEO is the guest speaker.

Killian Court
Seating: 7:30 a.m.

TECHNOLOGY DAY

June 4

"Bioengineering at MIT: Building Bridges Between the Sciences, Engineering and Medicine." 253-8243.

Kresge Auditorium
9 a.m.-12:45 p.m.

MIT EVENT HIGHLIGHTS JUNE 6-12

MONDAY
June 6

 **"Sweeney Todd" Auditions**
Auditions for Musical Theatre Guild's summer 2005 production of "Sweeney Todd." 7-9 p.m. Twenty Chimneys, Student Center. 253-6294.

TUESDAY
June 7

 **"Sturtevant: The Brutal Truth"**
Paris-based American artist known for her replications of works. Noon-6 p.m. List Visual Arts Center. 253-4680.

WEDNESDAY
June 8

 **Introduction to Self-Defense**
Jiu-Jitsu prepares a person for any situation, including stand-up and ground fighting, knife attacks and multiple attacks. 7 p.m. Dupont Wrestling Room, Building W32, Second Floor.

THURSDAY
June 9

 **Karaoke Night at the Thirsty Ear**
Must be 21+. I.D. required. 8 p.m. The Thirsty Ear Pub, Ashdown House.

FRIDAY
June 10

 **MIT Anime Club Weekly Showing**
The best of both recent and classic Japanese animation. 7 p.m. Room 6-120.

 **Trivia Night at the Thirsty Ear**
Host: Tim Graves. Must be 21+. I.D. required. 9 p.m.-11:30 p.m. The Thirsty Ear Pub, Ashdown House.

 **Arbor Day Contra Dance**
Music by Apple Crisp. \$5, MIT/Wellesley students free. 8-10:30 p.m. Sala de Puerto Rico. 354-0864.

Go Online! For complete events listings, see the MIT Events Calendar at: <http://events.mit.edu>.
Go Online! Office of the Arts website at: <http://web.mit.edu/arts/office>.

NEWS BRIEFS

Bates milestone

At 8 a.m. on Tuesday, May 31, the 31-year use of the Bates Linear Accelerator as a national nuclear physics user facility under the sponsorship of the Office of Nuclear Physics of the U.S. Department of Energy came to an end. The Middleton, Mass., facility had been used by an international collaboration of scientists for frontier research in electromagnetic physics. Negotiations are in the final stages for transferring the Bates facility from DOE to MIT, which might use the accelerator for a new interdisciplinary center.

Animal care concerns

Vice President for Research and Associate Provost Alice Gast and the chairman of the Committee on Animal Care are once again soliciting any information that would aid MIT's effort to maintain the humane care of animals used in research. The committee was established to ensure that all MIT researchers working with animals comply with federal, state, local and institutional regulations on animal care. To that end, it inspects animals, animal facilities and labs, and reviews all research and teaching exercises that involve animals before experiments are performed. If you have information about inadequate animal care or any information that would help the committee fulfill its responsibilities, contact the committee at 253-9436 or call Gast at 253-1403. All concerns about animal care will be handled confidentially and will be investigated by the committee.

MISTI experiences span the globe

Sigrid Berka
MIT-Germany Program
Center for International Studies

This summer, the MIT International Science and Technology Initiatives (MISTI) will again be sending students abroad to get hands-on experience in how science is created and applied worldwide. About 200 students will fan out to seven countries on three continents.

"I will be spending my summer in Munich, working with the autonomous intelligent systems group at Siemens Corporate Technology," said Gireeja Ranade, a sophomore in EECS who is going abroad through the MIT-Germany Program. "In addition to the technical thrill, what is most exciting for me is that I will be sharing a flat with three German artists, two musicians and an actress, in a more alternative part of the city. I'll be able to explore Munich and the culture from a perspective I never would have gained on my own."

More than 40 students will be heading to Germany, most of them working in such companies as BMW, Bosch, Lufthansa, Porsche and Siemens. Others will engage in research.

"I will help design, build and test a new biomedical device for the treatment of hydrocephalus, a disorder where excess cerebrospinal fluid causes elevated brain pressure and mental dysfunction," said Spencer Szczesny, a recent recipient of an M.S. in mechanical engineering who will work as a research assistant within the Helmholtz Institute for Biomedical Technology at RWTH Aachen University.

MISTI offers intensive three- to 12-month internships as well as study abroad opportunities, so undergraduate and graduate students from all fields can access advances in science and technology elsewhere in the world. MISTI students take intensive language and culture courses



PHOTO / DANISH S. KHATRI

As an intern in the MIT-Japan Program, Danish S. Khatri, a graduate student in electrical engineering and computer science, worked on the 'Robovie' project at the Advanced Telecommunications Research Institute in Keihanna, Japan, in 2003.

and participate in various cross-cultural retreats before their departure. MISTI has country programs in China, France, Germany, India, Italy, Japan, Mexico and Singapore.

The MIT-Italy Program will be sending a dozen interns to a variety of research centers and companies. Terry Gaige, a 2004 graduate who will return to MIT as a graduate student in September, is completing his internship at the Citta' dell'Arte, a foundation created by internationally renowned artist Michelangelo Pistoletto. Gaige has been working on alternative transportation possibilities, especially airships for passenger transportation, and the use of ethanol in reformulated gasoline.

MIT-France Program interns will do research at the famous Institut Pasteur and Institut Curie in Paris or work at companies such as Air Liquide and Renault.

In Asia, MIT-China's pilot OpenCourseWare project, launched last summer at Qinghai University, has been expanded to include four teams introducing OCW and MIT iCampus subjects at Tsinghua, Xi'an Jiaotong and Qinghai universities and at Dalian University of Technology. Team member Salvatore Scaturro said, "I am certain that OCW will change the face of education around the world. It has already begun to do so."

More than 30 students will work at national and multinational companies across Japan thanks to the MIT-Japan Program. The program is also planning a weekend trip to Kyoto, where interns will get a glimpse of ancient Japanese arts and culture.

Of the 24 students going with the MIT-India Program this year, seven are graduate students working at premier research and educational institutes such as the Indian Institute of Technology in Madras. Others will be doing internships at such corporations as Hikal Pharmaceuticals and DaimlerChrysler. For the first time, some students will also work in health care and education.

MISTI's newly launched MIT-Mexico Program arranged internships for some of its first 11 students at Banco de México, the Comision Federal de Electricidad, Metalsa and Macimex. Some students will do research at the U.S.-Mexico Foundation for Science, and at the prestigious Tecnológico de Monterrey.

For more information, visit web.mit.edu/misti.