

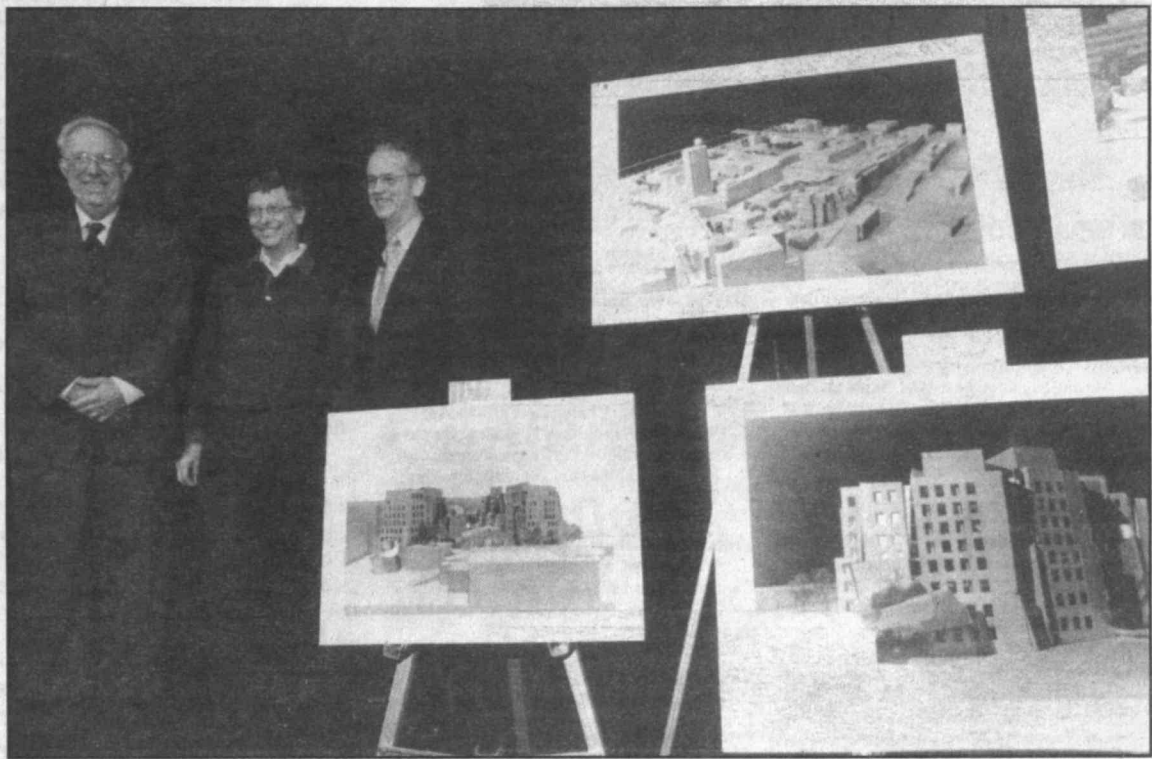
Bill Gates donates \$20 million for new LCS building

■ By Sarah H. Wright
News Office

The William H. Gates Foundation has donated \$20 million for construction of a building that will become the new home for MIT's Laboratory for Computer Science (LCS), Presi-

dent Charles M. Vest announced today.

The William H. Gates Building, as the new LCS home will be known, is being designed by architect Frank O. Gehry and should be ready by 2003. It will be part of the Stata
(continued on page 9)



The foundation headed by Microsoft founder Bill Gates (center) is donating \$20 million for a new computer sciences building, to be part of the Stata Center now being designed by Frank Gehry. With Mr. Gates at Tuesday's announcement were President Charles M. Vest (right) and LCS director Michael Dertouzos. On stage at right are photos of Mr. Gehry's models of his Stata Center designs.
Photo by Donna Coveney

Premier Zhu speaks to world at MIT today

■ By Kenneth D. Campbell
News Office

Premier Zhu Rongji of the People's Republic of China will speak to the world from MIT on Wednesday as he concludes a nine-day tour of the United States with a visit to the Boston area.

The speech, including a question and answer session with the MIT audience, is scheduled from 10:45-11:40am. Science, technology and education are expected to be the topics. The event will be broadcast live by CNN on its

national and international channels and will be webcast by Ziff-Davis TV. The main MIT web site at <<http://web.mit.edu/>> will have a link to the webcast site today.

The speech will be in Chinese, with simultaneous English translation carried to the audience via headsets at each of the 1,200 seats in Kresge Auditorium. Mr. Zhu rarely speaks from a text.

Premier Zhu has been both blunt and humorous during exchanges with
(continued on page 12)

MIT aids in Charles River cleanup

■ By Robert J. Sales
News Office

MIT will assume an active role in the Environmental Protection Agency's Clean Charles 2005 campaign, providing a boat that will make regular cleanup patrols under the supervision of the MIT boatmaster. The EPA goal is to make the river safe for swimming and fishing by Earth Day 2005.

MIT will also subsidize a graduate student with special skills to work on the campaign, and sponsor and host a competition that invites engineers, landscape designers and other experts to create ingenious, economical and achievable solutions for the problems on the river. Student crews from MIT,

Boston University, Northeastern and Harvard will man the boat.

MIT's commitments were announced Tuesday at a news conference at the Watertown Dam during which the EPA issued its annual report card on the status of the river.

New England EPA Administrator John P. DeVillars said the Charles was noticeably cleaner than a year ago, fit for boating 83 percent of the time compared to 70 percent in 1998. As for swimming, the water met safety standards 51 percent of the time, compared to 34 percent the previous year.

In addition, Mr. DeVillars announced the formation of the Clean Charles 2005 Coalition of five universities including MIT, six companies and an environmental group. The coa-

lition will work collectively and individually on voluntary storm water management, education and water-quality
(continued on page 9)

Richardson offers Bates funding reassurance

■ By Deborah Halber
News Office

US Secretary of Energy Bill Richardson assured the 85-member staff of the MIT Bates Linear Accelerator Center yesterday that despite a budgetary snafu that had the facility headed for a "cold shut-

down" earlier this year, he strongly supports the work there and anticipates that it will remain unthreatened for at least the next few years.

Secretary Richardson visited the center, which is operated by MIT's Laboratory for Nuclear Science in Middleton, MA, as a national user
(continued on page 10)

Gairdner is shared by MIT's Horvitz

Dr. H. Robert Horvitz, professor of biology and a Howard Hughes Medical Institute Investigator, is the co-winner of one of this year's Gairdner Foundation International Awards, which reward outstanding contributions to medical science.

Professor Horvitz was honored jointly with Professor Andrew H. Wyllie of Cambridge University "in recognition of their pioneering contribution to our understanding of apoptosis, or programmed cell death."

Since its establishment in 1957 by the late James A. Gairdner to recognize outstanding contributions to medical science, the Toronto-based foundation has honored 260 scientists, 51 of whom subsequently won a Nobel Prize. Past Gairdner winners from MIT are Professors Richard O. Hynes (1997), Robert S. Langer Jr. (1996), Robert Weinberg (1992), Phillip Sharp
(continued on page 10)



Horvitz

Wiesner tribute



Dr. Lisa Wiesner (second from left) and daughters Emily Volkmar (far left) and Lucy Volkmar (second from right) eagerly greet Ruth M. Batson, co-founder of the METCO program. Ms. Batson spoke fondly of their mother/grandmother, Mrs. Laya Wiesner, and their days together in civil rights and educational endeavors, at the Women's League tribute to the late Mrs. Wiesner held at Bartos Theatre last Wednesday. Other speakers included Professor Paul Gray and Mrs. Priscilla Gray, former Rep. Joseph Kennedy, former Dean of Students Carola Eisenberg, Edith Ruina, and President and Mrs. Vest.
Photo by Donna Coveney

IN BRIEF

FACULTY MEETING

A regular meeting of the faculty will be held on Wednesday, April 21 at 3:15pm in Rm 10-250. Agenda items will be:

- Vote on the motion to approve the internal use of intermediate grades, by Professor Lagace.
- Vote on the proposal to revise the undergraduate program in the Department of Aeronautics and Astronautics, by Professors Greitzer and Hall.
- Report of the Committee on Nominations, by Professor Sussman.
- Proposal to establish an SB in linguistics and philosophy, by Professor Hall.
- Proposal to establish a PhD in Chemical Engineering Practice, by Professors Armstrong and Cohen.
- Report of the ROTC Oversight Committee, by Professor McKersie.
- Report of the Committee on Faculty-Administration on Policies regarding retired faculty, by Professor Jacoby.
- Motion to implement house-keeping changes to *Rules and Regulations of the Faculty*, by Professor Bailyn.
- Resolution on the death of Professor Kenneth A. Johnson, by Professors Freedman and Low.
- Report of the Edgerton Committee, by Professor Polenske.

RICE FAREWELL

A farewell celebration for retiring Vice President for Human Resources Joan Rice will be held on Friday, April 30 in the Humanities Library (Rm 14S-200) from 4-6pm, with remarks beginning at 4:45pm. All are invited.

Student Notices

* Open to public
** Open to MIT community only

April 14-May 2

ANNOUNCEMENTS

Physics Department Freshmen Open House—Wednesday, April 14.** Professor Edward Farhi will be master of ceremonies, division heads will be guest speakers, physics demonstrations will be presented. 3-4:30pm, Physics Common Room (4-339). Refreshments served. More info: x3-5682 <savioli@mit.edu>.

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>.

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>.

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

Lincoln Laboratory Bible Study*—Wednesdays, noon-1pm, weekly Bible study in the Division 7 conference room, D-430. More info: Sharon Frigon at 981-7751 or <frigon@ll.mit.edu>.

Lutheran-Episcopal Ministry at MIT*—Regular Wednesday worship 5:10pm, followed by 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 <mchta@cytel.com>.

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

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

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

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

Tech Catholic Community—Sunday** Masses 9:30am, 1pm and 5pm. Weekday Masses Tuesdays and Fridays 12:05pm when classes are in session. More info: x3-2981 or <catholic@mit.edu>. **Living with Christ:** an ongoing Lenten program of personal prayer. Meeting times TBA. More info: Sister Kathleen Crowley x2-1778 or <catholic@mit.edu>.

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

CABLE

For program information, contact Randy Winchester at x3-7431, Rm 9-050, <randy@mit.edu> or see the web site at <http://web.mit.edu/org/m/cable/www/home.html>.

Keil engineering fellowships offered

The School of Engineering is seeking applications for graduate student scholarships for work that will contribute to a better understanding of the implications of science and technology on society.

Applications for the Alfred Keil Fellowships for the Wiser Uses of Science and Technology are due April 30 to Professor Daniel Roos, associate dean of engineering systems, in Rm 1-203.

The fellowships were created to honor Dr. Alfred Keil, the Ford Professor of Engineering emeritus, who was a driving force behind the establishment of the Technology and Policy Program.

He was dean of engineering from 1971-77 after being head of ocean engineering. Throughout his career, he has stressed the importance of research and study on the societal and policy implications of science and technology.

Applicants for the Keil Fellowships must demonstrate academic excellence, the relevance of their proposed work to the spirit of the fellowship and creativity—the potential for doing work that might not be possible without the fellowship. Two half-tuition or a single full-tuition scholarship(s) will be awarded for 1999-2000 to a continuing or entering master's or PhD student in

the School of Engineering.

To apply, students should submit a short proposal (two pages maximum) describing his or her proposed research or study, and explaining how that work would contribute to the wiser use of science and technology. Applicants should provide two references, at least one of whom should be an MIT faculty member.

The awards are overseen by a faculty committee comprising Professors Roos (chair), Fred Moavenzadeh and Joel Clark. The committee encourages faculty members to inform potential applicants about the fellowship.

Voting on for young Corporation member

The annual election to name a recent graduate to the MIT Corporation, the Institute's governing body, is now underway.

This category of membership on the Corporation was created in 1970. Each year, one person receiving any degree from MIT in the current year or in one of the two preceding years is elected through this ballot process to a five-year term on the Corporation.

Ballots have been sent to those eligible to vote in this year's election—members of the Classes of 1997, 1998 and 1999. The candidates selected among the nominees by the Corporation Screening Committee are Sangeeta N. Bhatia (SM 1993, PhD 1997), Dedric A. Carter (SB/MEng expected in 1999), Michael D.D. Clarke (SB 1992, SM 1994, SM 1997, ScD 1998), Duane H. Dreger (SB expected in 1999), David

Goldhaber-Gordon (PhD in physics expected in 1999), Martin J. Gilkes (SB 1997), Brad Gray (SB 1998), Jennifer Kelly (SB expected in 1999), Eve Phillips (SB/MEng expected in 1999) and Pardis Sabeti (SB 1997).

Information about the candidates and the process is available on line at <http://web.mit.edu/alum/mitcorp/>. Ballots must be returned by May 3.

UROP 1998 Summer Studies Program Laboratory for Computer Science

This summer program is intended for undergraduate students who are interested in participating in research projects in the Laboratory for Computer Science. Although no prior experience is necessary, pay under this UROP Summer Studies Program is commensurate with experience, and the program is open to all undergraduates not formally or currently associated with the Laboratory. Students are expected to continue work in the fall semester (either for credit or for pay). We hope to identify creative and energetic undergraduates interested in computer science and to encourage their development.

An informational meeting will be held:

Thursday, April 22

NE43-518

3:00 pm

If you are unable to attend but are still interested in the program, send e-mail to alison@hq.lcs.mit.edu

City is seeking school volunteers

Cambridge School Volunteers, Inc., is seeking people of all ages and backgrounds throughout the Cambridge public schools.

Volunteers are needed for at least two hours per week (before, during or directly after school) in elementary school classrooms, libraries and after-school homework centers, and to tutor high school students, particularly in math, science, social studies, Macintosh computer skills and English as a second language.

If interested, call 349-6794 or e-mail <CSV@cps.ci.cambridge.ma.us>.

MIT TECH TALK (USPS 002157)

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Crimewatch

The following summary contains most of the incidents reported to Campus Police from April 1-7, 1999. It does not include medical shuttles, ambulance transfers, false alarms and general service calls.

April 1: *Kappa Sigma:* malicious damage to a window. *Student Ctr:* suspicious activity, person refused to leave restroom. *Bldg. N52:* suspicious activity. *Bldg. E23:* threats by a former boyfriend, assisted individual in obtaining a restraining order. *Walker:* wallet removed from backpack, \$240 cash and \$200 travelers checks stolen. *Bldg. 16:* pocketbook stolen later recovered in Bldg. 36 missing \$65 cash. *Bldg. E25:* keys stolen. *Bldg. E23:* debit card stolen sometime since March and several purchases made on same. *Memorial Dr.:* assist State Police with Boston University ROTC unit having a drill. *Bldg. 13:* report of juveniles on skate boards, advised same to move along. *Rear of Bldg. NW12:* suspicious person issued trespass warning. *Student Ctr:* three individuals issued trespass warnings.

April 2: *Bldg. E18:* step ladder stolen. *Baker House:* backpack stolen containing text books and a calculator, \$300. *Bldg. 12:* table stolen, \$20. *Pika:* \$130 withdrawn from x-press check account. *Bldg. E52:* homeless person in lobby. *Cambridge Police Station:* MIT female officer assist Cambridge Police with a female prisoner. *Albany St:* two juveniles were arrested for tagging.

April 3: *Student Ctr:* officers observed juveniles looking over bikes, individuals had been issued previous trespass warnings. All youths fled when they noticed they were being observed by CP's. Two were arrested for trespassing and other related charges, three others fled. *Bldg. 4:* report of suspicious activity. *Bldg. E53:* suspicious noises, five individuals stopped.

April 4: *Bldg. W59:* malicious damage to a window. *Westgate:* report of a missing person, individual returned home shortly thereafter. *Alpha Delta Phi:* side view mirror stolen from vehicle, unknown value. *Emergency phone hang-up call:* area checked, no cause found. *Bldg. 54:* suspicious activity. *Memorial Dr.:* assist State Police with construction barrels strewn in roadway.

April 5: *McCormick:* report of smoke in hallway, fire caused by burning candle left unattended on a pile of papers. *East Garage:* vehicle broken into and radio stolen, unknown value.

April 6: *McCormick:* annoying phone calls. *Student Ctr:* backpack stolen. *Bldg. 4:* VCR stolen, \$250. *Bldg. 7:* students observed a female attempting to leave the area with victim's stolen CD player. Several students held the suspect until Campus Police arrived and placed her under arrest for larceny, disorderly person and other related charges. *Bldg. 68:* past larceny of compact discs, \$60. *Bldg. 68:* vending machine broken into.

April 7: *Bldg. 20:* hack. *Bldg. E52:* suspicious activity. *Bldg. 1:* suspicious activity. *Bldg. NE43:* harassing e-mail. *Bldg. 9:* person reports witnessing hit and run damage to vehicle. *Bldg. E40:* laptop computer stolen. *Bldg. 56:* wallet stolen, \$35. *33 Mass. Ave. bike rack:* \$295 bike stolen.

MIT

CCRR

1998 + 1999

grants program

we're looking for proposals with new, creative, and innovative ideas for events and activities to enhance racial and cultural relations at MIT.

all members of the MIT community - students, faculty, and staff - are welcome to apply.

NEXT DEADLINE

may 1st

APPLICATION DEADLINES: Proposals are reviewed on a monthly basis. Applications received by the first of any month from October to May will be notified of a decision by the middle of that month.

For more information, an application, or the CCRR Resource Guide, contact:
Dean Ayida Mthembu (mthembu@mit.edu, x3-4861) or Elizabeth Connors (econnors@mit.edu, x3-0764).

MIT Committee on
Campus Race Relations

Maier delves into Constitution's origins, intentions in Killian lecture

■ By Sarah H. Wright
News Office

The framers of the US Constitution—which was never intended to be a final, unalterable document—devoted little attention to spelling out how a chief executive should be removed from office, something which clearly affected impeachment proceedings two centuries later, said Professor Pauline R. Maier in last week's 27th annual Killian Lecture.

Dr. Maier, the William R. Kenan Jr. Professor in the history section, delivered her talk on April 6 in Wong Auditorium. She was introduced by Lotte Bailyn, the T. Wilson (1953) Professor in Management and chair of the Faculty. Professor Maier, who received the James R. Killian Jr. Faculty Achievement Award for 1998-99, spoke on "High Crimes and Misdemeanors: Reflections on the Bonds between Past and Present."

"Professor Maier is the first historian to have this honor, and it is a tribute to her teaching and to her chairmanship of the department over nine years," said Professor Bailyn. She also read selected online reviews of Professor Maier's well-received recent book, *American Scripture: Making the Declaration of Independence* (Knopf).

In thanking the Killian Award Selection Committee, Professor Maier said, "I count among the great blessings of my life the privilege of keeping my head in the 18th century and my body at MIT. This has been a wonderfully supportive and congenial institution, full of people, like those I study, [who are] ready to invest their minds in the most challenging problems of our time. I take delight in being part of an engineering culture that's ready to recognize problems because it knows what to do with problems: solve them. Let me thank fellow members of the faculty for that enormous honor—and acknowledge as well the great honor of being a member of this faculty," she said.

Professor Maier's goal in her lecture was to illuminate this year's impeachment proceedings of President Clinton in "new and interesting ways and perhaps begin making sense of

them... in a broad historical context," she said.

As a historian (Professor Maier has been called an 'historian's historian'), she was guided in preparing her wide-ranging and enthusiastic talk on "high crimes and misdemeanors" by three provocative, even paradoxical questions: "Why are we so concerned with the ideas of the 'founders'? Should we be? What is the relevance of late 18th-century 'understandings' of the Constitution for Americans living two centuries later?"

First, she distinguished emphatically between lively "concern" for the ideas of the framers of the Constitution and a frozen state of worship for the documents enshrined in Washington, DC.

"In 1787, no sane man thought that the federal Constitution would last this long. It was a first try at creating a national government whose authority came directly from the people... Recent history suggested that most first tries don't last. That lesson was not lost on delegates... who quietly abandoned the pretension of founding a 'perpetual union.'

"In 1787, no sane man thought that the federal Constitution would last this long."

—Prof. Pauline Maier

"They also consciously chose to state principles and procedures in general terms so they could more easily be accommodated to times and events."

A particular challenge for the founders, noted Professor Maier, lay in constructing the executive branch of the new government, since the "convention had few positive role models to follow." The issue of removing the chief executive received "about five minutes of debate," while the phrase

"high crimes and misdemeanors," used in English impeachment proceedings since the 14th century, stuck.

IMPEACHMENT IMPACT

Moving into issues of more recent days, Professor Maier said, "Unfortunately, the [Clinton] impeachment process tended to confuse the historical question with those over the President's guilt or innocence. It did so for a reason the founding generation failed to anticipate and, indeed, feared: the development of a party system. From their first emergence in the 1790s, parties played havoc with the convention's carefully crafted solutions to the problem of constructing a national executive... Then, in 1804, the 12th Amendment adjusted presidential election procedures for the existence of parties.

"But no amendment updated the impeachment procedures. And nowhere do party politics cause more havoc with a constitutional procedure today than with impeachments, and particularly presidential impeachments, which transform Congress from a legislative into a judicial body," Professor Maier asserted. She quoted Barney Frank's quip—"unilateral bipartisanism"—to denote the bullying type of havoc caused by the party system.

Thus, the witnesses, scholars, historians, lawyers and politicians who combed the Constitution for guidance on the term "high crimes and misdemeanors" didn't get the "simple answers to straightforward questions" they had hoped for, because they simply weren't there.

"Indeed, the framers consciously built a certain ambiguity into the Constitution, preferring 'general propositions' over specific provisions... There is, however, another reason why we return time and again to 1787: the debates in the constitutional convention serve as something of a technical manual on the federal government," said Professor Maier.

CHALLENGE FOR TODAY

She then issued a challenge to the audience—a roomful of citizens, after all, not much different from the founders themselves—to consider the next step in the evolution of American political culture.

"Surely, this 'running of the experiment' revealed problems aplenty. Why then, has there been so little discussion of how better to assure, in a modern context, that 'impartial justice' the founders tried to establish?"

"Surely, too, the Clinton impeachment case gave reason to reflect on the remoteness of Congress from the public whose views it was originally supposed to reflect and on how the President has become for most Americans the human face of government," she said.

Noting our reluctance to amend the Constitution—"after adopting the first 10 amendments in two years, we enacted only 17 in the next 208 years"—Professor Maier asked, "Is our reticence at odds with the 'original intent' of the founders that, as posterity gathered experience with the Constitution, it would update the document?"

Professor Maier gave a resounding conclusion to her hour-long lecture. "The question, I think, is whether we can keep the strength of that tradition while abandoning the mythologizing that John Adams and Thomas Jefferson found so out of keeping with the people they knew and the work of constitution-writing as they understood it. Maybe, after two centuries, we can acknowledge that the founders "deserve well of their country" not only because they left us a constitution better built than they knew, but because they had the great wisdom to understand the limits of their wisdom.

"Maybe, too, we can accept their affirmation of our capacity to carry on the experiment they began, and consciously accept their invitation to participate in a founding that never really ended, but remains, as it must, an ongoing act of creation."



Pauline R. Maier, the William R. Kenan Jr. Professor of History, gives the Killian Lecture in Wong Auditorium.
Photo by Donna Coveney

Clintons praise MIT for candor, actions on women science faculty

■ By Deborah Halber
News Office

President Clinton and Hillary Rodham Clinton publicly commended MIT's administration and women faculty members on April 7 for the Institute's actions and candor in addressing gender bias against women science faculty.

The President and First Lady led a White House panel on equal pay for women in commemoration of Equal Pay Day, which was April 8. Nancy Hopkins, a professor of biology at MIT and one of the women who launched the discrimination investigation, was one of four panelists.

President Clinton said, "Just recently—let me just mention the experience of one of our panelists—we saw this courage among the administrators and women scientists at MIT, one of our country's most outstanding institutions of higher education.

"Together, they looked at the cold, hard facts about disparities in everything from lab space to annual salary. They sought to make things right, and they told the whole public the truth about it, which is a rare thing. And I appreciate what they did. I commend them. I hope their success and their example can be replicated throughout our country."

Mrs. Clinton said that wage gaps such as the one affecting the women science professors point to a larger social problem.

"I think it's fair to say that when you have some of the best scientists in the world taking a look at this issue in one institution—and coming to these conclusions—and then that, in turn, supports the broader findings that have been derived from looking at society at large—we know that we do have a wage gap that we have to address. And it's not just a gap in wages, it's a gap in our nation's principles and promises," she said.

"So the kind of work that was done by the 15 women scientists, with the support of the MIT administration, made a very important contribution to this whole debate because they were able, with their scientific method, to get below the surface and really figure out what it is that was going on. And I really want to commend MIT for doing that. I hope it serves as a model not only for the rest of higher education, but for employers in all kinds of institutions around the country," Mrs. Clinton said.

Professor Hopkins said that the Clintons' "sophisticated knowledge of the issues surrounding the MIT report and their insightful questions were so engaging that I was immediately drawn into conversation with them and totally forgot the wall of cameras and lights before us."

Professor Hopkins joined panelists Sanya Tyler, who filed a Title IX discrimination lawsuit against Howard

University in 1991 that resulted in a landmark decision protecting female athletic coaches; Carolyn Gantt, a retired mother of seven who continues to work part-time to make ends meet while her male colleagues are financially secure; and Patricia Higgins, a nurse from Cleveland who believes that nurses have traditionally been undervalued and underpaid.

"It was absolutely thrilling to hear President and Mrs. Clinton praise the tenured women faculty in the School of Science and the MIT administration's approach to analyzing gender issues at the Institute," Professor Hopkins said.

Seeberger named to CD chair

Assistant Professor of Chemistry Peter H. Seeberger has been selected as a Firmenich Career Development Professor of Chemistry for a five-year term. The Firmenich chair is awarded to younger, nontenured members of the chemistry department.

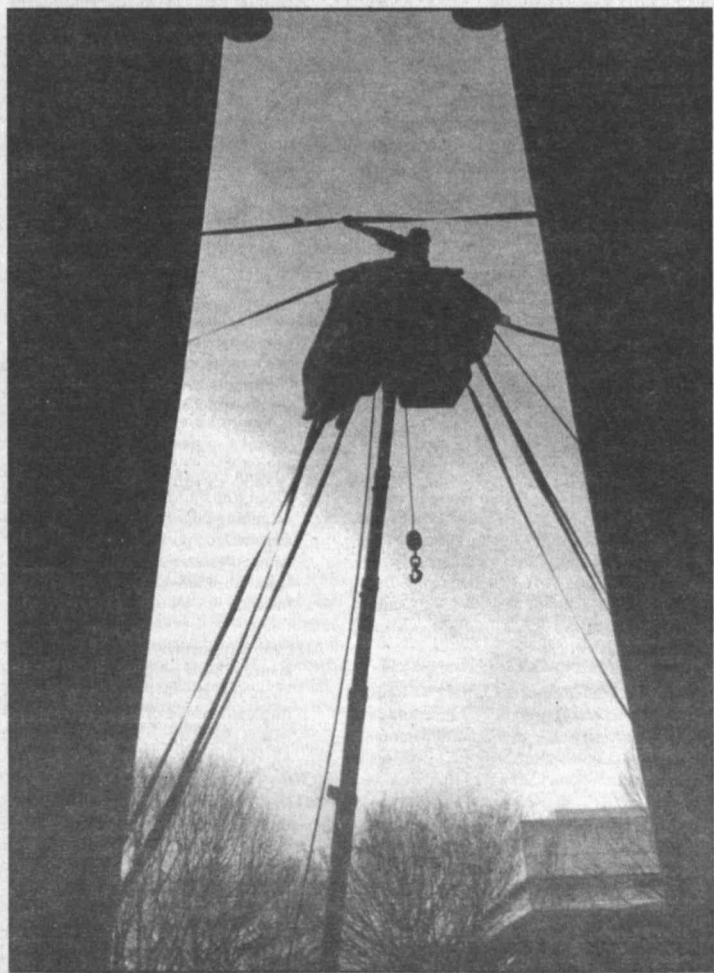
Dr. Seeberger joined the MIT faculty in 1998 after working as a research fellow at the Sloan-Kettering Institute for Cancer Research.

He holds the BS (1989) from the University of Erlangen-Nürnberg and the PhD (1995) from the University of Colorado at Boulder. He won the 1998 Research Award from the CAPCure Foundation for work on prostate cancer and the 1999 Award from the Mizutani Foundation for Glycoscience for work in cancer immunology.

Dr. Seeberger's research interests include carbohydrate chemistry, vaccine development, solid support synthesis and signal transduction processes mediated by glycoconjugates. Professor Seeberger recently received funding for a project on ocular neovascularization based on combinatorial chemistry (MIT Tech Talk, March 31) and has also worked on a new technology for designing and synthesizing oligosaccharide-based drugs and materials.

Alice C. Waugh

Land ahoy!



High up in the entryway at 77 Massachusetts Ave., a worker anchors the Lab for Computer Science 35th anniversary banner for all to see.
Photo by Donna Coveney

Institute Calendar

* Open to public
** Open to MIT community only

(For arts-related listings, see page 11.)

INSTRUCTIONS: Seminars & Lectures listings must now be submitted to the online TechCalendar at <http://tech-calendar.mit.edu>. If you have questions about that procedure, please contact <help@tech-calendar.mit.edu>.

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

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

Next deadline for all types of listings is noon Friday, April 23, covering events from Wednesday, April 28 through Sunday, May 9.

April 14-May 2

■ SPECIAL INTEREST

MIT Community Forum on China*—April 14, 3-5pm, Wong Auditorium, Tang Center. Panelists include Profs. Thomas Christensen, Zhiyuan Cui, Chiang Mei, Peter Perdue, Ed Steinfeld, with chair Prof. Kenneth Oye. Sponsored by Center for International Studies. Discussion follows. More info: x3-3121, <lauries@mit.edu>.

Sustainable Growth: Fantasy or Vision?*—Dr. John H. Gibbons, Clinton Science Advisor and dir, Office of Sci and Tech. Monday, April 26, Compton Lecture Series. Sponsored by Office of Provost and Dept. of Political Science. 4-5:30pm, Rm E51-Wong Auditorium. Introduction by Dean of Science Robert J. Birgeneau. Reception will follow question and answer period. More info: x8-5879, <cclark@mit.edu>.

■ SEMINARS & LECTURES

(Listings compiled by TechCalendar, courtesy of The Tech.)

WEDNESDAY, APRIL 14

All-Fiber-Optical Analysis and Manipulation of Light*—Turan Erdogan, Univ. of Rochester. EECS/RLE - Optics & Quantum Electronics Seminar Series. 11am, Rm 34-Grier Room B. More info: x3-8504, <ippen@mit.edu>.

Capabilities-Based Planning and the Role of 'Uncertainty' in Current Defense Policy*—Dr. Carl Conetta, Project on Defense Alternatives. Sponsored by Security Studies Program. Noon-1:30pm, Rm E38-615. Bag lunch. More info: x3-0133, <llevine@mit.edu>.

The Role of the Seasonal Cycles on the Air-Sea Exchange of CO₂*—Goran Brostrom, MIT. Sponsored by Physical Oceanography. 12:10-1:10pm, Rm 54-915. More info: x3-2177, <ganacho@gulf.mit.edu>, <http://puddle.mit.edu/~ganacho/sack.html>.

MIT Community Forum on China*—Sponsored by Center for International Studies. 3-5pm, Wong Auditorium, Tang Center. See Special Interest above.

Lecture on Science Policy Issues: Intellectual Property Rights*—Jack Turner, MIT. Professional Development Series. 3:30-5pm, Ashdown House, Hulsizer. More info: x3-2195, <wolff@mit.edu>, <http://www.mit.edu/activities/gsc>.

Identities for Bernoulli Numbers*—Dr. Ira Gessel, Brandeis Univ. Sponsored by Combinatorics Seminar with Department of Mathematics. 4:15-5:15pm, Rm 2-338. Refreshments served at 3:45pm in Rm 2-349. More info: x3-6544, <sara@math.mit.edu>, <http://www-math.mit.edu/~combin>.

Markov Chain Bootstrap*—Professor Xuming He, Univ. of Illinois at Urbana-Champaign. Sponsored by Statistics Seminar with Department of Mathematics. 5:15-6:15pm, Rm 2-105. More info: x3-4390, <genton@math.mit.edu>.

Meeting the Challenge: The Orthodox Church in the 21st Century*—Father Peter Smith, Holy Cross Seminary. Sponsored by Orthodox Christian Fellowship. 6:30 pm, Chapel. Bright Wednesday vespers and talk, followed by refreshments in W11. More info: x5-9818, <johnkym@mit.edu> <http://web.mit.edu/ocf/www>.

THURSDAY, APRIL 15

Sexuality and Aging*—Catherine N. Stratton Lecture On Aging Successfully. Sponsored by the MIT Medical Dept/Women's League. 9:30am-noon, E25-111. Coffee will be served at 9am. More info: x3-3656 <esdeb@mit.edu>.

"Knitting" Photonic Crystals*—Yoel Fink, Dept. of Materials Science and Engineering. Materials Unlimited. 4-5pm, Rm 8-314. Outstanding interdisciplinary materials research by graduate students. An informal reception at 3:30pm. More info: x3-5179, <fmpage@mit.edu>, <http://web.mit.edu/mpc/www/>.

Entropy Budget of an Atmosphere in Radiative-Convective Equilibrium*—Olivier Paulius, GFDL. Sponsored by MIT Atmospheric Science Seminars. 4pm, Rm 54-915. More info: <rap@rossby.mit.edu> <www-paoc.mit.edu/MASSseries.html>.

A Multi-Firm Stocking Game Under Dynamic Choice*—Garrett van Ryzin, Columbia Univ. Sponsored by Operations Research Center. 4-5pm, Rm E40-298. Refreshments to follow in Rm E40-106. More info: x3-7412, <mhaugh@mit.edu> <http://web.mit.edu/orc/www>.

Bose-Einstein Condensation of Atomic Hydrogen*—Professors Thomas Greytak and Daniel Kleppner, MIT. Physics Colloquium. 4:15pm, Rm 10-250. Refreshments in Rm 4-339 at 3:45pm. More info: x3-4801, <physhdq@mit.edu> <http://web.mit.edu/physics/www/Colloquium/current.html>.

FRIDAY, APRIL 16

Time-Frequency Analysis by Harmonic Wavelets*—Prof David E. Newland, Cambridge Univ. Mechanical Engineering Spring Seminar Series. 3-4pm, Rm 3-270. Refreshments to follow in Miller Room (1-114). More info: x8-5807 <bhenson@mit.edu>.

Rare Gases: Implications for Mantle Sources and Processes in Generating Oceanic Basalts*—Dr. Mark Kurz, Woods Hole Oceanographic Institution. EAPS Department Lecture Series. 4pm, Rm 54-915. Refreshments, 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu>, <http://www-eaps.mit.edu/dept_sem.html>.

TUESDAY, APRIL 20

Applications of Fluid Mechanics in Circulating Fluidized Beds*—Dr. Alan Pfeffer, ABB. Gas Turbine Seminar Series. 4:30pm, Rm 31-161. Refreshments 4:15pm. More info: x3-2481, <dragonl@mit.edu>.

Stephen R. Covey*—bestselling author of *The 7 Habits of Highly Effective People*. Sponsored by Sloan 2000 Leadership Forum. 6-7:15pm, E51, Wong Auditorium. Covey to speak about principle-based leadership. Open seating begins at 5:30pm. Only about 100 seats available. More info: <info@sloan2000.com> <http://www.sloan2000.com>.

WEDNESDAY, APRIL 21

Optical Networking*—Alistair Glass, Lucent Technologies, Bell Laboratories. EECS/RLE - Optics & Quantum Electronics Seminar Series. 11am, Rm 34-Grier Room B. More info: x3-8504, <ippen@mit.edu>.

Lecture on Science Policy Issues*—Professional Development Series. 3:30-5pm, Ashdown House, Hulsizer. More info: x3-2195, <wolff@mit.edu> <http://www.mit.edu/activities/gsc>.

From Complete Genome Sequences to Regulatory Network Measures and Models*—Prof. George M. Church, Harvard Univ. Medical School. Problems and Methods in Bioinformatics. 4pm, Rm 56-114. More info: x8-0398, <gregstep@mit.edu>.

A q-analogue of Mahler Expansions*—Dr. Keith Conrad, Ohio State Univ. Sponsored by Combinatorics Seminar. 4:15-5:15pm, Rm 2-338. Refreshments served at 3:45pm in Rm 2-338. More info: x3-6544, <sara@math.mit.edu>, <http://www-math.mit.edu/~combin>.

THURSDAY, APRIL 22

Regulation of Glial Development through Ligand- and Voltage-Gated Ion Channels*—Dr. Vittorio Gallo, Section Chief, NIH/NICHD. Sponsored by Wurtman Lab. 12pm, Rm E25-401. More info: x3-6732, <les@mit.edu>.

Selling to the Newsvendors*—Prof. Marty Lariviere, Fuqua School of Business, Duke Univ. Sponsored by Operations Research Center. 4-5pm, Rm E40-298. Refreshments to follow in Rm E40-106. More info: x3-7412, <jgallien@mit.edu>, <http://web.mit.edu/orc/www>.

Gamma Ray Bursts and Their Afterglows*—Bohdan Paczynski, Princeton Univ. Physics Colloquium. 4:15pm, Rm 10-250. Refreshments in Rm 4-339 at 3:45pm. More info: x3-4801, <physhdq@mit.edu> <http://web.mit.edu/physics/www/Colloquium/current.html>.

Media and Imagination: Readings in Science Fiction*—Lois McMaster Bujold, Mel-

issa Scott. Sponsored by Media in Transition Project with Lecture Series Committee. 7pm, Rm 10-250. Lois McMaster Bujold has won four Hugo awards and is known for her Miles Vorkosigan series. Melissa Scott has won the John W. Campbell Award and Lambda Literary Award for Gay/Lesbian Science Fiction. More info: x3-3068, <henry3@mit.edu>, <http://media-in-transition.mit.edu/>.

FRIDAY, APRIL 23

Analyses of Rocks and Soils at the Mars Pathfinder Landing Site*—Prof. Harry Y. McSweeney, Jr., Univ of Tennessee. EAPS Department Lecture Series. 4pm, Rm 54-915. Refreshments, 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu> <http://www-eaps.mit.edu/dept_sem.html>.



Ongoing Community Meetings

■ COMMUNITY

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

MIT Folkdance Club*—Sundays: International Dancing 7-11pm. Tuesdays: Advanced Balkan Dancing, regular teaching and 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>.

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

GABLES (Gay, Bisexual, and Lesbian Employees and Supporters) at MIT*—Monthly lunch-time get-togethers held on and off campus on the last business day of the month. Info line x2-1014. Staff lesbian e-mail list sign-up: <gables-request@mit.edu>.

Graduate Student Council Grocery Shuttle*—The GSC offers a grocery shuttle from MIT to the University Park Star Market on Saturday mornings every half-hour from 8-11:30am from Eastgate. Free to all members of the MIT community. For schedule and stops, see <http://www.mit.edu/activities/gsc/Committees/HCA/Grocery/grocery.html>.

Hands Club*—Sign Language lunches every Monday at noon in the back of Walker (on odd days) and second floor of Lobdell (even days). More info: <askwersk@mit.edu>.

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

MIT Toastmasters*—An organization that helps people improve and practice their public speaking and presentation skills. Meets second and fourth Friday of each month, 12:05-1:30pm, Rm E19-220. For schedule, see <http://web.mit.edu/personnel/toastmasters/>.

MIT Working Group on Support Staff Issues*—The MIT Working Group on Support Staff Issues is made up of staff and administrators working together to address issues of concern to support staff at MIT. The group organizes task groups which report findings to the membership for action and implementation. If you would like to attend one of the monthly meetings, contact Heather Mitchell at <mheather@mit.edu> or x3-9474.

■ FAMILY

Family Resource Center*—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. See <http://web.mit.edu/personnel/www/frc/>, call x3-1592 or e-mail <frc@mit.edu>.

Family On-Line Services*—A computer workstation is available in the Family Resource Center reception area

Flow Induced by Steady Air Venting and Air Sparging*—Prof. Chiang C. Mei, civil and environmental engineering. Sponsored by Engineering & Environmental Mechanics Group. 4-5pm, Rm 1-350. Refreshments.

Formulas in the Schubert Calculus*—Dr. Arun Ram, Princeton Univ. Sponsored by Combinatorics Seminar with Department of Mathematics. 4:15-5:15pm, Rm 2-338. Refreshments will be served at 3:30pm in Rm 2-349. More info: x3-6544, <sara@math.mit.edu>, <http://www-math.mit.edu/~combin>.

SUNDAY, APRIL 25

Architecture Symposium*—Sponsored by Department of Architecture. 12pm, two-day symposium. More info: <dtrs.mit.edu> <http://architecture.mit.edu/events/dtrs>.

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-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 noon-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 or preregistration required. Co-sponsored by the Family Resource Center and the Health Education Resource Center. For schedule and 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. Info: Chris Bates, 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. Info: Jennifer, x3-1614.

■ HEALTH

AI-Anon*—Meetings every Friday, 12-1pm, Rm E25-101. More info: 781-843-5300.

Alcoholics Anonymous (AA)*—Meetings every Tues, 12-1pm; Thurs, 12-1p; Womens AA meets Mon 6-7pm., Rm E23-376. Info: Denise x3-4911.

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

Early Pregnancy, Prepared Childbirth and Childbirth Review*—Classes are offered to patients of the 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 24 hrs/day. Make arrangements with Margery Wilson, Rm E23-407, x3-2466.

Nursing Mothers' Group*—First and third

MONDAY, APRIL 26

Military Organization and Its Discontents: Gunpowder Production in the Era of Enlightenment*—Thomas Kaiserfeld, Royal Institute of Technology, Stockholm. Program in Science, Technology, and Society 1999 Spring Colloquia. 4pm, Rm E51-095. More info: x3-4062, <meimbres@mit.edu> <http://web.mit.edu/sts>.

Sustainable Growth: Fantasy or Vision?*—Dr. John H. Gibbons, Clinton Science Advisor and dir, Office of Sci and Tech. Compton Lecture Series. 4-5:30pm, Rm E51-Wong Auditorium. See Special Interest above.

Gaussian Estimators for Permanents and Related Quantities*—Prof. Alexander Barvinok, Univ. of Michigan. Sponsored (continued on page 5)



Wednesday of each month, 11am-noon, Rm E23-297. For pregnant and nursing women. Babies and toddlers welcome. No fee or registration. Sponsored by the Medical Dept. Info: x3-2466.

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

Weight Watchers at Work*—Thursdays, 1-1:45pm, Rm 8-219. Cost: \$120 for a 12-week session. Some health plans are eligible for reduced rates. More info: x3-4005 or <cohen@media.mit.edu>.

■ INTERNATIONAL

Guide for Foreign National Spouses Seeking Work*—Information on topics such as American resumes, job interviews, volunteer work, employment agencies, salary negotiation, visa issues and 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 at noon in Walker. 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. Info: Dr. Grace Gibson, x3-2916.

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 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>.

MIT Job Support Group for international spouses. Meet people in the same situation you are. We can help you find information and prepare for your job search and interviews. Info: Jennifer, x3-1614.

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

Stammtisch/German Table*—Join us for lunch auf deutsch, all are welcome. Every Monday at 1pm, Walker cafeteria. Info: <debi@mit.edu> or <sherka@mit.edu>.

Panelists discuss black diversity

Lani Guinier, a Harvard Law School professor and civil rights attorney, joined MIT Assistant Professor Melissa Nobles of political science, Senior Associate Dean Isaac M. Colbert, senior Eto Otitigbe and graduate student La Tonya Green last Thursday on a panel entitled "Questioning Race: Is BLACK black?" The Race2000 event was sponsored by the Committee on Campus Race Relations (CCRR) and moderated by Dean Ayida Mthembu.

Professor Guinier said the poor are like ice—frozen in the community with little or no mobility. When heat—which she called "resources"—is applied, people become more fluid; when additional heat is applied, they evaporate like vapor and disappear, she said.

Professor Guinier told the audience that the tradition of rugged individualism was a roadblock to developing a sense of community, sometimes adversely affecting black students' academic progress.

To illustrate her point, she recalled a story about a professor who was teaching algebra to a diverse group of students. The Chinese and Chinese-American students were doing well in the class and the black students were not doing as well.

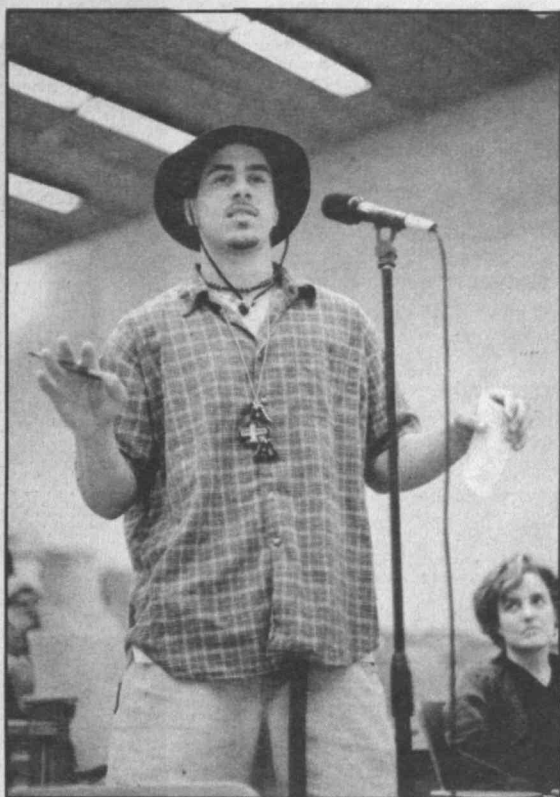
The professor discovered that the Chinese and Chinese-American students were studying in groups and exchanging ideas in social settings, while the black students were studying alone at home. He redesigned the class to include study groups, and grades went up across the board.

Panelists and the audience discussed several topics, including the effect that the influx of African and Caribbean immigrants has had.

Dean Colbert said coalitions are the key to bridging the differences created by political, economic, social and class lines. He said staff and faculty had to provide the impetus for creating new rituals that will help focus the black community at MIT on academics.

He said he used to be able to look at black people and assume that because of their skin color, they shared similar life experiences. He can't do that anymore, he said, because of the diversity of the experiences of people who have black skin or look black. Some black people don't see race and/or racism as a big issue in their lives, he added.

Professor Nobles said the atmosphere at MIT makes community building difficult for all students, which affects minority students more acutely since there are fewer of them. She noted that the end of Jim Crow and immigration restrictions led to the growth of a black middle class, creating greater diversity among blacks. Consequently, poor and working-class people have been left behind, creating division within the black community.



Black Student Union president Daniel W. Rodriguez, a junior in electrical engineering and computer science, comments on the role of the BSU in building a community among the MIT students of color at the Race2000 panel discussion event last week.

Photo by Gábor Csányi

Diversity in the black community has brought other issues to the forefront, Ms. Greene noted. In the 1950s and '60s, a sense of community was instilled in people early in life. Now, "everyone wants to be an individual," she said. "How do you create community in this kind of atmosphere?"

While the black students at MIT belong to many different groups, outsiders see those groups as all the same, Mr. Otitigbe said. Individuals must be accountable for incorporating community into their daily lives, he said. For him, this means tying everything he does at MIT into his passion.

Foundation gives \$3m for bioengineering

A \$3 million grant from the Whitaker Foundation to the Division of Bioengineering and Environmental Health (BEH) will help launch a new bioengineering PhD program and support the role of BEH as the departmental home for MIT students and faculty at the interface of engineering and biology.

The grant was announced by Professor Thomas L. Magnanti, dean of the School of Engineering.

"In making this award to BEH, the Whitaker Foundation has recognized the potentially transformative discipline of bioengineering, matching our own commitment to the future in this field," said Dean Magnanti.

"Since the School of Engineering expects that the most powerful technologies for improving human health in the 21st century will emerge from bioengineering, we created BEH to build intimate ties between engineering and biology, with an aim to advancing biomedical engineering and environmental health. By bringing biology into engineering as one of the foundational sciences, along with mathematics, physics and chemistry, bioengineering will be in a much better position to assume a central role in the coming era of molecular medicine."

A private, nonprofit foundation dedicated to improving human health through the support of biomedical engineering, the Whitaker Foundation began support of BEH with an initial grant of \$1 million awarded in 1998 for enhancing the division's undergraduate minor in biomedical engineering and planning an envisioned new five-year SB/MEng biomedical engineering program in BEH.

The current grant will provide funds for research and teaching laboratories for all BEH faculty, startup support for new faculty, and curriculum development and graduate student fellowships for the bioengineering PhD program. Bioengineering research will be applied to both medical and environmental effects on physiology, as well as to industrial biotechnologies bearing on diagnostics and therapeutics.

Professors Douglas Lauffenburger and Steven Tannenbaum,

BEH co-directors, said, "Our sincere hope and intention is that BEH will help accelerate recognition of MIT as being an unsurpassed institution for bioengineering teaching and research, and that the bioengineering PhD program will soon be viewed as one which attracts the very best students interested in this new discipline, nationwide and worldwide, and prepares them for leadership careers in academe and industry."

The new bioengineering PhD program will bring in graduate students to study in an innovative curriculum centered on a sharply focused technical core. It will teach students how fundamental biological processes can be analyzed in terms of central engineering principles of mechanics, transport and kinetics, and how they can be manipulated by combining engineering design approaches with molecular- and cell-based methodologies.

Researchers will give special attention to advances in materials, instrumentation and computation relevant to biology. Thesis research will emphasize synthesis of this understanding for technological applications in human health, spanning the range from genomics to molecular diagnostics and therapeutics to tissue-engineered devices.

Established in 1975 upon the death of Uncas A. Whitaker (SB 1923), founder and former CEO of AMP Inc., the Whitaker Foundation is a private, nonprofit foundation dedicated to improving human health through the support of biomedical engineering.

Mr. Whitaker and his family provided major support for construction of both MIT's Whitaker Building (Building 56) and the Whitaker College of Health Sciences and Technology (Building E25). He also contributed to the endowment for the Health Sciences and Technology Program jointly administered by Harvard and MIT, and created the Health Sciences Fund which, for nearly two decades, supported collaborative, interdisciplinary research by young investigators and doctoral students at MIT, Harvard Medical School, Boston University School of Medicine and Tufts University School of Medicine.

April flowers



Campus crocuses herald spring's arrival. Photo by Donna Coveney

MIT experts guides available

Guides to MIT research experts are available through the MIT News Office.

The 1997-98 MIT Media Guide to Experts on Medicine, Physiology and Health features research descriptions and contact information for almost 200 MIT faculty and scientists.

The MIT Media Guide to Experts on the Environment, published in 1995, features some 100 researchers in fields ranging from air pollution to waste remediation.

To obtain a copy, contact Myles Crowley of the News Office at x3-2700 or <mcrowley@mit.edu>.

(continued from page 4)

by Applied Mathematics Colloquium with Department of Mathematics. 4:15-5:15pm, Rm 2-105. Refreshments served at 3:45pm in Rm 2-349. More info: x3-3661, <brenner@math.mit.edu>, <http://www-math.mit.edu/amc/spring99>.

TUESDAY, APRIL 27

Topological Aspects of 19th Century Debates on the Space Problem*—Moritz Epple. Dibner Institute Luncheon Colloquia. Noon-2pm, Rm E56-100. Send email or call if you plan to attend: x3-6989 or <dibner@mit.edu>.

The Ocean's Biological Carbon Pump: Mechanisms of Nutrient Supply to the Subtropical Surface Ocean*—Prof. Steven R. Emerson, Univ. of Washington. EAPS Department Lecture Series. 4pm, Rm 54-317. Refreshments, 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu>, <http://www-eaps.mit.edu/dept_sem.html>.

Ocean Isopycnic Modeling beneath Ice Shelves*—Prof. David M. Holland, Courant Institute of Mathematical Sciences, New York Univ. Sponsored by Physical Mathematics Seminar with Department of Mathematics. 3-4pm, Rm 2-338. Refreshments at 4pm in Rm 2-349. More info: x3-4387, <bush@math.mit.edu>.

High K Dielectrics for Gigascale CMOS and Flash*—Lalita Manchanda, Lucent Technologies. MTL VLSI Seminar Series. 4-5pm, Rm 34-101. Refreshments at 3:30pm. More info: x3-0292, <mathias@mtl.mit.edu>, <http://www-mtl.mit.edu>.

Presentation*—Scott Copeland, United Technology Research Center. Gas Turbine Seminar Series. 4:30pm, Rm 31-161. Refreshments 4:15pm. More info: x3-2481, <dragon1@mit.edu>.

Religion and Politics in the Persian Gulf*—Prof. James A. Bill, The College of William and Mary. Sponsored by Center for International Studies. 4:30 pm, Rm E51-095. The Emile Bustani Middle East Seminar. More info: x3-8961, <stilwell@mit.edu>.

"Get the Message?" An Update on Advanced Speech Interfaces Research*—Christopher Schmandt, Speech Research Group at the Media Lab. Sponsored by Media Lab. 5-6pm, Bartos Theater. More info: x3-0338 <http://www.media.mit.edu/Events/>.

The Increase of R&D and Venture Businesses in Japan*—Prof. Koichi Masubuchi, ocean engineering and materials science. Sponsored by MIT Japan Program with ocean engineering and materials science. 5:30 pm, Rm 4-237. More info: x2-1483, <mitj-info@mit.edu>, <http://www-japan.mit.edu/mitjapanprogram/>.

WEDNESDAY, APRIL 28

Capturing Early Light and Diffusive Light for Imaging Applications*—Robert Alfano, City Univ. of New York. EECS / RLE - Optics & Quantum Electronics Seminar Series. 11am, Rm 34-Grier Room B. More info: x3-8504, <tippen@mit.edu>.

Trading with the Enemy During Wartime*—Prof. Jack Levy, Department of Political

Science, Rutgers Univ. Sponsored by Security Studies Program. 12-1:30pm, Rm E38-615. Bag lunch. More info: x3-0133, <levine@mit.edu>.

Vertical Mixing During the North Atlantic Tracer Release Experiment*—Louis St. Laurent, MIT/WHOI Joint Program. Sponsored by Physical Oceanography. 12:10-1:10pm, Rm 54-915. More info: x3-2177, <ganacho@gulf.mit.edu>, <http://puddle.mit.edu/~ganacho/sack.html>.

Lecture on Science Policy: Issues in Starting and Running a High-Technology-Based Business*—Ed Dunn, MIT Enterprise Forum. Professional Development Series. 3:30-5pm, Ashdown House, Hulsizer. More info: x3-2195, <wolff@mit.edu>, <http://www.mit.edu/activities/gsc>.

Structural Genomics*—Dr. Chris Sander, Chief Information Science Officer, Millennium Predictive Medicine. Problems and Methods in Bioinformatics. 4pm, Rm 56-114. More info: x8-0398, <gregstep@mit.edu>.

Shuffling Cards and Lie Theory*—Dr. Jason E. Fulman, Dartmouth Univ. Sponsored by Combinatorics Seminar with Department of Mathematics. 4:15-5:15pm, Rm 2-338. Refreshments served at 3:30pm in Rm 2-349. More info: x3-6544, <sara@math.mit.edu>, <http://www-math.mit.edu/~combin>.

THURSDAY, APRIL 29

Weak Links in Superfluid 3He: A New Tool to Measure Macroscopic Quantum Phenomena*—Richard Packard, Univ. of

California at Berkeley. Physics Colloquium. 4:15pm, Rm 10-250. Refreshments in Rm 4-339 at 3:45pm. More info: x3-4801, <physhdq@mit.edu>, <http://web.mit.edu/physics/www/Colloquium/current.html>.

FRIDAY, APRIL 30

The Motion of Small Particles in Viscoelastic Fluids*—Ronald Phillips, Univ. of CA, Davis. Chemical Engineering Department Spring Seminar Series. 3-4pm, Rm 66-110. Reception at 2:45pm. More info: x8-7031, <arline@mit.edu>, <http://web.mit.edu/cheme/www/>.

Extremes in Thermodynamic Machines*—Prof. John Brissson, Mechanical Engineering Dept. Mechanical Engineering Spring Seminar Series. 3-4pm, Rm 3-270. Refreshments to follow in Miller Room, 1-114. More info: x8-5807, <bhenson@mit.edu>.

Thermodynamic Modeling as an Aid to Understanding Magmatic Evolution*—Prof. Mark S. Ghiorso, Univ. of Washington. EAPS Department Lecture Series. 4pm, Rm 54-915. Refreshments, 3:30pm, Ida Green Lounge. More info: x3-3382, <bevkt@mit.edu>, <http://www-eaps.mit.edu/dept_sem.html>.

Parking Functions, Allowable Pairs and a Symmetry in Trees*—Dr. Louis Kalikow, Brandeis Univ. Sponsored by Combinatorics Seminar with Department of Mathematics. 4:15-5:15pm, Rm 2-338. Refreshments at 3:30pm in Rm 2-349. More info: x3-6544, <sara@math.mit.edu>, <http://www-math.mit.edu/~combin>.

COMMUNITY CALENDAR

An Evening with the Capitol Steps*—Wednesday, April 14. Sponsored by LSC with Council for the Arts, De Florez Fund. 8pm. Kresge Auditorium. Tickets are \$5 for the MIT Community; \$10 for other college students; \$20 for the general public. Purchase at The Source in the Student Center or via credit card at x3-0465. More info: x3-0465 <lsc@mit.edu> <http://lsc.mit.edu/capsteps>.

MIT Working Group on Support Staff Issues meeting*—Thursday, April 15, 11:45-1:30 in Bush Room, 10-105. Agenda: seminar and tribute to Joan Rice. To attend: please contact Heather Mitchell at <mheather@mit.edu> or x3-9474. The Working Groups a volunteer organization of support staff and administrators working to improve the support staff environment at MIT.

Radio Societies SWAPFEST*—Sunday April 18, 9am-2pm. Sponsored by the MIT Radio Society and the MIT Electronics Research Society. Albany St Garage and parking lot. Buy, sell or swap almost anything hi-tech. \$4 admission; \$3 with MIT ID. More info or for sellers space call x3 3776.

Wives Group*—April 14: Work and Family. April 21: The American Political System. April 28: Art in Bloom at the MFA. Meet in Kendall Sq. at 3pm. A support network sponsored by MIT students for partners and spouses of students, staff and faculty. Meetings held every Wednesday from 3-5pm in W20-400. Childcare provided. More info: x3-1614 or <http://web.mit.edu/medical/wivesgroup>.

Sloan's Diversity Day spawns discussion, competition ideas

■ By Paul Denning
Sloan Communications

"Why would the world's leading school of management want to investigate diversity?" Mary Rowe (special assistant to the president, ombudsman and adjunct professor of management) asked rhetorically last Friday at the Sloan School's third annual Diversity Day. The event is a day set aside during the academic week for the Sloan School community to examine closely issues of diversity that can bring individuals and organizations into conflict, or—if wisely understood and mined—can enhance their lives and profitability.

Diversity can have a positive effect on a business's bottom line, said keynote speaker Jeff L. Shames (SM 1983, chairman and CEO of MFS Investment Management) in answer to Ms. Rowe's question. Maureen Scully noted that "people doing diversity cases need to be bilingual—able to talk about both the moral and business reasons for diversity." Dr. Scully is the Elizabeth Barrett-W. Maurice Young Career Development Assistant Professor in Business Ethics.

During the afternoon session, Susan C. Shackford (Sloan Fellow, 1994), gave a punchy primer on the art of developing a diverse workforce. Sloan School Dean Richard Schmalensee, who opened the afternoon session, asked everyone to help design research and action plans to promote diversity. Alexander d'Arbeloff (SB 1949), chairman of the MIT Corporation and of Teradyne Corp., concluded the day with the observation that "in today's changing world, if you're not changing within your company, you're going to have a problem."

Diversity Day offered more than 200 attendees exposure to diversity issues (some unexpected, such as the importance of playing golf) and some unexpectedly sensitive (age discrimination, for example). They also had a chance to enter a "\$10K Return on Diversity (R.O.D.)" competition, a first for Diversity Day. In the competition, teams submit research proposals or action plans that could result in mutual gains for businesses or organizations with diverse workforces. Prizes totaling \$10,000 will be distributed among winning entries.

The teams—randomly chosen groups of Sloan faculty (including Dean Schmalensee), staff and students who worked together in the midday breakout sessions—discussed topics such as how merger and acquisition layoffs affect diversity, how diversity in a workforce affects sales, how a woman could run successfully for president, chauvinism, how empowering low-level teams in an organization can reduce costs, reasons for nurturing women entrepreneurs, and how homogeneity (hiring and promoting people who look and think just like you do) can limit opportunities and make organizations inefficient and unproductive.

Final suggestions for the competition, which the teams will develop into formal proposals in the next two weeks, focused on how diverse workforces could result in mutual

gains for businesses or organizations, including Sloan itself. For example, one team called for putting more effort into helping new students, who come from all over the world, relocate in Boston and assimilate into the Sloan community.

"Boston is a captive, incredibly competitive labor pool," Mr. Shames said. "Attracting the brightest and best people to work for you has to be your focus. You need to have a reputation as a great place to work—for people of color, people with different sexual orientations, women. It's hard to attract these people. They self-select themselves out of the pool."

"We have to be more proactive—educate them about our opportunities and learn about their needs. We want to attract people who think differently than we do so that we can come up with new ideas together. Diversity makes American companies a lot stronger in the marketplace. We're more sensitive to different cultures than our competitors are. Representing diversity is a real positive for companies operating in the global marketplace. It makes us better competitors," Mr. Shames said.

Mr. d'Arbeloff agreed. "The United States has the greatest economy in the world," he said. "It's entrepreneurial, because we can reallocate our resources toward things that are productive. We are probably the most inclusive society in the world. An economy moves on the talent that is available. You don't want to miss some talent because of your attitude. Diversity means getting the best talent available in your society to work in your organization."

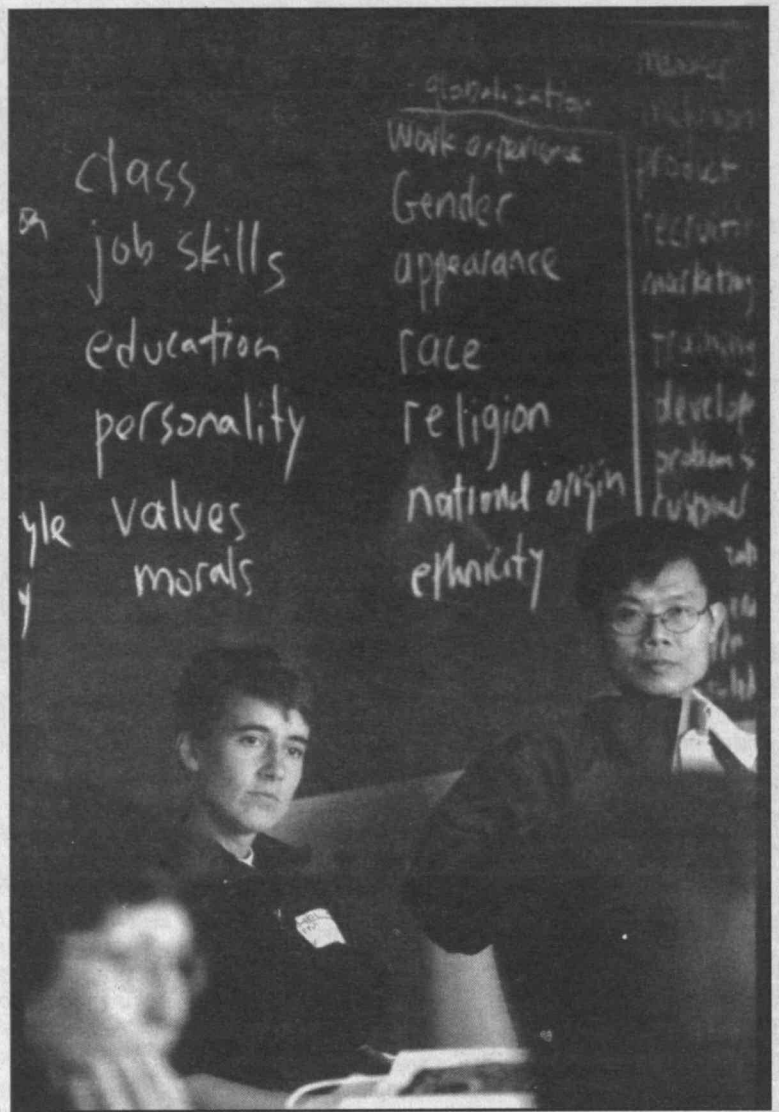
Speaking before the breakout sessions, Dr. Scully listed the Sloan faculty, staff and students on Sloan's six-year-old Diversity Committee by name. "It's a really diverse team; it's hot; it hums," she said. And she asked some hard questions: What helps recruit and retain women? Can you create new niche markets when you single out segments of society—for example, mothers of young children? How can you integrate diversity into your everyday ways of doing things? What is the impact of diversity?

Ms. Shackford described diversity as "a real business case. But it doesn't happen by itself. It has to be championed by the leaders in the company and supported by the whole workforce. It works when we work at it." She is vice president of parts manufacturing for Sikorsky Aircraft, part of United Technologies Corp.

"As managers, it's our job to pick candidates and develop environments that bring all views to the table and result in good decisions. At my company, 95 percent of our customers used to be the military. Now, 60 percent are international. They have different faces, different cultures. We need their trust. To be competitive, we have to be diverse."

The speakers agreed that "it's hard to get quantitative information, an ROI [return on investment], on human capital in the workplace. But diversity needs to be a business goal. Your greatest resources are your human resources."

United Technologies Corp. contributed financial support for Diversity Day.



Sloan School MBA student Kristin Wise (left background) and Peiguan Wu, an International Faculty Fellow from Lingnan, were among those who participated in Diversity Day sessions. Photo by Mark Ostow

Notes from the Lab

THE PSYCHOLOGY OF MONEY

People's complex attitudes toward money often defy economic theory. So says Drazen Prelec, associate professor of management science at MIT's Sloan School of Management.

Professor Prelec's studies of consumer behavior focus on the irrationalities people exhibit toward money—why they buy lottery tickets and insurance at the same time, for instance. Although his work is designed primarily to help firms understand how pricing and payment systems affect consumer buying decisions, his findings offer a glimpse into our own complex relationships with money.

Professor Prelec said our spending habits are based on an accumulation of rules, like "I never buy high-priced gourmet foods." Those rules, he says, keep us out of financial trouble, and we suffer a sting of guilt whenever we break one. But he added that companies could do more to lessen the sting—by adopting bundled pricing schemes or "flat-rate" arrangements.

"When items in a bundle are not priced separately, then no individual item is 'responsible' for the cost; hence, it feels free," he said. "And that provides a genuine mental benefit. An ideal pricing system should minimize the psychological burden of payment but should also allow for a correct accounting of costs. The paradox is that the consumer wants to know how much everything costs but does not want to unduly have to think about these costs." His work is sponsored by the NSF.

Eve Downing, Spectrum

ANCIENT NILE PROVIDES CLUES TO EL NIÑO

Hydrologists at MIT used records of the Nile River's height to put recent occurrences of El Niño into historical perspective.

Elfatih Eltahir, associate professor of civil and environmental engineering, and graduate student Guilang Wang compared records of the Nile River—which indicate years of flooding or drought—with records of the temperature of the Pacific Ocean—which indicate El Niño years—from 1872 to 1997. They found that 30 percent of the natural variability in the Nile's water level fluctuations could be linked to El Niño. Based on that information, they analyzed ancient records (kept since 622 AD and measured with a simple gauge, the nilometer) of Nile water levels for the past 1,000 years.

Using the Nile's height as an indicator of El Niño years, Professor Eltahir and Mr. Wang determined that El Niño has occurred more often and with longer duration in the past two decades than in most similar periods during the last millennium. Continuation of this trend for a few more decades would indicate a shift in global climate, but Professor Eltahir cannot say whether that shift is the consequence of human activity.

This research, funded by NSF, NASA and the Alliance for Global Sustainability, was published in the February 15 issue of Geophysical Research Letters.

Denise Brehm

This column features summaries of MIT research drawn from several sources. If you have an item to suggest, send it to Deborah Halber in the News Office, Rm 5-111, or <dhalber@mit.edu>.

Sloan launches e-commerce awards

The Sloan School of Management has announced the first annual MIT Sloan E-Commerce Awards, which will be presented at a May 11 ceremony to be broadcast live over the Internet.

In keeping with Sloan's focus on the practical implementation of business theory and technology, the entries must have implemented a business theory or technology to be eligible for nomination in a particular category.

"We are living in a time that may be as significant as the dawn of the Industrial Revolution. It is our goal to recognize the successful business and technology innovators that are leading this change on the Web," said Assistant Professor Nader Tavassoli, co-director of Sloan's new MBA track on electronic commerce and marketing.

Anyone wishing to nominate a company (including his or her own) can do so at the awards web site at <<http://www.mitawards.org>>, which also has additional information about the award categories.

Companies nominated for each award category will be selected in a two-stage process. A committee of MIT faculty members and business leaders including Bill Porter, founder of E*Trade, will select final winners.

- The award categories are:
- Re-Inventor Award—best reinvention of an existing industry
 - Internationalist Award—best servicing of international customers
 - Rookie of the Year Award—most promising "up and coming" company
 - Technology Innovator Award—most promising technology
 - Web Transformation Award—most impressive transformation of

an established company into a web-based business

- Social Responsibility Award—best use of e-commerce for social responsibility

The awards will be part of Sloan's new education program on electronic commerce and marketing, announced in February and accepting its first students in fall 1999, that will build on MIT's extensive expertise in electronic commerce and the Internet. Faculty will work with industry leaders to develop knowledge, insights and techniques that shape future technology and management practices. Details about the program can be found at <<http://mitsloan.mit.edu/news/releases/eccommerce.html>>.

For more information on the E-Commerce Awards, contact Paul Denning at x3-0576 or <denning@mit.edu>.

Goody building arts prize offered

Applications for this term's Marvin E. Goody Prize, a \$5,000 award for a master's thesis that advances the building arts, are now available.

Joan E. Goody of Goody, Clancy & Associates in Boston established the prize in 1983 as a memorial to her husband, Marvin E. Goody, an MIT alumnus and faculty member.

The award aims to extend building techniques and use of materials, to encourage links between the academic world and the building industry, and to increase appreciation of the bond between good design and good building—criteria intended to reflect the range

of Professor Goody's interests as a teacher, researcher and designer.

The competition is held every January (for theses completed four months later) and May (for theses completed the following January). It is administered by a committee including faculty members from the Departments of Architecture and Civil and Environmental Engineering.

Forms and further information are available in the Department of Architecture headquarters in Rm 7-337. The deadline for applications is 5pm on Wednesday, May 5.

Do you have news or information you'd like to share with the MIT community or outside readers?

Contact the News Office at x3-2700 or send e-mail to <newsoffice@mit.edu>. Also see our web page at <http://web.mit.edu/newsoffice/www>

Researcher examines damage to concrete walls in tunnel fires

■ By Denise Brehm
News Office

Fires in long traffic tunnels are rare. But when they occur, they tend to burn long and hot, inflicting damage on the concrete walls that requires months of closure and costs millions of dollars in economic loss.

At least 40 people died in the March 24 fire in the Mont Blanc tunnel connecting France with Italy, which burned for two days and reached a temperature of 1,832 degrees.

When fire burned for 10 hours in the 31-mile tunnel connecting France and England in 1996, the concrete walls peeled away layer by layer like an onion, destroying entire portions of the 20-inch-thick concrete ring and leaving the chalky soil exposed in places. Repairs took six months. Tunnel closure caused an estimated loss of \$1.5 million per day.

A researcher at MIT now believes he understands exactly what happens to concrete in extreme heat, a first step to being able to design a more fire-resistant concrete for use in tunnel walls.

In two papers published in the *Journal of Engineering Mechanics* last month and prompted by the 1996 fire in the tunnel under the English Channel (the Chunnel), Franz-Josef Ulm and two colleagues analyzed the failure of tunnel walls. They examined the mechanical properties of concrete at the molecular level and created a computer model to mimic the material's reaction to intense heat.

"We used an interdisciplinary approach to this problem. Using chemistry and mechanics, we considered the mechanisms at the scale of a few water molecules to explain what happens to a 45cm tunnel ring during fire," said Professor Ulm of the Department of Civil and Environmental Engineering, lead author of both papers.

"Whatever money you put into research in this area will pay off," he said. "There is no comparison between the enormous economic loss and the cost of research."

He and two coauthors—Professor Olivier Coussy of the Laboratoire Central des Ponts et Chaussées in France and Professor Zdenek Bazant at Northwestern University—discovered that when mature dried concrete is exposed to extreme heat for long periods of time, the chemical bonds between the water molecules in the concrete break, destroying molecular bridges that bind together the various materials that make up concrete.

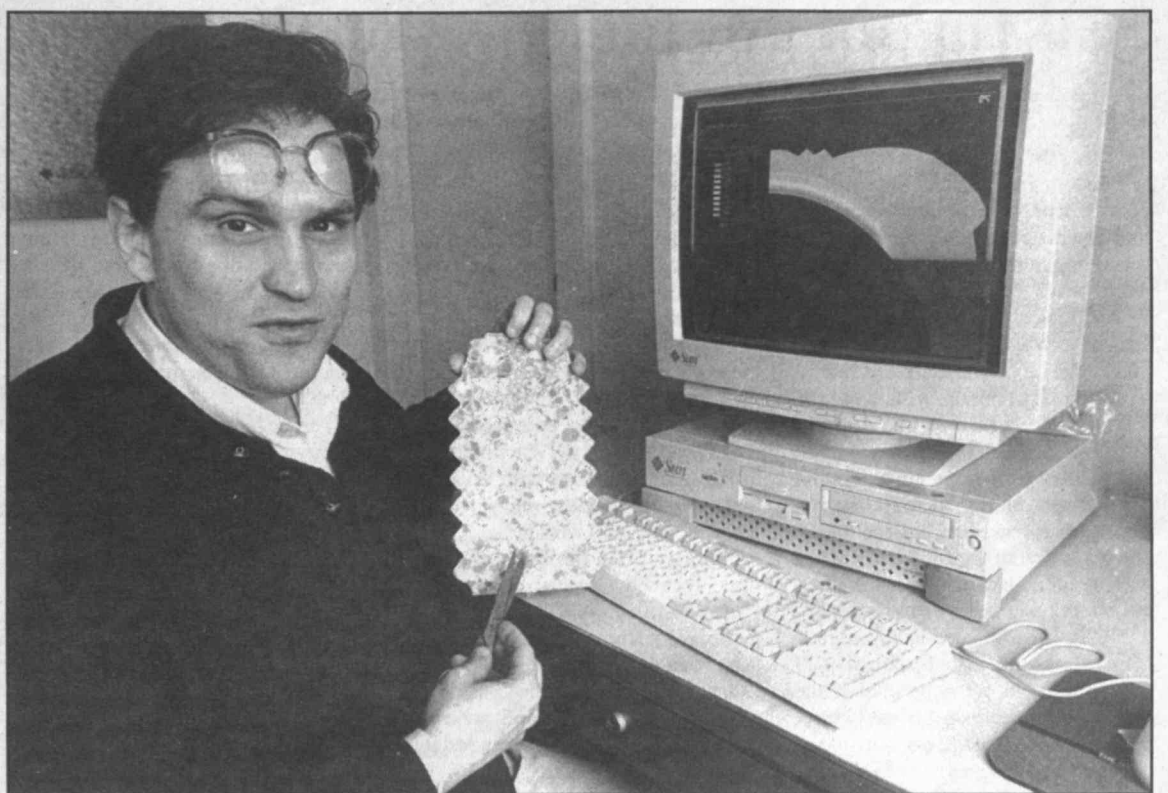
As the water molecules are pulled out of the skeleton through dehydration, the concrete loses its cohesion and weakens, pushing pieces of the concrete off the tunnel walls in very thin layers resembling onion peel. This phenomenon, called spalling, can eventually work its way through the entire concrete ring lining a tunnel, layer by layer.

"After the [Chunnel] fire, there were pieces of the spalled concrete on the tunnel floor. You could actually see the aggregates in the material in these thin slices," said Professor Ulm.

If the soil between the tunnel wall and the English Channel had not been stable at the points where this happened to the four-year-old Chunnel, water would have rushed in, he said. "There's no recovering a tunnel. Once the water comes in, you can't pump it out again."

One possible solution to the spalling problem is to include tiny plastic fibers in the concrete mixture. When heated, the plastic would melt and reduce the risk of spalling. Another answer could be to use certain paints or coatings on the concrete.

Concrete buildings receive ratings indicating how long the structure can withstand fire. For instance, a class 60



Professor Franz-Josef Ulm holds up a block of concrete to show the porous nature of the material. On the computer monitor is a representation of how the concrete degraded in the Chunnel fire, peeling off in layers.

Photo by Donna Coveney

building can withstand 60 minutes of fire; a class 90 building, 90 minutes. Tunnel fires are an animal of a different color, with very hot temperatures lasting much, much longer. The tunnel itself sometimes works like a convection oven, drawing air in to fuel the fire. The air temperature during the Chunnel fire reached more than 1,000 degrees, heating the concrete to nearly 1,300 degrees.

Professor Ulm pointed out that the United States hasn't seen a big tunnel fire like those two in Europe, but it's not impossible. Subway tunnels gener-

ally include sprinkler systems, giving them a tremendous advantage over long underground or underwater traffic and rail tunnels. Those longer tunnels are usually equipped with modern information technology equipment that monitors traffic, provides safeguards against fire and swift communication when it does occur. But those can fail, as they did in the Mont Blanc and English Channel tunnels.

According to Professor Ulm, who began this research while at the Laboratoire Central des Ponts et Chaussées,

people in Europe are more concerned in general about the degradation of concrete in infrastructure.

"Research into concrete degradation was triggered by the problem of nuclear waste disposal, where you need a clear prediction over a long period of time," he said. "In Europe, people are also aware of the costs which are coming for infrastructure renewal and the research and development necessary to monitor it. This will be one of the great challenges to the United States in the new millennium."

Community Service Fund drive kicks off

The Community Service Fund (CSF), which supports Cambridge-based organizations for which members of the MIT community volunteer, has begun its annual fundraising drive.

The CSF was established in 1968 by a vote of the faculty to strengthen cooperation and understanding between MIT and the Cambridge community. In 1998, 20 agencies received allocations from CSF, which raises approximately \$60,000 a year through its annual fund drive, the CSF Road Race (scheduled this year for May 8), and the Commencement plant sale.

"For members of the MIT community, the fund serves as a reminder that we champion those among us

who volunteer their time, talent, and energy through local public service. To our Cambridge neighbors, it demonstrates our strong concern and willingness to face various challenges together," said Paul Parravano, secretary of the CSF Board of Trustees and co-director of the Office of Government and Community Relations.

Institute employees recently received a letter from board co-chairs Rebecca Vest and Professor Woodie Flowers of mechanical engineering, inviting donations to the CSF. For more information about the Fund and related events, contact David Cohen at x3-1989 and watch future issues of MIT Tech Talk.

'Liquid cartilage' could help make restorative procedures easier, safer

■ By Deborah Halber
News Office

Researchers at MIT have found a way to inject into the body a cartilage-laced liquid that, when exposed to light, hardens into cartilage or a kind of "living glue" that connects existing cartilage to bioengineered tissue.

"This substance basically replaces cartilage," said Jennifer Elisseeff, a graduate student in the Harvard-MIT Division of Health Sciences and Technology and lead researcher on the discovery, which has been done on animals and has implications for tissue engineering, plastic and orthopedic surgery and drug delivery in humans. The work was described in the March 1999 Proceedings of the National Academy of Sciences.

Photopolymerizations—creating polymer networks in materials in response to light—are used for bone restorations, filling teeth and for coatings for artificial implants.

This new method potentially could allow physicians to inject a photopolymer material exactly where they want it before shining light on the exterior surface of the skin to turn the viscous liquid solution into a gel. It takes about two minutes of light exposure to polymerize the material injected beneath it.

This noninvasive method of rebuilding damaged or missing cartilage in the nose, ears or joints may make it easier for physicians to do restorative work. Currently, placing self-hardening gels in the body is a tricky business. Physicians must expose the materials to light in "open" environments such as the mouth or during surgery. They must work in a narrow range of temperatures and environments.

By using an injectable system, phy-

sicians can precisely place the material while it is still a liquid, and even suck it out and reposition it if necessary.

"This is a method of cartilage tissue engineering that makes it easier to implant a hydrogel" in the body, Ms. Elisseeff said. This method could be used to create a variety of new, minimally invasive surgical procedures, or control the release of an encapsulated protein.

She has worked on this research for four years with tissue engineering pioneer Robert S. Langer, the Germeshausen Professor of Chemical and Biomedical Engineering.

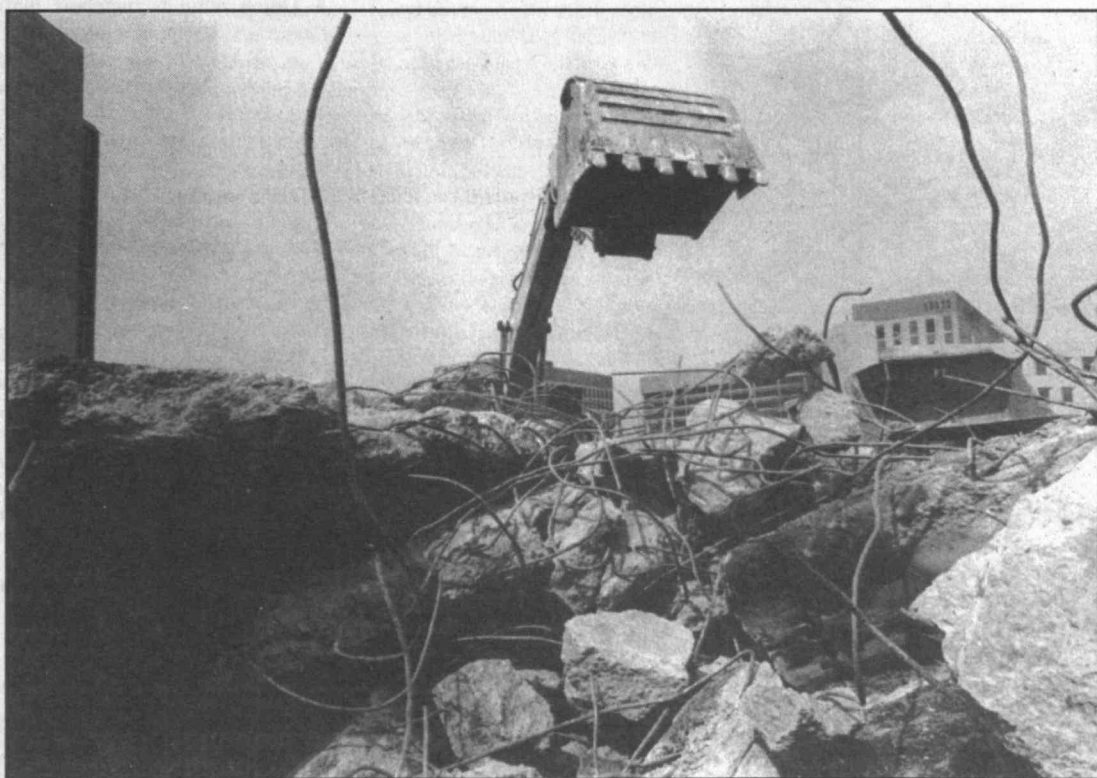
After hearing plastic surgeons at Massachusetts General Hospital say they would like to have more control over the polymerization reaction, Ms. Elisseeff pursued the idea that light could be used to polymerize an implant through the skin.

One of the possible applications of this approach is to use the liquid cartilage as a biological glue to hold bioengineered cartilage in place and integrate it with existing cartilage. Because the liquid includes cells that form living tissue, it is a kind of living glue that can be used to replace or augment damaged knee cartilage, for instance, in patients with osteoarthritis or sports injuries. The hydrogel acts as a scaffold for engineering the growth of cartilage tissue, which will grow to fit the dimensions of the scaffold, Ms. Elisseeff said.

It's a fact

In 1903 Lydia G. Weld became the first woman to receive an engineering degree from MIT, the SB in naval architecture and marine engineering.

Take it down



Building 20 is, for the most part, nothing but rubble and rebar. Passersby could feel the earth shake as crews from general contractor LVI Environmental battered the remains of the cement foundation.

Photo by Donna Coveney

Random Hall residents monitor one of MIT's most-washed web sites

Need a washer or drier? Check the web.

That's the drill in the laundry room at Random Hall, thanks to Philip A. Lisiecki (SB 1996), who wired up the four dryers and three washers while he was living at the residence during his junior year.

Mr. Lisiecki, now a graduate student in electrical engineering and computer science (EECS), created the Internet laundry hookup, with help from Kevin Lynch (SB 1996), who is attending graduate school at Boston University. It allows the residents to monitor the washers and dryers via computer from their rooms, avoiding the drudgery of observing the final cycle while waiting for a machine. The web site is at <http://laundry.mit.edu/laundry>.

"I first got the idea late at night," Mr. Lisiecki recalled recently. "I thought, 'Wouldn't it be cool if the laundry machines were on line? Then I wouldn't have to go downstairs to see whether the machines were available.' At first it was a purely silly, frivolous idea, but the people I mentioned it to eventually realized that it was a pretty cool idea. So I built it and Kevin and I

installed it.

"It wasn't too hard to do, but there were a few challenges to overcome, such as how to get useful information out of the machines without altering the machines or dealing with high voltages, and how to get the information from the basement to my computer on the second floor. But a little thought revealed solutions such as hijacking the dorm's old phone wiring.

"Once it was all running, everyone liked it. I could tell people used it since every time I turned my machine off for a half hour, someone with a laundry basket would wander by my room to find out what was wrong."

Shortly after the laundry server was created, housemaster Nina Davis-Millis, an MIT information technology librarian, suggested that it be included in a New York Public Library exhibit on innovative uses of the Internet. Her friend, who was organizing the exhibit, included it in a proposal for the exhibit.

"Her superiors were heartily displeased with her," said Ms. Davis-Millis. "They told her that she was too gullible, that she apparently was not

familiar with the noble MIT tradition of hacking, but that it ought to have been obvious to her that hooking washers and dryers to the Internet was impossible." Thus, on the grounds that it couldn't be done, Random Hall's Internet laundry connection was not included in the NYPL Internet exhibit. To which Mr. Lisiecki replies, "They seem to have a fundamental misunderstanding of the Internet: nothing is too trivial."

The system, still in place, provides a time-management perk for the 93 undergraduates and three graduate resident tutors who now live in Random Hall at 282 Massachusetts Ave. in Cambridge. When Mr. Lisiecki graduated, the server software and connection were passed on to Jacob Schwartz (SB 1998, now a graduate student in EECS) and later to Daniel Kamalic, who graduates in June. Gary Zacheiss, a junior in physics, will be in charge next year.

Ziff-Davis Broadcasting recently filmed a segment on the setup in conjunction with Yahoo! magazine's Most Wired Campus survey.

Robert J. Sales



Alumnus Kevin Lynch (left) and graduate student Philip Lisiecki wired the washers and dryers in Random Hall to the Internet so they could check their usage status and minimize the time wasted in waiting for a machine. Though no longer residents, they still "consult" for Random Hall.

Photo by Donna Coveney

Obituaries

IRVING R. BAIRD

A funeral Mass was held in St. Michael's Church in Bedford for Irving R. Baird, 65, of Bedford, a former Lincoln Laboratory service staff employee who died on March 24. He retired last July after working at MIT for 16 years.

Mr. Baird is survived by his wife, Ita, and several nieces and nephews. Memorial contributions may be made to the Bedford Council on Aging, 1-2 Mudge Way, Bedford, MA 01730 or the Bethke Cancer Center, 133 Old Rd., Concord, MA 01742.

JAMES PANNELL

James Pannell, 79, of Dunnellon, FL, a former Sponsored Research Staff member at Lincoln Laboratory, died on March 26. He retired from Lincoln Lab in 1980 after working there for 24 years.

Mr. Pannell is survived by his wife, Mary; four daughters, Joan Pannell of

New York, NY, Ruth Boiteau of Chelmsford, Marjorie Pannell of Chicago and Susan Pannell of Washington, DC; two sons, Michael and Lawrence of Massachusetts; two sisters, Mary A. Wachs of Eureka, CA, and Katherine Gruenberg of England; and three grandchildren. He will be buried in Brookline Cemetery in Brookline.

NORMAN E. COATES

A burial Mass was held on March 17 at St. Brigid's Church in Lexington for Norman E. Coates, 82, of Lexington, a former Campus Police patrol officer who died on March 12. He retired from MIT in 1981 after working here for 24 years.

Mr. Coates is survived by his wife, Jean; two daughters, Norma J. Coates and Teresa M. Coates; a son, James; a sister, Pearl Moreland of Texas, and a granddaughter. He was buried in Westview Cemetery in Lexington. Donations in his memory may be made

to the St. Brigid's Restoration Fund, 2001 Massachusetts Ave., Lexington, MA 02421 or Emerson Hospice, c/o Emerson Hospital, 133 ORNAC, Concord, MA 01742.

MIT to host engineering education workshop

MIT is hosting a major ECSEL workshop (Engineering Coalition of Schools for Excellence in Education and Leadership) on the reform of undergraduate engineering education on April 30 and May 1 in Building E51.

The three panels will focus on curriculum reform and learning by design, faculty development, and industry and curriculum reform. The workshop aims to describe and disseminate the main results of ECSEL's efforts over the past decade; to bring together faculty department chairs and deans from a variety of

engineering schools to explore how the most significant barriers to reform can be overcome; and to set effective policies for the future.

ECSEL is an NSF-funded coalition of seven engineering schools (Howard University, the University of Maryland, Pennsylvania State University, MIT, Morgan State University, the University of Washington and City College of New York) dedicated to the reform of engineering education through the infusion of design throughout the curriculum and to increasing

the recruitment and retention of women and underrepresented minorities.

Panels are free to the MIT community; check in Friday morning between 8:30 and 9am at Wong Auditorium.

ECSEL plans to publish a document based on contributions to a web forum as well as on discussions recorded at the workshop sessions.

For more details, see the workshop's web site at <http://web.mit.edu/engineering/www/ECSEL/wkshp.html>.

Awards & Honors

The Alfred P. Sloan Foundation has announced that Sloan Research Fellowships will go to 100 young scientists and economists, including five from MIT: Associate Professors **Bruce Tidor** of chemistry and **Dora L. Costa** of economics, and Assistant Professors **Elly Nedivi** and **H. Sebastian Seung** (both in brain and cognitive sciences) and **Amihay Hanany** of physics. The two-year fellowships are awarded to young faculty members who have demonstrated great research potential in the physical sciences, economics, mathematics and neuroscience.

Sloan Fellows receive research grants of \$35,000 for a two-year period. More than 400 nominations were reviewed by an 18-member panel of distinguished scientists including Barbara Liskov of electrical engineering and computer science, Steven Lippard of chemistry and Dean of Science Robert Birgeneau of physics. The Sloan Foundation has spent nearly \$83 million since 1955 on the program.

Dr. **Justin Du Bois**, a postdoctoral fellow in chemistry, has won the Nobel Laureate Signature Award for Graduate Education in Chemistry, presented by the American Chemical Society. The award recognizes the research he did as a Caltech undergraduate with advisor Erick Carreira on new methods for making molecules as possible drugs to treat cancer and other diseases. Their research focused on nitrogenating molecules in an attempt to make synthesized pharmaceuticals better match the body's chemical structure.

At the same national meeting on March 23, the ACS also honored alumni **Barry Trost** (PhD 1965) of Stanford University with its Herbert C. Brown Award for Creative Research in Synthetic Meth-

ods, **Chi-Huey Wong** (PhD 1982) of the Scripps Research Institute with the Claude S. Hudson Award in Carbohydrate Chemistry, and **John T. Yates** (PhD 1960) of the University of Pittsburgh with the Arthur W. Adamson Award for Distinguished Service in the Advancement of Surface Chemistry.

Professor **Thomas W. Eagar**, department head and POSCO Professor of Materials Science and Engineering, recently received the Honorary Membership Award from the American Welding Society at the 1999 AWS International Welding and Fabrication Exposition and 80th annual convention held in St. Louis. This award is presented to "a person of acknowledged eminence in the welding profession or who is credited with exceptional accomplishments in the industry."



Eagar

Alexandra Techet, a graduate student in ocean engineering, has won a \$20,000 Link Foundation Ocean Engineering and Instrumentation Fellowship for 1999-2000. The Link Foundation, established in 1953, aims to enhance theoretical and practical knowledge and applications of ocean engineering and instrumentation research, with emphasis on development and conservation of energy resources.

Prabal Chakrabarti, a graduate student in the Technology and Policy Program, has been named as one of 18 Luce Scholars for 1999-2000. The program places young scholars from a wide variety of intellectual fields in 10-month internships throughout Asia.

Dr. **Robert S. Langer**, the Germeshausen Professor of Chemical and Biomedical Engineering, received the 1999 Gustavus John Esselen Award for Chemistry in the Public Interest, presented by the American Chemical Society's northeastern section on April 8.



Langer

In a talk titled "Bio-materials and How They Change Our Lives," Professor Langer spoke about his work developing biodegradable scaffolding to deliver drugs within the body and for the regeneration of organs. Professor Langer was honored for his "interdisciplinary approach to solving medical problems through polymer chemistry and engineering."

Last month, Professor Langer also received the 1999 Award in Polymer Chemistry from the American Chemical Society, for developing polymers that make brain cancer treatments safer and more effective, that provide scaffolding on which to grow tissues such as new skin, and other applications.

Kush Gulati, a graduate student in the Department of Electrical Engineering and Computer Science, has been named the first Maxim Integrated Products Fellow. He expects to receive the PhD in mixed signal integrated circuit design in December. Mr. Gulati, who has earned degrees from the Delhi Institute of Technology and Vanderbilt University, holds one patent and has another pending.

CU can help with course financing

The MIT Employees' Federal Credit Union reminds members that it offers a 6.5 percent, six-month loan of up to \$3,000 to help members take greater advantage of their tuition assistance benefit.

The loan bridges the gap between course enrollment (when full tuition payment is normally due) and course completion, when most tuition assistance plans provide reimbursement. No loan payments are due until the end of the six-month term, when full payment is due.

To be eligible for the loans, members may be participants in any employer's tuition assistance plan.

Joining the credit union requires the purchase of just one \$5 share. Contact the credit union's Loan Department at x3-0090 or mitfcu@mit.edu for information or an application.

Looking for past articles?

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

New LCS chair endowed by 3Com goes to Berners-Lee

■ By Patti Richards
Laboratory for Computer Science

The Laboratory for Computer Science (LCS) on Monday announced the establishment of the 3Com Founders Chair, made possible by a gift of \$2 million from the founders and friends of 3Com Corp. The announcement was made as part of the LCS 35th anniversary celebration.

The first holder of the 3Com Founders Chair will be LCS Principal Research Scientist Tim Berners-Lee, inventor of the World Wide Web and director of the World Wide Web Consortium. That organization, headquartered at LCS, aims to continue developing the capabilities and usefulness of the Web toward its full potential.

The 3Com Founders Chair is a first for MIT in that its primary purpose is to support distin-

guished researchers. Traditionally, such chairs have been designated exclusively for professors in MIT's academic departments.

The chair is being established to commemorate the 20th anniversary of the founding of 3Com. The purpose of the chair is to support research and teaching in computer communication compatibility (the acronym for 3Com) in computer networking technologies such as Ethernet, the Internet and the World Wide Web, as well as research and teaching in the development, standardization and commercialization of these technologies.

METCALFE ORGANIZES

The establishment of the new chair was organized by Dr. Robert M. Metcalfe (SB 1968), vice president for technology at International Data Group.

"What a grand occasion to gather these old friends and compatriots, to celebrate the founding and success of 3Com these last 20 years, and to give back to MIT's Laboratory for Computer Science, from which 3Com sprung," he said. "We recommend to successful company founders everywhere that they take on similar projects for their alma maters. And we are delighted and honored to have Tim Berners-Lee as the inaugural holder of our chair."

Contributors to the chair include founders of 3Com, friends and LCS/MIT alumni. They are Mr. Metcalfe, Gregory L. Shaw (SB 1975), Ronald C. Crane (SB 1972), Larry Birenbaum (SB 1969), John Shoch, J. P. "Pitts" Jarvis III (SB 1969), Kenneth P. Morse (SB 1968), L. William Krause, David E. Burmaster (SB 1969, PhD) and 3Com Corp., thanks to CEO Eric Benhamou.

Commenting on the significance of the gift, President Charles M. Vest said, "This chair, in its name and purpose, celebrates the contribution that university research makes to the nation's economy and technological advancement. Bob Metcalfe's invention of the Ethernet, and 3Com's entrepreneurial success in translating it into a ubiquitous product, demonstrate the important role of academic laboratories like LCS."

Professor Michael L. Dertouzos, director of LCS, commented, "The 3Com Founders Chair, rooted in the spectacular achievements of Bob Metcalfe and our celebrated alumni, will now fuel the future innovations of the lab's distinguished researchers like Tim Berners-Lee. It highlights and celebrates the laboratory's most precious resource—our people."

Gates sees personal data, telepresence as future software issues

■ By Robert J. Sales
News Office

The audience in Kresge Auditorium served as perfect, if unwitting, illustrations of Bill Gates's main points in his keynote speech, "The Future of Software," delivered yesterday in honor of the 35th anniversary of the Laboratory for Computer Science (LCS).

As Ethernet inventor and LCS alumnus Robert Metcalfe (SB 1968) introduced Professor Michael Dertouzos, director of LCS, who in turn introduced Mr. Gates, the crowd of computer industry executives, scientists,

students and journalists clicked on recording devices ranging from PCs to PalmPilots to ballpoint pens to TV cameras.

And that click, Mr. Gates suggested in his 45-minute talk, is the sound of recent history—history in the making and history he believes will be made in the next five to 10 years.

As for recent history, Mr. Gates said, the "PC success loop" tells all: the greater the volume of PCs made, the cheaper they get; the cheaper they get, the more people use them; and as more people use PCs, more software variety is born.

With the present "massive growth potential," the questions are where to go with software and how to get there, he said.

"The art of creating software has changed very little since 1975, when I dropped out of Harvard and started Microsoft. What's required now are breakthroughs in techniques," Mr. Gates said.

Noting that people in the audience and industry in general were already "living the web lifestyle," he said the next phase of software development will shift from analyzing and creating documents to "reading, communicat-

ing, consuming, entertaining and understanding.

"There's still a huge mismatch between data models and whole language. The future of software will include an entire realm of the senses including vision, speech recognition, speech synthesis and motion. In the next decade I see big progress in these areas," he said.

TELEPRESENCE

Of particular interest to both Mr. Gates and his Kresge audience is the "telepresence challenge," he said.

"What do people do at work? They go to meetings. How do we deal with meetings? What is it about sitting face to face that we need to capture? We need software that makes it possible to hold a meeting with distributed participants—a meeting with interactivity and feeling, such that, in the future, people will prefer being telepresent," he said.

As for other areas, Mr. Gates envisions breakthroughs such as digital life records (in which software captures, organizes and stores all one's personal and professional information) and in storage and retrieval.

"Retrieval of personal information is a challenge, raising deep privacy questions," he said. "It's not clear—would you want all your personal records kept in a computer? Storage is also a challenge. Today's user is explicitly involved in moving information around—in the future, all your information will be 'in the cloud,' on the Internet, and it will be constantly backed up and synchronized."

Mr. Gates noted a challenge for the future is in testing software programs. "Testing is the weak link in software," he said, adding that Microsoft has a "huge database of the kinds of mistakes made by programmers. It needs

analysis; we've got openings there!"

The LCS anniversary celebration began on Monday, April 12 with a reception at Boston's Museum of Science. An LCS "Time Capsule of Innovations," sculpted by architect Frank Gehry, was sealed by Professor Dertouzos that evening. The capsule is to be unsealed in 2033 or upon solution of a cryptographic puzzle that is estimated to require approximately 35 years to be solved.

Gift to fund new building for LCS

(continued from page 1)
Center for Computer, Information and Intelligence Sciences, also designed by Mr. Gehry.

President Vest made the announcement Tuesday (April 13) at the opening of a two-day conference titled "LCS35: Creating the Future World of Information" marking the 35th anniversary of the Laboratory for Computer Science. He was flanked on the Kresge Auditorium stage by Mr. Gates, chairman and CEO of Microsoft Corp., and Michael Dertouzos, director of LCS for the past 25 years. Mr. Gates gave the morning's keynote speech, "The Future of Software" (see story above).

"We are most grateful to Bill and Melinda Gates for this wonderful gift, which will not only bring our LCS colleagues back to the heart of the

campus, but will also create new opportunities for interactions and innovations that will once again redefine the information sciences," said President Vest.

"At LCS, we are delighted and excited by this generous gift, which will improve the opportunities of future generations of LCS researchers and students to make forefront innovations in information technology for the benefit of all people," Professor Dertouzos said. "May those generations of students who occupy your building share and reflect your vision and your generosity."

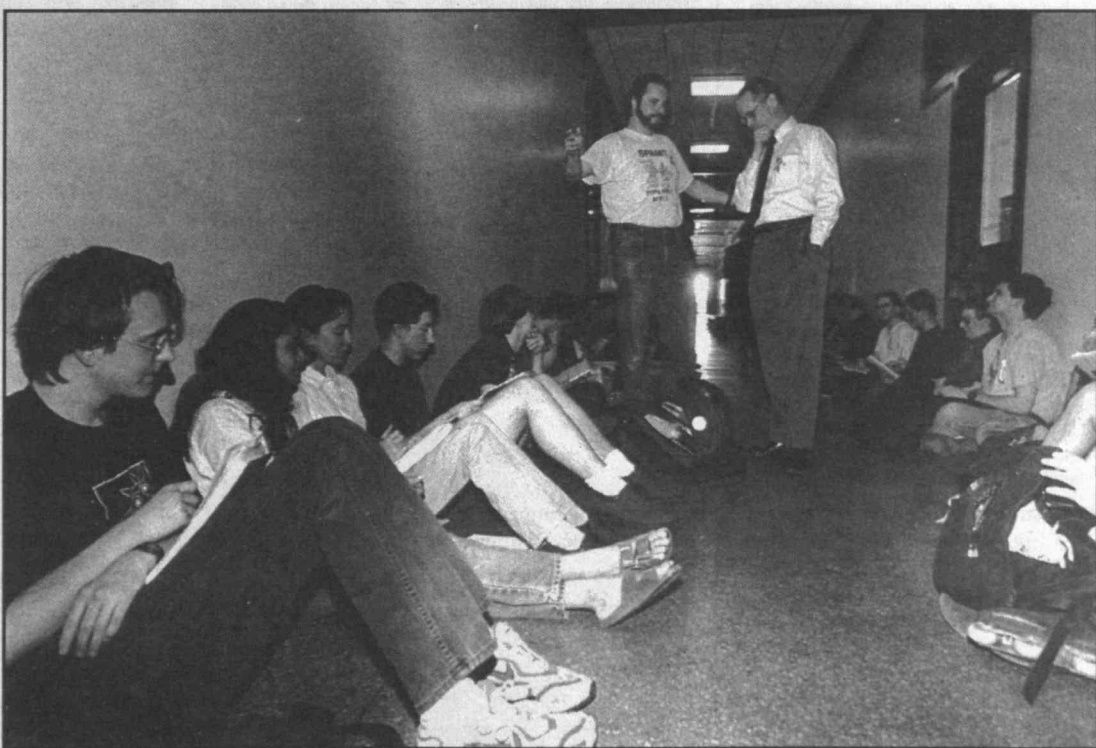
GATES LAUDS LAB

"I feel very privileged to be able to contribute in this way," Mr. Gates said. "When people talk about the United States as a leader in advancing the use of the Internet, it will be because of

institutions like MIT. The MIT Laboratory for Computer Science is one of the most important centers for computer research in the world. I'm happy that this gift will be used to support continued innovation in computer science and the groundbreaking research that LCS is known for."

The Laboratory for Computer Science has been at the forefront of computer science since its inception. LCS members were instrumental in the invention of time-shared computers, spreadsheets, RSA encryption, the Ethernet, X-Windows and the World Wide Web. The LCS is also the home of the World Wide Web Consortium, which strives to move the web forward to its full potential. In addition, LCS research has spawned some 50 companies including Lotus, 3Com, Open Market and RSA Data Security Inc.

Deep-seated concerns



President Charles Vest came out to speak to protesters who occupied the hallway outside his office during last Thursday's "Tool-In," a peaceful protest of administrative actions and attitudes on student housing and social policies with which the organizers disagree. The Tool-In was sponsored by ILTFP (<http://iltfp.mit.edu>).

Photo by Donna Coveney

MIT plays role in campaign to clean up Charles River

(continued from page 1)
research. Students in MIT's Sea Grant program already study water quality in the river in a seminar entitled "How Clean is Clean?"

"The EPA is thrilled to have so many world-class private sector institutions working with us to make the Charles a healthier, cleaner river," Mr. DeVillars told an audience that included government officials, environmentalists, educators and students from Watertown High School. "These private institutions will bring new perspective, new talent, new resources and new strength to this challenging endeavor—a major addition to the impressive group of state, federal and local partners that has already been assembled."

In addition to MIT, members of the newly formed coalition are Boston University, Brandeis, Harvard, Northeastern, Massachusetts General Hospital, Polaroid, Genzyme, Triumverate Environmental Services, Stop & Shop and the Charles River Watershed Association.

In announcing MIT's contributions

to the Clean Charles 2005 campaign at the news conference, Paul Parravano, co-director of the President's Office of Government and Community Relations, said, "We are here today in large part due to the perseverance and strong sense of purpose of John DeVillars. We recognize and admire the role that he and his agency have played in making the dream of a swimmable and fishable Charles an attainable reality."

"MIT has a major stake in this goal. The Charles River is our front yard, providing a playground for the entire community and an important educational tool for our students. More than 2,300 students, faculty, administrators, staff and family members enjoy the river in MIT sailboats and rowing shells. We will all reap the benefits when Memorial Drive becomes beachfront property."

Noting that MIT sailors and rowers must pass a swimming test before setting foot in an Institute boat, Mr. Parravano said, "For decades, that test has been administered in a pool. Thanks to this project, we look forward to the time in 2005 when we can hold swimming tests in the Charles River."

Crossing lights



Lobby 7 pedestrians traverse a shaft of sunlight.

Photo by Laura Wulf

Richardson reassures Bates workers

(continued from page 1) facility. He heard 10 representatives of the Bates researchers talk about what the 25-year-old facility means to them and their careers; he toured the facility and saw projects such as the Bates Large Acceptance Spectrometer Torrid (BLAST), a detector that, when completed, will shed new light on magnetism in atomic nuclei; and he gave employees a pep talk.

Tony Carter, an employee in the facility's computer group, said Secretary Richardson reassured the staff that his personal commitment for the work that goes on at Bates remains intact despite the budget situation earlier this year. (In February, MIT learned that the President's budget for fiscal 2000 showed funding at Bates for basic research into the structure of the atomic nucleus would go from \$10.8 million in fiscal 1999 to \$2.5 million in fiscal 2000, which begins Oct. 1, 1999. At the time, Secretary Richardson told MIT President Charles Vest that he would

file an amendment to the budget to keep Bates alive.)

During Tuesday's visit, Secretary Richardson said his budgetary amendment was officially approved by the Office of Management and Budget on Monday.

"DOE is a science and technology agency and for us to support the work you do is very important," Secretary Richardson told the researchers. "I want to show a commitment to science, and MIT has the best scientists in the world."

Prior to being sworn in as the ninth Secretary of Energy in August 1998, Richardson was US permanent representative to the United Nations. Twice nominated for a Nobel Peace Prize, he has conducted sensitive diplomatic missions that resulted in freeing hostages in Bangladesh, Cuba, Iraq, North Korea and the Sudan.

AWARD PRESENTED

Ceremonies during Secretary Richardson's visit to Bates included

presentation of the Peter T. Demos Award, named for the first director of Bates, for achievement in graduate student research. Secretary Richardson presented the 1998 award to Xiaodong Jiang, who received his PhD from the University of Massachusetts and worked on the Out-of-Plane Spectrometer (OOPS) experiment at Bates.

The Bates Laboratory is a center for world-class experiments in basic nuclear physics. Research is defined and driven by 200 users from 50 institutions from the United States and abroad who carry out experiments in nuclear physics using Bates' high-quality beams and facilities. Work done at Bates leads to a better understanding of the fundamental nature of matter and is an important resource in educating young physicists. Around 120 PhD students have been educated and trained at the Bates Laboratory and now occupy positions in academia, industry and research worldwide.

Horvitz is co-winner of Gairdner Award

(continued from page 1) (1986), Susumu Tonegawa (1983) and H. Gobind Khorana (1980). Professors Sharp and Tonegawa later won the Nobel Prize, while Professor Khorana had already won the Nobel in 1968.

A second Gairdner Foundation International Award went to Professors Avram Hershko of Technion-Israel Institute of Technology and Alexander Varshavsky of Caltech, for discovering the ubiquitin system of intracellular protein degradation and its many functions in the cell.

The foundation also bestowed two Wightman Awards, given periodically to a Canadian who has demonstrated outstanding leadership in medicine and medical science. The six scientists honored by the Gairdner Foundation shared \$180,000.

Drs. Horvitz and Wyllie's work focuses on the crucial balance between cell growth and death, and the disruption of that balance through the dysregulation of apoptosis. Failure to engage programmed cell death contributes to diseases such as cancer, autoimmune disorders and systemic viral infection, while exces-

sive apoptosis can contribute to neurodegenerative diseases and other problems.

In 1986, Professor Horvitz described the genetic basis of apoptosis in development of the nematode *Caenorhabditis elegans*, discovering many of the genes controlling the process and showing that similar genes exist in humans. "Horvitz's work definitively showed that apoptosis is a genetically regulated mechanism and has subsequently led to the discovery of countless novel death-signaling pathways whose dysregulation directly contributes to human disease," the Gairdner citation read.

Professor Horvitz has been an MIT faculty member since 1978. He holds the SB (1968) in mathematics and economics from MIT and the MS (1972) and PhD (1974) in biology from Harvard. Among his many other awards and honors are election to the National Academy of Sciences in 1991, the V.D. Mattia Award from the Roche Institute of Molecular Biology in 1993, and the Passano Award and the General Motors Cancer Research Foundation's Alfred P. Sloan Medal, both in 1998.

Alice C. Waugh

Friday, April 30, 1999
4:00 to 6:00pm
Remarks at 4:45pm
Humanities Library
Building 14S-200
Massachusetts Institute of Technology

Goldhagen to speak today at Holocaust observance

Harvard Professor Daniel Jonah Goldhagen will discuss his acclaimed book *Hitler's Willing Executioners: Ordinary Germans and the Holocaust* following the annual Holocaust Memorial Service at the MIT Chapel this afternoon (April 14).

Professor Goldhagen, whose book has been translated into many lan-

guages, will speak at about 5pm. The service, in the Chapel's main dining room, starts at 4:45pm. Admission to the talk is free and the public is invited.

Professor Goldhagen's talk is sponsored by the MIT Hillel Foundation and the Office of the Dean of Students and Undergraduate Education (ODSUE).

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

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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

Bianchi, deep reddish-brown, 19" diamond frame, just tuned up for the riding season, top-flight components, extras, exceptional cond, must see, \$350 or best. Contact: <sandra@mit.edu> or x3-0758.

Bicycle, Cannondale 3.0 Road Race Series, royal blue, alum, 14-sp, 23", 58cm Suntour no-rust index shifting, Welgo pedals, luggage rack, \$200 firm. Laura 617-547-0564 eves or <laura@mit.edu>.

Snowblower, Craftsman, 8hp, 32" 2 stage, 120V elec start, new block, works grt, you pick up, Danvers, \$75. Dan x3-9533, <cheever@mit.edu>.

Handmade oak LEGO table, 3 x 3 x 2 with some LEGOs, \$100. Don, 978-957-2774 or page 617-882-1348 or email <drs@newton.mit.edu>.

Columbia 15-sp bike, dk green, never used, just needs pedals, \$100. Joanne or Joe 781-284-1278 after 6:30.

Used furniture: Maytag washer & dryer, \$100/ea; Frigidaire w/double doors, gold, \$100; plaid couch, \$100; exercise mach for thighs & legs, \$40. Much more. Contact: <debbied@mit.edu> or x2-1550.

Yamaha Electronics: CD player & AM/FM stereo receiver for sale, best offer. Call 924-8950.

ANIMALS

Spayed F dk calico cat nds new home, outdr/indr, 4 yrs old, lively, vocal, affectionate, gd mouser, best w/mellow feline housemates, if any. Luch x3-2744.

VEHICLES

1994 VW Jetta GL 4-dr sedan, blue, dual airbags, power sunroof, power locks, a/c, new Michelins, garaged, 50K miles, exc cond, \$8900. Call 781-275-8687.

HOUSING

Belchertown: Go West — 2 sunny pond-front wooded building lots, 10 min to Amherst, v private, 17 acres w/creek & 3 acres, perc tested, for sale by owner. Call x3-8020.

Belmont: fully-furn BR/study in priv home, shr bath, light kchn privileges, on transp, visiting scholars, non-smkrs, intl guests welcome, rates based on duration of stay. Mrs. Wolf 617-484-6455.

Brewster, Cape Cod: cottage, 50' priv pond beach, LR, DR, BR, music rm, fplc, piano, deck, sep studio w/bath, slps 6, abuts conservation land, \$700/wk June, \$800/wk July/Aug. Andy, 617-876-6257.

Cambridge, Inman Sq: room in priv hse, furn, smoke-free, environmentally sensitive space, \$600-700/mo all included, refs req. Call 617-625-9839.

Falmouth, Cape Cod: Oct 19-Nov 5, Nov 5-Nov 12, indoor swimming pool, cont. brkfst, 2 baths, slps

2-4, jacuzzi, furn, notify before 7/31, \$700/wk. Call 617-491-4008 or <usat50@gateway.net>.

Franconia Notch, NH: 1BR condo, slps 4, kitchenette, close to golf, trails, horseback riding, Old Man on the Mountain, \$600/wk or bst, avail week of May 7-14, 1999. Call 617-441-3897.

Maine: beaut Mt. Desert Island, 2 oceanfrt cabins, secl, each w/deck/LR/BR/K, lrg windows, 2 sm BR&B; 1 or both avail by wk/mo, avail June, July or Sept only, \$700 ea/wk, \$2,500 ea/mo. Steve x3-5757.

Mt. Wash. Valley: 4BR lakeside cottage, sandy beach, slps 8, furn, w/w, all appl, rowboat, canoe, 5 min to Kancamagus, 15 min to N. Conway, avail wks of 6/26, 7/3 & 7/24, \$800/wk. Call 978-779-6473.

N. Camb: doctoral candidate subletting half of sunny, 6-rm apt, part furn, prkg, porch, safe, quiet, beaut, June 1 - Aug 31, nr Porter/Davis T, M/F, non-smkr, \$550/mo. Email: <sackler@wi.mit.edu>.

N. Camb: fully furn room avail 4/15, prefer long-term, \$500/mo w/4-mo minimum, higher rates for shorter stays. Contact Yellow House at <annals@mit.edu> or x3-7182.

Watertown: June 99-June 00, lrg comfortable furn house w/garden, quiet residential street, 10 min to Hvd Sq, public transp. Call 617-495-3191 days, 617-926-2493.

White Mountains, NH: Waterville Estates, 3BR, 2b, grt vw, pond, 3 htd pools, hot tub, on site tennis, biking, hiking, no pets, non-smkg unit, summer \$595/wk. Chuck, Draper x8-2957.

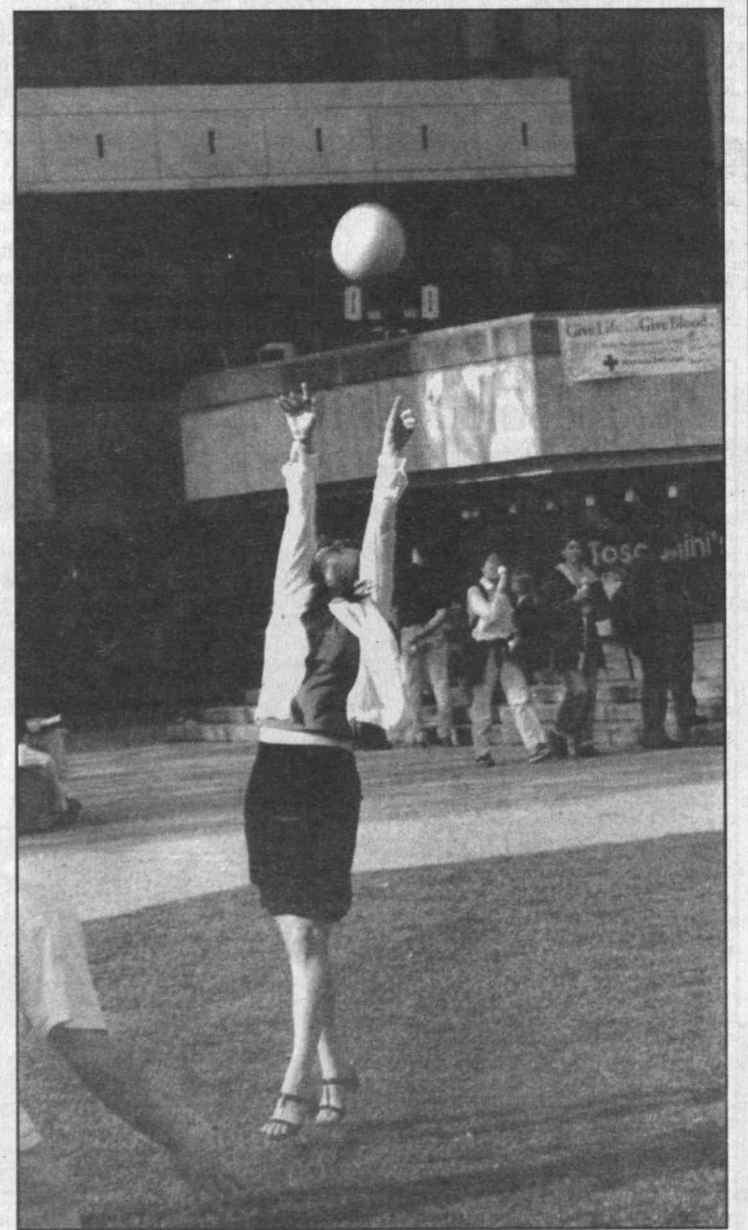
Woburn: shr lrg furn home, lrg 16x14 BR, full kchn, laundry, deck & porch, priv yd, prkg, on MBTA, many extras, male n/s, \$425+util. Call 781-933-7584 eves.

WANTED

Visiting professor looking for furn apt/house w/ 3BR, 2b, in greater Boston area (western suburbs incl), May 15 - Aug 30 (dates flex). Call 617-252-0739 eves or <gabi@mit.edu>.

Small apartment rental or housesit wanted in Boston for the summer, v resp. Call x3-0857.

At her fingertips



Freshman Audrey Chang, undeterred by her nonathletic footwear, stretches for the ball in an impromptu game of volleyball (sans net) on Kresge Oval. Photo by Donna Coveney

Machover's *Resurrection* opens this month in Houston

■ By Mary Haller
Office of the Arts

After years of having his name associated with electronic music, "hyperinstruments" and "opera" in its most untraditional sense, Professor Tod Machover's new opera, *Resurrection*, premiering April 23 at the Houston Grand Opera, marks a new step for the Media Lab composer.

While the orchestration of the piece will be "electronically enhanced," Professor Machover says his goal has been to keep the work unamplified, implying a very different production than his computer-interactive, multimedia

Brain Opera (1996) or his science fiction video-opera *Valis* (1987).

"Over the past few years, I've gotten incredibly tired of loud-speakers and amplification," he told Opera News recently. "One thing I'm trying to experiment with in *Resurrection* is bringing technology to the level of good acoustic sound."

Based on Leo Tolstoy's final novel, with a libretto written by Laura Harrington (a lecturer in music and

theater arts who teaches play-writing), *Resurrection* is a story of spiritual renewal amid the corrupt institutions of a decadent society. The story traces the fate of a Russian prince called a juror for the trial of a prostitute who proves to be the servant girl he set on the road to ruin.

"The opera is meant as a call to action, to make the world a better place," said Professor Machover, whose ancestors came from Russia and who has long found Tolstoy "the most inspiring, most complex and most truthful of all novelists."

Resurrection marks the first time that Professor Machover has collaborated with MIT colleague Ms. Harrington, an award-winning playwright whose plays and musicals have been produced regionally, off-Broadway and in Canada.

"I always imagined *Resurrection* as a work which would sit comfortably in a traditional opera house... and speak directly and immediately to opera lovers while not being 'conventional' in the negative sense," says Professor Machover.

While the score calls for a traditional orchestra and unamplified voices, the orchestration employs special sound-shaping devices built by his team at the Media Lab: a custom software environment created to change the electronic sonorities of three live keyboard players, and a "multimodal mixer" which Professor Machover said will "enable all of the sounds and layers of the opera to be controlled with an intuitive gesture language using the left hand," while the other hand is either playing keyboard notes or controlling sound transformation devices.

But while Professor Machover's background in electronic music will be evident to those who listen closely, his hope is that the electronics will be "subtle and sophisticated enough to blend almost imperceptibly with the physical, acoustic presence of instruments and voices."

Even more important, it seems, is his hope that *Resurrection* will "draw people to consider the higher goals and simple truths that Tolstoy reminds us of so powerfully—and that are so often buried or forgotten in our hectic, complicated lives."

"My music has always been about human possibility and transformation," he said. "I want this piece to be about

how one's own personal growth could have—must have—a powerfully positive effect on other people and on the

whole world."

Resurrection runs at the Houston Grand Opera through May 7.

Arts at MIT

Myriad music events to choose from this month

A kora player from Mali, a contemporary music ensemble from Paris, a Boston-based jazz orchestra and MIT vocalists are among the musicians taking to the stage in the next two music-filled weeks. For more information on the following events, call x3-2826.

SPECIAL GUEST JOINS MITCAN

On Saturday, April 17 at 8pm in Wong Auditorium, MIT's East African performance group, MITCAN, presents a free program of "heart-pounding rhythms, melodious tunes and stories" from both eastern and western sub-Saharan African traditions. MITCAN will be joined by celebrated musician and griot (storyteller) Alamako Balla Tounkara, originally from Mali, who sings and accompanies himself on the 21-string harp known as a kora and will offer music and stories of Mali's Mandinka people. The MITCAN performance, under the direction of Professor James Makubuya, will also include three Ugandan dances.

ENSEMBLE INTERCONTEMPORAIN

Created in 1976 by Michel Guy, France's Minister of Culture, Ensemble Intercontemporain fulfilled the vision of composer Pierre Boulez of an ensemble devoted entirely to music of the 20th century. Under the direction of David Robertson, 16 members of this internationally acclaimed group will present a free concert in Kresge Auditorium on Friday, April 23 at 8pm as

part of a mini-residency at MIT.

The program will feature Karlheinz Stockhausen's *Kreuzspiel*; Igor Stravinsky's *Soldier's Tale Suite*; Iannis Xenakis' *Thallein* and Gyorgy Ligeti's *Piano Concerto* with soloist Florent Boffard. While they're here, the Paris-based Ensemble will also coach students in the MIT Chamber Music Society and present a reading of MIT student compositions.

AARDVARK, MIT SALUTE THE 'DUKE'

A band of MIT "all-stars" headlined by the Aardvark Jazz Orchestra led by Mark Harvey, lecturer in music, will present *An Ellington Centennial Salute* on Saturday, April 24 at 8pm in Kresge Auditorium. Joining Aardvark will be the All Saints Choir of Men and Boys from Ashmont, the MIT Chamber Chorus, and vocal soloists Donna Hewitt-Didham, Pamela Wood (senior lecturer in music) and Jerry Edwards. Ayida Mthembu (associate dean for counseling and support services) will serve as narrator and Thomas DeFrantz (assistant professor in theater arts) will tap dance.

The free concert, presented five days before what would have been Edward "Duke" Ellington's 100th birthday, will offer a spectrum of his works spanning five decades, from familiar standards and portions of extended suites to selections from the "Sacred Concerts." Dr. Harvey's own tribute, *For Edward*, will also be performed. The concert will be taped by WGBH-FM for broadcast on Thursday, April 29, Ellington's actual birthday.

Jazz noble



Duke Ellington, the jazz composer and orchestra leader, would have turned 100 on April 29. A free concert of his music will be presented at Kresge.

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 14-28

MUSIC

Chapel Concerts: April 15: The Splendid Century performs music of the French Baroque. April 22: John Tyson, recorders; Miyuki Tsurutani, recorder and harpsichord; Douglas Frenlich, lute. Early 17th century sonatas, improvisations and dances. Noon, Chapel. x3-2906.

Advanced Music Performance (AMP) Recitals: April 14: Jennifer Gruczka (G), viola, with Gaspar Tarancher Oldenburg (A), harpsichord; Ivan Middleton 2001, piano; Jo Marie Sison 2001, Dawn Perlner 2001, violins; Juliet Gopinath (G), viola; Bernd Schoner (G), cello; Svetlana Shnitser 1999, piano. April 21: Christopher Rohrs 1999, clarinet; Andrew Pak 2002, piano. April 26: Rachel Levinson 2001, violin; Jessica Laszlo 2000, piano. April 28: Petra Chong 1999, horn; Jaemin Rhee (G), piano. 5pm, Killian Hall. x3-2826.

Capitol Steps: April 14. Musical political satire by the troupe of current/past Congressional staffers. \$20, \$10 students & MIT alums, \$5 with MIT ID. Tickets available at The Source (M-F, 8am-6pm) or by credit card at x3-0465. 8pm, Kresge Aud. Info: x3-2791 or x5-9132 or see <http://lsc.mit.edu/capsteps/>.

"Rhythm of the Youth": April 17. Local youth will learn and perform drumming, capoeira, breakdancing, hip hop dancing, West African dancing and more. Drumming presented by Bill Bloom of Drumming About

You and capoeira by Mestre Deraldo Ferreira of the Brazilian Cultural Center. 2-8pm, Johnson Athletic Ctr. x5-7424. <mcgill@mit.edu> or <http://web.mit.edu/groove/www/roy/index.html>.

MITCAN, MIT African Music Ensemble: April 17. James Makubuya, director. 8pm, Wong Aud (Tang Ctr). x3-2826 or <http://web.mit.edu/mitcan/www/>. See story above.

MIT Affiliated Artist Collaboration: April 20. Lecturer Charles Shadle, piano; Prof. Ellen Harris, soprano; Admin. Asst. Elizabeth Connors, clarinet. Brahms, Lutoslawski, Schubert and Shadle. 8pm, Killian Hall. x3-2826.

MIT Chamber Chorus: April 21. William Cutter, director. Bach's Cantata 106; Bononcini's *When Saul was King*; Schutz's Motets. 8pm, Kresge Aud. x3-2826.

MIT Guest Artists-in-Residence Concert: April 23. Ensemble Intercontemporain. David Robertson, conductor. 8pm, Kresge Aud. x3-2826. See story this page.

Battle of the Bands Competition: April 24. Spring Carnival competition among five bands with at least 50% MIT student membership. 12-5pm, Kresge steps or the Johnson Barbecue Pit. More info: <spring-carnival@mit.edu>.

Muses Spring Concert: April 24. Guest group: University of New Hampshire Gentlemen. 7:30pm, Rm 10-250. x5-8614.

An Ellington Centennial Salute: From Standards to Sacred: April 24. The Aardvark Jazz Orchestra and MIT Chamber Chorus. 8pm, Kresge Aud. x3-2906. See story this page.

N. Ramani, South Indian flute: April 25. \$15, \$12—MITHAS & NEHT members

and students, \$10—MIT students. 4pm, Wong Aud (Tang Ctr). x8-7971 or <http://web.mit.edu/mta/mithas/>.

THEATER

A Funny Thing Happened on the Way to the Forum: April 15-17. MIT Musical Theatre Guild production—book by Burt Shevelove and Larry Gelbart; music & lyrics by Stephen Sondheim. \$9; \$8 MIT faculty and staff, senior citizens, other students; \$6 MIT/Wellesley students. 8pm, Kresge Little Theater. x3-6294.

The Food Chain: April 15-17. Theater Arts workshop production of Nicky Silver's play directed by Thomas Cork 2000. 8pm, Kresge Rehearsal Room B. x3-2877.

Yeomen of the Guard: April 16-18, April 22-25. MIT Gilbert and Sullivan Players production. 8pm (except 2pm on Sun, April 18 and April 25), Sala de Puerto Rico (Stratton Student Center 2nd floor). Tickets: \$9, \$8 for MIT community, \$7 for other students/children, \$6 for MIT/Wellesley students. x3-0190.

For Colored Girls Who Consider Suicide When the Rainbow is Enuf: April 22-24, April 29-May 1. Dramashop production of choreopoem by Ntozake Shange directed by Asst Prof Thomas DeFrantz. \$8, \$6 with student ID. 8pm, Kresge Little Theater. x3-2908.

READINGS

Poetry@MIT: Nuala Ni Dhomhnaill: April 15. Reading by the author of *Pharaoh's Daughter*, *Selected Poems: Rogha Dánta* and *The Astrakhan Cloak*. 7pm, Rm 6-120. x3-7894.

EXHIBITS

List Visual Arts Center* (E15): Eve André Laramée: A Permutational Unfolding. New installation by the NY-based artist explores the history of digital technology. **Landscape: Outside the Frame.** Works by contemporary artist collaborative the Ctr for Land Use Interpretation (CLUI) & artists Olafur Eliasson, Jaci den Hartog, Peter Minchell & Olaf Nicolai. **Opening Reception—April 23, 5-7pm.** April 23-June. Hours: Tues-Thurs & Weekends 12-6pm; Fri 12-8pm; closed holidays. x3-4680. **Artist Talk*—April 24.** Slide presentation by Eve André Laramée in conjunction with her exhibit, *A Permutational Unfolding*. 2pm, Bartos Theater (E15). x3-4680.

MIT Museum* (N52): "Family Adventures in Science and Technology" or "FAST Sundays"*—April 25 Interactive activities for families on the last Sunday of every month. Join MIT students in making slime, experimenting w/magnets, etc. 2-4pm, MIT Museum. x3-4422. **Flashes of Inspiration: The Work of Doc Edgerton.** Long-term installation celebrates the life and work of Prof Harold ("Doc") Edgerton (1903-1991), whose work with stroboscopic light redefined photography. **Ongoing Exhibits. Gestural Engineering: The Sculpture of Arthur Ganson; LightForest: The Holographic Rainforest; Holography: Artists and Inventors; MIT Hall of Hacks; Light Sculptures by Bill Parker; Math-in-3D: Geometric Sculptures by Morton C. Bradley, Jr.; MathSpace.** 265 Mass Ave. Tues-Fri 10-5, Weekends 12-5. x3-4444.

Hart Nautical Gallery—Deep Frontiers: Ocean Engineering at MIT. Long-term exhibit exploring the latest advances in underwater research. **Ship Models: The Evolution of Ship Design.** Ongoing. Daily 9am-8pm. x3-5942.

Wolk Gallery: Istanbul: Crossroads of Religious Architecture. Photographs by Murat Germen, documenting Istanbul's religious pluralism as found in the architecture created by the three great monotheistic traditions. Through April 21. Rm 7-338. x3-1400.

Compton Gallery: New Craft Technology. Collaborative work of Timothy Eliassen. Exhibition organized by Fernando Domeyko, senior lecturer, architecture. Through June 4. Compton Gallery (Rm 10-150). Weekdays 9-5. x3-7791.

The Dean's Gallery—John Avakian: Chapter 1: Rebirth and Celebration. Abstract monoprints. Through April 30. The Dean's Gallery, Sloan School of Management, E52-466. Weekdays 9-5pm. x3-9455 or <http://web.mit.edu/deans-gallery/www/>.

Religious Activities Center (W11-180)—Mandalas. Drawings of mandalas (graphic patterns in a sectioned circular form) by Joseph Preston Baratta. Through April 30. x3-0108.

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

OTHER

Potluck Performance Art*—April 16. Bring video, poetry, slides, anything to read, show, perform &/or consume for free admission. \$4 donation requested for selected charity. 9pm, Rm N52-115. x3-2060.

Arts Colloquium*—April 23. All MIT faculty are invited to hear Thomas DeFrantz, assistant professor of theater, speak on his work on Friday, April 23 at Noon. Lunch will be served; reservations required by April 20. More info: x3-9821 or <laura@mit.edu>.

Hakubi Kimono Presentation*—April 23. 1pm, Kresge Little Theater.

Zhu caps US tour with address at MIT today

(continued from page 1) officials, news reporters and citizens during his six-city tour of Los Angeles, Washington, Denver, Chicago, New York and Boston. The New York Times wrote, "the 70-year-old Premier, with his poker face and acute timing, can be funny, especially when no one in the audience expects him to be."

In Los Angeles, he told of trade concessions China had made in its as-yet-unsuccessful effort to be admitted to the World Trade Organization. One concession, lifting a ban on citrus fruit, was particularly important to California and to Sen. Diane Feinstein (D-CA), who has known Mr. Zhu since the late 1980s when she was the mayor of San Francisco and he was the mayor of Shanghai. She has visited the Premier regularly and complained about the ban, which contributes slightly to the US trade deficit with China—\$57 billion last year.

"California," said Premier Zhu, "has a woman who comes each year to China. Every time, she raises the same old issue about citrus fruit." Pausing a beat, he added, "Thank God, from now on she will never raise it again!"

Protesters about China's handling of human rights, Tibet and Taiwan trailed the Premier at each stop. Dozens were arrested, some through negotiated settlements with local police.

Mr. Zhu, referring to the reports that China had obtained military secrets from an alleged spy at Los Alamos National Laboratory, said the Chinese Army will consider stenciling on the side of its missiles the words "Made in China, not in USA."

In Washington, he participated in an extraordinary one-hour, 45-minute news conference with President Bill Clinton. In Denver, he announced lowering China's trade barriers to wheat and beef, important to farmers in Colorado and the region. He visited the Denver Broncos' training site outside Denver and "side-armed a blistering pass into a group of television cameras."

In Chicago, the Hyatt Corp. gave Chinese agriculture a boost when it presented Premier Zhu with a 1,500-pound black Angus bull, genetically engineered to produce calves that make the highest grade of beef. Ignoring high winds that kept the rest of his delegation in a bus, the Premier lobbied local farmers to call President Clinton to say how much farmers want China to join the WTO.

Former US Ambassador to China James Lilley told the Times, "He is selling himself as the intelligent, sophisticated Chou En-lai guy. He's post-Tiananmen Square, Shanghai not Beijing, economic reform, free market, MIT and science and all that. All very effective."

VEST INTRODUCTION

Attendance in Kresge Auditorium will be limited to the MIT community and invited guests. He will be introduced by MIT President Charles M. Vest, who met Premier Zhu in Beijing in 1995.

"We see China—and US relations with China—as major issues for American society and for the world," Dr. Vest said. "We know that China will have an increasingly important world role in the creation of new scientific, technological and industrial activities. MIT faculty and students are involved in many projects in the PRC, ranging from working with high school students to establish Internet communication to a major environmental study of coal combustion throughout that nation."

Mr. Zhu continues as the dean of the business school at Tsinghua University in Beijing. The Sloan School of Management has a substantial educational initiative with Tsinghua, with Fudan University in Shanghai, and the Lingnan (University) College of Zhongshan University in Guangzhou, southern China.

Premier Zhu, an electrical engineer, has been a planner, teacher, engineer, economist, mayor of Shanghai and governor of the central bank, as well as Vice Premier. He was named the fifth Premier of the People's Republic of China in March 1998.

Sloan School joins China's Lingnan to offer new international MBA program

The Sloan School of Management has announced that Lingnan (University) College of Zhongshan University in Guangzhou, southern China, has joined Sloan's MIT-China Management Education Project and will now offer an International Master's of Business Administration (IMBA) program.

Sloan's management education initiative now includes programs in three leading Chinese universities—Tsinghua in Beijing, Fudan in Shanghai and Lingnan.

These international MBA programs are developed in conjunction with the three schools and Sloan. Professors from the Chinese universities come to Cambridge as International Faculty Fellows to study Sloan's US-based program. They attend classes, and begin developing a curriculum to be implemented back in China. They work closely with Sloan faculty in their areas of concentration—attending planning sessions and presenting Chinese-based problems in Sloan classes.

They also experience the program from the students' perspective, joining discussion groups and other activities characteristic of American MBA programs. The experience enables the Chinese professors to compare teaching methods and develop a more global MBA approach.

"Through Sloan's MIT-China Management Education Project, the Chinese professors are able to incorporate our interactive teaching techniques into their program, providing a world-class global business education for the students in China," said Alan White, senior associate dean at Sloan and a director of the initiative. "We are very pleased to be working with Lingnan. Our experiences also provide direct benefits for us and our scholarship. We have greatly ex-

panded our knowledge of China's economy as that country develops into a major economic force."

"We're pleased to join Tsinghua and Fudan in this program with MIT Sloan. Our professors are now over in Cambridge beginning development of the program and our students will begin classes for the preliminary IMBA program in the fall," said Shu Yuan, president of Lingnan (University) College.

The IMBA program curriculum is based on Sloan's curriculum, and consists of nine themes—global business environments, economic analysis, operations and technology, finance and accounting, marketing, strategy and international management, organizational processes/human resources, management/leadership, and communications—plus a practicum.

Lingnan University was originally founded as a private university in 1888 by Christian Americans. In 1927, administrative responsibilities of the university were assumed by the Chinese and in the early years, graduates received their degrees from the State University of New York.

Graduates of Lingnan University can be found in many countries, especially in North America. In 1952, the university's departments were incorporated into other universities, primarily Zhongshan University. In 1987, Lingnan (University) College was again established, within Zhongshan University. With a faculty of about 100, Lingnan enrolls about 1,500 of Southern China's top students in its departments of economics, business administration, public finance and taxation, finance and international business, and offers bachelor's, master's and doctoral degrees.

Security measures in effect today for Chinese Premier Zhu's visit

Some areas of the campus are restricted until 1pm today as part of security measures for the visit of Premier Zhu Rongji of the People's Republic of China. Premier Zhu will deliver an address in Kresge Auditorium this morning.

Only members of the MIT community who hold tickets and invited guests may enter the area. Members of the community who do not hold tickets may watch the address on MIT Cable TV in one of several campus locations (see list below).

Protestors are expected to demonstrate on the grassy area in front of the Student Center along Massachusetts Avenue down to Vassar Street, as well as along the Charles River from the Harvard Bridge west. State Police said that four groups of about 1,000 people each have requested permission to hold demonstrations.

Police officers from the MIT Campus Police, Cambridge Police, State Police and MBTA Police De-

partments as well as the Middlesex County Sheriff's Office are on duty for the Premier's visit.

Memorial Drive is closed from Massachusetts Avenue to Endicott Street to make way for the motorcade. Massachusetts Avenue is closed to traffic from the Harvard Bridge to Vassar Street, and barriers are in place along Massachusetts Avenue from Memorial Drive to Vassar Street, restricting pedestrians from entering the west side of campus. Ticket holders must enter from the corner of Massachusetts Avenue and Amherst Street. This is the only access point to Kresge Auditorium.

ARRIVAL

You must show your ticket or provide your name as you enter this area. Those with tickets will be routed to a ticket collection area where photo IDs will be checked. Faculty members picking up tickets will be directed to a pickup point within the staging area. A photo ID is needed not only to pick up tickets but also prior to passing through metal detectors. All who attend will pass through metal detectors prior to entering Kresge Lobby. The staging area opens at 8am; doors to Kresge Auditorium open at 8:45am and all guests must be seated by 10am.

SECURITY GUIDELINES

These security guidelines have been developed by Campus Police in consultation with the US Secret Service:

You must not carry large or metallic objects such as radios, large key rings or beverage containers. If you bring a camera or videocamera, it is recommended that you do not bring it in a case, which would slow the screening process. Alcoholic beverages are prohibited. The smaller the number of carried objects, the faster the security screening. Even items known to be safe will be scrutinized and will cause delays. In consideration of those around you, please limit the use of personal communication devices within Kresge Auditorium.

MIT cannot accept responsibility for storing items that are not permitted through security checkpoints. You will be required to return them to another area and return for additional security screening. Your cooperation is appreciated.

PARKING

Until 1pm today Amherst Street (to Endicott Street) is closed to vehicular and pedestrian traffic; parking is not allowed along Massachusetts Avenue from Memorial Drive to Vassar Street; and Kresge Parking Lot is closed. Permit holders for the Kresge lot can park in the West Garage.

BUILDING CLOSURES

Until 1pm today, Building W11, the chapel and the Stratton Student Center are closed. Regularly scheduled athletic activities in Buildings W23, W31, W32, W34 and the tennis bubble are cancelled until after 1pm.

The Dining Service is offering an alternate location (due to the Student Center closure) in Lobby 13 until 2pm that will feature Pan Geos, sandwiches, salads, soup, bagels, cookies, muffins and assorted beverages. This is also a viewing location for the cablecast of the Premier's address.

ACCESS RESTRICTIONS

Until 1pm, access from Ashdown House, McCormick Hall, Green Hall and Baker House to Amherst Street is restricted; access to and from these buildings is via Memorial Drive only. The section of Amherst Street from Ashdown House to Endicott Street is closed except to those attending the event in Kresge Auditorium. Access to and from Bexley Hall is from Massachusetts Avenue only; Bexley alley is closed.

VIEWING LOCATIONS

The Premier's address will be broadcast over the MIT Cable system. Monitors are available in Lobby 7, Lobby 10, Lobby 13, Lobby E52, the Tang Center's Wong Auditorium and Diebold Lounge, and Rms 16-160, E25-117, E51-063 and E51-385.

China conference at Harvard

On Saturday, April 17, the Harvard China Review and the university's Fairbank Center for East Asian Research will host a conference titled "1979-1999: An Examination of the Forces Behind U.S.-China Relations." The event, marking the 20th anniversary of the establishment of the diplomatic relationship between the United States and China, will examine the prospects and pitfalls facing the US-China relationship in the coming century.

For more information and registration, go to <<http://www.HarvardChina.org>>.

Going up?



Demolition workers Steve Mahoney and Frances Bonet gamely push the button on an "elevator" they discovered amid the rubble that was Building 20. Photo by Donna Coveney

Throwing it away?

Post it on the "reuse" e-mail list, where everything from old computers to kittens can be given away. For more information, send e-mail to:

<reuse-request@mit.edu>