

List opens ambitious Surrealism exhibit

■ By Lynn Heinemann
Office of the Arts

Mirror Images: Women, Surrealism and Self-Representation, the most broad-reaching exhibition organized by the List Visual Arts Center (LVAC) to date, opens with a reception on Thursday, April 9 from 5:30-7:30pm.

Organized by LVAC Director Katy Kline and Curator Helaine Posner-Dorsky with Whitney Chadwick, an art historian, author and professor at San Francisco State University, this exhibition is the first to present the self-portraits or self-representations of three generations of women Surrealist or Surrealist-influenced artists. *Mirror Images*, which was three

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Helaine J. Posner-Dorsky (left), curator of the List Visual Arts Center, and Katy Kline, director of the List Visual Arts Center, with a Cindy Sherman photograph (Untitled #153, 1985) that is part of the *Mirror Images: Women, Surrealism and Self-Representation* exhibit. Photo by Donna Coveney

Whitehead gets \$10.9m DOE grant

Secretary Federico Peña of the US Department of Energy (DOE) has announced that a \$10.9 million grant has been awarded to the Whitehead Institute for Biomedical Research.

The \$16 million in grants to Whitehead and four other recipients will provide additional technology, expertise and resources to DOE's Joint Genome Institute, a "virtual institute" that integrates human genome research based in three of DOE's national laboratories (Lawrence Berkeley National Laboratory and the Lawrence Livermore National Laboratory in California, and the Los Alamos National Laboratory in New Mexico).

The Joint Institute's principal goal is to sequence or decode a substantial fraction of the total human DNA by 2005 and share that information through scientific databases more quickly, cheaply and accurately.

Professor of Biology Eric S. Lander, director of the Whitehead/MIT Center for Genome Research and principal investigator of the DOE grant, said Whitehead will work with DOE to develop an automated system that integrates DNA sample preparation, DNA sequencing with available instruments, and sequence data analysis. The system will be modular so that individual units, representing different steps in the overall sequencing process, can be readily adjusted.

Other DOE grants ranging from \$800,000 to \$1.7 million went to Stanford University, the University of Florida at Gainesville, Immusol Inc. of San Diego, and the University of California at Berkeley.

With the grants, the universities will help develop the technology needed by the Joint Institute to set up a cost-effective, highly automated DNA sequencing assembly line. This genome-sequencing "factory" in Walnut Creek, CA, is scheduled to begin operation in August, with sequencing goals of 20 million bases of DNA in fiscal 1998, 40 million bases in 1999, and eventually 100 to 200 million bases per year. About 6,000 genes of the estimated 60,000-80,000 human genes have now

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MIT students share their talents around the world

Spring break teaching grows

■ By Deborah Halber
News Office

At first, MIT student Carina Fung was taken aback when students in the Washington, DC, elementary school where she volunteered during freshman-year spring break asked her if she had children. Then she realized that some of the students' mothers were as young as she is.

Instead of spending spring break sunbathing in Florida, about 70 MIT students opted to spend the week of March 23-27 teaching science and math to "at-risk" kids in Washington, Baltimore and San Juan, Puerto Rico; running youth programs at a camp in Penn-

sylvania; and building affordable housing in Washington and Philadelphia.

The students are members of MIT Alternative Spring Break (ASB), a student group affiliated with the Public Service Center. Started three years ago by Anthony Ives (SB '96), ASB organizes week-long community service trips for students who are looking for a service-oriented alternative to beach-bound vacations.

ASB students "have gained some hands-on experience doing meaningful work, interacting with people outside MIT and gaining a brand-new perspective of many problems others face in the real world," said Mr. Ives, who returned to MIT after he graduated to realize his vision of a creating an MIT version of this volunteer organization, which already existed at some other schools.

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India school gets Web help

A new project will send six MIT students to an Indian high school this summer to connect the school to the Internet and teach students how to develop a Web site.

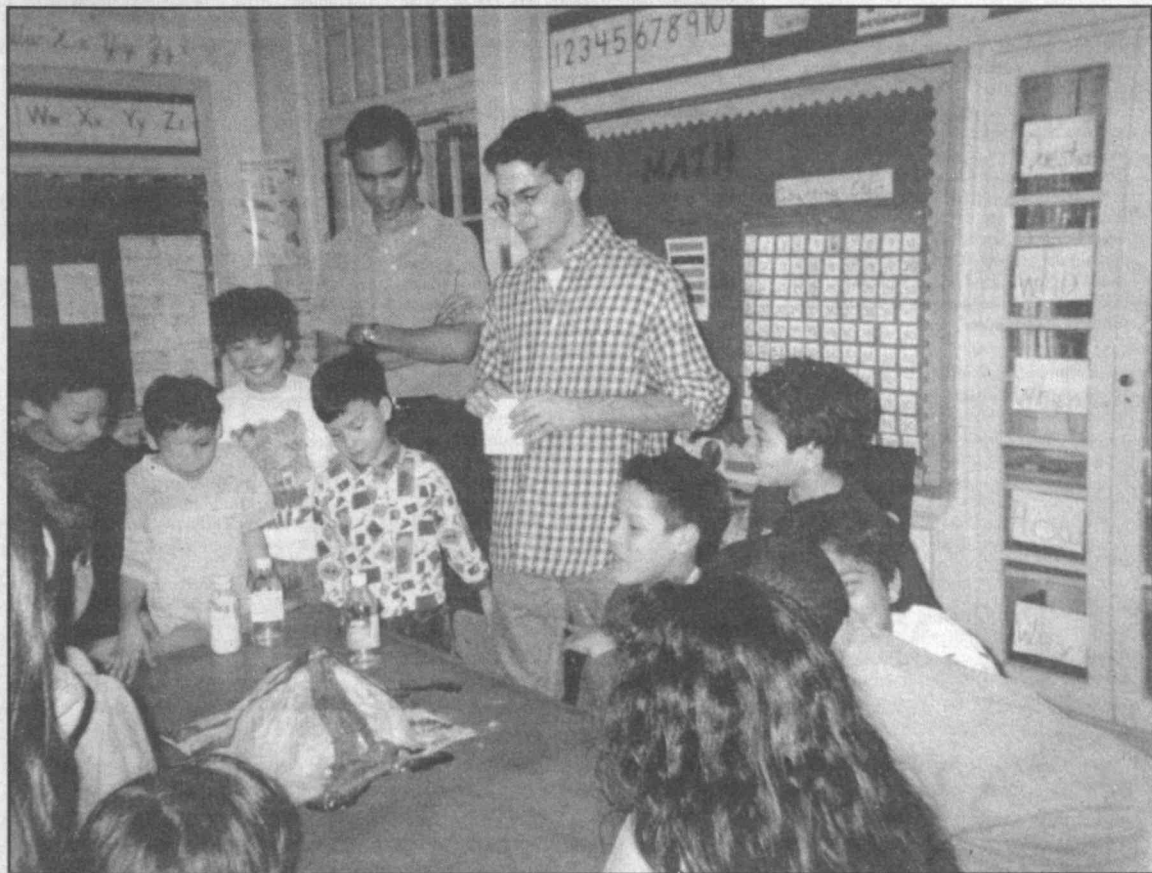
Founded last September by Ameet Ranadive and Vinay Pulim (both graduate students in electrical engineering and computer science) and Professor Kenneth Keniston of the Program in Science, Technology, and Society (STS), Project India Connect has three goals:

- To advance computer-related education in India with a focus on the Internet.
- To establish a long-term exchange program between MIT and India.
- To promote cultural understanding between American and Indian youth.

This summer, four MIT undergraduates and two graduate students will travel to the state of Maharashtra in India. Over a six-week period, they will establish an Internet server at an Indian high school and educate students about computers, the Internet and HTML programming.

The students will spend their six weeks in Pune, a city of 3 million people approximately 60 miles south of Mumbai (once known as Bombay). Due to the numerous universities and automotive industries in Pune, it is referred to as both the "Oxford of India" and the "Detroit of India." The MIT students will be working in the Dr. Kalmadi Shamarao School, which enrolls children up through high school. Ever since a new computer facility was created in 1991, the school has made computer education a mandatory sub-

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Lavi Nissim (right), a junior in biology, and freshman Jonathon Wolf work with second- and third-graders on a model of a volcano at Bancroft Elementary School in Washington, DC, during Alternative Spring Break.

Next year's MIT freshmen are 'strongest class ever'

■ By Robert J. Sales
News Office

MIT has accepted 1,863 applicants for the class of 2002, including 112 who scored a perfect 1,600 on the Scholastic Aptitude Test—23 percent of the high school students worldwide who achieved that score last year.

Forty percent of the admitted students, or 737, participated in varsity sports, including members of championship teams. Among the sports involved are boys' and girls' basketball, track, cross-country, swimming, fencing, lacrosse and soccer, as well as baseball and football. Among them were 315 team captains and 168 all-conference players. In addition, 37 percent (688) are musicians who were members of orchestras, bands or choruses, and 21 percent (387) participated in theater programs.

"Every way you look at it, this is the strongest class ever admitted to MIT," said Director of Admissions Marilee Jones.

The letters of acceptance were mailed

on March 17. Replies are due by May 1. The mean SAT verbal score was

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IN BRIEF

NO TECH TALK

There will be no Tech Talk on April 22 because of the Patriot's Day holiday. The deadline for submitting classified ads and announcements for the April 15 issue, which will cover the period from April 15-May 3, is Friday, April 10 at noon.

FACULTY MEETING

A regular faculty meeting will be held on Wednesday, April 15 at 3:15pm in Rm 10-250. The agenda will be posted online at <<http://nimrod.mit.edu/depts/archives/facmin/980415/980415.html>>.

Student Notices

* Open to public
** Open to MIT community only

April 8-19

ANNOUNCEMENTS

Dartmouth Medical School Presentation, April 8, 2-3pm, Rm 1-190. Sponsored by Career Services and Preprofessional Advising Office. More info: x3-4737.

RELIGIOUS ACTIVITIES

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

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

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

Campus Crusade for Christ**—Weekly meeting on Wednesdays, 8pm, PDR 1 & 2, 3rd fl Student Center. Morning prayer, Tuesday and Thursday, 8:30am, Rm W11-080 (CFL). More info: x2-1781 or <bigbob@mit.edu>.

Tech Catholic Community**—Weekday Mass Tues & Thurs 5:05pm, Friday 12:05pm, Saturday 5pm, Sunday 9:30am & 5pm. Call x3-2981.

Graduate Christian Fellowship**—Weekly meetings in Student Ctr, PDR 1&2, Fridays at 5:30pm. Also weekly Bible studies and Responsible Technology discussion group. Andrew Crabtree 868-0488 or <crabtree@mit.edu>.

Christian Science Organization**—Thursdays at 7pm. Call x3-8797 or <lnorford@eagle.mit.edu> for further information.

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

MIT Hillel**—Tuesdays: 5:30pm Beginning Hebrew Class; 6:30pm Intermediate Hebrew Class. Wednesdays: 12noon Hebrew Conversation Table in Walker Cafeteria; 7pm Haftorah Class. Thursdays: noon, Taste of

Torah. Fridays: 6pm, Egalitarian Chavurah Services and Orthodox Minyan Services; 7pm, Shabbat dinner. Saturdays: 9am, Orthodox Minyan Services; 12:45pm, Shabbat lunch. More info: x3-2982.

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

Meditation and Discourse on the Bhagavad Gita*—With Swami Sarvagatananda, MIT Chaplain and Head, Ramakrishna Vedanta Society of Boston. Every Friday, 5:15-6:30pm, MIT Chapel. Sponsored by the MIT Vedanta Society. More info: 661-2011 or <mehata@cvtel.com>.

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

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

Special events:

Good Friday Service*—Friday, April 10, Noon, MIT Chapel. Sponsored by Lutheran-Episcopal Ministry. More info: Trish Weinmann or The Rev. Jane Gould x3-0108 or x3-2983, <weinmann@mit.edu> or <jsgould@mit.edu>.

STUDENT JOBS

For other job listings and more information about the following listings, go to the Student Employment Office, Rm 5-119 or <http://web.mit.edu/seol>.

On-Campus, Non-Technical: Research and database assistant, part- or full-time to work at MIT LAI office for one year, possibly two. Collect, review and organize metric and benchmarking data from identified and accessible databases. Salary negotiable. George Bentley x3-6794 or <gbentley@mit.edu>.

Off-Campus, Technical, Summer: Tech Specialist Inc. has a number of openings for full-time and occasionally part-time work for chemists, biochemists, and others, 1st and 2nd shift. See <www.techspec.com> or call Frank Curran at (617) 890-2727 or <fcurran@techspec.com>.

Off-Campus, Non-Technical: Looking for someone to do light typing and drawing. Must have

MIT Class of '02 is 'strongest ever'

(continued from page 1)

719 and the mean math score was 756. A year ago, these scores were 712 and 753, respectively. The pool includes six of the 10 winners of the prestigious Westinghouse science awards. Also accepted were 11 members of the US Olympiad teams—three in math, four in physics and four in computer science.

Forty-two percent of the students who were accepted are class valedictorians and 90 percent are in the top 5 percent of their class. Thirty-four percent (636) performed com-

munity service and 16 percent (289) were class officers. The class includes 330 student editors, 122 members of state and national debating teams and 64 Eagle Scouts.

Forty-six percent of the class are women (855), five percentage points higher than a year ago. Twenty-nine percent (536) are Asian Americans.

African Americans (135), Mexican Americans (105), Native Americans (35) and residents of Puerto Rico (47) make up 17 percent of the class. Four fewer international students were accepted

(106) than in 1997. This year they make up 6 percent of the class.

A total of 8,247 students applied, of which 22.5 percent were accepted. Since all students admitted are accepted by other elite schools as well, many choose to matriculate elsewhere. An entering class of 1,050 is expected. The yield of 56 percent is considered high for engineering schools.

Of the 1,857 who were accepted, 22 percent expressed an interest in electrical engineering and computer science and 10 percent in biology.

Obituaries

CHARLES F. COREY

Word has been received of the October 5, 1997 death of Charles F. Corey, 71, of Waltham, a former Lincoln Lab technician who retired in 1992 after working at the Lab for eight years. He is survived by a friend, Mary Burrows.

THOMAS SAXON JR.

A memorial service was held March 21 in the First Congregational Church in Falmouth for Thomas Saxon Jr., 82, of East Falmouth, who died on March 13. He was a former fiscal auditor at

Lincoln Laboratory who retired in 1977 after 23 years at the Lab.

Mr. Saxon is survived by his wife, Ruth; a son, Richard of Falmouth, and one grandson.

HAROLD D. WOODMAN

Harold D. Woodman, 84, of Wilmington, a former head custodian with Physical Plant, died on March 14. He retired in 1979 after 17 years at MIT. Survivors include two daughters, Phyllis Tonks of Wilmington and Betty Chuvvuck of Melrose;

seven grandchildren and nine great-grandchildren.

CHARLOTTE YORSTON

Charlotte Yorston, 87, of Tyngsboro, a former custodian with Physical Plant, died on March 2. She began working at MIT in 1952 and retired in 1971. Survivors include a granddaughter, Karen Henson of Tyngsboro.

Whitehead gets \$10.9m DOE grant

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been mapped to particular chromosomes and roughly 2.5 percent of the human genome has been sequenced as part of the Human Genome Project.

The DOE and the National Institutes of Health coordinate the Human Genome Project. DOE's involvement grew out of a historical congressional mandate to study the health effects of radiation and the resulting expertise at the DOE's laboratories in this field.

e-mail, be able to type from tape or voice, use MS Word, PowerPoint, willing to do some writing, need access to a computer. Prefer basic HTML programming, desktop publishing. Hours negotiable, possible to work at home. R. Gulati at (617) 576-6331.

The following positions are for students with Federal Work Study eligibility.

Community Service: Living On Earth weekly radio news program and middle school program on environmental education. Opportunities exist in general production, news writing, feature story research, curriculum activities development. Minimum 12-15 hrs/wk. Resume and letter to Julia Madso, Living On Earth, 8 Story St, Cambridge, MA 02138 or fax to (617) 868-8659.

Community Service: Research to expand EcoLogic's database of information about community-based development and the conservation of threatened tropical ecosystems in Latin America. Familiarity with the Internet and Spanish preferred. Hours and salary negotiable. Fax (617) 441-6363 or mail to Luise Wills, Ecological Dev. Fund, PO Box 383405, Cambridge, MA 02138.

Community Service: Fundraising for Health Care for All. Past experience working with nonprofits helpful; willingness to take on a variety of tasks; good oral and written communications skills; and willingness to work a minimum of 5 hrs/week. Pays \$8-\$9 depending on experience. Albertian White at (617) 350-7279.

VOLUNTEERS

The MIT Public Service Center (Room W20-311, x3-0742) has compiled the following volunteer opportunities.

Cambridge School Volunteers. Volunteers needed for a number of special programs: math tutors at CRLS, once a week, Mon-Fri, 7:30-8:15am; Macintosh lab aide at CRLS, any afternoon from 2:30-4pm; soccer coach for boys in grades 3 and 4, Tues and Thurs from 2-4pm; art volunteers in elementary schools; book repairer for elementary schools, training provided, 1-2 mornings/week; squash players and homework helpers and the Harvard Club in Boston, Tues and Wed from 3:15-4:45pm. Call 349-6794 or e-mail <CSV@cps.ci.cambridge.ma.us> for more information.

Keys to Empowering Youth (KEYs) is looking for a part-time intern to begin work now and continue through summer. KEYs brings 11-13 year old girls to MIT for a day-long program of active learning, self-esteem building, career exploration and problem solving to encourage them not to drop out of science and math classes. Send e-mail to <keys-staff@mit.edu> or call MIT Public Service Center at x3-0742.

Safe Futures, A Youth Mentoring Program: English and mathematics tutors needed at the Frank V. Thompson School at 100 Maxwell Street, Dorchester from 1:30-3:30pm on Monday and Wednesday. The Thompson school is accessible by public transportation. Call the Mattapan/Dorchester Churches in Action at (617) 265-8997 for more information.

Ecologic Development Fund: Needs several interns for internet research, journalism, Spanish translation, and computer assistance. Advanced positions include Web page designer/manager and graphic designer. Academic credit, some work study positions.

Louise M. Wills (617) 441-6300 or <lwills@ecologic.org>.

UROP

The UROP Office invites MIT and Wellesley students to join faculty members on research projects. For information on procedures, please contact the UROP Office, Rm 20B-140 <urop@mit.edu> or x3-7306. Information and current listings available on-line at <http://web.mit.edu/urop/www/>.

Computational Biology: Programmers wanted for project on recognizing protein structural motifs from sequence data. Faculty Supervisor: Prof. Peter Kim. Contact: Mona Singh x8-6918 or <mona@wi.mit.edu>.

Sloan: Modeling and analysis of a replication-competent adenovirus that selectively kills tumor cells. Experience with computing partial differential equations desirable. Contact: Prof. Lawrence Wein x3-6697 or <lwein@mit.edu>.

EAPS: UROPers needed for experimental work in the new Experimental Sedimentology and Stratigraphy Lab. Faculty Supervisor: Prof. John Grotzinger. Contact: Jeff Parsons x3-5747 or <prson@grabau.mit.edu>.

Research Program on Communications Policy: The Community Networks Group, a research forum that operates under the Internet Telephony Consortium, is seeking a UROP student. Contact: David Pearah x3-4138 or <pearah@rpcp.mit.edu>.

CABLE

For more information, call Randy Winchester at x3-7431, Rm 9-050 or <randy@mit.edu> or <http://web.mit.edu/org/mitcable/www/home.html>.

Continuously Running Programs—Channel 10: Physics 8.02 TV Help Sessions. Assignments will be discussed by Professor Walter Lewin. Program starts every hour on the hour. Channel 11: NASA Television. See schedule at <http://www.hq.nasa.gov/ntv.html>. Channel 12: Today at MIT - a listing of MIT events. To submit your event, send e-mail to <tv-messages@mit.edu>. Channel 13: International Channel provided by the MIT Language Learning and Resource Center. See schedule at <http://www.i-channel.com>.

April 8: Channel 8: 11am—Live coverage of the EECS/RLE Optics and Quantum Electronics Seminar. (See Calendar listing.) 3-4:30pm—Live from Digital Equipment Corporation, "Recent Advances in Basic Physical Technology for Parallel SCSI: UltraSCSI, Expanders, Interconnect, and Hot Plugging," Bill Ham, DEC.

April 9: Channel 10: 4pm—Physics 8.02 Review Assignment #9. Repeats every hour.

April 14: Channel 8: 4-5:30pm—Live coverage of the MIT MTL VLSI Seminar. (See Calendar listing.) Channel 9: 5:30pm-2am MIT MTL VLSI Seminar (pre-recorded).

April 15: Channel 8: 11am-12:30pm—Live coverage of EECS/RLE Optics and Quantum Electronics Seminar. (See Calendar listing.)

April 16: Channel 10: 4pm—Physics 8.02 Review Assignment #10.

Crimewatch

The following summary contains most of the incidents reported to Campus Police from March 18-April 1, 1998. It does not include medical shuttles, ambulance transfers, false alarms and general service calls.

March 19: East Campus: \$300 cash reported stolen, later found. Westgate lot: disturbance over purchase of vehicle. Bldg. W31: harassing e-mail. Amherst Alley: vehicle and bicyclist accident.

March 20: Bldg. E19: annoying mail. Memorial Drive: assist other police agencies with bicyclist accident. Bldg. 3: domestic disturbance. Student Center: 1) \$39 cash stolen; 2) \$220 cash stolen from LaVerde's. Bldg. N52: harassing phone calls. Westgate: noise complaint, parties yelling at each other.

March 23: Student Center: male taken into custody on outstanding warrants. Bldg. 42: TV/VCR stolen, \$300. Bldg. 44: computer stolen, \$2,200. Delta Psi: harassing phone calls.

March 24: Bldg. E52: laptop stolen, \$1,040. Bldg. 54: hack. Bldg. 56: strong odor of paint thinner, area ventilated.

March 25: Bldg. 24: room broken into, nothing taken. Bldg. 18: computer stolen, unknown value. Bldg. NW16: bicycle stolen, \$150.

March 26: Bldg. 9: 1) construction tools stolen, \$200; 2) computer hard drive stolen, \$200. Bldg. 48: bicycle parts stolen, \$30. Bldg. 10: wallet and contents stolen, \$1,331. Bldg. 6: chemical spill, contained and cleaned without problem. Student Center: backpack left unattended stolen and recovered in stairwell, \$85. Bldg. 42: report of suspicious person.

March 27: Bldg. 20: hack. Tang: report of fraud. Bldg. N51: report of suspicious activity. Bldg. E56: report of a suspicious person. Bldg. 14: vending machine broken into and bill changer stolen, \$50. Mass. Ave. Bridge: MBTA Police arrested two individuals suspected of breaking into the Bldg. 14 vending machine.

March 28: Tang: report of loud party, with alcohol, no minors. Party was unregistered; party closed, no citations. Bldg. E17: computer equipment damaged due to flood.

March 29: Bldg. 48: chemical spill, area evacuated for a few hours until EMS gave the all-clear. Rockwell Cage: assault between two basketball players known to each other, loud noise complaints against Sigma Phi Epsilon and Delta Upsilon, Campus Police responded on two separate occasions and advised individuals to quiet the noise. Amherst Alley: report of fireworks.

March 30: Bldg. E19: electrical supplies stolen, \$196. Alumni Pool: report of credit cards stolen. Bldg. 45: Walkman type radio and jacket stolen, \$115. Bldg. E34: laptop stolen, \$2,060. Bldg. W59: bicycle left unlocked stolen, \$150. Bldg. NW12: suspicious activity. Bldg. E1: small brush fire, extinguished by CPs and Cambridge Fire. Bldg. 54: suspicious person, checked out okay.

March 31: Bldg. 13: bicycle secured with a "U" lock stolen, \$239.

April 1: Student Center: 1) wallet stolen, \$5; 2) bicycle stolen, \$350. Westgate lot: license plate stolen. Bexley: computer parts stolen, \$283. Bldg. 35: vending machine broken into.

MIT Athena users may subscribe to the cp-crimelogs and cp-bulletin lists with the commands "blanche-add \$USER cp-crimelog" and/or "blanche-add \$USER cp-bulletin."

MIT TECH TALK

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Merck spring symposium focuses on neuropharmacology

An exciting development in neuropharmacology that may point to a new means of treating depression and anxiety was presented by Merck scientists Nadia Rupniak and Mark Kramer to an overflow audience at the Whitehead Institute's McGovern Auditorium at the Merck Spring Symposium on April 1.

The discovery centers around substance-P antagonists. Substance P is a short peptide produced by the limbic system and other regions of the brain. This peptide is highly conserved among organisms, but its functions in the brain are poorly understood.

Dr. Rupniak, a Merck senior research fellow, said she and colleagues at Merck discovered that an antagonist of substance P's interaction with its cell surface receptor would reduce both anxiety and stress responses in gerbils. For example, gerbils that live in colonies in the ground thump with a hind paw to warn of impending danger, such as predators. Injection of substance P induces this response, while Merck's new class of compounds

inhibits this response. The compounds also suppress the anxiety of gerbil pups who are separated for a short time from their mothers.

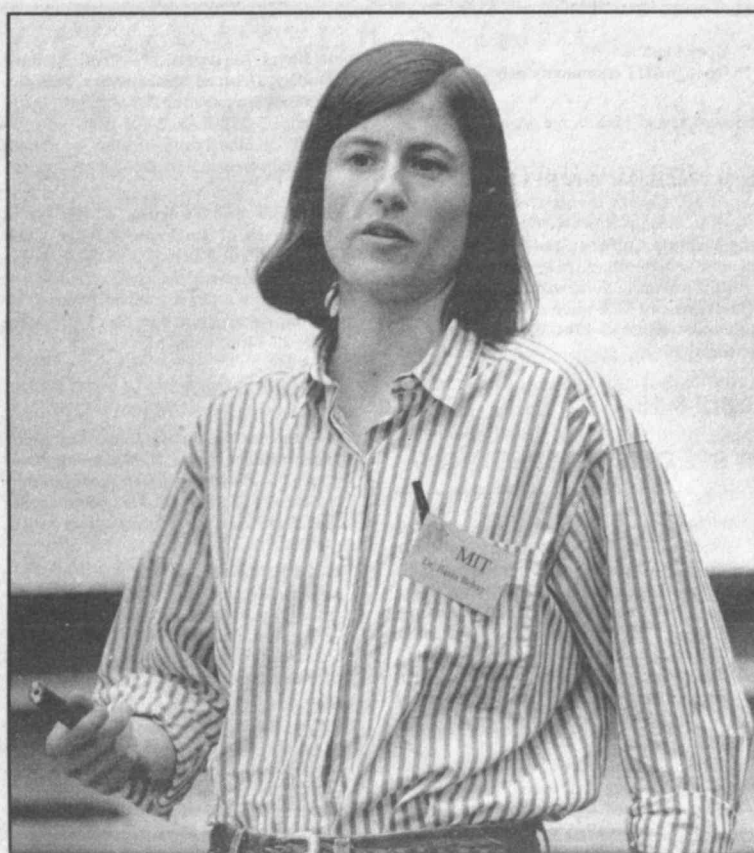
Dr. Kramer, a Merck senior research physician, presented the first public discussion of the results of a recent clinical trial using antagonists of substance P. The trials were a blind test of the drug to treat patients with both depression and anxiety. There was a statistically significant beneficial effect in the treated patients as compared to those receiving a placebo.

Last week's spring symposium was the second since the January 1997 inception of an agreement between pharmaceutical giant Merck & Co., Inc., and MIT to further Merck's interest in "recruiting the best possible scientists and engineers" and in basic research that may lead to new pharmaceutical and biotech products.

In addition to specific research projects, the Merck/MIT collaboration supports postdoctoral and graduate fellowships. MIT hosts two symposia each

year, where Merck visitors have the opportunity to interact with MIT personnel and hear presentations on their ongoing work. The first was held in October 1997.

Attendees this time included Merck/MIT collaboration managers Professor Phillip Sharp, chair of the biology department, and Dr. Edward Scolnick, president of Merck Research Labs and executive vice president of science and technology for Merck. Other MIT speakers were Sara Dempster and Chuan He, graduate fellows in chemistry; Cheuk-san (Ed) Wang, graduate fellow in electrical engineering and computer science; Professor of Mathematics Daniel Kleitman; Tod Smeal, a postdoctoral fellow in biology; David Sabatini, a Whitehead fellow; Assistant Professor of Biology Peter Sorger; Joydeep Goswami, a graduate fellow in chemical engineering; Assistant Professor of Biology Ilaria Rebay, who also is a Whitehead associate member. Thirty-two researchers and scientists/managers from Merck also took part.



Dr. Ilaria Rebay, assistant professor of biology and Whitehead Institute associate, was one of the speakers at the April 1 Merck symposium.

Photo by Donna Coveney

Two Sloan faculty members, Ross and French, come to MIT from Yale

Yale Professors Stephen Ross and Kenneth French will join the Sloan School of Management's finance department on July 1. Professor Ross will have a joint appointment with the MIT Department of Economics.

Dr. Ross has been the Fischer Black Visiting Professor at Sloan this year. Dr. French, the Edwin J. Beinecke Professor of Management Studies at the Yale School of Management, is a leader in the empirical analysis of capital markets.



Ross

"We are extremely pleased to have Steve Ross and Ken French join the Sloan faculty," said Sloan School Dean Glen Urban. "Steve brings an outstanding reputation for work in both corporate finance and financial engineering. He and Ken, a highly talented empirical economist and capital markets expert, ensure that Sloan's finance group is second to none."

Professor Ross, who will be the Franco Modigliani Professor of Finance and Economics, is best known as the inventor of the widely applied Arbitrage Pricing Theory, an approach to determining asset prices. He has co-authored three books on corporate finance and has published numerous articles in financial economics. He is also co-chairman of Roll and Ross Asset Management,

which manages more than \$3 billion in equity investments worldwide.

"Ross has changed the way Wall Street views academia," said Sloan Professor Andrew Lo. "People like Steve, Bob Merton and others raised the intellectual stakes in finance by applying beautiful and rigorous mathematical arguments with the goal of developing some extraordinarily practical applications."

Trained as a physicist at Caltech, Professor Ross earned the PhD in economics from Harvard. While an economist at Wharton, a seminar by Fischer Black, another former Sloan professor, piqued his interest in finance at a time when finance was not very respectable.

Professor French, who will join Sloan as the Nanyang Technological University Professor of Finance, is an authority on the behavior of security prices, investment strategies and the management of financial risk. His recent research focuses on tests of asset pricing models, the trade-off between risk and return in domestic and international financial markets, and investor diversification in international equity markets.

He is managing director of the International Center for Finance at the Yale School of Management, a research associate at the National Bureau of Economic Research, and past director of the Center for Research in Security Prices at the University of Chicago.

Mary Schaefer

Director of Communications, Sloan School

Reid to head MITES, EIP

Karl Reid (SB '84, SM) has been named executive director of special programs for the School of Engineering. He will direct the Minority Introduction to Engineering and Science (MITES) and the Engineering Internship Program (EIP).

The MITES program (see the web site at <http://web.mit.edu/mites/www/>) is a rigorous, six-week residential summer course that introduces promising underrepresented minority high school juniors to careers in engineering, science and entrepreneurship.

EIP (see <http://web.mit.edu/eip/www/>) combines traditional on-campus academic programs with off-campus work experience in industry and government and leads to simultaneous

bachelor of science and master of science degrees in participating engineering departments.

Both programs have been in place for more than 20 years.

"I am thrilled and humbled about returning to my alma mater to continue the legacy of MITES and EIP," Mr. Reid said.

"This position gives me a unique chance to broaden the educational opportunities for both talented high school students and undergraduate MIT students seeking to augment their theoretical education with practical



Reid

industry experience. I attribute my success in industry and at MIT largely to programs like these."

Mr. Reid, whose degrees are in materials science and engineering and electronic materials, spent 12 years in systems engineering, systems consulting and product management at IBM and Programart Corp. in Boston. Most recently, he was product director for data warehousing for Software AG Americas, based in Reston, VA, and Frankfurt, Germany.

"Karl brings valuable MIT and industry experiences that will infuse these programs with the leadership necessary to take them to new levels of excellence and effectiveness for talented high school and MIT students," said Dean of the School of Engineering Robert Brown.

Mr. Reid took over from Laura Robinson (SB '80), who is now associate director of development at the Management of Technology Program at the Sloan School.

While a student at MIT, Mr. Reid served as both vice chairman of the MIT chapter and national chair of the National Society of Black Engineers (NSBE). He founded and directed the NSBE High School Ambassador Program, which exposes Boston-area students to careers in engineering. He was co-founder of the Black Christian Fellowship, a member of the MIT Gospel Choir and co-chair of his living group. Mr. Reid also received the Karl Taylor Compton Award and was appointed to the Tau Beta Pi National Engineering Honor Society.

Deborah Halber

Supreme court decision could affect credit unions

By Peggy O'Brien
MIT Credit Union

The MIT Employees' Federal Credit Union (MITEFCU) is tracking developments following a US Supreme Court decision that could affect membership and services of credit unions.

In February, the Supreme Court decided a case that charged federally chartered credit unions with exceeding their legal market boundaries. The complaint was brought by a group of North Carolina bankers who questioned the eligi-

bility policy, known as the "select employee group policy," of the National Credit Union Administration as implemented by the AT&T Family Credit Union. The suit argued that expanding credit union membership eligibility beyond employees of AT&T was in conflict with the Federal Credit Union Act. The charge implied that such expansion constituted unfair competition with banks.

While the court's 5-4 decision favored the bankers, the ruling is not expected to affect the current eligibil-

ity policy of the MITEFCU, which restricts membership to employees of MIT, MIT/Lincoln Lab, and close affiliates Draper Laboratory and Whitehead Institute. Families of primary members are also eligible.

The House of Representatives also recently passed the Credit Union Membership Access Act (HR 1151). If approved by the Senate, the bill would in effect reverse the Supreme Court ruling by restoring the right of all consumers to join a credit union.

There is, however, concern among

CEOs of all credit unions that the court decision could set the stage for future challenges from the banking industry and negatively affect other aspects of credit union membership.

"Because we are member-owned and not-for-profit, our members can obtain most financial products and services from us at a significantly lower cost than they would pay elsewhere in the financial services industry," said Paul L. Bergonzi, CEO and treasurer of MITEFCU. "We want to preserve that unique cost advantage and other member benefits from future court challenges. With regard to the current decision, we emphatically take the opposing position that all consumers should have the option to do their financial business with a credit union, if they choose."

The Supreme Court decision on member eligibility has been remanded to the district court for implementation. An injunction that allows credit unions to continue their present select employee group policy remains in effect until the lower court's interpretation.

Mr. Bergonzi suggests that MIT community members write Senators Edward M. Kennedy and John F. Kerry and ask them to support fair market competition in the financial services industry by voting "yes" for the Credit Union Membership Access Act. The Senators' addresses are available from the credit union at x3-2845.

MITEFCU is located on campus in Rm E19-437 and at Lincoln Laboratory in Building A, Rm 100.

Reading, writing and railing



Molly Fenn, a Wellesley College sophomore, catches up on her work near a Building 2 stairwell.

Photo by Laura Wulf

Institute Calendar

* Open to public
** Open to MIT community only

(For arts-related listings, see page 7)

Next deadline for listings: 12 noon Friday, April 10. Covers events from Wednesday, April 15 through Sunday, May 3. Listings for the Institute Calendar and Student Notices should be submitted using the web form at <<http://web.mit.edu/newsoffice/tt/calform>>. Questions can be e-mailed to <calendar@mit.edu> or call x3-2704. Early submissions encouraged.

April 8-19

■ SPECIAL INTEREST

1998 Catherine N. Stratton Lecture on Aging Successfully—Who is Managing Your Care?—Panel discussion moderated by Michael A. Kane, MD, MIT Medical. Sponsored by MIT Medical and the MIT Women's League. 9:30am-noon, Bartos Theater, Wiesner Building (E15). Coffee at 9am. More info: MIT Women's League x3-3656 or <<http://web.mit.edu/medical/age/age.htm>>. Thursday, April 9.

Hot Topics for Computer Users: Do You Know Who's Reading Your Email? (Privacy)*—Joanne Costello, Coordinator, I/T Support. Sponsored by Information Systems. Noon-1:30pm, Rm E28-100. Bring a lunch. More info: x3-6322, <joanne@mit.edu> <<http://web.mit.edu/is/training/hot.html>>. Wednesday, April 8.

■ SEMINARS & LECTURES

WEDNESDAY, APRIL 8

WDM Devices in InP*—Christopher Doerr, Lucent Technologies, Bell Labs. Sponsored by EECS/RLE Seminar Series on Optics & Quantum Electronics. 11am, Grier Room B, Rm 34-401B. More info: Prof. Erich Ippen, x3-8504 <ippen@mit.edu>.

Future Threats and Challenges: 1998 to 2018*—Gen. Patrick Hughes, Dir., Defense Intelligence Agency. Sponsored by Security Studies Program. Noon-1:30pm, Rm E38-615. Bag lunch, refreshments will be provided. More info: x3-0133 or <llevine@mit.edu>.

The Vices of Social Engineering**—Prof. Deirdre McCloskey, Univ. of Iowa. Sahin Lecture Series, sponsored by History Faculty. Brown bag lunch discussion. Noon-1:30pm, Rm E51-275. More info: History Office x3-4965 or <history-info@mit.edu>.

Hot Topics for Computer Users: Do you know who's reading your email? (Privacy)*—Joanne Costello, Coordinator, I/T Support. Sponsored by Information Systems. Noon-1:30pm, Rm E28-100. Bring a lunch. More info: x3-6322, <joanne@mit.edu> <<http://web.mit.edu/is/training/hot.html>>.

Stacking the Deck in Our Favor: Identifying Technological Strategies for Reducing Greenhouse Gases*—Dr. Elisabeth Drake, Energy Lab. Alliance for Global Sustainability Brown Bag Luncheon. Noon-1:30pm, Rm E40-496. Cookies and beverages provided. More info: x3-7985, <connorsr@mit.edu>.

Observations of the Deep Circulation of the Brazil Basin*—Nelson Hogg, WHOI. Sponsored by Physical Oceanography. 12:10-1pm, Rm 54-915. More info: <<http://puddle.mit.edu/~mick/sack.html>>.

Large Scale Structure of the Earth's Mantle: Results from Seismic Tomography with Improved Earthquake Locations and Travel Time Data*—Prof. Robert van der Hilst, MIT. Sponsored by Dept. of Earth, Atmospheric and Planetary Sciences. 4pm, Rm 54-915. Refreshments, 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu> or <http://www.eaps.mit.edu/dept_sem.html>.

Extracting Structural and Functional Information from Families of Protein Sequences*—Prof. Neil Clarke, Johns Hopkins School of Medicine. Problems and Methods in Bioinformatics Seminar, sponsored by Metabolic Engineering Lab & Lab for Intelligent Systems Process Eng. 4pm, Rm 56-114. More info: x3-3904 or <geostep@mit.edu>.

New Directions in Angiogenesis Research*—Dr. Judah Folkman, Harvard Med School and Children's Hospital. Sponsored by Biology Undergraduate Student Association (BUSA). 4:15pm, Rm 54-100. Reception follows in Rm 68-181. More info: x3-4718, <bexec@mit.edu>.

Monomial Ideals, Real Boolean Subspace Arrangements, and Order Dimension of Lattices*—Prof. Irena Peeva, Dept. of Mathematics. MIT Combinatorics Seminar, sponsored by Dept. of Mathematics. 4:15pm, Rm 2-338. More info: x3-7775, <sara@math.mit.edu> or <<http://http://222-math.mit.edu/~combin>>.

Some Bayes Asymptotics*—Prof. Richard Dudley, Dept. of Mathematics. Statistics Seminar, sponsored by Department of Mathematics. 5:15pm, Rm 2-105. More info: x3-4390, <genton@math.mit.edu> or <http://www-math.mit.edu>.

Architecture and Function of the Great Imambara of Lucknow*—Peter Chelkowski, NYU. The Aspect of the Sacred in Architecture and Urbanism Lecture Series, sponsored by The Aga Khan Program for Islamic Architecture. 6pm, Rm 3-133. More info: x3-1400, <islarch@mit.edu>.

THURSDAY, APRIL 9

1998 Catherine N. Stratton Lecture on Aging Successfully—Who is Managing Your Care?—Panel discussion moderated by Michael A. Kane, MD, MIT Medical. See Special Interest above for more information.

Does Arms Control Have a Future?—Michael Nacht, Univ. of Maryland. Sponsored by Security Studies Program. 1-2:30pm, Rm E38-615. Bag lunch, refreshments will be provided. More info: x3-0133 or <llevine@mit.edu>.

We Were Burning: Japanese Entrepreneurs and the Electronic Revolution*—Bob Johnstone, journalist and author talks about his new book. Sponsored by MIT Japan Program. 3:30pm, Rm E38-7th floor conference room. More info: Mark Eykholt x8-8208 or <meikholt@mit.edu>.

New Bounds and Heuristics for (Q;R) Polynomials*—Guillermo Gallego, Columbia University. Sponsored by OR Center. 4-5pm, Rm E40-298. Refreshments to follow in Rm E40-106. More info: <<http://web.mit.edu/orc/www>>, x3-1419 or <salal@mit.edu>.

Power in Andean Metals: Bronze or Tumbaga?—Heather Lechtman, Archaeology, MIT. Mechanics & Materials Seminar, ME Dept. 4-5pm, Rm 5-234. Refreshments prior. More info: <xray@mit.edu> or <<http://lohtse.mit.edu/~maha/seminar.html>>.

Tailored Composites as Enabling Technology for Civil Infrastructures: ECC Development & Applications*—Victor Li, Univ. of Michigan. Sponsored by Civil & Environmental Engineering. 4-5pm, Rm 1-350. More info: Oral Buyukozturk x3-7186, <obuyuk@mit.edu>.

FRIDAY, APRIL 10

Initial Results of Impurity Plume Modeling in the SOL of Alcator C-Mod*—Sanjay Gangadhara, MIT. Nuclear Engineering Fusion Doctoral Seminar. 12:30-1:30pm, Rm NW16-213. More info: x8-7818 <kshadman@mit.edu>.

Thermal Engineering of Electronic Microstructures*—Prof. Kenneth Goodson, Stanford Univ. Mechanical Engineering Spring Seminar. 3pm, Rm 3-270. More info: Prof. Sanjay Sarma x3-1925 or <sesarma@mit.edu>.

Structure, Surface Reactivity and Reliability of Metallic and Semiconductor Thin Films: A Computational Materials Science Study*—Dimitrios Maroudas, Univ. of Santa Barbara. Sponsored by Chemical Engineering. 3pm, Rm 66-110. More info: Arline Benford x8-7031 or <arline@mit.edu>.

Climate Fluctuations Associated with Oceanic Exchanges Between the Tropics and Extra-tropics*—Prof. George Philander, Princeton Univ. Sponsored by Department of Earth, Atmospheric and Planetary Sciences. 4pm, Rm 54-915. Refreshments at 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu> or <http://www.eaps.mit.edu/dept_sem.html>.

Breaking Symmetries of S5 and S6*—Dr. Karen Collins, Wesleyan Univ. MIT Combinatorics Seminar, sponsored by math dept. 4:15pm, Rm 2-338. More info: x3-7775, <sara@math.mit.edu> or <<http://http://222-math.mit.edu/~combin>>.

MONDAY, APRIL 13

Tokyo's New Performing Arts Center, 21st Century Acoustics**—Dr. Leo Beranek, Acoustical Design Consultant. Building Technology Lecture Series, Dept. of Architecture. 12:30-2pm, Rm 1-390. More info: x3-0463 <dorrit@mit.edu>.

Universal Methods for Communication and Signal Processing*—Dr. Andrew C. Singer, Sanders, a Lockheed Martin Company. Special EECS Seminar. 2pm, Rm 36-428. Refreshments at 1:45pm. More info: Prof. Jeffrey Shapiro x3-4607 or <jhs@mit.edu>.

What It Takes to Decommission a Nuclear Power Plant*—Dr. Andrew Kadak, former president and CEO, Yankee Atomic Electric Co. Sponsored by Dept. of Nuclear Eng. and American Nuclear Society. 3:30pm, Rm NW 12-222. Refreshments at 3pm. More info: Elizabeth Parmelee x3-

3801 or <parmelee@mit.edu>.

Ethnography of IRCAM: Music, Science, Technology*—Georgina Born, King's College, Cambridge Univ. Program in Science, Technology, and Society Spring 1998 Colloquia Series. 4pm, Rm E51-095. More info: STS Program, x3-4062.

Recent Developments in Primality Testing*—Prof. Carl Pomerance, Univ. of Georgia. Applied Mathematics Colloquium. 4:15pm, Rm 2-105. Refreshments at 3:45pm in Rm 2-349. More info: x3-3661, <brenner@math.mit.edu> or <<http://www-math.mit.edu/amc/spring98>>.

The Problem of Representation in the Art of the Alhambra*—Prof. Valerie Gonzalez, Ecole D'Architecture de Marseille-Luminy. Sponsored by the Aga Khan Program for Islamic Architecture. 6pm, Rm 1-390. More info: x3 1400, <islarch@mit.edu>.

TUESDAY, APRIL 14

The Rise and Decline of Mathematical Table-Making*—Martin Campbell-Kelly, Univ. of Warwick, UK. Dibner Institute Colloquium. Noon-2pm, Rm E56-100. Please notify if you plan to attend:



■ COMMUNITY

MIT Ballroom Dance Club*—For schedule, x8-6554 or <<http://web.mit.edu/mitbd/>>.

The Furniture Exchange at MIT**—Used furniture needed in good condition, to be sold to MIT/Harvard students. Donations are tax-deductible and receipted; our profits go to MIT scholarships. Call x3-4293 or see <<http://web.mit.edu/wivesgroup/resource.html#anchor545694>>.

GABLES (Gay, Bisexual, and Lesbian Employees and Supporters) at MIT**—Meetings held twice a month, one for general business and one for a program or social gathering. Info line x2-1014. Staff lesbian e-mail list sign-up, send e-mail to <gables-request@athena.mit.edu>.

Graduate Student Council Grocery Shuttle*—The GSC offers a grocery shuttle from MIT to the Allston Star Market on Saturday mornings and Tuesday evenings. Free to all members of the MIT community. For schedule and pickup locations see <<http://www.mit.edu/activities/gsc/Committees/HCA/Grocery/grocery.html>>.

MIT Folkdance Club*—Sundays: International Dancing 7-11pm. Tuesdays: Advanced Balkan Dancing, regular teaching & requests, 7:30-11pm. Wednesdays: Israeli Dancing 7-11pm. MIT/Wellesley students free, \$1 others. For location, see <<http://www.mit.edu/activities/fdc/home.html>>.

MIT Toastmasters**—An organization that helps people improve and practice their public speaking and presentation skills. Meets second and fourth Friday of each month, 12:05-1:25pm, Rm E19-220. For schedule, see <<http://web.mit.edu/personnel/toastmasters/>>.

Tech Squares*—MIT's Square and Round dance club, meets on Thursdays, with caller Ted Lizotte. For more info on the club, see <<http://www.mit.edu/activities/tech-squares/>> or e-mail <squares@mit.edu>.

■ FAMILY

Family Resource Center**—See Web site at <<http://web.mit.edu/personnel/www/frc/>>. In addition to parenting workshops and programs, the Family Resource Center also offers support and training programs for child care providers, workshops at your request, a lending library, and individual consultations concerning parenting, schools, child care options, and work/family issues. Call x3-1592 or <frc@mit.edu>.

Family On-Line Services**—A computer workstation is available in the Family Resource Center reception area for those who would like to access child care databases and on-line parenting resources. Also, the FRC maintains a list of those members of the MIT community who would like to be on an e-mail list to receive news, program updates, etc. To be added to the subscriber list, e-

<dibner@mit.edu> or x3-6989.

Atomic and Molecular Physics with Laser Cooled Atoms*—William D. Phillips, NIST, Nobel laureate. Lord Lecture, sponsored by MIT's G. R. Harrison Spectroscopy Lab. Noon-1pm, Grier Room (Rm 34-401). More info: x3-9774, <farideh@mit.edu> <<http://web.mit.edu/spectroscopy/www/mos.html>>.

Spiral Instabilities in Torsional Flows of Elastic Fluids*—Prof. Gareth H. McKinley, Dept. of Mechanical Eng. Physical Mathematics Seminar. 2:30pm, Rm 2-338. Refreshments at 3:30pm in Rm 2-349. More info: x3-3661, <brenner@math.mit.edu> or <<http://www-math.mit.edu/amc/spring98>>.

Low Dielectric Constant Materials in Interconnect Integration*—Carlye Case, Lucent Technologies. Sponsored by MTL VLSI Seminar Series. 4pm, Rm 34-101, Edgerton Lecture Hall. Refreshments at 3:30pm. More info: x3-4799 or <meg@mtl.mit.edu>.

Optimal Multirate Digital Signal Processing*—Bruce Francis, University of Toronto. LIDS Colloquium. 4pm, Rm 35-225. More info: Michael Schneider <mikesch@mit.edu>.

Ongoing Community Meetings

mail <frc@mit.edu> or call x3-1592.

Fathers Group**—Peer-led, informal discussions of the challenges and joys of fatherhood. No fee. Cosponsored by the Family Resource Center and the Health Education Resource Center. Open to MIT, Draper and Whitehead communities. Thursdays, 12-1pm, call or e-mail for meeting place, x3-1316 or <mit-dads@mit.edu>.

Mothers Group**—Professionally-led group. Wednesdays, 1-2pm, Rm E23-297. No fee, no preregistration required. Cosponsored by the Family Resource Center and the Health Education Resource Center. For schedule and further information, call x3-1316.

Off-Campus Playgroups**—The MIT Wives Group, with the cosponsorship of the Family Resource Center, provides ongoing support for establishing and maintaining informal parent-child playgroups. Contact Wives Group, Rm E23-376, x3-1614.

Parents Forum**—Peer-led discussions for parents. No fee. Contact Chris Bates for more info: x3-4084 or <cbates@mit.edu>.

Wives Group**—A support and self-help program sponsored by MIT Medical for partners and spouses of students, staff and faculty. Meetings held every Wednesday from 3-5pm in W20-400. Childcare provided. For info call Jennifer at x3-1614.

■ HEALTH

Alcoholics Anonymous (AA)*—Meetings every Tues, 12-1pm; Thurs, 12-1pm, Rm E23-364. Alise x3-4911.

AI-Anon*—Meeting every Fri, noon-1pm, Rm E25-525. The only requirement for membership is that there be a problem of alcoholism in a relative or friend. Alise x3-4911.

Alcohol Support Group**—Meetings every Wednesday, 7:30-9am. Alise x3-4911.

Cancer Support Group**—Meets last Tuesday of the month, 12:15-2pm. For those with acute and chronic forms of cancer. Sponsored by the MIT Medical Dept. Info: Dawn Metcalf x3-4911.

Co-Dependents Anonymous (CoDA)*—Thursdays, 6:30-8pm, Rm 66-168. Alise x3-4911.

Early Pregnancy, Prepared Childbirth and Childbirth Review**—Classes are offered to patients of the MIT Medical Department's Obstetrics Service. Call x3-1316.

Falun Gong Classes*—Falun Gong is an ancient way of self-improvement in body and mind, an advanced Qigong system of the Buddhas' School. Good for all ages. Everyone is welcome. No fees or donations. Tuesdays, 6:30-7:30pm, Rm 1-134. Contact Leonard at x3-0720 or see <<http://falun.mit.edu>>.

Health Education Resource Center**—Books, free video loan program and brochures on diet, exercise, wellness, childbirth, parenting, aging and much more. Rm E23-205; open weekdays 9-5pm. Call x3-1316.

Nursing Mothers Room**—A comfortable, private place to nurse babies or express milk. Cosponsored by the Family Resource Center and the Medical Dept. Located within the Women's Lounge in Rm 10-384 and Rm E19-6th floor, accessible 24hrs/day. Make arrangements with Margery Wilson, Rm E23-407, x3-2466.

The PLO and the State of Palestine*—Mr. Alain Gresh, editor-in-chief, Le Monde Diplomatique, Paris. Emile Bustani Middle East Seminar. Sponsored by the Center for International Studies and the Foreign Languages and Literatures Section. 4:30-6pm, Rm E51-095. More info: Gabi Glatkauskas x3-8961 or <gabig@mit.edu>.

Refugees and De-Mining: A Panel*—Dr. Jennifer Leaning, Susannah Sirkin, and Prof. Kosta Tsipis. Sponsored by Inter-University Seminar on International Migration. 4:30-6pm, Rm E38-615. More info: x3-3121 or <lauries@mit.edu>.

Studying the State Ethnographically: the Culture of the State in India*—Prof. Akhila Gupta, Stanford. Ford Workshop. 6pm, Rm E38-714. Info: <sarajane@mit.edu>.

WEDNESDAY, APRIL 15

Extraordinary Optical Transmission Through Sub-Wavelength Hole Arrays*—Tineke Thio, NEC Research Institute. Sponsored by EECS/RLE Seminar Series on Optics & Quantum Electronics. 11am, Grier Room B, Rm 34-401B. More info: Prof. Erich Ippen, x3-8504 <ippen@mit.edu>.

(continued on page 5)



Nursing Mothers' Group**—First & third Wednesday of each month, 11am-noon, Rm E23-297. For pregnant and nursing women. Babies & toddlers welcome. No fee. No registration. Sponsored by the Medical Dept. Info: x3-2466.

RSI Alert!**—RSI Alert! is a group of MIT employees and students dedicated to 1) creating an awareness of Repetitive Strain Injury, 2) educating to prevent RSI, and 3) facilitating treatment and accommodations for those who have RSI. To receive notices about events and meetings, subscribe to our listserv mailing list by sending an e-mail to <listserv@mitvma.mit.edu> with the following message: [SUBSCRIBE RSIAlert YourLastname YourFirstname], or, for more information, call x8-9328.

Weight Watchers**—New program starting, come join friendly and supportive group and improve your health. More info: <patricia@mit.edu>.

■ INTERNATIONAL

Stammtisch/German Table*—Join us for lunch auf deutsch, all are welcome. Every Monday noon-1pm, MIT's Walker cafeteria. More info: <debi@mit.edu> or <sberka@mit.edu>.

Guide for Foreign National Spouses Seeking Work**—Information on topics such as American resumes, job interviews, volunteer work, employment agencies, salary negotiation, visa issues, much more. Reference binders may be used in Rm 12-170; ask for Beth Anderson.

Hebrew Lunch Table**—Come join us for an informal discussion in Hebrew every Wednesday. Students meet in the Walker Cafeteria at Noon. Bring your lunch or buy it there. Speaking ability ranges and attendance need not be consistent. All are welcome. Info: Adam Bovilsky <adambov@mit.edu> or 252-1521.

Hosts to International Students Program*—Offer assistance, encouragement and occasional hospitality to our students from around the world. Not a home-stay program. Faculty, staff and alumni/ae (singles, couples or families) are encouraged to participate. Kate Baty, x3-4862 or <baty@mit.edu>.

International Women's Discussion Group*—meets Tuesdays beginning Oct. 28 from 12:30 to 2pm in Rm E23-347. Contact Dr. Grace Gibson for more information, x3-2916.

MIT Japan Program**—Students: Go to Japan with the MIT Japan Program, and do cutting-edge research in your field in a Japanese corporate, government or academic organization. All expenses paid. Info: x8-8208 or <japanprogram@mit.edu>.

Japanese Lunch Table*—Japanese and non-Japanese students meet every Wednesday at noon for language and cultural exchange. E38-7th floor. Bring your own lunch. Info: <japanprogram@mit.edu>.

MIT Language Conversation Exchange**—We find conversation partners for those interested in practicing a language with a native speaker. Call x3-1614 for more information.

Awards & Honors

■ **Koichi Masabuchi**, professor of ocean engineering and materials science and co-director of the Fabrications Laboratory, recently received an award from the Japan Society of Mechanical Engineers for the best paper in the materials and fabrication division published in the Society's journal in 1995. The paper, co-authored by Professor Masabuchi, was entitled "Development of Arc Welding Process Applied to Construction and Repair of Space Vehicles and Structures in Space."



Masabuchi

■ **Eugene R. Chamberlain**, a former international students' advisor, associate dean and associate director of admissions who retired in 1986 after more than 30 years at

MIT, was named Citizen of the Year by the Hingham (MA) Journal. In its March 29 edition, the newspaper noted his leadership of the town historical society and volunteer work for several local schools, the town library and a church. "It is because of his enthusiasm and energizing that so many others work so hard for [our town]," wrote one person who nominated him for the honor.

■ The 1998 Dr. Robert H. Goddard Memorial Trophy was presented to Professor **Sheila Widnall** of aeronautics and astronautics by the National Space Club in March. "During her service as Secretary of the Air Force from 1993-97, Dr. Widnall displayed extraordinary vision and strength of purpose in leading the US Air Force efforts to modernize



Widnall

the space and launch systems of the Department of Defense and enhance the integration of space operations into the military services of the United States," her citation read. Past MIT winners of the Goddard Trophy include **Charles S. Draper** (1978) and **Robert C. Seamans Jr.** (1968).

■ Three MIT students—seniors **Noemi Giszpenc** of writing and humanistic studies and **Lin-Ann Ching** of architecture, and **Xiaomin Mou**, a sophomore in electrical engineering and computer science—have been awarded the Kawamura Visiting Fellowship to Japan for this summer. Four fellowships are awarded each year, split between Harvard and MIT students. The program, co-sponsored by Kawamura Electric Industrial Co., Ltd. in Nagoya, Japan, is designed to promote cultural exchange and better mutual understanding between the Japanese people and outstanding students from the two universities.

(continued from page 4)

What's New in Buildings: Are Green Buildings in Your Future?—Prof. **Leon Glicksman**, Dept. of Architecture. Alliance for Global Sustainability Brown Bag Luncheon. Noon-1:30pm, Rm E40-496. Cookies and beverages provided. More info: x8-6368, <kgibson@mit.edu>.

Onset of the 1997-98 El Nino—**Lisan Yu**, NASA/Goddard and Univ. of Maryland. Sponsored by Physical Oceanography. 12:10-1pm, Rm 54-915. More info: <http://puddle.mit.edu/~mick/sack.html>.

Global Environment Challenges for the 21st Century—**Mario J. Molina**, Institute Professor, Dept. of Chemistry. Sponsored by ICRMOT. 1-2pm, Rm E56-270. More info: x3-0586 or <http://web.mit.edu/afsa/athena.mit.edu/org/iicrmot/www/seminars.html>.

Fluvial Systems in Mountain Belts and Foreland Basins: An Alpine Perspective—Prof. **Trevor Elliott**, Univ. of Liverpool. Sponsored by Dept. of Earth, Atmospheric and Planetary Sciences. 4pm, Rm 54-915. Refreshments at 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu> or <http://www-eaps.mit.edu/dept_sem.html>.

Images of the Divine: The Tombs of Saints and the Mausolea of Kings—**Catherine Asher**, Univ. of Minnesota. The Aspect of the Sacred in Architecture and Urbanism Lecture Series, sponsored by The Aga Khan Program for Islamic Architecture. 6pm, Rm 3-133. More info: x3-1400, <islarch@mit.edu>.

THURSDAY, APRIL 16

1998 Catherine N. Stratton Lecture on Aging Successfully—Minimal Surgery: When Less is Better—**John A. Parrish**, MD, dermatology and laser surgery specialist, MGH. Sponsored by MIT Medical and the MIT Women's League. 9:30am-Noon, Bartos Theater, Wiesner Building (E15). Coffee at 9am. More info: MIT Women's League x3-3656 or <http://web.mit.edu/medical/age/age.htm>.

Review of Current and Future OR Applications in the Airlines Industry—**Ross Darrow**, Senior Principal, SABRE Technology Solutions. Sponsored by Operations Research Group. 4-5pm, Rm E51-149. Refreshments to follow in Rm E40-106. More info: <http://web.mit.edu/orc/www> or Jonathan Taylor x3-6185 or <jdtaylor@mit.edu>.

Dissipation in Granular Matter: Clusters and Precursors—**Arshad Kudrolli**, Physics, Clark Univ. Mechanics & Materials Seminar, ME Dept. 4-5pm, Rm 5-234. Refreshments prior. More info: <xray@mit.edu> or <http://lohtse.mit.edu/~maha/seminar.html>.

Languages of Class in the French Revolution: The Problem of the Missing Bourgeoisie—**Prof. Sarah Maza**, Northwestern Univ. Sahin Lecture Series, sponsored by History Faculty. 4:30pm, Rm E51-275. More info: x3-4965 or <history-info@mit.edu>.

FRIDAY, APRIL 17

Overview and Status of the National Ignition Facility (NIF) Project—**Dr. Sandra J. Breton**, Lawrence Livermore Nat'l Lab. Sponsored by Plasma Science and Fusion Center. 11am, Rm NW17-218. More info:

Paul Rivenberg x3-8101, <rivenberg@psfc.mit.edu>

Chemo-plasticity: Materials, Modeling, Computational Aspects and Concrete Design—**Dr. Franz-Josef Ulm**, Laboratoire Central des Ponts et Chaussees, Paris. Sponsored by Civil and Environmental Engineering. Noon, Rm 1-350. More info: Oral Buyukozturk x3-7186, <obuyuk@mit.edu>.

Architecture, Art and Cultural History: Refractions and Reflections—Symposium celebrating 25th anniversary of the History, Theory and Criticism section, Dept. of Architecture. April 17: 2:45-5pm, April 18: 9:30am-5:30pm, Bartos Theater (Bldg E15). Free. More info: x8-8439, <chcanniv@mit.edu> or <http://web.mit.edu/hct/www/25th.html>.

Interesting Dynamics of Azeotropic Distillation—Implications for Process Design—**Manfred Morari**, Swiss Federal Institute of Technology (ETH). Sponsored by Chemical Engineering. 3pm, Rm 66-110. More info: Arline Benford x8-7031 or <arline@mit.edu>.

Plasma Confinement in a Levitated Dipole—**Dr. Jay Kesner**, MIT Plasma Science and Fusion Center. Sponsored by Plasma Science and Fusion Center. 4pm, Rm NW17-218. More info: <rivenberg@psfc.mit.edu> or <http://www.pfc.mit.edu/cgi/calendars/psfc>.

The Influence of Carbonate Precipitation and Dissolution on Seawater [Sr] and 87Sr/86Sr—**Prof. Dawn Sumner**, Univ. of California, Davis. Sponsored by Department of Earth, Atmospheric and Planetary Sciences. 4pm, Rm 54-915. Refreshments at 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu> or <http://www-eaps.mit.edu/dept_sem.html>.

COMMUNITY CALENDAR

Wives Group—April 8: Raising Bilingual Children. April 15: A Grand Design exhibit at the MFA. Meet at the MIT Coop in Kendall Square at 3:15pm. \$3 per person. Meetings held every Wed. in W20-400 at 3pm unless noted otherwise. Childcare provided. Info: Jennifer x3-1614.

MIT Women's League—Informal Needlework Group: April 15. 10:30am-1:30pm, Rm 10-340 (Emma Rogers Room).

Working Group for Support Staff Issues—April 8: Monthly meeting for members and guests who are interested in becoming members. Noon-1:30pm, Rm 10-105 (Bush Room), lunch provided. Please RSVP to Kate Schenk at <kates@mit.edu>. Info: x3-5921 or x3-5030.

SENIOR FOCUS

1998 Catherine N. Stratton Lectures on Aging Successfully—See Seminars & Lectures, April 9 and 16 above.

DANCE/SOCIAL ACTIVITIES

Ballroom Dance workshops. Tuesdays 8-9pm. Professionally taught Merengue: April 14. Lobby of Building 13. Cost: \$8/lesson (\$6 students) or \$25/four weeks (\$20 students). More info: x5-1153 or <gitano@mit.edu>.

MITAC

The MIT Activities Office (MITAC) serves the cultural and recreational needs of the MIT community from two locations: (1) Room 20A-023, 9:30am-3:30pm, Monday, Wednesday, Thursday, and Friday (2) Room LLA-218, x6130, Lincoln Lab, 1:15-4pm, Thursday and Friday only. More info: x3-7990 or <julieh@mit.edu>. Cash or personal check made payable to MIT only. MIT IDs must be presented.

Lady Day at Emerson's Bar & Grill (Merrimack Rep. Theatre, Lowell)**—Sun., Apr. 26, 2pm. Tickets: \$15.50 (reg. \$23).

Boston Classical Orchestra (Faneuil Hall, Boston)**—Fri., May 1, 8pm or Sun., May 3, 3pm. Tickets: \$14 (reg. \$18).

Boston Red Sox vs. Minnesota Twins (Fenway Park, Boston)**—Tues., May 5, 7:05pm. Tickets: \$16 (reg. \$20).

Loretta Lynn (Lowell Memorial Auditorium, Lowell)**—Fri., May 8, 8pm. Tickets: \$28.50 (reg. \$29.50).

Laughter on the 23rd Floor (Lyric Stage, Boston)**—Thurs., May 14, 8pm. Tickets: \$16.50 (reg. \$24). Purchase by 4/23.

Shriners Circus (Shriners Auditorium, Wilmington)**—Sun., May 17, 1:30pm. Tickets: adult \$9 (reg. \$10) children under 13 \$4 (reg. \$5). Purchase by 4/23.

Spirit of Boston/Boston Pops (World Trade Center, Boston)**—Wed., June 24, 3:30pm. Tickets: \$44 (reg. \$55). Purchase by 5/7.

Beauty and the Beast (Wang Center, Boston)**—Wed., Aug. 5, 8pm. Tickets: \$47 (reg. \$55). Purchase by 4/10.

Tanglewood and the Boston Symphony (Tanglewood, Lenox)**—Sun., Aug. 9 thru Mon., Aug. 10. Tickets: \$219 pp double occupancy. Purchase by 6/16.

Museum Passes**—Children's Museum: \$4 (reg. \$6-7). Museum of Science: \$4 (reg. \$5.50-7.50).

Discount Movie Tickets**—Sony Theaters: \$5. Showcase Cinemas: \$5.50. General Cinemas: adults \$5.50, children \$3.25. Kendall Square Cinema: \$6.50.

MOVIES

MIT-Germany Program Series on Berlin Films—April 9: *German Dreams*; dir. Lienhard Wawrzyn, BRD 1985, 88 min. Movies at 4:30pm, Rm 2-105. In German. Free. Info: <mit-germany@mit.edu> or x3-6982.

Lecture Series Committee Movies**—*Scream 2* (1997): 7 & 10pm on 4/10; 7pm on 4/12. *Midnight in the Garden of Good and Evil* (1997): 7 & 10:30pm on 4/11; 10pm on 4/12. *Good Will Hunting* (1997): 7 & 10pm on 4/17; 7pm on 4/19. *As Good as it Gets* (1997): 7 & 10:30pm on 4/18; 10pm on 4/19. LSC movies are in Rm 26-100 unless otherwise noted.

LSC Classics**—*The Last Detail* (1973): 7:30pm on 4/10. *Lilies of the Field* (1963): 7:30pm on 4/17. LSC Classics are in Rm 10-250 unless otherwise noted.

Admission to LSC Movies is \$2.50. MIT or Wellesley identification required. For more information, call the LSC Movieline x8-8881, or see <http://lsc.mit.edu>.

Engineering education needs to take 'time constants' into account

■ By Prof. Paul Penfield Jr.
Department Head, EECS

The following article originally appeared in *The Interface*, IEEE Education Society and ASEE Electrical and Computer Engineering Division (No. 1, April 1997) and was reprinted in the latest issue of the *MIT Faculty Newsletter* (Volume X, No. 4, January/February 1998).

Some ideas came to a focus for me recently when we held a memorial service here at MIT for Gordon Brown. Many readers of *The Interface* will know instantly who Gordon Brown was, but for the others, let me explain.

Gordon served as head of the Department of Electrical Engineering at MIT from 1952-59 and then as dean of engineering for the next nine years. He retired in 1973 and lived his later years in Tucson, AZ, where for some time he acted as an energetic citizen-champion to promote the use of system dynamics in the public schools. He was almost 89 when he died last August.

It is not too much to say that Gordon Brown had more impact on engineering education during the past 50 years than any other person. As department head and later as dean, he pushed through his vision of an engineering education based on fundamental science—not the same science that was of interest to scientists, but rather "engineering science," those aspects that supported the practice of engineering. Although this concept seems perfectly natural today, it was radical in the 1950s.

In preparing my remarks for his memorial service, I came to appreciate better why such revolutionary ideas were necessary at that time, and also what other, equally radical ideas might be appropriate today.

It is all a matter of time constants. Yes, time constants. This is a concept that Gordon Brown, the expert in servomechanisms, knew very well. Just as electrical systems are characterized by natural time constants, so are natural phenomena and even social systems. We electrical engineers have a

(continued on page 8)

Input sought from administrative staff on performance appraisals

The Performance Management Team is surveying MIT's administrative staff for their opinions of and experiences with the performance appraisal system. The survey will be available on the web <http://web.mit.edu/personnel/www/pasurvey.html> on Monday, April 13.

The team will also be hosting a series of department focus groups as well as general focus groups for administrative staff members to discuss the appraisal process. Team members are interested in all comments on the

process as well as any suggestions for improvement.

The focus groups are scheduled for Monday, April 13 and Thursday, April 23, both from noon-1pm in Rm 68-121, and Thursday, April 30 from noon-1pm in Rm 10-250. All administrative staff members are urged to participate in the survey and attend one of the focus groups. Anyone who is interested in having a departmental focus group or who has other comments may contact the Performance Management Team at <ppa@mit.edu>.

Media Lab's Donath on deck for April 14 Perspectives talk

"The Transmitted Self: How Identity is Established in the Mediated World" is the title of the next talk in the Media Lab's Perspectives series. The talk, given by Assistant Professor Judith Donath, will take place on Tuesday, April 14 from 5-6pm in Bartos Theater (Building E15).

Studying how identity is established in virtual environments raises many questions: What happens to the notion of individual identity in a world without bodies? How can a crowd gather in the absence of physical proximity? How does a virtual environment's technology and interface shape the way identity is established and interpreted?

Understanding these issues is essential for building vibrant on-line neighborhoods, and provides novel insights into the role that identity plays in social life, both on- and off-line.

Professor Donath directs the Sociable Media research group. She received the BA in history from Yale University, and the MS in Visual Studies and PhD in media arts and sciences from MIT. Her research group focuses on the social side of computing, building innovative interfaces for the online communities, virtual identities and computer-mediated collaborations that have emerged with the convergence of computing and communication.

Nobelist to give Lord lecture

William D. Phillips, a 1997 Nobel laureate in physics and a scientist at the National Institute of Standards and Technology, will deliver the seventh annual Richard C. Lord Lecture at MIT on "Atomic and Molecular Physics with Laser-Cooled Atoms" on Tuesday, April 14 from noon-1pm in the Grier Room (34-401). The public is invited to his talk, which is part of the Modern Optics and Spectroscopy series.

Dr. Phillips received the PhD from MIT in 1976. After two years as a Chaim Weizmann postdoctoral fellow at MIT, he joined the staff of the National Institute of Standards and Technology (then the National Bureau of

Standards).

At NIST, he began studies of laser cooling of neutral atoms, which led to his creation and leadership of the Laser Cooling and Trapping Group of NIST's Physics Laboratory. Members pursue research in collisions of laser cooled atoms, motion of atoms in optical lattices, atom optics, laser cooled atomic clocks, Bose-Einstein condensation, ultra-cold plasmas and optical tweezers.

Dr. Phillips shared the 1997 Nobel Prize in physics with Stephan Chu of Stanford University and Claude Cohen-Tannoudji of the École Normale Supérieure in Paris "for development of methods to cool and trap atoms with laser light."

Five project milestones for completing SAP rollout announced

■ **Robert Murray**
Management Reporting Project

The Management Reporting Project has announced the plan for completing the rollout of SAP to the MIT community. The rollout will be broken up into five phases, or project "milestones."

"The time has come to move forward expeditiously to finish the rollout of SAP and meet the management reporting goals that were set by the Institute four years ago," said Katherine Cochrane, manager of the Management Reporting Project. "MIT has a great transactional and reporting tool in SAP. We are looking forward to using the richness of the SAP environment that will be available when we finish the rollout and end our dependency on the legacy systems."

The first milestone consists of a series of informational meetings, designed to familiarize the community with the plan for the rollout, and the preparation work that will be required. This milestone began on March 25 and continues through April 14. A summary of the information meetings may be found on the Management Reporting web site at <http://web.mit.edu/reeng/www/finsys/status.html>.

To follow up on the status report sessions, a series of "concept workshops" are being held to provide more detailed information on MIT's SAP financial architecture, the MIT reporting strategy, purchasing with SAP, and the setup of a department's requisition approval process. The workshops will be given again on April 14 from 9am-3pm in the Student Center Mezzanine Lounge. No registration is required.

The descriptions and times for the workshops can be found at <http://web.mit.edu/sapr3/events/cwkskops.html>. Call Robert Murray at x8-7318 for more information.

NEW REPORTING FUNCTIONS

Beginning on May 18, training will start for the Milestone 2 reporting-related SAP functions. These reporting functions will supplement the reporting capabilities that were part of the Phase 1 rollout last fall. Tasks included in this group are running new SAP reports, reserving funds for future anticipated expenditures, and creating a departmental budget plan. Some of these tasks require special authorizations.

Reports using SAP's Executive Information System (EIS) will also be made available to users authorized by their departments. EIS can be thought

of as a collection of multidimensional dedicated databases called "information cubes."

EIS databases can be designed to cover virtually any kind of management reporting at MIT. Individual EIS databases, known as "aspects," collect information from various MIT sources, with the aim of presenting managers with a reporting view of a group; a department, lab or center; a School; or the entire Institute.

Milestone 2 reporting training will continue through July 15, and then will be offered on a periodic basis.

Beginning in Milestone 2, the Computing Help Desk will begin to provide front-line triage of business questions, in addition to their current support for technical problems. A special e-mail address, saphelp@mit.edu, has been set up to handle SAP questions.

MILESTONE 3

Milestone 3 includes six efforts that are to be rolled out between now and August 31. Because each has relatively few interdependencies with other SAP projects, it's possible for each to have a separate rollout plan for user training and for introduction to the MIT community. These tools are the MIT VIP Credit Card, the MIT Data Warehouse, an enhanced version of ECAT (Electronic Catalog) for the partner vendor NECX, and SAP electronic journal vouchers. They will be available on a rolling schedule between now and August 31. After August 31, they will be incorporated into the Milestone 4 training and delivery schedule.

To accomplish the Institute's 1998 fiscal year-end goals, SAP electronic journal vouchers will be used for the closing. The cutoff for paper journal vouchers will be June 24. The use of SAP for closing journal vouchers will dramatically speed up the closing time.

"The [MIT] Corporation Audit Committee asked us to provide financial results for the fiscal year earlier in 1998," said Controller James L. Morgan. "The faster we can deliver the fiscal year financial information, the more useful that information is. In addition, the federal government has shortened the deadline for the A-133 audit beginning in fiscal 98. We need to close the books a month sooner to assist in meeting these deadlines. SAP journal vouchers and online reporting will be helpful in meeting our goals." The closing takes place in the summer, following end of the fiscal year on June 30.

During Milestone 3, authorization to create journal vouchers and manual reservations will be given to SAP users who have authorization to display account summary and detailed transaction reports. This authorization scheme will be reconsidered prior to the beginning of Milestone 4.

Training for SAP journal vouchers will be available in a demo format during April. No registration is required for the demo classes. The training schedule can be seen on the SAP Training Web page at <http://web.mit.edu/sapr3/training/>.

The MIT VIP Card is a new tool developed for the MIT community with the intent of streamlining the procurement and payment process for small dollar purchases. There are two separate roles associated with the VIP Card. The first is the cardholder who will use the card to make small purchases. The second is the verifier, who will be the department person(s) who will verify, reallocate and post the charges as warranted.

The cardholder will not need any training or knowledge of SAP to use the card, but will be required to attend a one-hour cardholder training session before receiving their card. Once training has been completed, the VIP Card may be used to purchase authorized goods and services up to \$500 per transaction. (This limit is currently under review and may be increased at some point in the future.) The use of the VIP Card should eliminate the need for many requisitions, purchase orders, blanket orders, DAPOs, Request for Payments (reimbursements) and petty-cash transactions.

The verifier will reallocate and post

credit-card charges in SAP. They will need SAP access to perform a function similar to the current SAP journal voucher process. The verifier will also be required to attend a one-hour training session.

The ECAT project has been operational since March 1997 for three large-volume partner vendors. Goods may be purchased from Office Depot, VWR Scientific and BOC Gases simply by pointing and clicking on Web-based catalogs. The enhanced version of ECAT that will initially be used for NECX is due for full user rollout in May. It will allow purchasing of computers and computer-related supplies from NECX via the Web.

The MIT data warehouse has been developed to act as a single read-only data repository for SAP and other MIT systems, such as the Student Information, Proposal and Personnel systems. It will allow users to do "cross-system" reporting and download data to departmental databases.

PURCHASING

Starting in September, authorized users will be able to use the SAP and Web-based purchasing capability in Milestone 4. Once in SAP, they will have a rich set of requisitioning functions for both internal and external suppliers, complete with routing and approval capabilities. Streamlined approval processes will be used to facilitate requisition approval by MIT central departments such as the Office of Sponsored Programs and the Safety Office.

Occasional requisitioners such as graduate students may opt to utilize the simplified SAPWeb purchasing functions to create, route for approval, and display requisitions, as well as look up the status of purchase orders and vendor payments.

Also included in this milestone are salary planning and commitment capabilities, which will be available through the use of the MIT-developed Labor Distribution System (LDS). LDS, which appears as a menu choice within SAP, will provide a consistent tool for MIT departments, labs, and centers to analyze and manage labor and related effort costs. Authorized LDS users will be able to record current and future salary commitments by cost object; track and report labor costs and effort distribution, including vacation and change in hours, for current and upcoming appointments; view actual and committed salary detail by person; and view distributions by person within a cost object.

Training for Milestone 4 will be given from September to December 1998.

From September through the end of the year, some SAP infrastructure and future planning efforts will be completed. They include increasing the frequency of data feeds to and from SAP (such as Benefits, Library and Medical Accounts Receivable feeds); the development and rollout of the SAP Plant Maintenance module; and the establishment of standards and methods for the storage/archive of SAP transaction data.

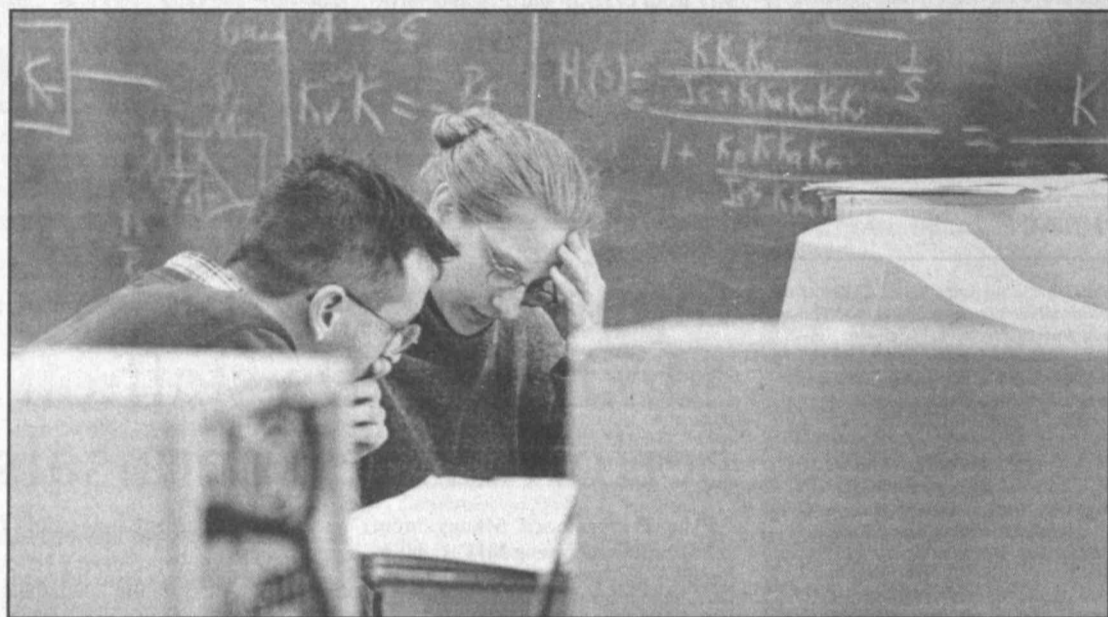
NEW AND UPDATED REPORTS

There are some new and enhanced SAP reports now available to authorized users:

- The "Summary Statement" report prints in the landscape mode to include all available columns.
- The "Journal Vouchers Postings Report" shows journal voucher activity by cost object.
- "Purchasing Overview" reports can be run by vendor or by cost object.
- An improved "Payment Report" shows check stub information.
- SAP requisitions can now be printed.
- The "Cost Object Consolidation Report" allows the user to summarize the activity of many cost objects in one report. Access to this report may be obtained by contacting an "authorized requester" from the list on the SAPR3 home page at <http://web.mit.edu/sapr3/>.

There is a new program in the standard MIT "Accounting" menu called "Convert Legacy Architecture" that will translate legacy account numbers and object codes to SAP cost objects and cost elements.

Course concentration



Fabio Brunet and Anna Mierzejewska, both seniors in mechanical engineering, tackle a problem together in 2.010 Control Systems Principles. Photo by Laura Wulf

Classified Ads

Tech Talk ads are intended for personal and private transactions between members of the MIT community and are not available for commercial use. The Tech Talk staff reserves the right to edit ads and to reject those it deems inappropriate.

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

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

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

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

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

Deadline is noon Friday before publication.

FOR SALE

High-quality JVC Compact Disc player, model XL-Z1050TN, orig \$800. Stereophile mag's best buy under \$1000, single-CD player, 4 yrs old, exc cond, \$300. Randall, Linc x3923.

Yakima bicycle roof rack, gutter mount 2 bike lock sys w/48" cross bars, \$100 or bst. Call 978-256-6724 or wcassidy@ll.mit.edu.

Drafting Table, 30" x 42", folding, w/parallel rule, \$75. Ruth x3-4716.

Modular bookcase, adj shelving, exc cond, 72"x60", \$45. Helene 781-643-7778.

Men's 3-sp bike, seat crank 22", rim 24", new tires & tubes, Bondmaster Cape Cod, 1 sp does not work, invested \$130, sell \$70. Call 617-547-5357.

Moving sale: sofa/loveseat/recliner set, 5' oval kitchn table w/removable leaf, coffee table, maple buffet, microwave oven, Mongoose mountain bike, etc. Chris 781-981-3270 or cwhittle@ll.mit.edu.

Pride shuttle, 3-wheel elect wheelchair, good cond, 4yrs old, w/front bskt, new batts, reg wheelchair & walker included. \$600 or best offer. Bob x8-5825.

Sunbeam frying & cooking elect skillet, temp controlled, hvy aluminum, 10" sq w/cover \$5; Berarducci ravioli & cookie metal forms, makes 12 @ 1-time \$5. Both in exc cond, good for holiday use. Rosalie 776-3748.

VEHICLES

1988 Nissan Pathfinder SE 2 dr, blue, auto, pwr wnds & dr locks, sunroof, a/c, cruise, al. whls, very clean. \$5,000 or best offer. Call 781-938-9811 or callison@ll.mit.edu.

1989 Nissan Maxima, relatively low mileage, complete electronic pkg, v well maint, \$5500 or bst. Email only: hwytaylor@mit.edu.

1989 Toyota Tercel DX, 4-dr hatchback, auto, 80K miles, red, runs well, clean, \$2,400. Joel, Linc x2855 or alpert@ll.mit.edu.

1991 Mazda 626LX, 4-dr sedan, a/c, ps, pb, pl, cc, 79K mi, orig ownr, exc cond, \$4900 or bst. Gopal, Draper x8-2629 (days) or 978-369-2257 eves.

1994 Ford Explorer XLT, 4-dr, 4-wheel drive, V6, auto, pw, pl, a/c, cruise, ABS, running boards, 55K mi, exc cond, blue, \$14,000. Call x3-4797.

HOUSING

Bethel, ME: summer vac at lakeft condo: swim, boat, fish, lux accommodations, 2BR, mod kitchn, cable, canoe, dock, spectacular sunsets, sleeps 4-5, \$500/wk. Cheryl 252-1111 or 978-664-3646.

Cambridge, N. fully furn room(s) in family home avail short- or long-term, rates depend on lengthofstay. Eve x3-7182, annals@mit.edu.

Chatham, Cape Cod: summer rental, gorgeous 3BR fully equipped home within 2 mi of beaches, vws, \$1000/w June & Sept, \$1300/w July & Aug. Vandevenne@ll.mit.edu or 781-981-3239, eves 781-891-1483.

Gloucester: oceanfront summer cottage on the water for single or couple, beautiful view of Ipswich Bay. \$500/wk. Jeanne 978-448-6695.

Lake Ossipee, NH: cottage summer rental, wkly or mnthly. Bill 603-539-4830 in Ossipee.

Newport, RI: summer shares, fun-loving, late twenties/thirty something professionals to summer house, shares: half \$700/full \$1300. Contact: sgarfunk@mit.edu.

Padua, Italy: 4BR, lrg LR, guest house, garden, 17th cent renov house in heart of city, exchange for housing in Boston area for visiting prof Aug 98-99. Email: ech@mit.edu.

Pittston, ME: naturalist haven, 487 scenic estate acres, multiple use, woods & fields, pond, brooks & tidal river frontage, deposited gravel roads (4m), \$385K. Joel, 207-778-0230, <http://www.route2.com/land.htm>.

Truro: 2BR house, newly renov, nr best beaches, nicely furn, cable, deck overlooks wooded yard, \$700/wk, July & Aug. Call 617-661-6698, 508-487-9106 wknds.

Vermont, N: summer cottage, 1/4 acre lakefront property, water activities, 3BR, shower, fplc, full kitchn, deck, lrg lawn area, avail. July 13-27, \$600/wk or \$1100/2 wks. Contact mcabral@mit.edu.

White Mountains, NH: Waterville Estates, 3BR, 2b, on site tennis, 3 htd pools, hot tub, pond, biking, hiking, great view, sorry no pets, non-smkg unit, SUMMER \$490/wk. Call Chuck, Draper x8-2957.

WANTED

Lebanese mother and son, age 11, looking to rent furn hse in Cambridge/Belmont/Arlington/Watertown for 6 wks beginning 7/4/98. Harriet harnett@mit.edu.

List Center mounts exhibit of works by women Surrealists

(continued from page 1)

years in the making, includes almost 100 paintings, drawings, photographs and sculptures, dating from 1928 to 1996, by 22 artists from North and Central America, Europe and Japan.

Strongly influenced by Freud's psychiatric studies, the early Surrealist movement developed as an expression of the workings of the subconscious using unnatural imagery and juxtapositions. Although Surrealists stressed personal psychic investigation and revelation, "none of the better-known male Surrealists, except for Max Ernst, were interested in looking inward through

self-portraiture," said Ms. Katy Kline. "Most of the women did, either literally or symbolically."

Significant painted and photographic self-portraits were produced during this period by Claude Cahun, Leonora Carrington, Leonor Fini, Frida Kahlo, Meret Oppenheim, Kay Sage, and Dorothea Tanning, among others.

"Not only did these self-portraits radically challenge existing conventions for representing the female body and female experience; they became important models for later generations of women artists exploring gender, sexuality, nature and culture through self-representations," said Ms. Chadwick, an associate professor of architecture at MIT from 1972-79.

"We began to identify strategies, like using masks or doubles, for defining the self in these earlier works, and we were struck by how many contemporary women artists adopted these same strategies," said Ms. Posner.

For example, parallels can be observed between Claude Cahun's photographic self-portraits of the

1930s and '40s and the work of photographer/filmmaker Cindy Sherman; between the visceral body language of Frida Kahlo and Dorothea Tanning; and the expressions of Louise Bourgeois and Kiki Smith.

Works for the exhibition were gathered from private collections, museums and artists' estates worldwide. "Some of the older works are so fragile, they had to be hand-carried here," said Ms. Kline, noting that the LVAC's shows don't usually include historical works.

Arts at MIT

Mirror Images tie-in programs offered

- **Walk-throughs**—Led by exhibition curators. Saturdays, April 18, May 9 and June 13, 2pm.
- **Slide lecture** on work of Surrealist photographers Lee Miller and Claude Cahun—Tuesday, April 14, 3-4:30pm, Rm 66-144. Slide lecture by co-curator Whitney Chadwick explores how the

Mirror Images is accompanied by a 258-page, illustrated MIT Press publication with essays by the show's curators, art historians Dawn Ades and Dickran Tashjian, Kahlo expert Salomon Grimberg and cultural critic Susan Suleiman. A smaller exhibition guide is also available.

After the exhibition closes at the LVAC on June 28, it will travel to the Miami Art Museum September 18-November 29 and the San Francisco Museum of Modern Art from January 8-April 20, 1999. The project is funded in part by the National Endowment for the Arts, the Massachusetts Cultural Council, the Dorsky Foundation, and Kitty and Herb Glantz.

Packer's portrayals



Tina Packer, artistic director of *Shakespeare & Company* and artist-in-residence at MIT (as *Desdemona*, above), will present Part II of her *Women of Will* trilogy—"Going Underground or Dying to Tell the Truth"—at MIT on Wednesday, April 8 at 7:30pm in the Wong Auditorium. She and Johnny Lee Davenport (as *Othello*, above) will explore Shakespeare plays in which women either disguise themselves as men and find acceptance, or stay in women's attire and try to tell the truth and end up mad, dead or both. Tickets are \$12. For more information, call x3-2341.

Photo by Richard Bambery

Arts News

■ "If coders are the next artists, the MIT Museum is the MFA of the future." Or so says John Rossheim in an article on the museum which appeared March 30, on the Boston sidewalk.com web site, archived at <<http://boston.sidewalk.com/detail/25999>>. While the primary focus is on hacks, there are also profiles of the *Piranesi in Perspective* exhibition, Arthur Ganson's *Gestural Engineering* and the Hart Nautical Gallery. The home page's lead that day, titled "High Intelligence," also featured the **World Music Weekend**, which took place at MIT April 3-5 (<<http://boston.sidewalk.com/detail/53521>>).

■ In addition to preparing for their concert in Kresge Auditorium tonight, the **MIT Brass Ensemble**, directed by Lawrence Isaacson, performed at Symphony Hall's Open House on April 5. On May 3, the ensemble will join members of the Boston Conservatory Brass Ensemble for a "Brass Bash" at St. Cecilia's Church in Boston.

■ Professor Emeritus David Epstein ended

his tenure as conductor of the **MIT Symphony Orchestra** on a high note, earning praise for the March 14 performance of Beethoven's Ninth Symphony. "The strings glowed in the noble first theme of the Adagio, the winds echoing them with equal luster; the gorgeous final variation ascended in ecstatic spirals," wrote Susan Larson for the Boston Globe. "Orchestral abandon grew steadily through the double fugues and erupted in a terrific ending. A fine and fond farewell to a beloved maestro."

■ Local artist Aaron Fink's large (108" x 72") oil painting, *Out for a Walk*, was recently installed in the Building E23/E25 atrium. The painting, a 1997 gift of **Roger Sonnabend** (SB '46) and his wife Joan, found an appropriate setting near MIT Medical. "After all, walking is a very healthy, easily available form of exercise," observed Medical Director Arnold Weinberg. *Out for a Walk* is the largest of several Fink pieces in the MIT Permanent Collection, which is maintained by the **List Visual Arts Center** and sited throughout the campus—in offices, reception areas, atria and other public areas.

Institute Arts

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

* Open to public
** Open to MIT community only

April 8-19

MUSIC

Chapel Concerts*—April 9: Art of Music Chamber Players. April 16: Arden Quartet. Beethoven's Quartet Opus 59, #1. Noon, Chapel, x3-2906.

Poetry and Music: Emily Dickinson**—April 13. Performance of Peter Child's "Emily Dickinson Songs" by Janna Baty, soprano and Elaine Chew (G), piano, including the premiere of 2 new songs. Part of a joint literature/music class by Profs. John Hildebidle of literature and Peter Child of Music and Theater Arts. Open to MIT students, faculty and staff. Made possible by the Kelly Fund at MIT. 11am-12:30pm, Killian Hall. More info: x3-2826.

Advance Music Performance*—April 13: Nicole Lee '98, piano. Mozart, Ravel & Chopin. 5pm, Killian Hall, x3-2826.

Mariachi Lecture-Demonstration*—April 13. Vocalist Isela Rodriguez '99, 1997 List Fellowship recipient. With Kamal Scott, vocal mentor & Eugene Suboh, piano. 7pm, Chapel, x3-8089.

Technology, Innovation & the Musical Imagination*—April 15. Gunther Schuller, Pulitzer-prize winning composer, author & renowned conductor; Prof. Barry Vercoe, composer, Media Lab; Darcy Kuronen, curator, Historical Musical Instrument Collection, Boston's Museum of Fine Arts. Prof. Peter Child, moderator. 8th Annual J. Herbert Hollomon Memorial Symposium. 3:30pm, Wong Aud. x3-0108.

MIT Chamber Chorus*—April 17. William Cutter, conductor. Noon, Killian Hall, x3-2826

Live Jazz at Muddy Charles Pub*—Wednesdays. The Pat Battstone Quartet. 8:30-10:30pm, Rm 50-110. x3-4012.

MIT Guild of Bell Ringers*—Change ringing on hand bells. Beginners welcome. Meets Mondays, 6:30pm, 2nd floor balcony of Lobby 7. Roberta Young, x3-3573 or <rey@mit.edu> or <<http://web.mit.edu/bellringers/www/>>.

THEATER

Women of Will*—April 8. "Going Underground or Dying to Tell the Truth." Tina Packer, artistic director, *Shakespeare & Company* & artist in residence at MIT presents Part II of her theatrical trilogy examining the role of women in Shakespeare's plays. With actor Johnny Lee Davenport. \$12. 7:30pm, Wong Aud. x3-2341.

The Mystery of Edwin Drood*—April 10-11, April 16-18. Musical Theatre Guild's audience participatory mystery-whodunit based on Dickens' unfinished story. \$9, \$8 MIT faculty & staff, senior citizens, other students, \$6 MIT/Wellesley students. Group rates available. 8pm, Kresge Little Theater. x3-6294 or <mtg-tickets@mit.edu> or <<http://www.mit.edu/activities/mtg>>.

The Pirates of Penzance*—April 17-19, April 23-25. MIT Gilbert & Sullivan Players' production. \$6-9. 8pm (except 2pm on April 19), Sala de Puerto Rico. x3-0190 or <gsp-tickets@mit.edu> or <<http://www.mit.edu/activities/gsp/>>.

FILM/VIDEO

La Nouba des femmes du Mont Chenoua (The Women of Mt. Chenoua)*—April 8. Assia Djebar's 1978 film followed by discussion on "Arab Women: How to Film the Unfilmable" with Djebar, an Algerian author/filmmaker currently living in exile in France. Sponsored by Program in Women's Studies, Foreign Languages and Literatures and Film and Media Studies. 5:30pm, Rm 66-110. x3-8844.

How New Was New Wave Cinema? Male Romantic Heroes & Their Muscles*—April 13. Program with Genevieve Sellier. Sponsored by Program in Women's Studies and Foreign Languages and Literatures. 5:30pm, Rm 56-114. x3-4776.

Regarde Les hommes tomber*—April 16. Jacques Audiart's 1996 film. (In French w/ subtitles.) 7:30pm, Rm 10-250. x3-9777.

READINGS

Assia Djebar Reads*—April 9. Assia Djebar reads in French from her books. The Genevieve McMillan-Reba Stewart Lecture on Women in the Developing World: *Ecrire l'Algérie violente*, cosponsored by Foreign Languages and Literatures and the Program in Women's Studies. 5pm, Rm 56-114. x3-8844.

Sci Fi Readings*—April 15. Nancy Kress & Michael A. Burstein. Sponsored by the Communications Forum and Film and Media Studies with a grant from John and Mary Markle Foundations. Both will read selections and engage of discussions of "media and imagination." 7-10pm, Rm 6-120. x3-3599 or see <http://media-in-transition.mit.edu>

Evening with Stephen Alter*—April 16. Writers Series presents the MIT Writer in Residence. 8pm, Bartos Aud. x3-9469

EXHIBITS

List Visual Arts Center (E15): Mirror Images: Women, Surrealism and Self-Representation. Self-representations by three generations of women Surrealist or Surrealist-influenced artists from 1928-1996. **Opening Reception**—April 9, 5:30-7:30pm, List Visual Arts Ctr (E15). **Exhibition Walk-Through***—April 18. 2pm. Show runs through June 28. Hours: Tues-Thurs & weekends noon-6pm; Fri 12-8pm; closed holidays. Meet the curatorial staff for informal discussions and questions about art—Weds, 12:30-1:30pm. x3-4680.

MIT Museum* (N52): Piranesi in Perspective: Designing the Icons of an Age. Examination of Giovanni Battista Piranesi's (1720-1778) career as an etcher, archaeologist & as a promoter of Rome extraordinaire. Through June 14. **Ongoing: Gestural Engineering: The Sculpture of Arthur Ganson; LightForest: The Holographic Rainforest; Holography: Artists and Inventors; MIT Hall of Hacks; Light Sculptures by Bill Parker; Math-in-3D: Geometric Sculptures by Morton C. Bradley, Jr.; MathSpace.** 265 Mass Ave. Tues-Fri 10-5, Weekends 12-5. x3-4444.

Wolk Gallery: Reflections: Drawings and Projects by Wellington Reiter. Works by the assistant professor of architecture illustrate contemporary parallels and provide a companion exhibition to *Piranesi in Perspective*. Wolk Gallery (Rm 7-338). x8-9106.

Hart Nautical Gallery—Ships for Victory: American Shipbuilding's Finest Hour. Shipbuilding production during World War II. Permanent Exhibition of MIT Museum's Ship Models. Ongoing. Daily 9am-8pm. x3-5942.

The Dean's Gallery—Yasuko: Recent Paintings. Graphite mixed with mineral spirits which are dripped, rubbed and manipulated on the surface of Arches paper. Through April 23. The Dean's Gallery, Sloan School, Rm E52-466. Weekdays 9am-5pm, x3-9455 or <<http://web.mit.edu/deans-gallery/www/>>.

Compton Gallery—Thinking Freehand: Architectural Process by Ada Karmi-Melamede. Projects showing the range of Karmi-Melamede's work, from residential to public institution, office building to civic center to campus. Sponsored by the Dept of Architecture, the School of Architecture & Planning, and the Arthur H. Schein Memorial Fund. Through April 10. Compton Gallery (Rm 10-150). Weekdays 9-5. x3-7791

Rotch Visual Collections—Ghadames: The City of Shades. Exhibition on a small historic town in the Sahara Desert, 250 miles from the Mediterranean on the bor-

der of Libya, Tunisia and Algeria. Because of its unique urban texture and street pattern, Ghadames is considered one of the most fascinating examples of vernacular earth architecture and a living bridge between traditional and contemporary human settlement. Since 1987, it has been included on UNESCO's World Heritage list of historic monuments. Through May 20. Rotch Visual Collections (Rm 7-304). x3-2955.

Women's Studies. Permanent exhibition of archival photographs documenting the role of women at MIT over the decades. Rm 14E-316. x3-8844.

Doc Edgerton Strobe Alley. Photographs, instruments and memorabilia that document Harold Edgerton's invention of the strobe light. Also, several hands-on corridor experiments. Bldg 4, 4th floor corridor. x3-4629.

OTHER

The On-Line Bookstore*—April 9. Jeffrey Rayport, Harvard Business School. Forum sponsored by the Communications Forum and Film and Media Studies with a grant from John and Mary Markle Foundations. 4-6pm, Bartos Theater (E15). x3-3599 or see <<http://media-in-transition.mit.edu>>.

Arts Scholars Applications Due*—April 13. Program for up to 30 students who will be sophs, jrs or srs when the program begins in Sept 1998. Applications & guidelines available in Rm E15-205 & Rm 3-234. x3-4005.

12th Arthur H. Schein Memorial Lecture*—April 14. "Thomas Herzog - An Architect Working on Solar Buildings." Thomas Herzog, Technical Univ, Munich. 6:30pm, Rm 10-250. x3-7791.

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

Body Shop founder discusses principles

■ By Nancy DuVergne Smith
Sloan School Communications

What's next for Anita Roddick, founder of the Body Shop empire? A move toward homeopathic products and returning an entrepreneurial spirit to her 1,500-shop firm, she told a large Tang Center audience at a March 30 talk hosted by the MBA Strategic Management and Consulting Track.

Ms. Roddick described entrepreneurs as pathologically optimistic, unemployable and afflicted with "hurry sickness." A proud member of this restless tribe, she built a single shop selling natural skin and hair products in England into a global enterprise in the past 22 years by relying, she said, largely on guerrilla marketing, story-telling and her own enthusiasm. The company is notable for the fact that its social activist agenda guides business practices.

"Business must be a force for social change," Ms. Roddick said. "At the Body Shop, we're trying to do things in a different way. We're trying to seamlessly transform the acceptance of private greed to public good—a truly difficult journey."

While boosting dividends by 38 percent in 1997, the company continued fighting for social causes ranging from domestic-violence legislation in the UK to defending imprisoned Nigerian activists to renovating Romanian orphanages.

The Body Shop never uses animal-tested products, obtains raw materials

from communities in need to boost their economies, readily turns shops into Action Shops to engage in local causes, and grants employees work time to volunteer. Each year, the company publishes an independently audited Values Report documenting environmental, animal-protection and social performance.

An inveterate traveler, Ms. Roddick sees her own value to the company primarily as a story-teller, an educator and an entrepreneur, not as a manager. "For me, journeying is educating and just something I couldn't live without. The most extraordinary journey I've taken, and am still taking, is with the Body Shop," she said.

In her first shop, Ms. Roddick applied her experiences of traveling and living with tribes. She told stories about Polynesian women's skin care to sell Cocoa Butter Body Lotion and described the foot-care needs of marathon runners to boost Peppermint Foot Lotion.

"If I had to name a single all-purpose instrument of leadership style, it would be communication," she said. "It doesn't matter how much you care; if you can't communicate, you might as well not be there."

Today her stories revolve around using the politics of consciousness to make business an agent of change. She uses her shops, videos, books, public speaking, a street paper in London and Los Angeles called the Big Issue, and the explicit social agenda of her corporation to encourage others to act on their own beliefs.



Body Shop founder Anita Roddick takes questions from the audience in the Tang Center.

Photo by Justin Knight

"What I have learned is that people become motivated when you guide them to the source of their own power,

and anything that changes your values changes your behavior," she said. "The best way for me to define spirituality is

to combine it with the spirit of work. If you allow people to act on their beliefs, then the energy is unstoppable."

India school to get MIT help

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ject for all students from grades 5-10.

The project (formerly known as the MIT India Technology Education Program) is made possible by support both from India and the United States. In India, Rahul Rathi, a young entrepreneur in Pune, has made a major commitment of time and energy to the project and acts as its local coordinator. Support from MIT alumni/ae in Pune and Mumbai has been combined with support from the Mustard Seed Foundation of Cambridge to make the program possible.

Providing oversight is an MIT steering committee consisting of Professors Keniston, the Andrew Mellon Professor of Human Development; Michael Fischer, director of STS; and Myron Weiner, former head of the Department of Political Science and former director for the Center for International Studies.

This summer's Project India Connect in Pune is designed as a pilot for future summer programs of this kind, and in the long run, for a larger MIT-India Program. For more information, go to <http://web.mit.edu/itep/www/>.

Ajay Kulkarni (Class of '01)

Students in the classroom over spring break

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While ASB started out with about 25 loosely organized students who all taught in Washington, DC, it has grown into a more diverse initiative that raises money from the MIT administration and other sources to send students who are serious about making a difference to a variety of locations.

Ms. Fung, a junior in chemical engineering who is now president of ASB, and Tam Nguyen, a junior in biology who coordinated the Washington, DC, Teach for America group, were participants in the first group as well. They have seen the organization grow to a point where it has almost tripled in the number of participants, elected officers and created an application form. The result, they say, is a more focused effort that ensures that the volunteers and the organizations they work for will get the most out of the experience.

This year, students participated in four initiatives. Through the national housing organization Habitat for Humanity, MIT students painted, dry-

walled, framed, roofed and did other construction work on low-income housing in Philadelphia and Washington.

Through Teach for America, in which recent college graduates commit to teaching in underserved schools for two years, MIT students developed and taught lesson plans on science and math topics with Teach for America teachers in classes of inner-city preschool to high school students in Baltimore and Washington. The volunteer efforts of Jeremy Lueck, a junior in computer science, and Jessica Wang, a sophomore in biology, were featured in a March 28 story in The Baltimore Sun on the pair's teaching efforts at Tench Tilghman Elementary School in Baltimore (the article is available online for free until April 11 by typing a keyword from <http://www.sunspot.net/archive/2week/>).

For the first time, an environmental trip was also offered. At Camp Speers in rural Speers, PA, MIT students worked as camp counselors with high school students who visited the camp.

And Spanish-speaking MIT students developed and taught lessons on science and math to Spanish-speaking students in middle and high schools in San Juan and Culebra, Puerto Rico.

The inner-city schools served by ASB are a far cry from the public schools attended by Ms. Fung in Bridgewater, NJ, and Ms. Nguyen in Downingtown, PA.

Ms. Fung learned that school was a safe haven for some of the city kids, many of whom walked home alone to crime-ridden neighborhoods. Ms. Nguyen said there were metal detectors at the doors of the school where she taught youngsters about fractions and how to use chopsticks.

"I think a lot of people never had experience with this kind of environment. These are intelligent kids in an unfortunate situation," Ms. Nguyen said. Through ASB, "we try to relate to their lives."

"I don't think I realized how difficult it is to learn in that environment," Ms. Fung said.

Penfield ponders engineering education and 'time constants'

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relative advantage in understanding the dynamics of such systems because of our familiarity with the dynamics of engineered systems.

We know that when dealing with rapidly changing, or dynamic, things, we can approximate slowly varying things as constant, or static. This approach is no less valid for natural or social systems than for engineered systems. For example, we think of the locations of continents as fixed on human time scales, even though they have moved on geological time scales. It is all a matter of time constants.

In engineering education, the most important time constant is 40 years, the length of one engineer's career. When designing an educational program, things that change slowly may be considered constant over a 40-year period, whereas things that change more rapidly must be considered as variable, in the sense that they may change during a single person's career.

Before 1900, advances in engineering (and in other fields) occurred at what seems today an incredibly slow rate. Fifty years passed between the inventions of the electric motor and the electric light. It took a hundred years for Coulomb's Law to turn into Maxwell's Equations. A practicing engineer could base an entire career on engineering techniques learned in school. The underlying science was changing so slowly that it could be considered as static, as far as an individual career was concerned. It is all a matter of time constants.

In the first half of the 20th century, science, especially physics, began to change more rapidly. Atomic theory, quantum mechanics, and relativity were introduced. But engineering education was not changed; the presumption continued to be that the science that was important to the practice of engineering was static, or unchanging.

The Second World War exposed the flaw in that reasoning dramatically. The atomic bomb was developed by physicists and chemists who understood atomic theory. Radar was developed by physicists who understood electromagnetism better. Engineers played a distinctly secondary role.

Gordon Brown recognized the problem. The presumption of a static science was obsolete. What was needed was a new model, in which the underlying science could change. Not only could specific branches of science advance rapidly, but other branches of science that had previously been of no engineering importance could suddenly become relevant.

As department head at MIT, Gordon led the revisions of the undergraduate electrical engineering curriculum to incorporate engineering science. He included an ample amount of science, to make it possible for our graduates to learn areas of engineering based on diverse sciences. He also exposed students to many different sciences, so that they would feel comfortable learning still other branches of science later in their careers.

Then, as dean, he extended this idea to other fields of engineering. Graduates of these programs, and similar programs elsewhere, went out to populate the faculty of many other universities, and the result was that today almost all engineering education has a heavy reliance on engineering science.

A question of critical importance to the readers of The Interface is whether this model of engineering grounded in a dynamic, changing base of science will serve us as well in the future as it has in the past. I personally believe it will. There is no indication that the rate of scientific advance is slowing, or that new sciences will be any less necessary. The only question might be which areas of science to incorporate. Many universities

(including my own) are betting that biology will be as important in the future as physics is today. We now require a semester of biology for all students.

Another question that arises is whether, if Gordon Brown were alive today, he might have his sights set on a more important change than merely the selection of which sciences to include in what amounts. I believe he would. Let me explain. Again, it is all a matter of time constants.

We continue to educate our students as though the context in which engineering is done is static, or at worst slowly varying. By the word "context" I mean the cultural, political, industrial, social and work environment in which an engineer practices. By failing to prepare our students to deal with a dynamic, or changing context, we are assuming that such changes have a time constant longer than 40 years. In other words, we recognize that science is dynamic, but we still think context is static.

There is ample evidence that this assumption is now obsolete. During the past 50 years we have seen several changes in context. Today, society values the environment and disapproves of pollution in a way that was unknown in 1950. Today, almost half of the engineering undergraduates are women. Today, new countries are being formed every year, and new cultures are asserting their importance all the time. Today, American industry competes globally. Today, a successful engineer must be nimble—to cope with shorter design cycles, changing styles of activity, more teamwork, constantly improving design tools and more effective global communications.

As these examples show, the context today is radically different from what it was 50 years ago or even 10 years ago. That is, context is changing too rapidly to be considered constant during a 40-year career. Once again, it is all a matter of time constants.

What should we do to equip our students to deal

with a rapidly changing context? That is probably the most important question facing electrical engineering education today. Different people have different ideas.

One idea is to ensure that students have a greater classroom exposure to various contexts. The traditional way of doing this is a liberal arts education. However, engineers also need their science base, and in addition they need the engineering approach to problem solving, which liberal arts programs do not usually supply. Perhaps what is needed is a new form of liberal arts education, with a much heavier dose of many sciences, along with some engineering experience. Or perhaps what is needed is a system where engineering is a professional, graduate program open only to graduates of a liberal arts program.

Another idea might be to strongly increase the creative, design portion of the curriculum so that a variety of contexts for design problems can be experienced. Another idea might be to emphasize exposure to multiple cultures via international exchange programs.

In judging any of these ideas, ask whether the graduates will be able to cope with profound changes in their context during their career. In other words, ask whether they will continue to learn after leaving school, both in technical and non-technical areas.

One wall in our department headquarters at MIT is adorned with pictures of past department heads. Gordon Brown's picture is prominent among them. I see it every day as I come to work, and sometimes wonder how he would approach things if he were around today. The need for a change is quite clear—it is all a matter of time constants. The way of satisfying that need seems much more elusive; it represents what is perhaps today's greatest and noblest challenge for us engineering educators.