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TechTalk
SERVING THE MIT COMMUNITY

MIT unveils new measure of R.E. value

Annual investment returns for U.S. holdings in commercial real estate – a sector favored by big pension funds – hit an unprecedented high of 34 percent in 2005, the MIT Center for Real Estate announced last week.

The finding is one of many from a first-of-its-kind index, just unveiled by the center, that tracks the value of commercial real estate, which over the past 30 years has joined stocks and bonds as a major investment vehicle.

Historically, it has been difficult to keep current on investment performance in this sector. While the performance of stocks and bonds can be tracked daily because they are publicly traded, holders of commercial real estate don't reveal comparable information.

The MIT quarterly index, the first tool released by the Center for Real Estate's new Commercial Real Estate Data Laboratory (CREDL), uses sophisticated statistical techniques and proprietary transactions data provided by the National Council of Real Estate Investment Fiduciaries (NCREIF) to create an accessible source for this information.

NCREIF is a nonprofit industry-governed organization consisting of firms that invest pension money; together the firms hold more than $200 billion in commercial real estate in nearly 5,000 properties nationwide.

"The index addresses the need for a 'fundamental asset class research' index of real estate investment performance and market conditions," according to center director David Geltner. "It is designed to tap the capabilities of modern econometrics to distill information from property transaction prices. The result is an index that provides the academic and industry investment research communities with information not currently available."

Last year's record 34 percent return made institutional private real estate investment a champion performer compared to other major asset classes in

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New battery developed for hybrid cars

Anne Trafton
News Office

Researchers at MIT have developed a new type of lithium battery that could become a cheaper alternative to the batteries that now power hybrid electric cars.

Until now, lithium batteries have not had the rapid charging capability or safety level needed for use in cars. Hybrid cars currently run on nickel metal hydride batteries, which power an electric motor and can rapidly recharge while the car is decelerating or standing still.

But lithium nickel manganese oxide, described in a paper to be published in Science on Feb. 17, could revolutionize the hybrid car industry – a sector that has "enormous growth potential," says Gerbrand Ceder, MIT professor of materials science and engineering, who led the project.

"The writing is on the wall. It's clearly happening," said Ceder, who added that a couple of companies are already interested in licensing the new lithium battery technology.

The new material is more stable (and thus safer) than lithium cobalt oxide batteries, which are used to power small electronic devices like cell phones, laptop computers, rechargeable personal digital assistants (PDAs) and such medical devices as pacemakers.

The small safety risk posed by lithium cobalt oxide is manageable in small devices but makes the material not viable for the larger batteries needed to run hybrid cars, Ceder said. Cobalt is also fairly expensive, he said.

The MIT team's new lithium battery contains manganese and nickel, which are cheaper than cobalt.

Scientists already knew that lithium nickel manganese oxide could store a lot of energy, but the material took too long to charge to be commercially useful. The MIT researchers set out to modify the

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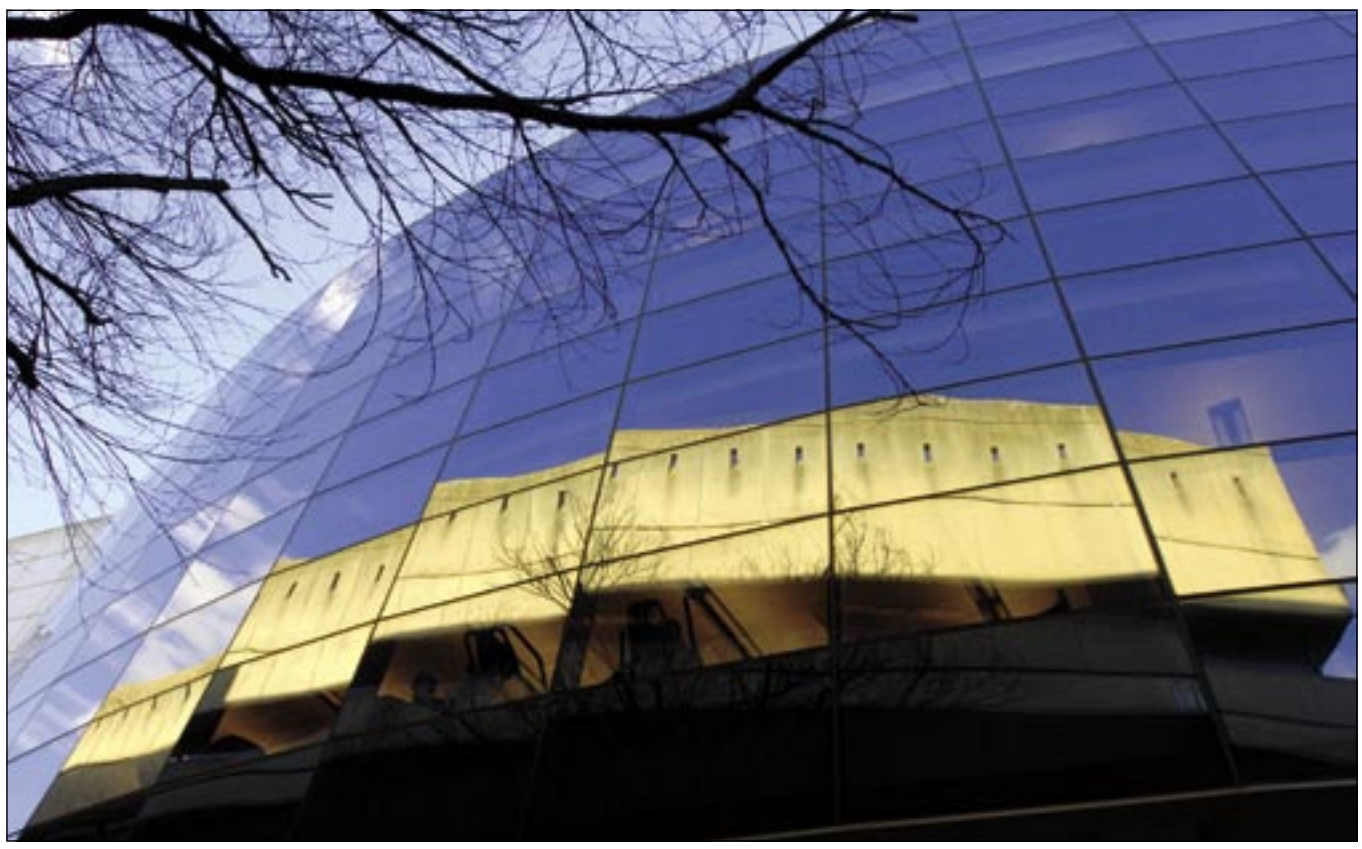

PHOTO / **DONNA COVENEY**

Winter blues

The glass wall of the Zesiger Center reflects the winter sky and the Stratton Student Center on a sunny February day.

Patrick Antaki (S.B. 1984) competes in the skeleton event in the 2003 World Championships in Nagano, Japan.

Brains, not brawn, takes alumnus to Olympics

Amy Marcott
MIT Alumni Association

MIT alumnus Patrick Antaki (S.B. 1984), a self-employed engineer and entrepreneur living in Texas, is not your typical Olympian. He's never even been much of an athlete, except for some recreational rugby. So how did he end up competing in the Winter Olympics in Torino? He decided to make it happen.

Antaki saw televised coverage of the sled racing sport called skeleton four years ago during the Salt Lake City Olympics, when the sport reappeared after a 54-year hiatus. He'd never had visions of Olympic glory, but Antaki was looking for something different to do. Different turned out to be a sport involving one person on a sled careening down a slick bobsled/luge track at speeds up to 80 mph. There are no brakes, and subtle weight shifts serve for steering.

Some 12 international competitions and nearly 500 runs later, Antaki secured a coveted spot at the Torino Games representing his birth country of Lebanon. He's the first nonskier to represent the Middle Eastern nation in the games and joined two skiers to form the 2006 team.

How did he do it? "Nothing was for sure, of course, but I did my homework, read everything I could about the sport, talked to a bunch of people, and actually tried

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In one little area of New England, a bacterium is found that is a magnetic misfit.

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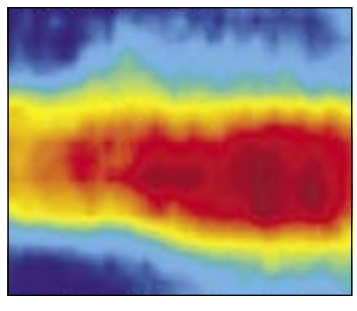

ATTENTION GRABBER

Neurons focus attention when they fire in synchrony, McGovern Institute researchers report.

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Dean calls for wider adoption of OpenCourseWare

Jon Paul Potts
MIT OpenCourseWare

Speaking before a distinguished group of leaders from government, industry and academe, MIT Dean of Engineering Thomas L. Magnanti recently issued a clear call for a new way of thinking about American higher education.

Thomas Magnanti

"I would offer two recommendations: Launch an 'OpenCourseWare for Secondary Education,' a web site focused on science, engineering and mathematics, that would help close the achievement gap in science and engineering education in the United States that concerns us all," Magnanti said. And, "create incentives to catalyze the development of OpenCourseWare projects at universities and colleges across the United States, enabling the open sharing of educational materials from a variety of institutions, disciplines and educational perspectives."

Magnanti strongly endorsed the OpenCourseWare (OCW) model, developed at MIT, before a public meeting of the U.S. Secretary of Education's Commission on the Future of Higher Education held in San Diego on Feb. 3. The commissioners – among them former MIT President Charles M. Vest – asked speakers to discuss innovative ways to improve higher education in the United States.

After presenting evidence of OCW's impact on educators and learners around the world, Magnanti stressed the benefits that users in the United States derive from MIT's unique experiment in open sharing. "OpenCourseWare users come from all over the world," Magnanti stated in his testimony, "but right here in the United States, students, self-learners and educators are finding MIT's open sharing resource to be an invaluable resource."

He cited as an example Allen Kovacs, an adjunct member of the faculty at Wayne State University in Detroit, Mich., who wrote: "We have a problem with students entering our engineering program with deficiencies in math and science. Your offerings may be of great influence and assistance to these kids who don't get enough preliminary training in K-12 curriculums."

Sharing the stories of other OCW users, Magnanti said, "OpenCourseWare demonstrates that this initiative is attracting an increasingly global audience of self-learners, students and educators, including a core group of returning visitors each week."

Magnanti also addressed potential cost savings through wider adoption of the OpenCourseWare model. "We know that high-quality educational materials and web-based resources can be expensive to develop," Magnanti stated. "When institutions share them openly on the web through programs such as OpenCourseWare, there are savings to be realized across higher education."

U.S. Secretary of Education Margaret Spellings formed the Secretary of Education's Commission on the Future of Higher Education in fall 2005. The commission is charged with developing a comprehensive national strategy for postsecondary education that will meet the needs of America's diverse population and also address the economic and workforce needs of the country's future.

For fuller text, visit web.mit.edu/newsoffice/2006/magnanti.html.

V.P. Avakian to retire in May

Laura Avakian, vice president for human resources since 1999, will retire at the end of May, announced interim Executive Vice President Sherwin Greenblatt.

"Laura's leadership has played an important role in positioning MIT as an employer of choice for talented and dedicated staff. She has guided the development of new systems within HR and streamlined procedures for our departments, labs, and centers. Our successful Rewards and Recognition program, Leader to Leader development program, and expanded child-care services all illustrate Laura's effectiveness in meeting critical challenges in a rapidly changing workplace, while the establishment of the Staff Diversity Council reflects her personal commitment to a diverse and inclusive MIT," Greenblatt wrote in a letter to members of the MIT community.

Laura Avakian

In his letter, Greenblatt invited the MIT community to join him in thanking Avakian for her contributions to the Institute. Under her leadership, MIT has been widely recognized as an outstanding place to work, he noted.

"In the year 2000, Working Mother magazine designated us one of the nation's 100 Best Places for Working Mothers, and twice in the last three years AARP has named us one of the country's 50 best employers for workers over the age of 50. Well-known to HR professionals around the country, Laura is currently president of the 4,000-member Northeast Human Resources Association," he said.

Avakian said she has "greatly enjoyed the unique challenges MIT presents" and said she is particularly proud of the Rewards and Recognition program.

For fuller text, visit web.mit.edu/newsoffice/2006/avakian.html.

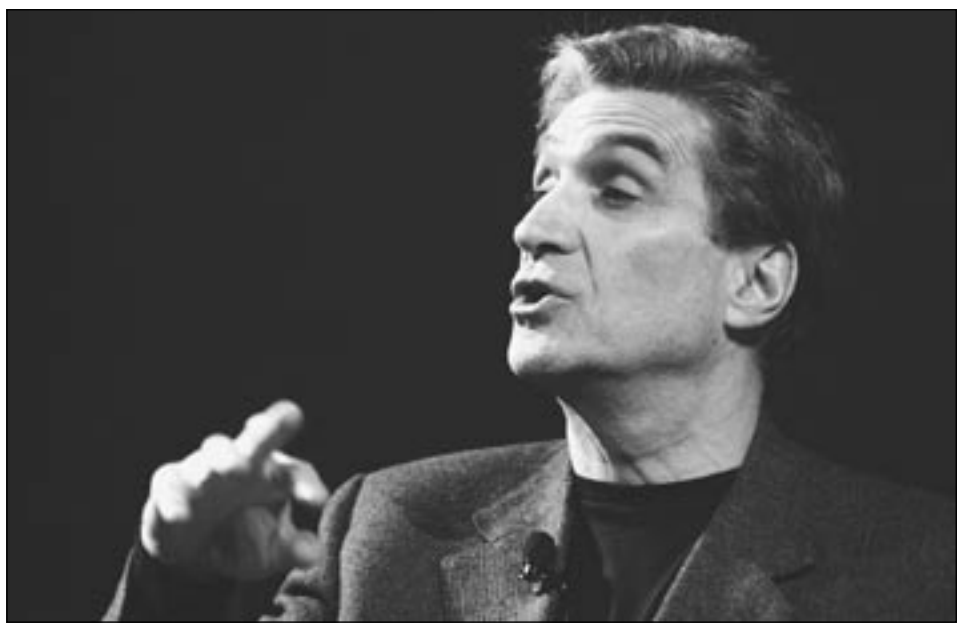

PHOTO / **DONNA COVENEY**

Former U.S. poet laureate Robert Pinsky talks about his work at an MIT Communications Forum event on Thursday, Feb. 23, in Bartos Theater.

Pinsky shares projects, poetry

Sarah H. Wright
News Office

Former U.S. poet laureate Robert Pinsky discussed poetry, democracy and a new opera in a two-hour panel conversation hosted by the MIT Communications Forum and held in Bartos Theater on Thursday, Feb. 23.

Pinsky was poet laureate from 1997 to 2000. A Pulitzer Prize nominee, he is the author of six books of poetry, including "The Figured Wheel" (1996), and "Jersey Rain" (2000). He is a professor at Boston University and poetry editor of the online journal Slate.

By turns amiable, passionate, funny and grave, Pinsky made it clear why he is the only poet to hold the laureate's chair for three terms. He engaged the audience in Bartos in his personal enthusiasm for his 1999 project, "Americans' Favorite Poems," an anthology with DVD.

"I invited Americans to send me the title and author of their favorite poem. I had an advertising budget of $7, and I received tens of thousands of responses. The project revealed a true elite — people responding to a poem and communicating their response to others — as opposed to the false elite, the academic, who may not even hear the poem, " he said.

To illustrate, he showed a video of a young man reciting Walt Whitman's "Song of Myself" while leaning against a backhoe in Braintree, Mass. This is how Whitman remains "alive — by the realization of his poem in another's body," he said.

The "ancient art of poetry has an important function in democracy because it inherently respects the dignity of the individual. It is an art of the mind and of the body," Pinsky said.

David Thorburn, professor of literature and director of the Communications Forum, moderated the MIT event.

Media Lab composer Tod Machover, a professor of media arts and sciences, joined Pinsky in the discussion of opera; they are collaborating on a new work, "Death and the Powers."

For fuller text, visit web.mit.edu/newsoffice.

Nicole Stark named YMCA Black Achiever

Nicole V. Stark, director of the MIT Saturday Engineering, Enrichment and Discovery (SEED) Academy, has been selected as the 2006 winner of the YMCA Black Achiever Award at MIT. She is the 46th member of the MIT faculty and staff to receive this designation since the Institute began participating in the YMCA program in 1979.

Stark and more than 40 other award winners were honored in a ceremony Jan. 31 at the Copley Place Marriott in Boston.

The Black Achievers program recognizes African-Americans in the Boston area and more than 100 other regions served by the YMCAs around the country. Recipients are nominated for their professional accomplishments and their commitment to community service for young people. As part of the program, recipients agree to spend at least 40 hours with youths in the Black Achievers Community Service programs.

Nicole Stark

Stark came to MIT in 2002 to direct the activities of the MIT SEED Academy. SEED provides traditionally underserved local high school students with a curriculum that strengthens their foundational math, science and communication skills; a challenging learning environment with high expectations; and access to positive role models.

"Nicole is a smart, talented, personable and accomplished professional with a personality that warms everyone she comes in contact with," said Assistant Dean Sheila Kanode in her nominating letter. "She is especially effective in motivating young people."

Minority staff development

In other news related to minority staff development, five MIT staff members have been chosen to participate in the 2006 career development programs offered by The Partnership Inc., an organization whose mission is to strengthen the Boston area's capacity to attract, retain and develop talented professionals of color. Chancellor Phillip L. Clay is a member of the organization's board of directors.

Gabrielle McCauley, administrative assistant in the Office of Minority Education, will participate in the early career program. Christopher Jones, assistant dean in the Graduate Students Office; Bryan Nance, director of minority recruitment in the Admissions Office; Lorraine Ng, associate director in resource development; and Etaine Smith, human resources officer, will participate in the mid-career program.

MIT faculty and staff members have also helped to create Conexión, a new Boston-area program. Launched earlier this academic year at a ceremony at the MIT Sloan School of Management, Conexión seeks to provide professional development opportunities, executive coaching and academic instruction to highly accomplished early to mid-career Latino and Latina professionals.

For fuller text, visit web.mit.edu/newsoffice.

HOW TO REACH US

News Office
Telephone: 617-253-2700
E-mail: newsoffice@mit.edu
http://web.mit.edu/newsoffice

Office of the Arts
http://web.mit.edu/arts

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Editor
Kathryn O'Neill

Photojournalist
Donna Coveney

Production
Anne Trafton

News Office Staff

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Int'l students find home away from home

Sasha Brown
News Office

As coordinator for the MIT Hosts to International Students (HISP) program, Janka Moss now gets to see the other side of a program with which she had some personal experience.

Close to 15 years ago, Moss and her then-husband arrived at MIT. He was here as a graduate student, but the transition from Slovakia was difficult for them both. The two enrolled in HISP, which smoothed their transition considerably, Moss said.

Moss was matched with Deborah Levey, a staff member in civil and environmental engineering, and her family. Levey invited Moss to her house, shared stories, customs and even cooking tips with Moss to help her acclimate to life in the United States.

"She is amazing," said Moss of Levey. "I can always count on her."

These are the relationships HISP was designed to cultivate when it started in 1960, Moss said. The program is open to any one of the nearly 400 international students who come to MIT each year, many of whom have never even visited the United States.

Some host families take multiple students at a time, inviting them into their homes, having them over for dinners, movies and conversation. "Many students feel homesick when they first arrive," said Moss. "It really just makes their life a little easier."

The program is very individual, said Levey, who has had many host students in the 20 years she has been involved with the program. "Some students need more than others."

Over the years, Levey has cultivated many traditions with her students. Each Halloween they carve pumpkins together and each Thanksgiving, they are invited to the Leveys' home.

The students benefit from the exposure to American culture and the homebase they create with their family. But the host families benefit as well, said Levey.

For their family, being part of HISP has been an opportunity to travel without leaving home, said Levey. "I have always been interested in life in other cultures."

PHOTO / **DONNA COVENEY**

Students participating in the MIT Hosts to International Students program identify their home countries on a globe as MIT staff member Janet Fischer, right, looks on. Since 2002, Fischer has been a host to, from left, Zawadi Lemayian, a freshman from Kenya; Irene Berita Murimi, a junior from Kenya; Smeet Deshmukh, a graduate student from India; and Tendai Chizana, a senior from Zimbabwe.

Over the years her family has hosted students from India, Romania, Malaysia, Argentina, Taiwan and more. "Their observations constantly remind us how many viewpoints we don't necessarily encounter in the American media," said Levey.

When her host students come to dinner, the conversations cover much ground, from the First Amendment to American cuisine. "One common question is, 'Is dorm food typical of American food?'" Levey said with a laugh.

For Janet Fischer, special assistant in the Office of the Provost, HISP offers an opportunity to form connections she might not otherwise make.

"For me, the program has brought nice friendships and a growing awareness of multicultural issues," said Fischer.

Since she first got involved with the program in 2002, Fischer has played host to four students: one graduate student from India, one undergraduate from Zimbabwe and two undergrads from Kenya.

This year, one of her first students will graduate. "It has been tremendously exciting to watch her," said Fischer. "She has grown in confidence quite a bit."

Fischer's door has always been open to her host students, who often stop by her office just to say hello or grab lunch. "I try to be as helpful as I can," she said.

Junior Irene Berita Murimi is one of Fischer's students. "The host program provides an opportunity to explore American culture from a nonacademic perspective," said Murimi. "Leaving campus to visit Janet's community has probably been one of the most important aspects of my international education."

Ideally, all of the roughly 100 families who participate in the program would form such bonds, said Moss, who still remembers what the transition felt like. "I loved the program when I was part of it, and I love it now," said Moss. "It makes life much easier for international students."

Women engineer future through SWE

Sasha Brown
News Office

In her first job after MIT, Barbara Johnston Fowler (S.B. 1980) found herself "the only woman on a 12-story office building jobsite."

The founding president of the MIT chapter of the Society of Women Engineers (SWE) had taken a job as a field engineer in Washington, D.C.

"(SWE) helped give me the confidence to handle most situations that I encountered in a male-dominated industry," Fowler said.

According to the National SWE web site, SWE's mission is to: "Stimulate women to achieve full potential in careers as engineers and leaders, expand the image of the engineering profession as a positive force in improving the quality of life, demonstrate the value of diversity."

In the late 1970s, MIT did not have a chapter of SWE, but in February 1980, a group of graduate students chartered a SWE chapter and elected Fowler president. This February, MIT SWE wound up its 25th year.

Institute Professor Mildred Dresselhaus, who served as MIT's SWE advisor in the 1980s, still remembers how different the academic experiences of men and women once were.

"By the end of the decade (the 1980s), women really felt they were equal here," said Dresselhaus. "SWE may have had a lot to do with that."

Since the organization is almost entirely student-led and driven, SWE participants have always been particularly empowered, said Dresselhaus.

TECH TALK FILE PHOTO / **JUDI STECIAK**

Founding President Barbara Johnston, left, holds the charter certificate for the MIT chapter of the Society of Women Engineers in February 1980. At right is Sheila E. Widnall, who is now an Institute professor.

Much has changed since SWE's early years. The number of female students has grown from 13 percent in 1979 to nearly 50 percent today, according to the Women's Guide Around MIT, published in 2005 by the Pan-Hellenic Association to help freshmen women.

Despite these changes, MIT SWE continues to maintain a strong presence, says current president, junior Nupur Garg. A welcoming organization that encourages diversity, SWE is open to anyone – male or female – who has an interest in engineering, regardless of major.

SWE has grown considerably in its 25 years on campus. Each fall, SWE co-sponsors the annual career fair, which is now one of the largest campus events of the year. First sponsored by SWE alone, the career fair is now a collaborative effort between the senior class, the Graduate Student Council and SWE. The 2005 career fair at the Johnson Athletic Center attracted more than 3,500 alumni, graduate and undergraduate students.

Back in the spring of 1980, the career fair was a brand new concept, said Fowler.

"This was a major undertaking, as nothing like it had been done at the school," said Fowler. "It was a huge success and one of my fondest memories and proudest moments at MIT."

Fowler remembers what it was like to be one of the few women at MIT, but does not remember it as a major stumbling block. "Through my eyes most of the other students were men and I usually didn't notice that I was different. It sounds simple, but I really did not feel discriminated against at MIT," said Fowler.

Still, it was important for the few women students to network, both at MIT and with professionals in the field. And that's still part of SWE's mission. "We keep working on new events," Garg said.

SWE's events over the past year have included information sessions with various companies, meals with faculty members and community outreach events as well as many other social networking activities.

"SWE is continuing to grow," Garg said.

MIT scientist shares honor for cooperation

Elizabeth A. Thomson
News Office

MIT's Paul J. Cefola is one of seven members of a Russian and American team awarded the 2005 International Scientific Cooperation Award by the world's largest general scientific society.

The American Association for the Advancement of Science (AAAS) made the announcement Feb. 15 at its annual meeting.

"Once adversaries, these dedicated scientists are honored for both their determination to transcend numerous limitations to collaboration and their pioneering work to advance state-of-the-art space surveillance in both countries for the benefit of the worldwide astrodynamics community and the safety of human activity in space," according to an AAAS press release on the award.

At the beginning of the Space Age, the United States and the former Soviet Union created separate systems for surveying space and classifying objects floating in space to ensure their own strategic and tactical advantages. The resulting databases were not shared between the two countries.

Beginning in 1994, the awardees embarked on a series of workshops aimed at exchanging information on the mathematical methods and systems used for space surveillance in their two countries, and ultimately on comparing space object catalogs.

As a result of their efforts, it was possible to achieve near real-time determination of upper atmospheric density – the nagging problem for estimating drag on satellites – and, therefore, improving orbits of geostationary satellites.

In addition to Cefola, the team members are Kyle T. Alfriend, Felix R. Hoots and P. Kenneth Seidelmann from the United States, and Andrey I. Nazarenko, Vasiliy S. Yurasov and Stanislav S. Veniaminov from Russia.

Cefola, a lecturer in MIT's Department of Aeronautics and Astronautics, has more than 30 years of experience in the aerospace industry. His research interests include the application of optimization techniques to the design and maintenance of satellite constellations. He and his colleagues will each receive a commemorative plaque and a share of the $5,000 award.

Neurons in sync focus attention, researchers find

Cathryn M. Delude
News Office Correspondent

When individual neurons fire independently, their electrical recordings sound like radio static, all noise and no signal. When even a minority of neurons fire in synchrony, a tone emerges that resembles the one that precedes radio Emergency Broadcast System announcements.

Like that tone, the neurons' synchronous signal calls attention to certain tasks — and helps speed response time, according to a study in a recent issue of Nature by Robert Desimone, director of the McGovern Institute for Brain Research at MIT, and colleagues from the F. C. Donders Centre for Cognitive Neuroimaging at the Radboud University in Nijmegen, Netherlands.

The neurons studied belong to the V4 brain region, which plays an important role in activities involving visual attention, such as noticing when a traffic light changes. The two monkeys involved in this study had to notice a subtler change – a white dot turning light yellow on a video screen. In some trials, the monkeys had to ignore similar but distracting lights in different parts of the visual field.

Previously, Desimone had observed that neurons harmonize their voices when monkeys pay attention. His new finding indicates that this synchronization speeds detection of important events.

"We selected an attention task that allowed us to determine the relationship between synchronized neurons and the ability to detect an event, on a trial by trial basis," said Desimone, who is also a professor in MIT's Department of Brain and Cognitive Sciences. "We found that for any given trial, the more coordinated the neurons, the faster the solution."

His lab measured the strength of the synchronous brain activity before, during and after the monkeys detected a change in the small light on screen. Just as drivers may initially miss the traffic light change while fiddling with the cell phone, the monkeys' attention may have wandered occasionally because the times to detect the light change varied significantly. About half a second before the change occurred, the researchers could predict from the amount of synchronized activity how fast the monkey would detect it. The weaker and less synchronized the brain signals, the slower the monkey's response.

The researchers also noted the diluting power of distraction. The more the monkeys' neurons synchronized on distracting lights, indicating they were not ignoring them as they should have, the more slowly the monkeys noticed the change in the actual target. A similar process might happen when a child with attention difficulty observes the birds outside the window instead of the teacher at the blackboard.

"Our findings suggest that the synchronization of V4 neurons reflects a general mechanism for rapidly funneling important information to other regions of the brain," Desimone said. "This leads us to ask if disruptions of neural synchrony might lead to some of the attention problems that are found in so many brain disorders."

The work was funded by the National Institutes of Health.

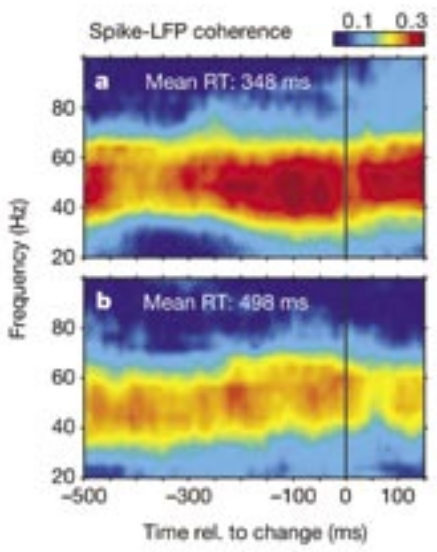


IMAGE COURTESY / **ROBERT DESIMONE**

MIT researchers have found that synchronized neurons speed up attention. The color scale in these graphs indicates the degree of synchronized activity of neurons in the monkey's V4 area of the visual cortex. The more the neurons fire in synchrony (red), the faster the monkey notices a small color change in a picture (348 instead of 498 milliseconds).

OLYMPICS

Continued from Page 1

it. And even though I was really terrible at it for the first year, I had a pretty good idea of what it would take to get up to the level where I could get into the Olympics," Antaki said. "The message is simple: If you're smart, and you study, even though this is an athletic thing, using your brain actually does help."

Antaki qualified for the Olympics in January at the Challenge Cup in Germany, securing the last of eight spots in the level of worldwide competition one tier below the World Cup circuit. He beat out 21 other competitors for the slot.

The Olympic competition played out according to Antaki's expectations, although he was slightly unnerved at the media spectacle. "It's the first time I actually was in the same race with the world's best in the sport," he said. "My goal was just to get there and to finish and that was it, fully expecting to be last." He did come in last, finishing eight and a half seconds behind the gold medal winner. But that was encouraging enough for Antaki, who has set his sights on Vancouver in 2010.

The trick to skeleton, Antaki said, is negotiating the many variables: a slider's weight and speed, the weather, ice quality, how well the sled's runners are polished, how one enters turns.

He received contradictory advice from fellow racers and discovered, "People don't really know what works. It's just a lot of trial and error."

So, Antaki put his MIT degree in electrical engineering to good use.

He souped up his training sled with accelerometers, gyroscopes and a camera to record data and compare runs to discern useful tactics.

"I think I'm at the point now where this is really going to help," he says. "My theory is that it will help me to get better faster." Next year, he'll spend time in Calgary and perhaps Lake Placid, training at two of the handful of tracks in North America. And next time he competes with the world's best, he vows that he won't be last.

"I know exactly what I have to do to get to that level, and it's going to take time," he said. Time and a little science and engineering.

Patrick Antaki (S.B. 1984) represented his birth country of Lebanon in the 2006 Winter Olympics in Turin, Italy.

Prof offers perspective on hosting Olympics

Sarah H. Wright
News Office

The 2006 Winter Olympics in Turin, Italy, may have ended on Sunday, but hosting Olympic Games can affect cities for years to come, according to Julian Beinart, professor of architecture and author of several papers on the subject.

"The Games bring the host city to the world — through television and other media — and they bring the world to the city in the form of tourists. It's a giant transient event that alters urban life economically, socially and politically," Beinart said.

A specialist in the form and design of cities, Beinart (M.Arch. 1956) has worked on urban design projects in the United States, Europe, the Middle East, South Africa and Asia. For more than 20 years, he has studied the effects on cities of hosting the Olympics.

He began as a fan. A native of Cape Town, South Africa, Beinart attended his first Olympics in Helsinki, Finland, in 1952, becoming immediately "caught up in the athletics, seeing the world, and in this event that's a 'time outside of time,'" he said.

The modern Olympics were born in 1932 in Los Angeles, which hosted Games that featured a centralized physical spectacle, a constructed media image and a new town for athletes, Beinart said.

Those Games were an economic and public relations success even though "worldwide depression, prohibition against alcohol in the U.S. and long travel distances kept many countries from attending. In addition, their investment in a 110,000-seat stadium paid off, since it was reused in 1984," he said.

The dark side of the modern, media-constructed Olympics occurred in Berlin in 1936, he noted: Hitler staged the Olympics to market the Third Reich. Anti-Semitic signage was taken down, but Oranienburg, a concentration camp just north of Berlin, continued operation, he said.

Future hosts of the Olympics — Beijing in 2008, Vancouver in 2010 and London in 2012 — might look to history to anticipate difficulties, he said. Olympics tend to be particularly challenging for cities in which infrastructure, such as transportation and hotels, is undeveloped.

"Tokyo, Moscow, Seoul and Barcelona all used hosting as an incentive for massive city rebuilding. But such speeding up has both positive and negative value. In some cities, urban parks may be lost to new sports facilities," he said.

HYBRID

Continued from Page 1

material's structure to make it capable of charging and discharging more quickly.

Lithium nickel manganese oxide consists of layers of metal (nickel and manganese) separated from lithium layers by oxygen. The major problem with the compound was that the crystalline structure was too "disordered," meaning that the nickel and lithium were drawn to each other, interfering with the flow of lithium ions and slowing down the charging rate.

Lithium ions carry the battery's charge, so to maximize the speed at which the battery can charge and discharge, the researchers designed and synthesized a material with a very ordered crystalline structure, allowing lithium ions to freely flow between the metal layers.

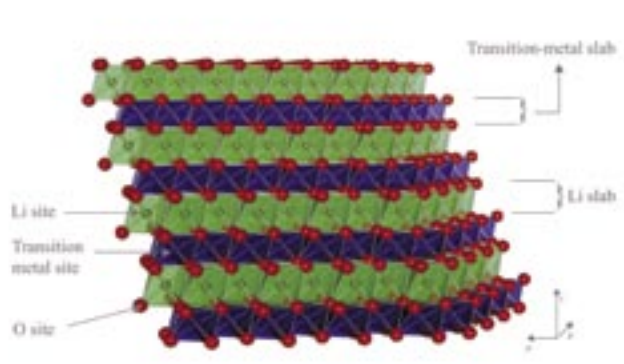
A battery made from the new material can charge or discharge in about 10 minutes – about 10 times faster than the unmodified lithium nickel manganese oxide. That brings it much closer to the timeframe needed for hybrid car batteries, Ceder said.

Before the material can be used commercially, the manufacturing process needs to be made less expensive, and a few other modifications will likely be necessary, Ceder said.

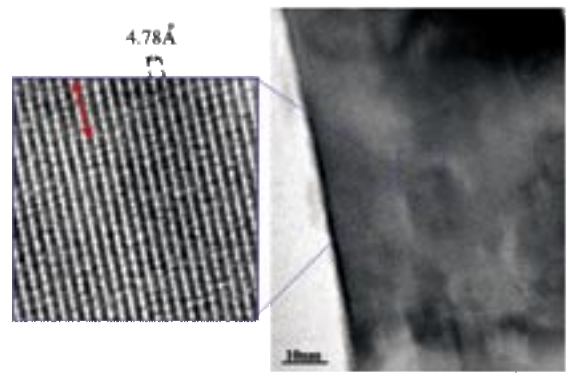
Other potential applications for the new lithium battery include power tools, electric bikes, and power backup for renewable energy sources.

The lead author on the research paper is Kisuk Kang, a graduate student in Ceder's lab. Ying Shirley Meng, a postdoctoral associate in materials science and engineering at MIT, and Julien Breger and Clare P. Grey of the State University of New York at Stony Brook are also authors on the paper.

The research was funded by the National Science Foundation and the U.S. Department of Energy.



Above, the structure of lithium nickel manganese oxide consists of layers of transition metal (nickel and manganese, blue layer) separated from lithium layers (green) by oxygen (red). Below, an electron micrograph of lithium nickel manganese oxide. The white layers are composed of nickel manganese oxide, and the dark layers represent lithium.



IMAGES COURTESY / **CEDER LABORATORY**

Picower reports neuron growth in adult brain

Deborah Halber
News Office

Despite the prevailing belief that adult brain cells don't grow, a researcher at the Picower Institute for Learning and Memory reports in the Dec. 27 issue of Public Library of Science (PLoS) Biology that structural remodeling of neurons does in fact occur in mature brains.

This finding means that it may one day be possible to grow new cells to replace ones damaged by disease or spinal cord injury, such as the one that paralyzed the late actor Christopher Reeve.

"Knowing that neurons are able to grow in the adult brain gives us a chance to enhance the process and explore under what conditions – genetic, sensory or other – we can make that happen," said study co-author Elly Nedivi, the Fred and Carole Middleton Assistant Professor of Neurobiology.

While scientists have focused mostly on trying to regenerate the long axons damaged in spinal cord injuries, the new finding suggests targeting a different part of the cell: the dendrite. "Dendrite," from the Greek word for tree, is a branched projection of a nerve cell that conducts electrical stimulation to the cell body.

"We do see relatively large-scale growth" in the dendrites, Nedivi said. "Maybe we would get some level of improvement (in spinal cord patients) by embracing dendritic growth." The growth is affected by use, meaning the more the neurons are used, the more likely they are to grow, she said.

The study's co-authors – Nedivi; Peter T. So, an MIT professor of mechanical and biological engineering; Wei-Chung Allen Lee, an MIT brain and cognitive sciences graduate student; and Hayden Huang, a mechanical engineering research affiliate – used a method called two-photon imaging to track specific neurons over several weeks in the surface layers of the visual cortex in living mice. While many studies have focused on the pyramidal neurons that promote firing, this work looked at all types of neurons, including interneurons, which inhibit the activity of cortical neurons.

With the help of technology similar to magnetic resonance imaging (MRI), but at a much finer, cellular resolution, the researchers were able to stitch together two-dimensional slices to create the first 3-D reconstruction of entire neurons in the adult cortex. Dendritic branch tips were measured over weeks to evaluate physical changes.

What the researchers saw amazed them.

In 3-D time-lapse images, the brain cells look like plants sprouting together. Some push out tentative tendrils that grow around, or retract from contact with, neighboring cells. Dendrite tips that look like the thinnest twigs grow longer. Of several dozen branch tips, sometimes only a handful changed; in all, 14 percent showed structural modifications. Sometimes no change for weeks was followed by a growth spurt. There were incremental changes, some as small as 7 microns, the largest a dramatic 90 microns.

"The scale of change is much smaller than what goes on during the critical period of development, but the fact that it goes on at all is earth-shattering," Nedivi said. She believes the results will force a change in the way researchers think about how the adult brain is hard-wired.

Nedivi had previously identified 360 genes regulated by activity in the adult brain that she termed candidate plasticity genes or CPGs. Her group found that a surprisingly large number of CPGs encode proteins in charge of structural change. Why are so many of these genes "turned on" in the adult well after the early developmental period of dramatic structural change?

The neuroscience community has long thought that whatever limited plasticity existed in the adult brain did not involve any structural remodeling, mostly because no such remodeling was ever detected in excitatory cells. Yet evidence points to the fact that adult brains can be functionally plastic. In response to the CPG data, Nedivi and Lee revisited this question with the help of So and Huang.

By applying an innovative new imaging technology that allows monitoring of neuronal structural dynamics in the living brain, they found evidence for adult neuronal restructuring in the less-known, less-accessible inhibitory interneurons.

"Maybe the inhibitory network is where the capacity is for large-scale changes," Nedivi said. "What's more, this growth is tied to use, so even as adults, the more we use our minds, the more robust they can be."

This work is supported by the National Eye Institute.

Bacterium has strange magnetic personality

Researchers led by an MIT graduate student have discovered a bacterium that is a magnetic misfit of sorts.

Magnetotactic bacteria contain chains of magnetic iron minerals that allow them to orient in the Earth's magnetic field, like living compass needles. These bacteria have long been observed to respond to high oxygen levels in the lab by swimming toward geomagnetic north in the Northern Hemisphere and geomagnetic south in the Southern Hemisphere.

But now researchers from MIT, the Woods Hole Oceanographic Institution (WHOI) and Iowa State University have found a bacterium in New England that does just the opposite: a Northern Hemisphere creature that swims south.

Because this behavior doesn't make sense in the natural environment of the bacteria, where swimming south would take them away from areas with their preferred oxygen level, the researchers believe there must be other explanations for why some magnetotactic bacteria swim in particular directions.

The team dubbed the bacterium the barbell for its appearance. In a study reported in the Jan. 20 issue of Science, they describe how they used genetic sequencing and other laboratory techniques to identify the barbell, which was found coexisting with other previously described magnetotactic bacteria in Salt Pond on Cape Cod.

Magnetotactic bacteria are found throughout the world in chemically stratified marine and freshwater environments, said lead author Sheri Simmons, a graduate student in the MIT Department of Biology and the MIT/WHOI Joint Program in Oceanography and Applied Ocean Science and Engineering.

The coexistence of magnetotactic bacteria with north and south polarity in the same environment contradicts the currently accepted model of magnetotaxis, which says that all magnetotactic bacteria in the Northern Hemisphere swim north and downward to reach their desired habitat when exposed to high-oxygen conditions.

Simmons and colleagues studied the bacteria under laboratory conditions and say the behavior of the bacteria in situ could be different from laboratory behavior. Their results, however, suggest new models are needed to explain how these magnetotactic bacteria behave in the environment.

This work was supported by the WHOI Coastal Ocean Institute, Ocean Life Institute and Ocean Ventures Fund, as well as the National Science Foundation and a National Defense Science and Engineering Graduate Fellowship.

PHOTO / **TOM KLEINDINST, WOODS HOLE OCEANOGRAPHIC INSTITUTION**

Sheri Simmons uses a pipette to place water samples onto a microscope slide to look at the swimming behavior of magnetotactic bacteria. Her advisor and co-author, Katrina Edwards, is at left.

AWARDS & HONORS

John M. Wozencraft, professor of electrical engineering emeritus, is the 2006 recipient of the Alexander Graham Bell Medal of the Institute of Electrical and Electronics Engineers (IEEE). The medal is one of the most prestigious awards of the IEEE, and recognizes Wozencraft for his pioneering work in the development of sequential decoding and the signal space approach to digital communication. Wozencraft invented sequential decoding in 1957, providing the first practical technique for the reception of convolutional error-correcting codes, thus spurring the use of error correction in digital communications.

Three MIT undergraduates have won scholarships from the National Italian American Foundation. **Diana Lusk**, a sophomore majoring in brain and cognitive sciences, **Steven Russo**, a sophomore majoring in mathematics, and **John Thomas**, a junior majoring in physics, received the National Italian American Foundation Eleanor and Anthony DeFrancis Scholarship.

Kenan Sahin Distinguished Professor of Music **Evan Ziporyn** is one of 20 composers commissioned by Carnegie Hall to have their music performed during Carnegie Hall's 2006-2007 season. As part of Carnegie Hall's mission to nurture talent, two emerging composers will join Ziporyn and three other established composers to write new works for string and percussion instruments indigenous to the ancient trade route known as the Silk Road. The works will be performed in Zankel Hall by Yo-Yo Ma and members of the Silk Road Ensemble. In addition, Carnegie Hall has announced that its 2006-2007 season will include a new composition by Institute Professor **John Harbison**.

Devavrat Shah, assistant professor of electrical engineering and computer science and engineering systems, recently received an Early Career Development Award from the National Science Foundation's Division of Computer and Network Systems. The award, which grants $90,000 per year for five years, will be used to fund Shah's research in implementable network algorithms, randomization, belief propagation and heavy traffic.

Daniel D. Frey, the Robert N. Noyce Career Development Professor and assistant professor of mechanical engineering and engineering systems, has received the 2005-2006 Junior Bose Award for Excellence in Teaching. Established in 1995-96, this honor is presented annually to outstanding contributors to education from among the School of Engineering faculty members who are being proposed for promotion to associate professor without tenure. MIT's Engineering Council selects the recipient as part of its promotion deliberations. The award includes a prize of $3,000.

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2005. The S&P 500 return was 4.9 percent in 2005 (its highest during the past 20 years was 37.4 percent in 1995). The NAREIT Equity REIT Index came in at 12.2 percent in 2005 (its highest in the past 20 years was 37.1 percent in 2003). Returns for the Ibbotson Small Stocks Index and the Lehman Brothers Govt/Corp Bond Index were in the 5 percent to 6 percent range for 2005, while the Morgan-Stanley EAFE International Stock Index had a total return of 14 percent. (Source: Ibbotson Associates Inc.)

According to the MIT index, the previous highest total return for commercial real estate was 23 percent in 1997. The average annual return for the entire period studied (1984-2005) was slightly under 10 percent. Investment returns in 2005 for the four major commercial property types – office, retail, apartment and industrial – were all high, ranging from 29 percent to 40 percent.

The index is based on transaction prices of properties sold each quarter from the property database that underlies the NCREIF Property Index (NPI), and also makes use of the appraisal information for all of the almost 5,000 NCREIF properties. Such an index – national, quarterly, transaction-based and by property type – has not been previously constructed. It covers the period 1984-2005, and will be updated quarterly by the CREDL initiative of the MIT Center for Real Estate.

MIT CREDL's co-director Henry Pollakowski said, "This has been a major undertaking; there is demand for this information, and we have been driven by this demand to take this undertaking very seriously to get the most precise results possible."

The MIT Center for Real Estate web site, web.mit.edu/cre, presents a set of 15 indexes, along with extensive documentation. All results are available free of charge to the public.

Week of events highlights diversity

MIT's Campus Committee on Race Relations will sponsor several events celebrating racial and cultural diversity as part of its second CCRR Week, March 6-10.

CCRR Week is intended to educate, entertain and promote further awareness and appreciation for cultural difference within the MIT community. Most of the events are run by student groups.

This year, the committee is focusing on fewer events in hopes of drawing more attendees, said Lily Burns, staff associate in the Office of the President and one of the CCRR Week organizers.

Events will include an "Islamic Equality" dinner, which will feature a discussion with Imam Abdol Alim Musa, on Tuesday, March 7. The dinner will begin at 6 p.m. in Walker Memorial, Morss Hall. Imam Musa is most well known for protesting U.S. aggression against Muslims, in the form of international and domestic police brutality.

On Thursday, March 9, there will be a screening of "Nuestras Voces: Being Latina at MIT," a documentary produced by Latina MIT students and alumnae and by faculty in the foreign languages and literature section.

In the film, Latina students who came to MIT from Chilean, Cuban, Dominican, Mexican and Puerto Rican families share their challenges and successes. The screening starts at 4 p.m. in the Mezzanine Lounge at the student center.

True Colors, a Cambridge-based dance troupe of LGBT students aged 14 to 22, will perform at 7 p.m. Thursday night in Simmons Auditorium. The troupe's education director, Brenda Cotto-Escalera, is a former MIT professor of theater arts and music.

All events are open to all members of the MIT community. For more information, visit web.mit.edu/ccrr/ccrrweek.html.

NEWS YOU CAN USE

Institute Awards Convocation

Nominations are now being accepted for awards to be given out at the 2006 Institute Awards Convocation in May.

Awards will honor students, faculty and staff who have made special contributions to the life of the MIT community. Descriptions of the awards can be found at mit.edu/awards.

Nomination letters are due on Friday, March 17. For more information, e-mail awards@mit.edu, call Fran Miles at x3-7546 or visit the Awards Committee in W20-549.

Entrepreneurship award

The MIT Sloan School of Management is now accepting nominations for the 2006 Adolf F. Monosson Prize for Entrepreneurship Mentoring. The deadline for nominations is March 15.

The award, created to honor the memory of MIT graduate Adolf "Sonny" F. Monosson '48, recognizes entrepreneurship mentors who have shown a deep commitment to investing time, energy and/or capital to help new generations of business pioneers.

Last year's inaugural award went to Aaron Kleiner, co-founder and former chair of the MIT Enterprise Forum and founder of its Start-Up Clinic for assisting early-stage firms.

Professor Edward B. Roberts, the David Sarnoff Professor of the Management at MIT Sloan and the founder and chair of the MIT Entrepreneurship Center, heads the committee that administers the award. Nominations for the 2006 award should be sent to Roberts at MIT E52-535, 50 Memorial Drive, Cambridge, MA 02142, or to eroberts@mit.edu.

Meeting slated on construction

A "town hall meeting" will be held Thursday, March 2, to address the next step in the construction of the new PDSI (Physics, DMSE, Spectroscopy, Infrastructure) building — crane mobilization and its impact on Eastman Court and the surrounding area. The meeting will be held from 3 to 4 p.m. in Room 56-114.

Blood drive

A blood drive will be held Wednesday, March 1, and Thursday, March 2, in La Sala de Puerto Rico at the student center. Blood drive hours are noon to 6 p.m. For more information or to make an appointment, visit web.mit.edu/blood-drive/www/.

MIT to host young inventors

MIT's Public Service Center will host the first United States-based Young Inventors Inventing the Future Conference on March 4.

The annual conference of Young Inventors International, traditionally held in Canada, brings up to 65 university-based entrepreneurs and innovators together with established entrepreneurs to work through a case study.

For more information or to register for the event, visit www.younginventorsinternational.com/conferences/inventingthefuture/.

PHOTO / **DONNA COVENEY**

Let there be light

A traveler on the second floor of Building 3 heads for Mass. Ave. in late afternoon sun on Thursday, Feb.16.

OBITUARIES

Elaine Cook

Elaine Cook, of Lexington, Mass., a former administrative assistant at MIT, died Jan. 24. She was 72.

Cook worked at MIT for more than 35 years. Her husband, John Cook, also worked at MIT. He was a photographer.

In addition to her husband, Cook is survived by two daughters, Sarah Steinberg of Framingham, Mass., and Jamie Patterson of Billerica, Mass.; a brother, Marvin Geller of New York, N.Y.; three grandchildren; and many nieces and nephews.

For donation information, visit web.mit.edu/newsoffice/topic/obituaries.html.

Nathaniel W. McCaughey

Nathaniel W. "Tim" McCaughey, a retired security officer at Lincoln Laboratory, died Feb. 15. He was 86.

McCaughey worked at Lincoln Laboratory for 15 years before retiring in 1983.

He is survived by his wife, Ruth McCaughey of Silver Spring, Md.; two daughters, Sharon Nyhus of Silver Spring and Kathleen Wright of Whitefish, Mont.; and four grandchildren.

He was predeceased by his son, Timothy McCaughey.

Faculty meeting focuses on recruitment

Biological engineering approved as new course

Deborah Halber
News Office Correspondent

The faculty officially approved Biological Engineering as Course 20 at its meeting on Wednesday, Feb. 15.

After the vote, the faculty heard Provost L. Rafael Reif discuss two new faculty committees that will focus on recruiting and retaining minority faculty members.

The Minority Faculty Recruitment Committee, co-chaired by Paula T. Hammond, associate professor of chemical engineering, and Akintunde Ibitayo Akinwande, professor of electrical engineering and computer science, and the Committee on the Retention of Minority Faculty, chaired by Wesley L. Harris, department head and professor of aeronautics and astronautics, will submit a report to the provost by May 1 and outline a work plan for the next academic year by Oct. 1.

"We want to attract the best faculty, learn who is doing a better job of attracting minority faculty, and once they are here, do a good job keeping them," Reif said. MIT currently has around 25 minority faculty members.

The committee devoted to retaining minority faculty will interview minority faculty, mentors and department heads about faculty development; assess best practices inside and outside MIT for retaining minority faculty and make recommendations about mentoring junior faculty; develop a system for reporting every year to the provost and Academic Council on the progress of minority faculty; and recommend changes that would help keep minority faculty at MIT.

Targeting undergraduates and graduate students who might pursue an academic career is one of the ways to keep an eye on and nurture up-and-coming talent, said Hammond.

"The bottom line is we are here to serve you to make MIT better," Harris told the faculty, noting that the "real test" will be whether faculty across the board feel strongly enough about increasing the numbers to make a concerted effort to hire and keep more minority faculty.

The recruitment committee will catalog successful approaches to faculty recruitment at MIT and elsewhere; advise the administration and Faculty Diversity Council; talk to minority graduate students about their concerns about an academic career; find out why minority candidates who turned down jobs at MIT did so; and consider the Martin Luther King Jr. and other visiting professors programs as recruiting opportunities.

Chancellor Phillip L. Clay pointed out that a discussion of life in the Boston metropolitan area needs to be included in efforts to lure minority faculty to MIT, and that potential faculty will need to see that this is an attractive area in which to settle down.

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.

HOUSING

Oceanfront summer cabin, Mount Desert Island, ME: 2BD/1BA w/living/kitchen area; picture windows, deck overlooking water; stairway to beach. Mins from Acadia National Park, Bar Harbor. $1,000/week June-Sept. Contact Steve at 253-5757 or chorover@mit.edu.

MARTHA'S VINEYARD: Newly renovated 3+BR Chappaquiddick house on 1 acre. 1 mile to beach and golf, 3 miles from Edgartown. Limited availability. $900 to $1100 weekly. Call David 781-981-5087 or 603-654-5513.

Dorchester 4BR apt. Top 2 floors of 2-fam house. 2 min walk to Savin Hill T on Red Line. 20 mins to MIT. $1900, includes utils & wireless internet. Avail . 4/1/06. Contact simpkins@mit.edu or 617-501-3287.

Fully furnished, attractive 1BR apartment for rent in Cambridge. Avail. 4/1/06 through August or longer. $1700/month. Walking distance to MIT/Harvard. Contact 617-868-2690 or crawfordstreet8@hotmail.com.

Cambridge — Gateway to Avon Hill! Two-floor condo for sale — 2-3 BR, 2 baths, office, big yard, parking; walk to T, Graham & Parks school, playground, Healthworks. Over 200' custom-built bookshelves. Call Adam 617-694-8553.

VEHICLES

2002 Honda Accord LX sedan. Reduced asking price, $12,000. Silver, looks great, 28K. Automatic, well-equipped, excellent condition. Call 258-7372.

1994 Volvo 850 wagon. Green w/ tan leather interior. High mileage but runs very well & looks great. $2,800/best. Call 617-312-4258 or e-mail mbj@mit.edu.

1996 Chrysler LHS, metallic silver, 95K, V-6, 3.5 liter, auto, FWD, well equipped power options, leather, premium sound, garaged, 31+ MPH hwy, all maintenance records. Asking $3,995. Call 781-521-9931.

STUDENT EMPLOYMENT

Positions for students with work-study eligibility

Jumpstart, an early literacy organization that trains college students to work w/ preschool children from low-income backgrounds, seeks Advanced Desktop & Network Support Technician. Will serve as primary contact for all basic technology requests, performing remote & on-location help desk support & basic server maintenance in a Microsoft-based office. Reqs: 1-2 yrs relevant experience & knowledge in help desk support, phone systems technologies, Microsoft packages, ghost imaging & networking protocols. Windows XP & Windows 2000 server certifications required. E-mail cover letter & resume to jobs@jstart.org.

Duties: Work one-on-one on reading & writing w/ a 10th grader at City on a Hill Charter School in prep. for English MCAS exam. Work as part of a team of five tutors, supervised by a lead tutor & project coordinator Mark Destler. You will be paid for four hours of tutoring & two hours of reflection, planning & professional development per week. See www.readingmd.org for more info. Reqs: Adherence to strict professional standards for conduct, dress, timeliness, etc. Eagerness to reflect on & improve performance. Training & curriculum guidance provided. You will be expected to adapt the curriculum to individual needs of your student. E-mail mdd@massed.net to apply.

MISCELLANEOUS

Looking to share nanny in Cambridge/Brookline. Up to 40 hr/week. Sharing's cheaper for adults, more stimulating for kids. My nanny's never had snow or sick day. And she's fun. Call Audrey at 617-864-3266.

Wanted: Danish Modern, Scandinavian, & Eames style Teak or Rosewood furniture from 1950s-1980s. Will give your furniture a good home. Contact Aaron at 617-547-4459 or adschwartz@alum.mit.edu.

Logos, Digital Design and Illustration: I am a freelance designer who specializes in logo design, computer graphics and illustration. For samples of my work, please visit http://chapmandesigns.net. Reasonable rates. Contact chap@med.mit.edu or 781-424-4182.

New directions for digital design on display

"Digital_minimal," a new exhibition in the School of Architecture and Planning's Wolk Gallery, explores a number of alternative directions for our digital future, from the use of mobile devices that describe urban space in real-time to new tangible user interfaces that redefine the design process.

Italian architect and planner Carlo Ratti and his design team, Carlo Ratti Associati, based in Turin, Italy, and Cambridge, collaborated on the exhibit with colleagues in the MIT SENSEable City Laboratory.

The exhibit is a presentation of some of the projects under development by the SENSEable City Lab and Ratti, who currently holds joint appointments in the Department of Urban Studies and Planning and the Media Laboratory.

The collaborative projects include iSPOTS, which was developed as a way of studying wireless usage on the MIT campus. Completed in October 2005, iSPOTS now allows researchers to track when and where members of the MIT community take most advantage of the school's 9.4 million-square-foot wireless network.

Most of the exhibition is interactive, featuring video and live computer links.

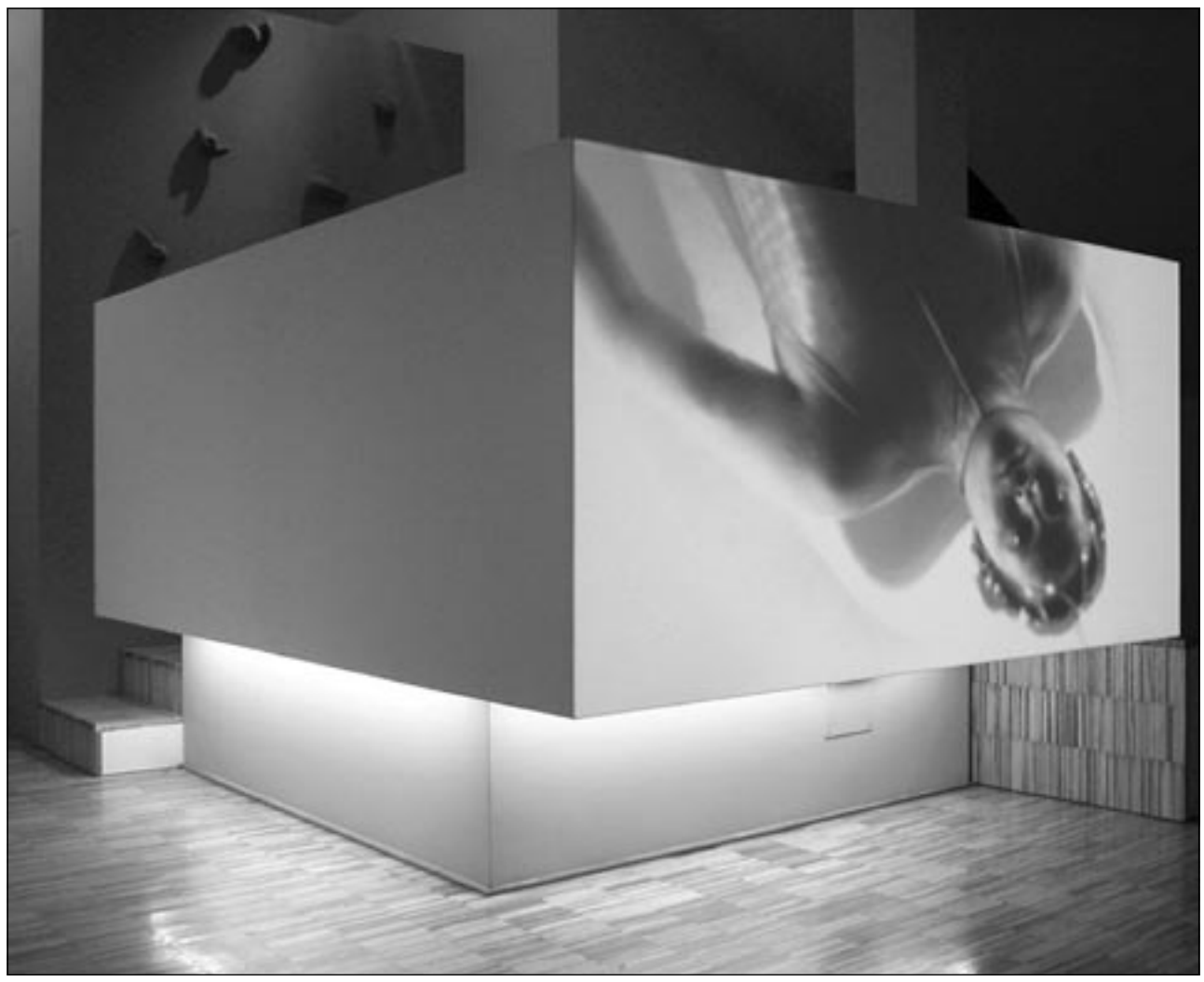
The one stand-alone object in the gallery is part of the SandScape project, developed with the Tangible Media Group at the Media Lab.

A digital sandbox of sorts, SandScape projects images onto a surface of tiny glass beads through which visitors may run their hands, thus changing the "landscape." The project aids design and understanding of landscapes through computational simulations that analyze such natural elements as slope and drainage.

As a measure of its success, SandScape has taken on a double life as an analytic tool and an artwork.

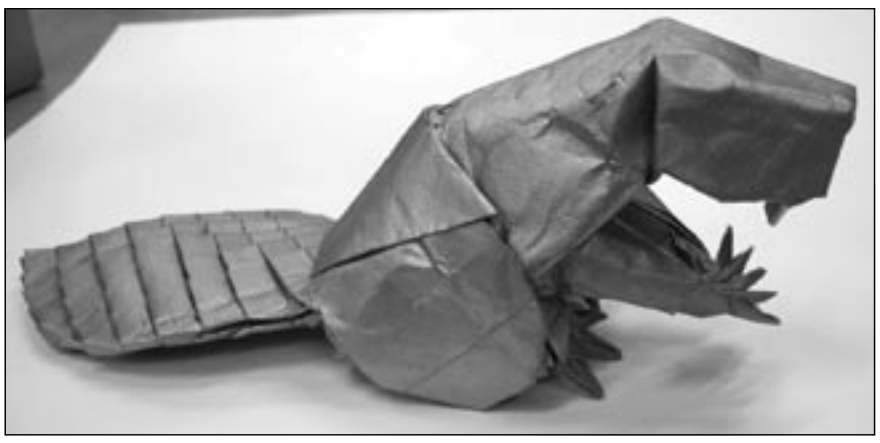
"Although this project was started to support landscape design, interactive art museums such as the Arts Electronica Center (in Linz, Austria) commissioned us to exhibit SandScape as a 'media art piece,'" said Hiroshi Ishii, associate professor of media arts and sciences and founder/director of the Tangible Media Group.

The Wolk Gallery is located in Room 7-338. The exhibit is open weekdays from 9 a.m.-5 p.m. and runs through March 29.



IBM's Everywhere Display is part of the 'Digital_minimal' exhibit now on display in the School of Architecture and Planning's Wolk Gallery through March 29. The installation is a video projector with a rotating mirror that allows any surface around it to become a potential screen.

Students fold under pressure



The winning entries from the fourth annual juried Student Origami Competition are on view at the Wiesner Student Art Gallery on the second floor of the Stratton Student Center, through March 15.

Freshman Jason Ku submitted an origami model of one of the Nazgul, or ringwraiths, from "The Lord of the Rings" trilogy (right photo). Ku's entry won a prize for Best Original Model.

Above is a model of MIT's mascot, the beaver, submitted by Brian Chan, a graduate student in mechanical engineering.

Karger moves in the best circles

Engineering prof to perform in folk dance festival

Lynn Heinemann
Office of the Arts

When David Karger isn't teaching algorithms in the Computer Science and Artificial Intelligence Laboratory (CSAIL), he's got dancing on his mind.

Karger, a professor of electrical engineering who specializes in information retrieval, and three of his four children will be among the dozens of performers taking part in the Israel Folkdance Festival, a gathering of folk dancers from across the country, on Sunday, March 5, in Kresge Auditorium at 3 p.m.

Israeli folk dancing has a mysterious appeal for Karger, he said. Is it the music? The movement? "Maybe it's just fidgeting carried to an extreme," he joked.

Karger started folk dancing at MIT when he was still a junior in high school in Brookline, adding modern dance to his repertoire while in college.

Dancers in the Israel Folkdance Festival create specially choreographed routines, some drawing heavily from the standard folk dancing, but modifying the formations and steps, said Karger.

Others create entirely new steps to traditional music, he says, and some groups use entirely new music and movement.

Karger associates dances with particular memories, he said. One dance is special because it was the one he shared with his wife at their wedding, while another is special because he broke his foot doing it.

Mainly, dancing is a "neat kind of social experience in which you interact with a large group of people without an extensive spoken dialogue," he said.

According to Miriam Rosenblum, director of MIT Hillel, several people from the MIT community are involved in the festival, including some who helped found the event 30 years ago.

George Kirby (S.B. 1979) originated the festival in 1977 and remains active, serving on the coordinating committee and coordinating the sound system this year; Ira Vishner (S.B. 1974) danced in the first festival and is now on the coordinating committee; and Joshua Musher (S.B. 1987), who danced in the festival while a student, remains an active participant. This year, his children are also performing.

Admission to the Israel Folkdance Festival is $12, $11 for seniors and children under 12.

The performance, sponsored by MIT Hillel and the Israel Folkdance Festival of Boston Inc., a nonprofit, tax-exempt organization, will be preceded by an Israeli market, with booths selling Israeli merchandise and crafts, from noon to 3 p.m.

For more information, call x3-2982.

N.E. Philharmonic to premiere Peter Child choral work

Lynn Heinemann
Office of the Arts

MIT composer Peter Child may have been born in England, but these days he's steeped in "Americana."

"Americana" is the title of a program to be presented by the New England Philharmonic, where Child is composer in residence. The program will include the world premiere of Child's choral piece, "The Sifting: Three Songs of Longfellow."

The orchestra presents "Americana" on Saturday, March 4, in Kresge Auditorium at 8 p.m. Admission is free with an MIT ID.

"The Sifting" will be performed with the Simmons College Chorale, directed by Sharon Brown, and the Boston Conservatory's Women's Chorus, directed by Miguel Felipe.

Child selected the three Longfellow poems with the Philharmonic's theme in mind, he said. The trio express a "compelling Romantic philosophy," he said.

"They condemn worldly ambition, express a sense of ideal reality that underlies appearance and everyday illusion, and extol a sense of divinity contained in human beings. It is this 'transcendentalist' quality, combined with their lyricism, that attracted me," Child writes in his program notes.

The concert will also include Elliott Carter's "Variations for Orchestra"; Gunther Schuller's "Violin Concerto No. 2" (Danielle Maddon, violin); and Charles Ives' "Three Places in New England."

For more information, visit www.nephilharmonic.org.

Professor of music Peter Child.

MIT EVENT HIGHLIGHTS MARCH 1-5

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

PHOTO / **THOMAS MAXISCH**

Jazz-amatazz

The MIT Festival Jazz Ensemble, with Frederick Harris, Jr. conducting, will perform a program called 'Fables from the Underground,' on Friday, March 3, at 8 p.m. in Kresge Auditorium. The evening will feature music by Charles Mingus, Duke Ellington, John Coltrane, Woody Herman and J.J. Johnson. Above, Jonathan Krones, Matthew Abrahamson and Ethan Fenn perform with the MIT Festival Jazz Ensemble.

WEDNESDAY March 1

Iraq
Talk by Fred Kaplan of Slate magazine. Noon. Room E38-615. 253-7529.

Jewish Cartoon and Sitcom Series
Screening of "Wish Upon A Wienstein." 7-8 p.m. Baker Residence Hall. 253-2982.

Israeli Dancing
Every Wednesday. 8-11 p.m. Room W20-407. 253-FOLK.

Lottery for Spring Beginning Glass Blowing Seminar
All members of the MIT community are eligible to participate in lottery for Glass Lab class. To enter the lottery for the class you must be present. No proxies allowed. 7 p.m. Room 6-120. 253-5309.

THURSDAY March 2

Networking with Faculty: How to Approach a Professor
Tips on approaching faculty members on a variety of topics including references and job opportunities. Noon. Mezzanine Lounge, Student Center.

MIT Chapel Concert
18th-century works by Philidor, Loeillet, Zamboni and Forqueray. Noon. MIT Chapel. 253-2826.

Technology Executives @MIT Lecture
Fran Keeth, president and CEO of Shell Chemical gives talk on "China: Opportunities and Challenges for the Chemical Industry in the Next Decade." 5-6 p.m. Room 66-110. 258-9419.

"Yasmin"
Film screening is part of the series "Emerging Muslim Identities in Diasporic Communities." 7 p.m. Room 56-114. 253-4771.

FRIDAY March 3

"Products That Are Processes: Micro Chemical Processes for Man-portable Power Generation"
Talk by Paul I. Barton, professor of chemical engineering. 3–4 p.m. Room 66-110. 253-6500.

Brain & Cognitive Sciences Colloquium
Talk by Lee Osterhout of the University of Washington. 4–5 p.m. Room 46-3002. 253-5748.

"Proof"
LSC spring 2006 film series. $3. 10 p.m. Room 26-100. 253-3791.

SATURDAY March 4

Freshman Sophomore Career Week: Career Exploration and Networking Fair
Students are encouraged to come prepared with a resume to help facilitate discussion with employers 1:30–3:30 p.m. Walker Memorial.

MIT Faculty Concert
The New England Philharmonic performs music by MIT composer Peter Child. 8 p.m. Kresge Auditorium. 253-2826.

"Harry Potter and the Goblet of Fire"
LSC spring 2006 film series. 6:30 p.m. and 10 p.m. Room 26-100. 253-3791.

SUNDAY March 5

Israel Folk Dance Festival
A celebration of Israeli folk dance and song with more than 250 performers. $12. 3 p.m. Kresge Auditorium. 253-2982.

International Folk Dancing
8-11 p.m. Student Center, 2nd floor. 253-FOLK.

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.

EDITOR'S CHOICE

WRITER'S SERIES: DOROTHY ALLISON — *Mar. 1*
Talk and reading by the acclaimed author of "Bastard Out of Carolina" and "Cavedweller."
Room 10-250
7 p.m.

MACVICAR DAY — *Mar. 3*
Student posters showcase work in laboratories and beyond. MacVicar Faculty Fellows announced at Corporation Lunch.
Stata Center Student Street
3-4:30 p.m.

LATKE VS. HAMENTASHEN — *Mar. 6*
Three professors on the latke side and three professors on the hamentashen side argue for their favorite Jewish delicacy.
Room 10-250
8-9:30 p.m.

MIT EVENT HIGHLIGHTS MARCH 6-12

MONDAY March 6

Special Science Seminar
Professor Jim Burge of the University of Arizona discusses mirror technology for the Giant Magellan Telescope. 3-4 p.m. Room 37-252.

Literature Section Monday Tea
Every Monday. 4-6 p.m. Room 14N-417. 258-5629.

"Sound, Light and Video Works"
Talk by Ann Lislegaard, the 2006 Ida Ely Rubin Artist in Residence. 7 p.m. Room 3-133.

TUESDAY March 7

"The United States, Iraq and the Future of Kurdistan"
Talk by Kevin McKiernan, a longtime television photojournalist and writer with 15 years experience in Kurdistan. 4-5:30 p.m. Room E38-714. 258-8552.

"Integrated Water Resources Management in the Midst of Chaos and Caducity: Lessons from Hurricane Katrina."
The Annual John R. Freeman Lecture, given by Eugene Z. Stakhiv of the Institute for Water Resources, U.S. Army Corps of Engineers. 6–9 p.m. Building E51. 452-3022.

WEDNESDAY March 8

Chinese Foreign Policy Debates: "North Korea, Japan and the 'Peaceful Rise'"
Talk by Bonnie Glaser of the Center for Strategic and International Studies. Noon. Room E38-615. 253-7529.

Communications Forum: TV's New Economics
Talk by David Poltrack of CBS Television and Jorge Schement of Penn State. 5–7 p.m. Room E15-070. 253-3521.

Advanced Music Performance Recital
Recital by grad student and flautist Ole Nielsen. 5 p.m. Killian Hall. 253-2826.

Mexican Celebration
Celebration of Mexican culture, food and music. $3. 7–9 p.m. W85-basement lounge. 577-5544.

THURSDAY March 9

MIT Chapel Concert: Pentimento
Music from the Tudor courts. Noon. MIT Chapel. 253-2826.

CAVS Artist's Presentation: Simon Starling
British-born artist Simon Starling's sculptures — a Polish-Italian Fiat, homemade replicas of Eames chairs, a reconfigured Schwinn bicycle. 6:30 p.m. N52-390. 452-2484.

Chicks Make Flicks: "Nothing Like Dreaming"
Film and talk by Nora Jacobson. 7 p.m. Room 6-120.

Karaoke Night at the Thirsty Ear
Must be 21+. Proper ID required. 8 p.m. The Thirsty Ear Pub. 258-9754.

FRIDAY March 10

Women's Studies Open House
Learn more about women's studies, check out syllabi for women's studies classes, meet and talk to faculty, staff and students, enjoy refreshments, etc. 1:30-3:30 p.m. Room 14-316. 253-8844.

"The Husbandry of John Muir"
Talk by Donald Worster of the University of Kansas. 2:30–4:30 p.m. Room E51-095. 253-4965.

"Sustainable Energy Technologies — The Importance of Multiscale and Multidisciplinary Research"
Chemical Engineering Spring 2006 Seminar Series. Talk by Jefferson W. Tester. 3–4 p.m. Room 66-110. 253-6500.

SATURDAY March 11

"Life Is Beautiful"
LSC movie. $3. 7 p.m. and 10 p.m. Room 26-100. 253-3791.

Ballroom Social Dance (participatory)
8 p.m. $6 students; $10 general. Morss Hall in Walker Memorial.

hiLaRiUm @ Thirsty Ear Pub
The Walsh Brothers perform every Saturday. Must be 21+. ID required. 8 p.m. Thirsty Ear Pub. 258-9754.

SUNDAY March 12

Pirates' Ball
Pirate tales and storytelling; a treasure hunt; pirate movies and much more. $6, ages 3 and up. 2–4 p.m. Building 50, Morss Hall. 253-7990.

Gallery Talk
Talk by List Visual Arts Center staff in conjunction with "America Starts Here — Kate Ericson and Mel Ziegler 1985-1995." 2 p.m. Building E15. 253-4680.

MITHAS Concert
Shweta Jhaveri on the khyal and Uttam Chakraborty on the tabla. $18; $14 MITHAS members; $10 students; MIT students free. 4 p.m. Building E51, Wong Auditorium. 258-7971.