

VOLUME 44 . NUMBER 12

WEDNESDAY . NOVEMBER 10, 1999

MIT and University of Cambridge announce partnership

■ By Kenneth D. Campbell **News Office**

The University of Campings and the partnership, a new form of academic enterprise new partnership, a new form of academic enterprise building on the complementary strengths of two of the world's great universities.

The two universities will create the Cambridge-MIT Institute, a new education and research enterprise that has the financial backing of the UK Treasury for 80 percent of its \$135 million (£84 million) budget for the first five years. The balance of the funding will be raised from British industry. British Chancellor of the Exchequer Gordon Brown announced the agreement Monday in London accompanied by President Charles M. Vest and the head of the University of Cambridge, Vice Chancellor Sir Alec Broers.

The Cambridge-MIT Institute's programs will include undergraduate, graduate student, and faculty exchanges; a program of integrated research; the adaptation to Britain of



Alumnus Kenan Sahin receives an ovation. Photo by Justin Allardyce Knight

professional practice programs developed at MIT; and the creation of a national competitiveness network in Britain.

President Vest, at the signing ceremony in London, said "This agreement creates a bridge of the minds across the Atlantic between Cambridge, England and Cambridge, Massachusetts.

(continued on page 6)

Alumnus Sahin makes a surprise \$100m gift to MIT

By Deborah Halber and Kenneth D. Campbell **News Office**

MIT graduate Kenan E. Sahin sur-prised even himself Saturday night when he announced that he was donating \$100 million to his alma mater.

The gift is the largest single donation in MIT's history and one of the largest ever in higher education.

Dr. Sahin (SB 1963, PhD), 58, founder of Kenan Systems Corp. of Cambridge, MA was supposed to be in China on Saturday. The trip was canceled, so the former MIT student and faculty member went to MIT for the day's programs, gala dinner and ball to celebrate the launch of MIT's \$1.5 billion capital campaign.

At 9:15pm, he told President Charles Vest he had something to say to the 500 people assembled for dinner amidst a sound-and-light show of gossamer sails and technological artifacts in Rockwell

Dr. Vest introduced him, saying, "I really don't know what he's going to say." Dr. Sahin smiled shyly and said, "He really doesn't know what I'm going to say. Up until half an hour ago, I didn't know what I was going to say... Sometimes, spontaneous, spur-of-themoment conversations have deep, deep consequences.'

A native of Turkey, Dr. Sahin recalled that while he was an engineering student at Robert College in Istanbul, he had a chance conversation with the late Harold Hazen, dean of graduate studies at MIT who was interim president at Robert College. Dr. Hazen advised him to attend MIT. "Little did I know how that would shape my life. I can't tell you how much I have benefited from this institution," Dr. Sahin

The top student in his engineering class, he went on to attend MIT and the Sloan School, earning a bachelor's degree in 1963 and a PhD in 1969. After (continued on page 5)



British Prime Minister Tony Blair (center) invited President Vest and Sir Alec Broers (right), vice-chancellor and head of Cambridge University, to meet with him Monday afternoon for 20 minutes in his office at Number 10 Downing Street to congratulate them on the formation of the Cambridge-MIT Institute. On Monday morning, Chancellor of the Exchequer Gordon Brown, Dr. Vest and Dr. Broers announced the joint venture at a press conference attended by 80 reporters at the British Treasury.

Photo by Kenneth D. Campbell

Institute launches \$1.5b capital campaign with weekend events

■ By Kenneth D. Campbell **News Office**

n November 5, MIT launched an ambitious \$1.5 billion capital campaign with the theme of "Calculated Risks. Creative Revolutions.'

"It is our challenge to attack and solve the next generation of great problems," said President Charles M. Vest. "Doing that will require some calculated risks: predicting the next generation of intellectual revolutions, and putting our chips down early. It's the kind of gamble we've won beforebetting on the long-term potential of basic biology in the 1950s, for example.

"Today we have the knowledge and the courage to believe we can do it again-in basic biology and its application to engineering, new materials and medicine; in the study of the brain and the mind, in information technology, and in grasping the ramifications of human population growth and global climate change-and that's just a

"In so doing, we must remind ourselves, and the public, that our value to practical concerns accrues ultimately from our enthusiasm for exploring the truly unknown. That is the ultimate rationale for supporting a university."

The campaign was celebrated Saturday with a daylong series of discussions and demonstrations by distinguished faculty (see story on page 4).

CAMPAIGN GOAL

The \$1.5 billion campaign goal is twice as ambitious as the goals of MIT's previous capital campaign, the "Campaign for the Future," which ran from 1987-92 and raised \$710 million. However, with the surprise announcement of a \$100 million gift from alumnus Kenan E. Sahin, the new campaign is already \$51 million ahead of its predecessor's total.

Response from MIT's 90,000 alumni/ae and from corporations and foundations has affirmed MIT's goals; raising a nucleus fund since July 1997

of \$761 million from more than 44,000 individual, corporate and foundation donors. The gifts include 100 commitments of \$1 million or more, including 23 commitments of \$5 million or more.

The chairman of the campaign is Ray Stata (SB 1957), founder of Analog Devices, who said, "MIT has had an enormous impact on society and on people's lives, and I see this campaign as a catalyst to enable MIT to make great things happen in the future. Certainly MIT has made a big difference in my life and in the lives of so many of her graduates, and now is the time to repay the investment that MIT made in us with a suitable dividend. The success of this campaign will be built on renewing the connection with those who know MIT best, her alumni and

The Institute is seeking \$550 million to support new directions in research and education, \$550 million to enhance the learning community, \$300 million to renew the physical infrastructure of the campus, and \$100 million for an unrestricted "Millennium Fund."

The \$550 million goal for new directions in education and research will support programs in neuroscience, the environment, educational technology, health sciences and technology, bioengineering, comparative media studies, political economy, entrepreneurship, engineering systems, national and international collaborations, the arts, and the libraries.

The \$550 million goal to enhance the learning community includes funds for undergraduate scholarships, graduate fellowships, educational innovation, campus life, professorships and innovation funds.

Commenting on the major focus on the learning community, Chancellor Lawrence Bacow said, "This campaign will help us to truly integrate student life and learning at MIT. The resources generated will make it possible for us to enhance the quality of life for every MIT student for generations to come.'

The \$300 million to renew the physi-

cal infrastructure includes such goals as buildings for the planned Ray and Maria Stata Center for Computer, Information and Intelligence Sciences, the Media Lab, the neurosciences, and (continued on page 5)

In Brief

HOLIDAY LIBRARY HOURS

MIT Libraries' schedules for Veterans Day (Thursday, Nov. 11) are as follows: Barker, Dewey, Humanities, Lewis Music, Reserve Book Room, Rotch, and Science will be open during their normal hours. All other libraries will be closed. For a complete schedule of the MIT libraries, see http://libraries.mit.edu/hours.

FACULTY MEETING

A regular faculty meeting will ber 17 at 3:30pm in Rm 10-250. Agenda items will be:

- · Announcement of the 1999-2000 United Way Campaign, by Professor Deutch
- Vote on the motion to implement housekeeping changes to the Rules and Regulations of the Faculty, by Professor Lerman
- Report of the HASS Overview Committee and motion in implement changes to the HASS-D requirement, by Dean Khoury
- Report on the revisions to Section 7.7 of Policies and Procedures that establishes a part-time phase-down to retirement, by Professor Lerman
- Update on the capital campaign, by Ms. Stowe and Dr. Vest
- Report on the Cambridge-MIT Institute, by Professor Bacow
- · Resolution on the death of Professor Myron Weiner, by Profes-

Tech Review lists top 100 young innovators

■ By Denise Brehm **News Office**

MIT affiliates make up more than a quarter of the TR100, Technology Review's compilation of the world's best young innovators, with six faculty members, one graduate student and 20 alumni/ae showing up on the list of 100 men and women under age 35.

The list was published in the November/December issue and publicly announced last Thursday in a day-long celebration of the magazine's 100th anniversary that included an afternoon symposium hosted by journalists Bill Moyers and Lesley Stahl.

The 100 were placed in five categories: hardware, software, telecommunications and the web, biotechnology and materials science. For a list of judges and short write-ups on each of the 100, see Technology Review's web site at http://www.techreview.com/>.

Yoel Fink, a 33-year-old graduate student in materials science and engineering, was one of the TR100.

"I felt like a dwarf among giants," he said about being named to the list. "It's a great honor. It's supposed to gauge people who have potential, in that respect I might fit in.

Steven Leeb, 34, the Carl Richard Soderberg Associate Professor of Power Engineering in the Department of Electrical Engineering and Computer Science, was another MIT affili-

"It was very humbling. It was an amazing crowd to be sitting with; I was starting to feel old. Many people in their twenties had already started companies," said Professor Leeb, who added that he got autographs from both Lesley Stahl and Bill Moyers during the day's well-run and highly-polished

Peter Seeberger, an assistant pro-(continued on page 8)

Notices Notices

* Open to public ** Open to MIT community only

INSTRUCTIONS: Listings for 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.

November 10-21

ANNOUNCEMENTS

Career Services and Preprofessional Advising Recruitment Presentations: Nov. 11:
Carlisle and Company, Inc., 5:30pm, Rm 8-302. Cyveillance, 6:30pm, Rm 4-149.
Medtronic, Inc., 5:30pm, Rm 4-153.
Netscape Communications Corporation, 7pm, Rm 8-306. NVIDIA, 6pm, Rm 4-145.
Nov. 15: Credit Suisse First Boston, 7pm, Rm 8-302. PricewaterhouseCoopers, LLP, 6pm, Rm 4-145. Nov. 16: Fletcher Spaght, Inc., 6:30pm, Rm 4-153. Forrester Research, 7pm, Rm 4-149. J. P. Morgan and Company, 7pm, Rm 8-205. Lehman Brothers/Global Information Technology, 7pm, Rm 8-105. Rand, 5:30pm, Rm 4-231.

MIT libraries' schedules for Veterans Day, Thursday, Nov. 11: Barker, Dewey, Humanities, Lewis Music, Reserve Book Room, Rotch, and Science follow regular schedule. All other libraries will be closed.

Italy Program Orientation**—Tuesday, Nov. 16, 5-6:45pm, Rm E53-482. Paid internships in Italy in all fields. Refreshments served. Sponsored by MIT International Science and Technology Initiatives (MISTI). More info: x3-6982 or <italy@mit.edu>.

Luce Scholars Program application deadline is Nov. 29. Ten-month internships in Asia aimed specifically for those with no prior Asia experience. Must be American citizens not yet 30 by Sept. 1. Applications at Center for International Studies, Rm E38-651, x3-9861 or x3-3121.

■ 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>.

Chi Alpha Christian Fellowship**—Weekly Organizational Meeting, Tuesdays, 7:3-9pm, Private Dining Room 3 in Stratton Student Center. Christian worship and an examination of the Book of Revelation. Prayer and fasting each Thursday from 12-12:45pm in W11-063. More info: x3-2327, <cac@mit.edu> <www.mit.edu/activities/xa/main/html>.

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 either a brown bag supper or social activity 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 Tyagananda, monk of
the Ramakrishna Mission of India, assoc.
minister of Vedanta Society of Boston and
MIT chaplain. Every Friday, 5:15pm, MIT
Chapel. Sponsored by the MIT Vedanta Society. More info: 661-2011 or <mehta@cytel.
com> or <http://www.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: vx.0785

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 Building W11. Sponsored by the Lutheran-Episcopal Ministry at MIT. More info: x3-2325 or kitheran@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>.

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 https://web.mit.edu/ucf/. For more info: Sherry or Sara at 576-5157 or mit.edu.

■ STUDENT JOBS

For other job listings and more information about the following listings, go to the Student Employment Office, Rm 11-120 or https://www.mit.edu/seo/. The MIT Student Employment Office functions much like the classified section of a local newspaper, and does not screen potential employers or employees.

On-Campus, Non-Technical. Student staff needed for the 24-hour coffeehouse, third floor, Student Ctr. Shifts available in 4 hour blocks, around the clock for customer service, stocking and cleaning. Free food during your shift. 4.5hrs/wk or more. \$7.25/hr. Morgan Gerdel at 594-3533 or <coffeehousemgmt@mit.edu>.

On-campus, Technical. Reactor operator trainees (freshman preferred) at MIT Nuclear Reactor Lab. The Lab will sponsor comprehensive training to obtain NRC licenses. Training begins as soon as hired, part-time during the semester and full-time otherwise. 5hrs/wk before license, 16hrs/wk after license. Competitive wage. Edward Lau x3-4211 or <eslau@mit.edu>.

Off Campus, Technical. Expert in ActiveX, Visual C++ (and Visual Basic) to work on a contract basis Nov-Jan with developers at a local start-up nr Harvard Sq. Link Java code with ActiveX API's for several Windowsbased programs, and use MS Visual Studio to make required resources (dll's etc). Friendly, informal work culture and surroundings. 20-40hrs/wk. Charles Ansbacher at 547-8987 or <ca@cognective.com>.

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

Community Service. Academic tutor at Dorchester House teen tutoring center. Provide individualized attention and help students with homework. The center primarily serves African American and Vietnamese students from low income families. Monday-Thursday 2:30-6pm. \$8/hr, flexible hours. Tom Powers at 288-0100 or <teen_ed @writeme.com>.

Community Service. Web page manager. The site will integrate text with photos and/or video clips of the endangered areas where our projects are conducted. Knowledge of HTML programming language, excellent design skills, and previous experience in web page design and maintenance required. Send cover letter and resume to Louise Wills, EcoLogic Development Fund, PO Box 383405, Cambridge, MA 02238.

Community Service. Science Clubs for Girls seeks program assistant with experience in science. Girls (K-6) meet for 8-week sessions with women scientists to explore science through fun, hands-on experiments. Assistant must work Fridays 2:30-5pm. T accessible Camb. schools. \$15/hr. Mary Memmott <memmott.burton@cwix.com>

■ VOLUNTEERS

The MIT Public Service Center (PSC) has compiled the following volunteer opportunities. Please contact the PSC for more information (Room W20-547, x3-0742).

People Making a Difference needs volunteers to clean, paint and do yard work for ShortStop, an emergency children's shelter in Somerville on Sat., Dec. 4, 9:30am-4:30pm. Founded in 1979 and operated by the Somerville Homeless Coalition, ShortStop is a resource for children at risk for homelessness, abuse, and neglect. 437-8871 or <lori@pmd.org> by Nov. 22.

The Thompson Elementary School is looking for coach for chess club. They have interested students and they have adults to run the club, but they need someone who knows more about chess. Club meets every other Monday from 4-5pm at a school on the bus line in Arlington. Caroline Meeks at caroline@arsdigita.com>.

Crimewatch

The following incidents were reported to the MIT Campus Police between October 28-November 4. This summary contains most incidents reported, but does not include incidents such as medical shuttles, ambulance transfers, false alarms and general service calls.

October 28: Bldg. 13: suspicious activity. #6 Club: suspicious person attempting to gain entry. Westgate lowrise lot: male arrested for possession of marijuana and other related charges. Rear of Bldg. NW12: homeless person, assisted to shelter. Ashdown: report of stolen bike, friend had borrowed without telling owner. Bldg. NW61: suspicious person. Bldg. W31: suspicious package thought to be a letter bomb, discovered to be antique MIT buttons sent through mail. Student Ctr: suspicious activity. Bldg. 26: employee problem.

October 29: Bldg. 7: computer stolen, \$1,000. Bldg. 14: suspicious person, checked out okay. West lot: arrest of male for assault and other related charges. Bldg. 10: hang-up call on "100" line same checked out okay. Main St.: Safe Ride van involved in minor motor vehicle accident.

October 30: Assist Cambridge Police with the report of a pedestrian hit and vehicle left scene.

October 31: Bldg. 7: attempted break into a coin machine. Bldg. NW30: check and inquiry of vehicle. Bldg. 7: spider web hack. Bldg. E55: male issued trespass warning.

November 1: Hayden Library: wallet stolen, \$150. Student Ctr: larceny by credit card. Hayward lot: stolen \$500 cash and credit cards. Baker: undergarments stolen from dryer, \$120. Bldg. E25: cell phone and charger stolen, \$100. Boston, Commonwealth Ave.: MIT Police cruiser involved in an accident with injuries. Bldg. W32: unwanted guest, trespass warning issued.

November 2: Bldg. 13: past larceny of bike, \$250. Phi Beta Epsilon, Sigma Phi Epsilon, Sigma Alpha Epsilon: suspicious activity, attempted flimflam, two males posing as a plumbers. Ashdown: backpack stolen, \$335. Tang: bike secured with a chain stolen, \$280. Kresge lot: '99 Honda Civic stolen. Bldgs. W31 and NW61: homeless person transported to shelter.

November 3: Bldg. 3: suspicious persons, check out okay. Bldg. 12: suspicious person, trespass warning issued. Bldg. 13: report of suspicious person, unable to locate.

November 4: Bldgs. 16 and 18: suspicious activity. Hayden Library: backpack stolen containing cell phone and camera, \$950. Networks and Bldg N51: suspicious person, trespass warning issued. Boston, Sigma Phi Epsilon: two noise complaints, noise was actually from a neighbor's apartment, not SPE.

Speaker advises parents how to cope with social cruelty

■ By Sarah H. Wright News Office

The sleeper hit of Family Weekend was a talk by Michael Thompson, an author, psychologist and school consultant specializing in social and emotional issues of middle school.

Dr. Thompson's best-selling book, Raising Cain: Protecting the Emotional Life of Boys (Ballantine, 1999), focuses on developmental issues up to adolescence. His current research focuses on social acceptance and emotional health during school years. His well-attended October 15 talk, titled "Friendship Development, Popularity and Social Cruelty," was sponsored by the Family Resource Center.

"Friendship is the area of our children's lives most closed to us and where we feel most helpless. If you could leave here with one area of your child's life illuminated, what would it be?" he asked the diverse group. They responded swiftly: peer pressure and how to stand up to it, social cruelty and how to end it, and social networks and how to form and nurture them.

"We want our children to stand up to peer pressure unless it's what we call 'the good kind,' such as the kind where everybody does their homework. Then we want them to conform," he observed. "We want them to have friends that we like. But all we can do is choose the context in which they make their selection."

Research has shown that social relationships are a better predictor of

CIS awards available for foreign study

A pplications are now being accepted for two grants programs administered by the Center for International Studies that help fund research and training in some foreign countries and on refugee issues.

The International Predissertation Fellowship Program is for students in the early stages of doctoral training in the Departments of Political Science, Economics and Urban Studies who wish to obtain supplementary area and language training to study Africa, China, Latin America, the Caribbean, the Middle East and South or Southeast Asia.

The award provides support during 12 months of full-time study. It includes tuition and fees for overseas or domestic language training, and for area studies course work at the home university or at a university in the region of interest.

See Dr. William Keller, CIS executive director, (Rm E38-652; x3-9861,

<b

MELLON GRANTS

The CIS also announces a small grants program for applied research and training on refugee issues in collaboration with nongovernmental organizations working in the field. Graduate students and faculty may apply for the grants program, which was established by the Inter-University Committee on International Migration and supported by the Andrew W. Mellon Foundation.

Awards will range from \$4,000-\$6,000 for graduate student research projects. Faculty and senior researchers may receive awards up to \$10,000. For full program information, contact Dr. Keller (see above) or Laurie Scheffler at x3-3121 or <a href="mailto:realize-selection-selec

mental health in adulthood than IQ and that beginning in middle school, most children know there's a difference between popularity and friendship, Dr. Thompson said.

"Everyone loses in the popularity wars—everyone," he said. "But if you have a good friend, somebody who doesn't tease you when the group does, you are going to be all right."

Social issues facing older children need to be explored rather than feared or managed by their parents, Dr. Thompson said. He advised parents not to "interview for pain," as he called it, meaning don't start conversations about school or friendships with a "what's wrong" opener.

"Your role is to empathize with their pain and confusion, to receive and to hold it and not to go nuts with it. If you interview for pain—as in 'Who hurtyou today, dear?'—you'll get pain. If you interview for strategy—'How did you handle that? How did you cope?'—you'll get conversation," he said.

As for social cruelty, Dr. Thompson held schools responsible for communicating and sustaining a "moral context" in which bullying, excessive teasing and even sarcasm can be moderated. "Schools must make it clear that treatment of others is a moral issue," he said.

Dr. Thompson endorsed peer counseling, peer mediation and commitment by all members of the community as effective tools for building a culture of respect in a school. He advised parents to participate as well. "Don't wait until you're angry or frightened to start asking questions of teachers or administrators. You're part of that message about 'moral context,' too."

MIT TECH TALK

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NOVEMBER 10, 1999 MIT TECH TALK ■ 3

Molina awarded UNEP's most prestigious environmental prize

The 1999 UNEP Sasakawa Environment Prize has been awarded to Institute Professor Mario J. Molina for his global contributions in the field of atmospheric chemistry, the United Nations Environment Programme (UNEP) announced last week.

The prize, worth \$200,000 and considered one of the most prestigious environmental awards in the world, will be presented at United Nations Head-



Mario Molina

quarters in New York on November 17. It has been awarded each year since 1984 to honor "outstanding global contributions to the management and protection of the environment."

"The prize has been awarded to Professor Molina for his pioneering investigations on the chemistry of the ozone layer, which have led to a better scientific understanding of the effect of human activities on the atmosphere," said Lord Stanley Clinton-Davis, chairman of the selection committee. "The confidence with which many aspects of the science of ozone destruction is now understood comes directly from Professor Molina's work."

Professor Molina and his colleagues discovered a previously unknown reaction whereby chlorine is activated on the surface of ice cloud particles in the polar atmosphere. Professor Molina, who is the Lee and Geraldine Martin Professor of Environmental Sciences and a professor of chemistry, also demonstrated a new reaction sequence involving chlorine peroxide, which accounts for most of the ozone destruction in the Antarctic. He was co-author of a 1974 paper in Nature on the developing threat to the ozone layer from the use of chlorofluorocarbon (CFC) gases,

the freons used in spray bottles, refrigeration and plastic foams.

Professor Molina shared the 1995 Nobel Prize in chemistry. He donated two-thirds of his Nobel prize money to set up fellowships to help scientists from developing countries conduct research in environmental science. He continues his research on stratospheric chemistry and tropospheric pollution including problems of rapidly growing cities.

"Professor Molina's leadership greatly contributed to making the UNEP-brokered Montreal Protocol on Substances that Deplete the Ozone Layer a reality. The speed with which countries ratified this precedent-setting international agreement was due in great part to the role he played in communicating to policy-makers, the media and ultimately the general public, the implications of his research," said Klaus Toepfer, UNEP's executive director.

"This recognition by UNEP represents for me a culmination of my efforts on the protection of the global environment," said Professor Molina. "I appreciate the support I have received from the world community over the years and I hope to continue my commitment to work for the benefit of humanity and the environment."

Rosenblith receives Okawa Prize for work in biomedical engineering

■ By Robert J. Sales News Office

Institute Professor Emeritus Walter A. Rosenblith has been awarded the Okawa Prize, presented annually to persons who have made outstanding contributions to research, technological development and business management in the information and telecommunications fields.

The announcement was made today at a news conference in San Francisco.

The prize, established in 1992 by the Okawa Foundation for Information and Telecommunications, carries a certificate, a gold medal and a 10 million yen cash award (about \$90,000). Japanese winners have been named since the prize's inception, joined by recipients from the US since 1996. The Japanese winner this year is Nobuaki Kumagai, former president and professor emeritus of Osaka University.

The citation on Professor Rosenblith's award will say: "For outstanding and pioneering contributions to the progress of biomedical engineering, especially the use of 'on line' computer analysis of brain activity, and to auditory biophysics as well as to the promotion of international scientific cooperation." Professor and Mrs. Rosenblith plan to attend the awards ceremony in Tokyo on November 25.

Professor Rosenblith, the fourth Okawa Prize winner from the United



Walter Rosenblith

States, came to the United States in 1939 on a scientific mission for a professor in Paris. While he was here, Nazi Germany invaded France and his return was out of the question. Since Professor Rosenblith, who is Jewish, had not entered the country as an immigrant, he was prohibited from working. To remain here, he accepted a graduate fellowship at UCLA, where he met and married the former Judy Olcott Francis, now a professor emerita of psychology at Wheaton College. They have been married for 58 years.

He taught physics at UCLA and the South Dakota School of Mines and was a research associate at the Harvard University Psychoacoustic Laboratory before joining the MIT faculty in 1951. He soon established the Laboratory of Communications Biophysics in the Research Laboratory of Electronics, a pioneer in online computer analysis of bioelectric signals. He was professor of communications biophysics in electrical engineering before being named an Institute Professor in 1975 (emeritus since 1984). This title is bestowed by MIT's faculty only on scholars of unusual distinction.

Professor Rosenblith served as chair of the MIT faculty from 1967-69, associate provost from 1969-71 and provost from 1971-80. As provost during Jerome Weisner's tenure as president of MIT, he played a central role in developing the health sciences and biomedical engineering disciplines at MIT, as well as in the establishment of the program for Science, Technology and Society. He also was active in forging MIT's collaboration with other universities and medical institutions

Respected internationally as a statesman of science, Professor Rosenblith is one of only a handful of scholars who are members of all the academies in the National Academy of Sciences complex—the National Academy of Science, the National Academy of Engineering and the Institute of Medicine (charter member). In 1982 he was elected Foreign Secretary of the National Academy of Sciences, a post he held until 1986. He is also a member of the American Academy of Arts and Sciences.

Born in Austria in 1913, Professor Rosenblith studied in Berlin, Lausanne, Paris and Bordeaux. He holds French degrees in communications engineering from the University of Bordeaux (1936), and from the Ecole Superieure d'Electricite, Paris (1937).

His early work in hearing led Professor Rosenblith to collaborate with faculty members of the Harvard Medical School in the formation of the Eaton Peabody Laboratory for Auditory Physiology at the Massachusetts Eye and Ear Infirmary. Professor Rosenblith was appointed research associate in otology in 1957 and a lecturer in otology and otolaryngology in 1969 at the Harvard Medical School. He is editor of two MIT Press volumes, Processing Neuroelectric Data and Sensory Communication, and author of numerous papers in a broad range of scientific journals.

In 1982 President Mitterrand of France named Professor Rosenblith to be a "Chevalier de l'Ordre National de la Legion d'Honneur" for his services at MIT and elsewhere on behalf of intellectual and scientific exchanges between the United States and France. In 1989 he was awarded the Alexander von Humboldt medal. In 1992 the National Academy of Sciences established an international lecture series in his honor.

Professor Rosenblith has received honorary ScD degrees from the University of Pennsylvania (1976), the South Dakota School of Mines and Technology (1980), Brandeis University (1988) and the University of Miami (1992). He was awarded the Doutor Honoris Causa from the Federal University of Rio de Janeiro in 1976, the year in which he was designated an honorary alumnus by the MIT Alumni Association.

MIT has awarded Walter A. Rosenblith graduate fellowships to students in all five MIT schools since 1997-98. The \$7.5 million allocated for 50 fellowships was provided from a fund created by the MIT Corporation's Executive and Investment Committees.

The Walter A. Rosenblith Professorship in neuroscience was established in 1994 and is held by Dr. Ann M. Graybiel of the Department of Brain and Cognitive Sciences, an internationally respected neuroscientist.

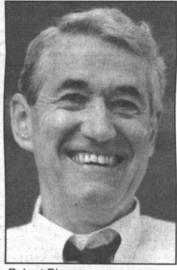
Previous Okawa Prize winners from the US were Professor Emeritus Lotfi A. Zadeh (1996) and University Professor Emeritus John R. Whinnery (1997), both from the University of California-Berkeley, and Professor Lewis M. Branscomb of Harvard University's John F. Kennedy School of Government (1998).

Awards & Honors

■ MIT Press was one of three winners of new grants from the Association of Research Libraries that are designed to encourage the development of alternatives to traditional models of scholarly publishing. The award will allow MIT Press to continue the development of CogNet, the Cognitive and Brain Sciences Community Online (see http://cognet.mit.edu). The other winning projects are based at Columbia University and the University of California.

■ Robert J. Birgeneau, dean of the School of Science and the Cecil and Ida Green Professor of Physics, has received the American Physical Society's 2000 Julius Edgar Lilienfeld Prize. The \$10,000 prize, established by the APS Council in 1988 through a bequest of Beatrice Lilienfeld in memory of her husband, recognizes outstanding contributions to physics by an individual who also has exceptional skills in lecturing to diverse audiences. Last year's prize went to Stephen Hawking.

Dean Birgeneau was recognized for "using neutron and X-ray scattering to elucidate the structure, phase transitions, and excitations of materials that are paradigms of important statistical mechanical models, and for his ability to convey the excitement of physics to a broad range of audiences." Research by Professor Birgeneau, who has been dean of science since 1991, is primarily concerned with the phases and phase transition behavior of novel states of matter.



Robert Birgeneau

John Ehrenfeld, director of the Technology, Business and Environment Program, won the 1999 Lifetime Achievement Award given by World Resources Institute and the Initiative for Social Innovation through Business, a program of the Aspen Institute. He was honored for his contributions to the field of environmental management, which include teaching environmental and technology management and research on pollution prevention, industrial ecology, environmental management and policy, and environmental practice in businesses. Dr. Ehrenfeld is a senior research associate at the Center for Technology, Policy and Industrial Development and a senior lecturer in the Technology and Policy Program.

The award was published in "Beyond Grey Pinstripes: Preparing MBAs for Social and Environmental Stewardship," a report on pioneering US business schools and faculty dedicated to educating future managers to handle complex social issues and provide stewardship of fragile environmental resources. For more information, visit http://www.wri.org/bschools/>.

■ Professor George Apostolakis of nuclear engineering has been given the 1999 Tommy Thompson Award by the Nuclear Installations Safety Division of the American Nuclear Society for "his contributions to improvement of reactor safety through formulation, development, and application of probabilistic risk assessment methods, and for his support of continual improvement of PRA as a risk management tool."

■ Anita Goel, an MD/PhD candidate in the Harvard-MIT Division of Health Sciences and Technology (HST), was awarded the Distinguished Student Award at the Seventh Foresight Conference on Molecular Nanotechnology. She received the \$1,500 award for ongoing research using "optical tweezers" to probe the real-time single molecule dynamics of motor enzymes "dancing on DNA."

Ms. Goel's research is at an emerging interface of physics, biology and nanotechnology. She is applying laser manipulation techniques—"optical tweezers"—to stretch out DNA, and is also developing a probe to directly observe the dynamics of enzymes reading a DNA molecule.

Benefits open enrollment, long-term care reminders

The Benefits Office reminds employees and early retirees that the annual open enrollment period ends Sunday, November 14 at midnight.

You do not need to do anything if you want to maintain your current elections for 2000 unless you wish to continue participation in a Flexible Spending Account (FSA). Your FSA contributions will not automatically continue into 2000. You must reestablish your FSA account(s) each year.

This also is a reminder of the December 3 deadline for enrolling in MIT's new long-term care insurance plan offered to employees and retirees through John Hancock Mutual Life Insurance Co. The plan offers coverage to will provide benefits for most long-term care expenses at group rates.

As part of the initial plan offering, eligible actively-at-work employees will automatically be accepted into the plan regardless of health status. Spouses or spousal equivalents of eligible employees will be subject to modified underwriting. They will be required to answer not more than five health questions during the enrollment process. All others, including retirees,

must provide evidence of insurability by completing a health questionnaire.

After December 3, all eligible participants (including actively-at-work employees) will be required to provide proof of good health to apply for coverage.

John Hancock and MIT Benefits Office representatives will be available to answer questions about the plan at the following meetings:

• Wednesday, Nov. 10—Lincoln Laboratory, Auditorium, 10am and

Monday, Nov. 15—Student Center

Mezzanine Lounge 9am and 11am

Mezzanine Lounge, 9am and 11am

• Tuesday, Nov. 16— Student Center
Twenty Chimneys, 10am and 2pm

Anyone with questions or who needs additional enrollment materials may call the John Hancock Customer Service Center at (888) 453-2030, Monday through Friday from 8:30am-4:30pm or visit the Long-Term Care web site for MIT employees at http://mit.jhancock.com (username mit, password jhancock). For other benefits questions, e-mail

benefits-www@mit.edu> or call x3-0500. The Lincoln Laboratory Benefits Office is at (781) 981-7055.

Campaign kick-off event celebrates ideas, inspires gifts

■ By Sarah H. Wright News Office

The MIT faculty presented research, ideas and demonstrations in a daylong event on Saturday to celebrate the launch of MIT's \$1.5 billion campaign.

The campaign theme, "Calculated Risks, Creative Revolutions," also served as the theme for the presentations. The day culminated in a blacktie gala in Rockwell Cage and a spontaneous gift of \$100 million to the Institute by alumnus and former faculty member, Kenan Sahin (see story page 1).

Mr. Sahin, who announced his gift at the dinner, characterized the series of presentations as a "wonderful day. MIT showed its intellectual prowess, deep thinking and caring."

MIT President Charles M. Vest opened "Calculated Risks, Creative Revolutions" by saying: "The world needs a new kind of leadership that we



Architect Frank Gehry speaks at the campaign kick-off.

Photo by Donna Coveney

may be uniquely poised to provide. We have a distinctive culture, extraordinary faculty and students, the power to bring people and ideas and organizations together, and the ability, imagination and courage to take on the big challenges.

"The result? MIT and its graduates are a driving force for insight and innovation in fields ranging from mathematics to manufacturing, from medicine to music, from economics to architecture, from high technology to high finance. We never rest," he said.

"Calculated Risks, Creative Revolutions" was comprised of presentations by distinguished MIT faculty including, among others, Nobel prize winners Mario Molina, Phillip Sharp and Samuel Ting. The morning's keynote speech by Professor Ting was followed by two major panel discussions and concurrent sessions on topics ranging from the biological revolution to a Balinese Gamelan Workshop to the Bionic Person.

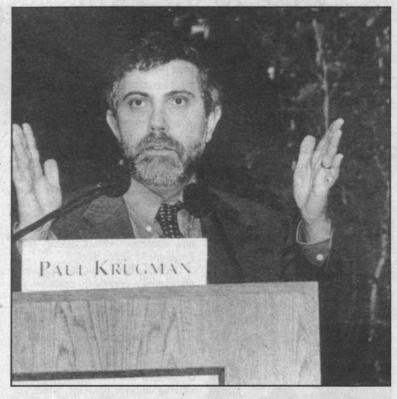
Concurrent session titles included, "A View of the Future of Our World," "The Oxygen System: Doing More by Doing Less," "Theater: What is It Doing at MIT?," "Tag Team Techies: Collective Crew Creation" and "Will the Digital Age make the Campus Obsolete?"

Professor Ting's speech, "In Search of the Origins of the Universe," summarized research resulting from collaboration among 200 scientists and 12 nations aboard the international space station. Professor Ting, who leads the collaborative effort, raised questions such as, where are the antistars and antigalaxies that prove the existence of antimatter? And, what is the universe made of?

The day's first panel, "Will the 21st Century Be Free of Major Economic Crises?" was moderated by Olivier Blanchard, Class of 1941 Professor of Economics and head of the Department of Economics. Panelists were Stanley Fischer, First Deputy Managing Director of the IMF; Paul Krugman, Ford International Professor of Economics; and Stephen Ross, the Franco Modigliani Professor of Finance and Economics. They addressed the impact of global financial and economic integration on markets, the ripple effects of crises such as the one in Asia, and whether to strengthen the IMF.

The day's final panel, moderated by Professor William Mitchell, dean of the School of Architecture and Planning and architectural advisor to President Vest, flowed easily from the afternoon panel on the 21st century. "What Is the Future of the MIT Campus?" featured comments by Laurie Olin, awardwinning landscape architect, and Frank O. Gehry, the world-renowned architect who is currently designing the new Ray and Maria Stata Center.

Mr. Gehry's model for the Center, on view in the Stratton Student Center, attracted a steady stream of visitors. The Stata Center, named in honor of Ray and Maria Stata, is comprised of a complex of buildings for the computer, information and intelligence sciences. Ray Stata of the Class of 1957 is chair of MIT's Campaign. One of the buildings will be named in honor of Alexander W. Dreyfoos Jr., in recognition of his generous support, and will house the Artificial Intelligence Laboratory, the Laboratory for Information and Decision Systems, the Department of Linguistics and Philosophy and some portions of the Depart-ment of Brain and Cognitive Sciences. Another building, to house the Laboratory for Computer Science, is to be named for William H. Gates in recognition of the generous



Economics Professor Paul R. Krugman was a panelist for "Will the 21st Century Be Free of Major Economic Crises?," part of Saturday's activities launching MIT's \$1.5 billion campaign.

Photo by Donna Coveney

support of the Gates Foundation toward its construction.

The concurrent presentations of faculty research kept "Calculated Risks, Creative Revolutions" moving at a brisk intellectual pace.

Mr. Sahin attended some of the concurrent sessions at the event before proceeding to the dinner at which he announced his generous gift.

He especially noted "How the Mind Works," with Professor Steven Pinker, associate professors Nancy Kanwisher and Earl Miller and assistant professor Elly Nedivi, all of the Department of Brain and Cognitive Sciences and "Towards Tricorders and the Bionic Person," with Professor Rodney Brooks, director of the Artificial Intelligence Laboratory; Ian Hunter, professor of mechanical engineering; Gill Pratt, assistant professor of electrical engineering and computer science; and John Wyatt Jr., professor of electrical engineering and computer science.

Calendar

* Open to public

** Open to MIT community only

(For arts-related listings, see page 7.)

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

Listings for Community Calendar should be submitted using the web form at http://web.mit.edu/newsoffice/tt/calform. If you have questions, 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, November 12, covering events from Wednesday, November 10 through Sunday, November 28.

November 10-21

■ SEMINARS & LECTURES

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

WEDNESDAY, NOVEMBER 10

GaN-Based White Light-Emitting Diodes with High Luminous Performance*—E. Fred Schubert, Boston Univ. EECS /RLE - Optics & Quantum Electronics Seminar Series. 11am-noon, Rm 34-Grier Room B. More info: x3-8504, <ippen@mit.edu>.

Does Security Studies Have a Future in the Ivory Tower?*—Steven Walt, Kennedy School of Govt, Harvard Univ. Security Studies Program Seminar Series. 12-1:30pm, Rm E38-615. Bag lunch, refreshments will be provided. More info: x3-0133, <|levine@mit.edu>, <|http://web.mit.edu/ssp/>.

Bob L. Mandab*—Larry Pratt, WHOI. Physical Oceanography Sack Lunch Seminars. 12:10pm (1 hour), Rm 54-915. More info: x3-2322, markus@ocean.mit.edu/, http://www.mit.edu/—mjochum/sack.html>.

Vertical Structure of Large Scale Convective Disturbances in the Tropics*—George N. Kiladis, NOAA. Sponsored by MIT Atmospheric Science Seminars. 4pm, Rm 54-915. More info: x3-0136, <ddlucas@ mit.edu> or <www-paoc.mit.edu/MASSseries.html>.

Formulas for Quiver Varieties and Stanley Symmetric Functions*—Anders Buch, Dept of Mathematics, MIT. Combinatorics Seminar. 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>.

Error Detection in GPS Observations by Means of Multi-process Models*—Henrik Thomsen, Aalborg Univ., Denmark. Sponsored by Statistics Seminar with Department of Mathematics. 5:15-6:15pm, Rm 2-105. Refreshments at 4:45pm in Rm 2-349. More info: x3-4390, <genton@math.mit.edu>.

Decompositions of Joint Probability Density Functions*— Juan Lin, Dept of Mathematics, MIT. Statistics Seminar. 5:15-6:15pm, Rm 2-105. Refreshments at 4:45pm in Rm 2-349. More info: x3-4390, <genton@ math.mit.edu>.

FRIDAY, NOVEMBER 12

Alternating Sign Matrices and Beyond*— James Propp, Univ. of Wisconsin. 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/~c

MONDAY, NOVEMBER 15

Smart Field Emission Arrays and Applications to Displays*—Prof. Akintunde Akinwande, EECS, MTL. MIT-EECS 1999 Fall Semester Colloquium Series. 4pm, Rm 34-Edgerton Hall, 34-101. Refreshments at 3:30pm. More info: x3-4193 <elias@theory. lcs.mit.edu>.

TUESDAY, NOVEMBER 16

Instability of Viscous and Buoyant Miscible Fluids in Confined Geometries*—Salin Dominique, Universite Paris VI. Physical Mathematics Seminar. 2:30-3:30pm, Rm 2-338. Refreshments at 3:30pm in Rm 2-349. More info: x3-4387, <bush@math. mit.edu>.

Semiconductor Industry Productivity: Shrinks, 300mm Wafers, or System on a Chip*—Bob Helms, Texas Instruments. MTL VLSI Seminar. 4-5pm, Rm 34-101. Refreshments in Rm 34-101 at 3:30pm. More info: x3-5264, <debb@mtl.mit.edu>, <http://www-mtl.mit.edu/>.

Design of Non-axisymmetric Turbomachinery*—Dr. Tom Hynes, Whittle Laboratory, Cambridge Univ. Gas Turbine Fall Seminar Series. 4:30pm, Rm 31-161. Refreshments 4:15pm. More info: x3-2481, <dragonl@mit.edu>.

Islamic Fundamentalism and the Arab-Israeli Peace Process*—Ahmad Moussalli, Amer Univ of Beirut. Sponsored by Center for International Studies. 4:30pm, Rm E51-095. Emile Bustani Middle East Seminar. More info: x3-8961, <stilwell@mit.

Meeting the Challenge to Grow Center City America*—Harvey Gantt, architect/ former mayor, Charlotte, NC. Dept of Architecture lecture. 6:30pm, Rm 10-250. More info: x3-7791.

Cults@MIT?*—Steve Hassan, Freedom of Mind Foundation. Sponsored by Atheists, Agnostics, and Humanists, MIT. 7-8:30pm, Rm 54-100. More info: <mitaah-officers@ mit.edu> ">https://www.mit.edu/-mitaah/>.

WEDNESDAY, NOVEMBER 17

Antimonide-Based Mid-IR Semiconductor Lasers*—Hong Choi, MIT, Lincoln Lab. EECS /RLE - Optics & Quantum Electronics Seminar Series. 11am, Rm 34-Grier Rm B, 34-401. More info: x3-8504 <ippen@ mit.edu>.

The Technology and Policy of Warhead Dismantlement*—Dr. Geoffrey Forden, Congressional Budget Office. Security Studies Program Seminar Series. 12-1:30pm, Rm E38-615. Bag lunch, refreshments will be provided. More info: x3-0133, <llevine@mit.edu>, http://web.mit.edu/ssp/.

Evolution of the Lamont ENSO Forecast Model*—Dake Chen, Lamont-Doherty Earth Observatory. Physical Oceanography Sack Lunch Seminars. 12:10pm, Rm 54-915. More info: x3-2322, <markus@ocean.mit.edu>, http://www.mit.edu/-mjochum/sack.html>.

Some Practical Mathematical Tools for Computational Quantum Chemistry*—Yvon Maday, Laboratoire A.S.C.I.-C.N.R.S., Universite Paris Sud. Sponsored by Singapore-MIT Alliance/HPCES. 4pm, Rm 4-237. More info: x3-8122, <patera@mit.

edu>, <http://web.mit.edu/sma/>.

Kazhdan-Lusztig Polynomials and 321-Hexagon Avoiding Permutations*— Gregory Warrington, Harvard Univ. Combinatorics Seminar. 4:15-5:15pm, Rm 2-338. Refreshments at 3:30pm in Rm 2-349. More info: x3-6544, <sara@math.mit.edu/~combin>.

THURSDAY, NOVEMBER 18

Networks as Links Between Operations Research and other Disciplines*—Ann Nagurney, UMass Amherst. Sponsored by Operations Research Center. 4-5pm, Rm E40-298. Refreshments follow in Rm E40-106. More info: x3-7412, <armacost@mit.edu>, khttp://web.mit.edu/orc/www.

FRIDAY, NOVEMBER 19

Co-Simulation and Knowledge Networking: A Grand Challenge at the d'Arbeloff Laboratory*—Prof. Harry Asada, mechanical engineering, MIT. Sponsored by ME Seminar Series. 3-4pm, Rm 3-270. Refreshments follow in Rm 1-114. More info: x8-5807, cbhenson@mit.edu>.

Differential Posets and Distributive Lattices: a 1975 conjecture of Richard P. Stanley*— Johnathan Farley, Vanderbilt Univ. Combinatorics Seminar. 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

Preparing for a Baby*—Tues. Nov. 16, Betsy Ross, LICSW, A2Z Psychotherapy. 12:30-1:45pm, Rm 16-151. Preregistration required. x3-1592, <frc@mit.edu>, <http://web.mit.edu/personnel/www/frc/>.

Working Group on Support Staff Issues lunch meeting*—Wed., Nov. 17. Bush Room. Agenda: mini-workshop on meeting management with Jeff Pankin; task group updates. Contact Heather Mitchell, x3-9474 or <mheather@mit.edu> for an invitation and more information.

Job Flexibility*—Thurs., Nov. 18. Kathy Simons and Valerie Chu, Family Resource Center and Personnel Department. Sponsored by Family Resource Center. 12-1:30pm, Rm 16-151: More info: x3-1592, <frc@mit.edu>. .

When Partners are from Different Religions*—Fri., Nov. 19. Sharon Bauer and David Breakstone, Pastoral psychotherapist and communications consultant. Sponsored by Family Resource Center. 12-1pm, Rm 16-151. More info: x3-1592, <frc@mit.edu>, http://web.mit.edu/personnel/www/frc/>.

New Weight Watcher's Program starting Nov. 18. \$120/12-week program. Meets Thursdays, 1-2pm, Rm 8-219. More info: x3-9756, <overlan@mit.edu>.

Lunchtime Craft Fair*—Nov. 19, 11:30am-1:30pm, Draper Lab, Enter only at the 1 Hampshire Street entrance. More info: Claudia at Draper 258-2592.

MIT Gardeners Group Meeting**—Friday, Nov. 19, noon-1pm, Emma Rogers Room (10-340). Speaker: Harriet Hathaway from Lexington Gardens. Topic; indoor gardening. Sponsored by MIT Women's League. More info: x3-2127 <mit-gardeners@ mit.edu>,

Wives Group**— Nov. 10: Thanksgiving Dinner, West Dining Room, Ashdown House.
Nov. 17: Trip to the Davis Museum at Wellesley College. Meet in Student Ctr lobby at 1:45pm. Meetings from 3-5pm in Rm W20-400. A support network for the partners and spouses of MIT students, staff and faculty. More info: x3-1614.

■ MITAC

The MIT Activities Office (MITAC) serves the cultural and recreational needs of the MIT community (including MIT's retirement community. Two locations: (1) Walker Memorial Rm 005, 9:30am-3:30pm, Wednesday-Friday (2) Room LLA-218, x6130, Lincoln Lab, 1:15-4pm, Thursday and Friday only. More info: x3-7990 or julieh@mit.edu>. MITAC accepts only cash or a personal check made payable to MIT. MIT IDs must be presented.

Waiting in the Wings, starring Lauren Bacall (Colonial Theatre, Boston)**—Sun., Nov. 28, 2pm. Orchestra Ticket: \$62 (reg. \$65); Balcony Ticket: \$52 (reg. \$55).

Nutcracker (Wang Center, Boston)**—Fri., Dec. 31, 12pm. Orchestra Ticket: \$26 (reg. \$49).

Yo Yo Ma (Symphony Hall, Boston)**—Fri., Jan. 21, 8pm. Ticket: \$41 (reg. \$48).

MIT TECH TALK # 5 **NOVEMBER 10, 1999**

Alumnus gives \$100m to Institute's campaign

(continued from page 1) several years of teaching and conducting research at MIT, Harvard, and the University of Massachusetts, he left academic life in 1982 to start Kenan Systems with an initial investment of \$1,000.

The company, which developed one of the key productivity advances in computer software, provides software products for billing, customer care, order management and decision support to single- and multi-service communications and energy companies worldwide. It was merged into Lucent Technologies for Lucent common stock, worth approximately \$1.48 billion at the time. Dr. Sahin is now president of the Kenan Systems division of Lucent Technologies and vice president of software technology at

Dr. Sahin said he is sometimes asked how it feels to be a billionaire.

"I wouldn't know," he said, "because I don't consider myself one. I'm just a guardian. In that spirit, I want to lay on the table \$100 million.'

There was a stunned silence, and then the audience erupted with cheers and applause for three minutes. Dr. Vest gave him a hug and then Dr. Sahin continued.

'My mission is not yet done. I am aiming to take some of the very best ideas from MIT and my experiences and use them at Lucent Technologies and its Bell Laboratories."

Dr. Sahin named former Presidents Paul Gray and Howard Johnson (a former member of Kenan Systems' board of directors), President Vest and Alex d'Arbeloff (SB 1949), chairman of the MIT Corporation, to constitute a council committee to advise him on how best to designate the \$100 million to best advance the educational and research goals of MIT

Raymond Stata (SB 1957), founder of Analog Devices and chairman of MIT's Campaign, thanked Dr. Sahin for "this magnificent gift."

Mr. d'Arbeloff, founder of Teradyne, said, "Kenan is the epitome of the kind of leadership that we hope to encourage in our students. Not only does he create new institutions, he helps to strengthen those that helped him along the way. We are deeply grateful for this extraordinary gift and for his confidence in our future.

President Vest said, "Kenan Sahin's extraordinary gift to MIT is in the finest spirit of personal philanthropy to support excellence in higher education. Kenan has experienced MIT in every dimension-as a student, as a faculty member, as an alumnus and as

This is a gift from the heart, and one that represents a belief in the importance of what MIT is and will be. It stands as a reminder of how much MIT and this country benefit from enormously talented students and faculty from all over the world."

"I have known Kenan for nearly 40 years, since his days as a student at the Sloan School," President Emeritus Johnson said. "I would say that he is the classic American success story. He was always interested in moving beyond what most people expected, even what most people imagined. His talents were matched by a kind of daring and tenacity that has led to remarkable success. And yet, there is a kind of modesty and quiet dignity about him. I am not surprised—but am certainly delighted—that he has sought to deepen and build the qualities of MIT that meant so much to him."

The gift is the largest ever received by MIT and one of the largest in higher

"Kenan Sahin's gift will transform MIT in many ways," said Barbara Stowe, vice president for resource development. "His generosity and that of many other alumni/ae so early in our campaign will signal a call to others that will forever change MIT's base of private support."



Alumnus Douglas Ross (1954) (left) chats with (left to right) President Vest, Ray Stata and architect Frank Gehry at the campaign kick-off Saturday afternoon. **Photo by Donna Coveney**

Capital campaign launched on Saturday

(continued from page 1)

the Sloan School of Management, as well as undergraduate and graduate housing, a sports and fitness center, and landscaping.

The \$100 million "Millennium Fund" is designed to provide the Institute with the financial agility to act quickly and support new ideas as they emerge.

NEW DIRECTIONS

MIT is known worldwide as a hotbed for innovation in discovery, teaching and research. Examples of its agenda for the future are the following four areas, highlighted in the casebook for the campaign.

Biotechnology, bioengineering and medicine-There are already 45 US biotechnology companies founded by MIT graduates or based on MIT patents that produce annual revenues of \$3 billion. Research in biotechnology, bioengineering and medicine at MIT will build on and add to past breakthroughs in cancer research, genetics, and organ regeneration.

Neuroscience—The goal is a much deeper understanding of the human brain. Researchers are pursuing paths such as using functional magnetic resonance imaging to actually see, for the first time, the brain working in real time, as well as relying on sophisticated genetic techniques to probe how the brain operates. MIT hopes to make advances that will lead to new therapies or cures for genetically based mental illness, and enhance human learning and communication.

The information marketplace— Some day, computers will be as easy to operate as a car. MIT is creating machines that understand casually spoken words and even some unspoken needs. The Laboratory for Computer Science and the Media Lab are tackling projects that range from the pragmatic to the provocative, from state-of-the-art fiber optics for high-bandwidth transmission to robots that learn like human babies.

Global climate change—Around the Institute, faculty and students are working on answers to the scientific, economic and political challenges of safeguarding the natural world while promoting the kind of development that meets the needs of a burgeoning global population. Earth scientists are exploring climate change, trying to determine to what extent human activity is impacting the way our climate works. Many of these scientists are working with economists, policy experts and others to forecast and plan for the broader impacts of potential changes in climate in the coming decades.

President Vest emphasized that practical advances such as these are made possible only by investments in fundamental research and scholarship. MIT researchers continue to explore the unanswered basic questions, such as what happened in the moments after the Big Bang; discover the nature of materials and the materials of nature; and prepare for a new era of interplanetary exploration.

Provost Robert A. Brown said that addressing such questions and challenges "requires intellectual and organizational nimbleness-combining disciplines, taking risks and looking at old problems in new ways. The result is fields-and even entire industries-that hardly existed a few years ago: gene therapy, ecommerce, optical communication, biomaterials, new environmental technologies, financial engineering and webbased learning. There is no place better suited to inventing the future than MIT, and we need both the vision and the generosity of our alumni/ae and friends to help us reach our targets.'

PRIVATE SUPPORT

MIT has enjoyed five decades of extraordinary federal research sponsorship. However, in the early 1990s, federal support for universities, including MIT, began to erode. While the faculty have succeeded in maintaining strong research support, a number of federal policy shifts have resulted in shrinking support for graduate students and shifting more costs of research onto universities.

In 1965, sponsored research support, predominantly federal, accounted for roughly 60 percent of all of MIT's campus operating revenues. By 1999, that figure had dropped to 45 percent. Of this, approximately 70 percent came from the federal government, 20 percent from industry, and the remainder from private foundations and other sources

Private support—from individuals and organizations—represents a growing portion of the Institute's revenues. While MIT receives a higher proportion of research funding from industry than any other university, that funding is generally restricted to certain fields of interest to the corporate sponsor. As a result, the Institute must look elsewhere-to alumni/ae and other individual donors-for the funds to meet its ambitious agenda.

IMPACT OF INNOVATION

The local economy and the country

as a whole have received an enormous social and economic return on MIT teaching and research. In the first national study of the economic impact of a research university, the BankBoston Economics Department found that MIT graduates and faculty have founded 4,000 firms, which in one year alone employed at least 1.1 million people and generated \$232 billion of sales. If the companies were an independent nation, the revenues produced by the firms would have made that nation the 24th-largest economy in the world. The full report can be downloaded from the web site at http:// web.mit.edu/newsoffice/founders/>.



acilities snows on Frank Genry's model of the new Stata Center, which was on view at the Stratton Student Center during Saturday's campaign activities. **Photo by Donna Coveney**

Complexity conference to feature Nobel laureate Gell-Mann

Engineering is in the midst of an explosion of complexity. New semiconductor chips contain a billion subcircuits. A new car contains 20 microprocessors. Home health care systems are being designed that monitor the heartbeat and temperature of a home's occupants.

A conference November 19-20 at the University Hotel in Cambridge, sponsored by MIT and the Santa Fe Institute, will address this trend by bringing together a variety of people from academia and industry who are working on complex systems. Speakers include Nobel laureate Murray Gell Mann and Alex d'Arbeloff (SB 1949), Chairman of Teradyne and of the MIT Corporation.

"Cars, computers, and even toasters are more complex than they were 10 years ago. But greater complexity brings both new benefits and new problems. For example, the new computerized cars can be more flexible and reliable than the old 'dumb' ones, but when they break down, they do so in weird new ways. The purpose of the conference is to determine the implications this 'complexification' has for society, and to develop techniques and strategies for engineering complex but reliable systems," said Seth Lloyd, organizer of the Complexity in Engineering Conference and the Finmeccanica Career Development Associate Professor in the Department of Mechani-

The conference includes three plenary speakers and sessions on manmachine interactions, networks, dynamics, design, computation, instrumentation (including talks on nanowalkers and polymer-based intelligent systems) and biology.

Plenary speakers are:

· Alex d'Arbeloff, Chairman of Teradyne and of the MIT Corporation, "Managing Complexity in Industry," 1:45pm Friday, Nov. 19.

• Murray Gell-Mann, Nobel Laureate in Physics and Distinguished Fellow of the Santa Fe Institute, "Simplicity and Complexity in Physical Law," 9:15am Saturday, Nov. 20.

 Paul Penfield, Professor the Department of Electrical Engineering and Computer Science, "Making Complexity Simple," 10am Saturday, Nov.

The conference is free for students, academics and members of the press. Members of the public are invited to attend for a \$50 fee, payable upon admission. Please preregister with Susan Ballati at the Santa Fe Institute Business Network for Complex Systems Research at <susanb@santafe. edu> or (505) 820-0122. Non-preregistered participants will be admitted on a first-come first-served basis. Further inquiries can be directed to Professor Lloydat <slloyd@mit.edu>orx2-1803.

Science and math whiz kids will vie for \$20,000 prize

■ By Deborah Halber News Office

Five individuals and five teams of high school students will compete at MIT this Saturday in the New England regional Siemens Westinghouse Science and Technology Competition, a scholarship and awards program of the Siemens Foundation.

The competition, in its inaugural year, was created to promote and advance math and science education in America.

The competition is open to individuals and teams of high school students who develop independent research projects in the physical or biological sciences or mathematics. Members of the MIT community are invited to the presentations, which will take place from 8am-12:30pm on Saturday, Nov. 13 in Rm 6-120.

The New England regional finalists, whose entries span mathematics, biology, environmental science, physics, computer science and chemistry, will present their independent research projects to a panel of MIT judges. The judges are Leslie Perelman, director of Writing Across the Curriculum; Maurice S. Fox, professor of biology; Maria Zuber, professor of earth, atmospheric and planetary sciences; Hal Abelson, the Class of 1922 Professor and MacVicar Teaching Fellow in electrical engineering and computer science; and David Vogan, professor and head of the Department of Mathematics. Student projects are judged on originality, creativity, academic rigor and clarity of communication. "Few things are more important

than to encourage and reward study and accomplishment in science, mathematics and technology among young people," said President Charles M. Vest. "This is the key to future discovery and innovation in our society, which in turn will drive our economy and enable us to improve our quality of life, health and environment."

Competitions in six regions across the United States are being held in October and November. The six individuals and six teams of finalists will go on to compete in Washington, DC in December for a top individual scholarship prize of \$100,000. Members of the top team will share a \$90,000 scholarship.

Regional competitions, which are co-administered by Siemens, the College Board and the Educational Testing Service, have been held at Carnegie Mellon University and the University of California at Berkeley. The University of Notre Dame competition is being held on November 12-13. The Georgia Institute of Technology and the University of Texas at Austin will host their competitions November 19-20.

The individual winner of the New England regional finalists will receive an award of \$20,000; members of the winning regional team will share a prize of \$30,000. All of the prize money will be applied toward the winning students' undergraduate or graduate education.

During the two-day event, the Institute will host the student competitors and their chaperones at oncampus activities and tours of university laboratories and facilities.

MIT and Cambridge University create educational partnership

(continued from page 1)

"The opportunity to join forces with the University of Cambridge to advance knowledge and educate leaders for the new global society is tremendously exciting. We believe that the synergies of Cambridge and MIT will present unparalleled opportunities for education and research and will serve to establish bold new university-industry linkages and create new cultures of entrepreneurism."

The Cambridge-MIT Institute, utilizing faculty and students from the two universities, will develop educational and research programs designed to stimulate the development of new technologies, to encourage entrepreneurship, and to improve productivity and competitiveness. Although the initial focus of the new Institute will be on research and education at the intersection of engineering and management, faculty from all five of MIT's schools are expected to participate in some aspect of the program.

An undergraduate student exchange program is a central objective of the Cambridge-MIT Institute. Currently, many MIT undergraduates find it difficult to participate in junior year abroad programs due to their highly constrained curriculum. Through the development of a series of common third year subjects taught with distance learning technologies, students will be able to take the same subject whether they are enrolled at MIT or Cambridge. This innovation should permit up to 50 undergraduates a year from each university to spend their junior year at the other Cambridge campus.

Professor Richard Hynes of biology, who has studied at both Cambridge University and MIT, said, "I think this exchange plan is excellent. They are very different places. MIT is go-go-go, run-run-run.

MIT students like constant testing. In Cambridge, they tend to think around and find the one way, rather than all the ways. That plays out in teaching. Teaching there is really very different. There is much less in the way of continual exams; you are more on your own. In Cambridge, there is basically one exam every three years—you could explore a subject. Also, you always had choice on exams. You're much more independent there as a student-you're given time to think, so it produces a different way of learning. It's very good for students to see and experience the other's style. I like both. I got a lot of out of both styles," Dr. Hynes said.

MIT programs for distance education with Cambridge will be based in part on experience gained in MIT's distance learning alliance with the National University of Singapore and the Nanyang Technical University.

Startup activities will include educational and research programs in manufacturing, product development and industrial competitiveness carried out jointly by MIT's Engineering Systems Division and Cambridge's Manufacturing Institute. A conference will be held of top executives from the US and the UK to discuss cooperative activities between industry and the new Institute.

Chancellor Lawrence Bacow, who has been working on the agreement for more than a year in close association with Daniel Roos, associate dean of engineering and head of the Engineering Systems Division, said in a statement, "What we are about to do is potentially historic. It could transform both institutions and truly create a new model for the global research university in the twenty-first century."

President Vest commented, "Modern industry is fast-paced, global in scale, knowledge-based, driven by innovation, and spawned by entrepreneurs. This program will not only help to stimulate industrial development in the UK, it will create a new generation of leaders and innovators on both sides of the Atlantic. Beyond that, the Cambridge-MIT Institute will give us opportunities to explore at a new level the use of cutting-edge information technologies in education and co-operative research. By bringing MIT and Cambridge together in this way, we can establish a model for the globally-linked research universities of the future.'

"This year marks the 50th anniversary of Winston Churchill's address to MIT's Mid-Century Convocation, a momentous occasion in the history of MIT. Today, with the signing of this agreement, the eighth of November, 1999 is another historic day."

Chancellor Bacow added, "For the University of Cambridge, this new partnership represents an opportunity to capitalize on MIT's entrepreneurial culture; to build on MIT's innovative programs that tightly couple management and engineering education; and to collaborate in extending MIT's model of university-industry partnerships to the United Kingdom.

"For MIT, this partnership offers an opportunity to participate in the education of the next generation of European technology leaders; to develop important relationships with European industry; and to expose its students to the culture of Europe.

"For both institutions, the partnership offers opportunities to build strength upon strength in fields where we are each world leaders, to collaborate efficiently in new research and educational initiatives, and to work together with our industrial partners. By using advanced information technology to link our campuses, frequent student and faculty exchanges, joint research programs, the development of some common curricula, we seek to create as much as possible, a university that spans two Cambridges-an extended Cambridge, equally accessible from both sides of the Atlantic to students, faculty, industry, and government," Dr. Bacow said.

Dean of Engineering Thomas Magnanti said, "For student and faculty exchanges, through basic research in the fields of science, technology and humanities, and through the use of contemporary distance education and collaboration tools, we are bringing together two of the world's great universities.

"Both Cambridge and MIT expect to have a significant impact on future technologies, and in the evolution of our economy in the fields like manufacturing, product development, logistics and entrepreneurship," Dr. Magnanti said.

Dean Richard Schmalensee of the Sloan School of Management said, "The Cambridge-MIT Institute is an exciting development that will reinforce our joint commitment to be at the forefront of innovation in management education and research in the global economy. We at Sloan welcome the opportunity to collaborate with colleagues at the University of Cambridge to enhance our teaching and research programs, to advance technology-driven entrepreneurship, and to impart the knowledge and skills required to launch and grow successful global businesses."

Professor Rosalind Williams, the dean of students and undergraduate education, said, "We are experimenting here with a new kind of campus rooted in a local place but very much a global campus, a human exchange but also a technology exchange. This is definitely a two-way street. We have much we can learn from them."

The vice-chancellor of the University of Cambridge, Professor Sir Alec Broers, has been at the forefront of Cambridge's development plans, creating links with industry and promoting entrepreneurial ideas. He said, "Higher education needs to think globally. Research universities of the caliber of Cambridge and MIT are substantial engines of economic growth and we need to think in terms of these long-

"Universities have the ability to foster and develop ideas, often over a longer time scale than commerce and industry. This means that our collaboration with MIT at faculty and student level can bring long-term benefits, and we can develop major joint research programs. Our students will visit MIT to be immersed in its culture.

term strategic partnerships.

"For Cambridge and MIT, this Institute is the start of a dynamic and challenging partnership. We can create entrepreneurs who can use their inspiration and perspiration to build a stronger British economy. They could change the face of entrepreneurship and wealth creation in the UK."

This British competitiveness network will link together several universities throughout the UK. It will provide opportunities to convene meetings, conferences and seminars between industry, government and universities, and to coordinate research and distribute curricula regarding competitiveness, entrepreneurship and productivity.

The integrated research program will focus on how technology improves productivity, how technology-based enterprises grow out of academia, and how technology enterprises develop into world-class organizations. The new Institute will also link research programs in fields that are likely to have great impact on the evolution of future technology.

Gantt to speak on urban revitalization

Martin Luther King Jr. Visiting Professor Harvey Gantt, an architect, planner and former mayor of Charlotte, NC will give a lecture on Tuesday, Nov. 16 on "Meeting the Challenge to Grow Center City America."

The 6:30pm lecture is sponsored by the Departments of Architecture and Urban Studies and Planning and will be held in Rm 10-250.

Mr. Gantt brings an informed vision of the pivotal role the inner city might play in the regeneration of the economic, social, civic and cultural life in the United States. The lecture is the first in a series of activities at MIT in which Mr. Gantt will lead discussions on these issues.

In January, Mr. Gantt will teach an IAP seminar, "City Revitalization in the Inner City." He is also organizing a major conference, tentatively scheduled for the fall of 2000, on "Inner Cities: The New American Heartland" that will bring together practitioners, scholars, and citizens to promote the center city as a focus for growth.

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FOR SALE

Modem, Súpra/Express 56K fax/modem for Mac, new w/manual, \$75. Contact <grimm@LL. mit.edu>. K2 skis, boots, bindings, 1998 models: K2 MGX skis, 176, Marker M28 bindings, Technica DUO boots 70" (length 294mm); orig \$700, sell \$200 or bst. Helen x3-5405 or 781-863-0941.

Golf clubs, Wilson, 3-PW, dry & 3wd, gd cond, \$125. Call x3-2970.

Dining room table & 6 ladder back chairs, incl seat cushions, entire set \$500. Joan x3-1916 or 978-897-4976.

■ VEHICLES

1985 Honda Rebel, 250cc, only 2,000 miles, runs grt & looks grt, \$1800 or bst. Grace 781-937-3740.

■ HOUSING

Arlington: lrg 3BR apt in 2-fam house, close to Alewife T, Mass Ave, shops, restaurants, avail 1/1/00. 6-mo lease, \$1500/mo; longer term, \$1350/mo. Contact: <mittim@aol.com>.

Brighton/Brookline border: 2BR apt avail Dec 5, incl prkg, a/c, laundry in bsmt, 2 min from Green Line, \$1250/mo; furniture for sale \$2000. Contact: <shlomi@lids.mit.edu>,617-566-4360,x3-6113.

Cambridge: Kendall Sq area, furn rooms for rent in single home, conv to MIT, subway, restaurants, \$250/wk; \$800/mo. J. Blair, Draper x8-2843 or 617-576-5125. Thanksgiving weekend, Christmas, New Years & IAP getaway, log cabin, slps 7, nr Mt. Sunapee, grt hiking, skiing, relaxing by the fire. Contact: <lw318@aol.com>, x3-4351, 781-449-6744.

Seekonk, MA: ~40 miles from MIT nr comm rail, among more exp homes, high-ceiling 3-4BR bungalow, LR/DR, ktchn, 1b, 2-car gar, 3/4 acre, \$159,900. Cynthia, 508-336-1369, 978-772-4848.

■ WANTED

Menopause study: menopausal women needed to study its effects on appetite, 3 hr study involves 1 dose of mild appetite suppressant and 2 blood samples, \$75 stipend. Contact: x3-3096.

1BR furn apt needed for Dec 10-27, prefer something close to Hvd/Central/Kendall T-stops. Contact x3-0502 or <mathias@mtl.mit.edu>.

Housesitter wanted Feb 3-March 14, care of 2 cats, plants, quiet nbrhd, close to bus for Hvd Sq, non-smkr. Alfred, 781-646-8618 (eves).

Prof on sabbatical at MIT sks to rent or exch in Boston sunny 2BR apt in Paris, mid-Dec - June/July 2000, nr public transp, \$1500/mo incl utils. Contact: <aidanm@esiee.fr> or 33-1-43-28-96-30.

Retirees to hold two-pronged program Tuesday

A voiding scams will be the topic of a retirees' seminar on Tuesday, Nov. 16 at 10:30am in the Student Center Mezzanine Lounge.

Dan Dermody, an investigator from the Massachusetts Secretary of State's Office, will be the speaker.

He will present a videotape and describe sophisticated approaches used to relieve people of their assets, including a number of Y2K bank and credit-card scams now in operation around the state. The presentation will be followed by a sandwich lunch.

Because many retirees have expressed an interest in using the facilities of the Hobby Shop and the Student Art Association, both will be open for tours in the early afternoon. Ken Stone (Hobby Shop) and Ed McCluney (SAA) will lead tours which will include examples of work in progress in the shop and studios. Both facilities welcome participation by retirees.

Members of the community interested in attending should call the Retirees Office at x3-7910 to sign up. The cost for the lunch is \$4.

Chamber Chorus premieres Cutter's new work

William Cutter, will present the world

premiere of Dr. Cutter's Missa Brevis in a concert on Sunday, Nov. 14at3pminKresge Auditorium.

"I have been

wanting to compose a work for the talents and considerable musical skills of the MIT Chamber Chorus since I began as its conductor three years ago,"

The 34-member MIT Chamber Chorus, under the direction of Lecturer summer and officially dedicated to the group, the work is performed without

Arts at MIT

accompaniment and features a solo quartet of singers in the Sanctus/ Benedictus.

Dr. Cutter set Latin texts from the Roman Catholic Mass to music, trying, he said, to capture memories from his childhood of the "often hushed and unsynchronized mumbling of congregational prayers, the symbolic ringing of bells by the altar boys, the chanting of ancient Gregorian melodies to Latin texts, and the general sense of seriousness, humility and awe which was

more the character of the Roman Catholic Mass before the reforms of Vatican II.

The concert will also include works by Henry Purcell, Benjamin Britten and Elliot Carter.



William Cutter

Photo by Karlene Rosera (Class of 2000)

MITHAS event



North Indian vocalist and recording artist Purnima Sen performs music from her country in Killian Hall on Saturday, November 13 in a concert sponsored by MITHAS (MIT Heritage of the Arts of South Asia). She will be accompanied by Senior Lecturer George Ruckert on harmonium and Jerry Leake on tabla. See listing in Arts Calendar below.

Arts News

■ National Public Radio's November 13 broadcast of "The World of Opera" will feature the Houston Grand Opera's performance of Resurrection, written by Media Laboratory Associate Professor Tod Machover (music) and Music and Theater Arts Lecturer Laura Harrington (libretto). Preceding the broadcast, Lou Santacroce will interview Professor Machover for the irreverent "At the Opera." Unfortunately, the program isn't carried by Boston-area affiliates.

■ Laura Harrington will read from her new work, Pickett's Charge-a modern comedy about Civil War reenactors—at the Clapp Library Lecture Room at Wellesley College on November 14 at 4pm.

■ Two MIT staffers will share the stage at the December 13 Blacksmith House Reading Series at 8:15pm at 42 Brattle St. in Cambridge. Robin Lippincott (senior secretary, Department of Materials Science and Engineering) will read from his latest novel, Mr. Dalloway: A Novella, and Andrea Cohen

(communications director, Sea Grant Program) from her book of poetry, The Cartographer's Vacation.

■ The Museum Loan Network has been re-funded by the John S. and James L. Knight Foundation and the Pew Charitable Trusts with \$3.8 million over the next three years. The MIT-based program was created in October 1995 to encourage and facilitate the long-term borrowing and lending of art objects among museums to increase the public's access to a wealth of objects currently in

■ The October 14 concert by the **New England Conservatory Honors** Orchestra featured a double bill of MIT musicianship. Professor Marcus Thompson was the viola soloist for Institute Professor John Harbison's 1990 Viola Concerto. "The concerto's four movements prove to be strikingly individuated as to scale, texture, and even emotional temperature," wrote the Boston Globe's Richard Buell, noting that "soloist Marcus Thompson... positively reveled in it."

Mitchell to speak on urban 'e-topia'

Friday night may have been all right once, but today it's a triage among communications options, according to Professor William J. Mitchell in his new book on life in the urban digital era, e-topia: 'Urban life, Jim, but not as we know it' (MIT Press).

In fact, the options are so many and the moments so few, a new economy of presence has sprung up, asserted Professor Mitchell who is dean of the School of Architectureand architectural advisor to President Vest. His previous book, City of Bits, skirted the problem by being released simultaneously in print and electronic form, a pioneering moment in publishing.

"Before telecommunication technology began to change things, being 'present' always meant having your body right there, in some specific location to establish the possibility of direct, face-to-face interaction.

'In the electronically restructured cities of the twenty-first century, we will, I believe, plot our actions and allocate our resources within the framework of a new economy of presence. In conducting our daily transactions, we will find ourselves constantly considering the benefits of different grades of presence that are now available to us...

"But the power of place will pre-

vail. As traditional locational imperatives weaken, we will gravitate to settings that offer particular cultural, scenic, and climatic attractions together with those face-to-face interactions we care most about," he writes in e-topia.

Professor Mitchell will speak on etopia on Friday, Nov. 12 at 5:30pm in Rm 1-190, with a reception to follow. His talk is part of the authors@mit series, sponsored by MIT Libraries and the MIT Press Bookstore. All authors@mit events are free, open to the public and wheelchair accessible. Books are sold at a discount the week of the event. For more information, go to http:// mitpress.mit.edu/bookstore/events>.

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

November 10-21

■ MUSIC

Chapel Concerts*—Nov 18: The Alexey Shabalin String Trio. Works of Beethoven and others. 12noon, Chapel. x3-2826.

MIT Muses Fall Concert*-Nov 12. MIT's all-women a cappella ensemble. 7:30pm, Rm 54-100. Adeline Leong, 216-8598, <muses@mit.edu>or<http://www.mit.edu/ activities/muses/>.

Purnima Sen, North Indian vocalist*-Nov 13. Vocalist from Calcutta, whose many recordings have brought her deserving ac claim. Accompanists George Ruckert, harmonium; Jerry Leake, tabla. Presented by MITHAS. \$15, \$12—MITHAS & New & seniors; \$10 MIT students. 8pm, Killian Hall. x8-7971 or http://web.mit.edu/mta/

MIT Chamber Chorus*-Nov 14. William Cutter, music director. Two psalm settings, and the Ode to St. Cecilia's Day by Henry Purcell; Te Deum in C major and the Hymn to St. Cecilia by Benjamin Britten; Premiere of Missa Brevis by William Cutter; Musicians wrestle everywhere by Elliot Carter. 3pm, Kresge Aud. x3-2826 or http:// web.mit.edu/21m.405/www/>.

MIT Concert Choir*-Nov 19. William Cutter, director. Mozart's Vesperae de Dominica, K.321; Poulenc's Gloria. \$5.8pm, Kresge Aud. x3-2826 or http://www.mit. edu:8001/activities/concert-choir/home.html>.

Techiya Fall Concert*-Nov 20. Jewish a cappella. With guest groups Kol Echad from Boston Univ and Tizmoret from Queens College. Sponsored by the Council for the Arts and the UA. 8pm, Rm 6-120. Info: <techiya-request@mit.edu>or<http://www mit.edu:8001/activities/techiya/home.html>

MIT Festival Jazz Ensemble*-Nov 20. Fred Harris, dir. The music of Duke Ellington, Charles Mingus, Count Basie, Bob Brookmeyer, Thad Jones and Gerry Mulligan The MIT Jazz Combo I will also be featured \$2 at the door. Pre-concert lecture at 7pm; concert at 8pm, Kresge Aud. x3-2826.

MIT Wind Ensemble*—Nov 21. Fred Harris dir. Chamber music for woodwind, brass and percussion instruments. Program includes Petite Symphonie, by Charles Gounod; Music for Pieces of Wood, by Steve Reich; Theme and Variations for Brass Choir, by Verne Reynolds and Divertimento for Brass and Percussion, by Karel Husa. 4pm, Killian Hall. x3-2826.

Singers Needed*-Mondays. The Meridian Singers, MIT's mixed classical and madri-gal chorus, is recruiting MIT staff and students for all parts, especially tenors and basses. Noon, Rm 4-148. Nancy Howells, dir, x3-1948 or <howells@mit.edu>.

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

THEATER

Iolanthe (or the Peer and the Peri)*- Nov 11-13. MIT Gilbert & Sullivan Players production. Tickets: \$9, \$7 for MIT community other students/children, senior citizens, \$5 for MIT/Wellesley students (group rates available). 8pm, Sala de Puerto Rico (Stratton Student Ctr), x3-0190, <savoyards-request@ mit.edu> or http://web.mit.edu/gsp/www/>

Student-Written One-Acts*-Nov 11-13. Dramashop presentation of original plays. No Soup on Sundays (by Whitney Boesel 2002, dir by Jeff Klann 2001); Next (by C. Scott Ananian (G), dir by Jeffrey Barrett 2002); Imprisoned (by Viengvilay Oudonesom (G), dir by Teresa Hernandez 2001). 8pm, Kresge Little Theater. x3-2908, <ds officers@mit.edu> or http://web.mit. edu/dramashop/www/>.

Evita*-Nov 18-21. Musical Theatre Guild production. \$9; \$8 MIT faculty and staff, senior citizens, other students: \$6 MIT/Wellesley students. Nov 18-20 at 8pm; Nov 20-21 at 2pm, Sala de Puerto Rico. x3-6294, <mtgtickets@mit.edu> or http://web.mit.edu/

DANCE

Dance Troupe Fall Concert*-Nov 19-21. Featuring a wide variety of dance styles. including modern, ballet, tap, jazz and funk, all student-choreographed. Tickets: \$5/\$6 students; \$6/\$7 non-students. Nov 19-20— 8pm, Nov 20-4pm, Nov 21-2pm, Little Kresge Theater. 494-8677 x 20 or http://web.mit.edu/dancetroupe/www/>.

■ READINGS

authors@mit. William J. Mitchell*-Nov 12. e-topia: Urban Life, Jim - But not as we know it. Mitchell, author of the bestselling City of Bits, is dean of MIT School of Architecture and Planning. 5:30pm, Rm 1-190. "The New New Thing: A Silicon Valley Story"*-Nov 17. Michael Lewis. Spon sored by The MIT Press Bookstore and MIT Libraries. 7pm, Rm 34-101. x3-5249 or <authors@mit.edu>or<http://mitpress.mit edu/bookstore/events>.

poetry@mit: Michael Gizzi*-Nov 18. Sponmistic Studies and Literature faculty. 7pm, Rm6-120. x3-7894, <poetry@mit>or http:// /web.mit.edu/humanistic/www/poetseri.htm>

■ FILM/VIDEO

An Evening with the Directors of Un sang d'encre (Black as Ink) and Black, Blanc, Beur:parlons-en!*-Nov 16. Screening and discussion led by Odile Cazenave. Sponsored by Foreign Languages and Literatures Dept. 7-8.30pm—Un sang d'encre (Black as ink) —subtitled. By Jacques Goldstein and Blaise N'Djehoya, the story of the migration to France of Afro-American artists and intellectuals after World War II; 8.30-10pm-Black, Blanc, Beur: parlons-en! in French, no subtitles. Johann Sadock's take on living in France when your heritage is African, Arabic, Jewish or Asian. Rm 4-237. x3-9777 or <jsadock@mit.edu>

Close Encounters Across*-Nov 18: Clando Jean-Marie Teno's 1993 film is a cross cultural confusion which takes place in Cameroon. Prof Odile Cazenave introduce Organized by the Center for Bilingual/Bicultural Studies and the International Film Club. Discussion and refreshments follow 7-9pm, Rm 4-237. More info: x5-7647,

<honjj@mit.edu> or <http://web.mit.edu/ ifilm/www/cbbs/>

■ EXHIBITS

List Visual Arts Center* (E15): Meanwhile, The Girls Were Playing. New installation by Boston-based artist María Magdalena Campos-Pons. A Unique American Vision: The Paintings of Gregory Gillespie. Major retrospective exhibition of works by the MA-based painter Gregory Gillespie includes paintings & painted sculptural objects. Both shows run through Jan 2. Hours Tues-Thurs & Weekends 12-6pm; Fri 12-8pm; closed holidays. x3-4680.

MIT Museum* (N52): 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: Geomet tures by Morton C. Bradley, Jr.; MathSpace. 265 Mass Ave. Tues-Fri 10-5, Weekends 12-5. x3-4444.

Compton Gallery- Dreams in Brick and Mortar: MIT, Alvar Aalto, and the Design of Baker House. Exhibition celebrating the 50th anniversary rededication of the Finnish architect's masterpiece of student life. Compton Gallery (Rm 10-150). Sept 30-Jan 28. Weekdays 9-5. Special weekend viewing: Oct 2-3, 16-17 and Nov 6-7 from 10-5pm. x3-4444 or

Hart Nautical Gallery-Deep Frontiers: Ocean Engineering at MIT. Long-term exhibit exploring the latest advances in underwater research. Opens March 19. Ship Models: The Evolution of Ship Design. Ongoing. Daily 9am-8pm. x3-5942.

The Dean's Gallery-Theresa Dietrich: Boston Architecture Collages. Collages created by combining xerox copies of photographs of Boston architecture with mixed media. Opening Reception-Nov 17, 5-7pm. Through Jan 21. The Dean's Gallery, Sloan School of Management, E52-466. Weekdays 9-5pm. x3-9455 or http://web. mit.edu/deans-gallery/www/>

chival photographs documenting the role of women at MIT over the decades. Rm 14E-316. x3-8844.

Women's Studies. Permanent exhibition of ar

Strobe Alley-Never Stop Learning: The Life and Legacy of Harold Edgerton. Photographs, instruments and memorabilia documenting the life of Harold Edgerton, inventor of the strobe light. Bldg 4, 4th floor corridor. x3-4444.

Institute Archives and Special Collections: Object of the Month: The Ellen H. Richards Memorial Home Economics Calendar 1913. A tribute to MIT's first woman graduate. Hallway exhibit across from Rm 14N-118. x3-5136.

■ OTHER

Machanina negaran kanda di mare-

Arts Colloquium**-Nov 19. All MIT faculty and arts staff are invited to hear Thomas DeFrantz, assistant professor in the Theater Section speak on his work at noon. Lunch will be served; reservations required. x3-9821 or <laura@mit.edu> by Nov 16.

Potluck Performance Art Party*-Nov 19. AKA show+tell. Bring video, poetry, slides, anything to read, show, perform and/or consume and get in free. Sponsored by MIT Electronic Research Society, \$4 donation requested for charity. 9pm, Rm N52-115. x3-2060 or http://www.mit.edu/activities/

MCA/SMFA Visual Arts Cross-Registration Applications Available*—Nov 19. Crossregistration program with the Mass College of Art and the School of the Museum of Fine Arts applications available at Student Services Ctr (Rm 11-120) or Architecture HQ (Rm 7-337) and Visual Arts Program (Rm N51-315). Deadline is Dec 3. Info x3-5229.

"Trauma and Artistic Intervention"*-Nov 20. Symposium celebrating Hiroshima Art Prize winner Krzysztof Wodiczko. In addition to Prof Wodiczko of architecture and author of Critical Vehicles, panelists include Ewa Lajer-Burcharth, Harvard; Michael Leja, MIT, Dominick LaCapra, Cornell; and John Rajchman, Barnard College. Architecture/authors@mit_symposium. 12-5pm, Rm 10-250. x3-5249 or <authors@mit.edu> or <a trip://mitpress. mit.edu/bookstore/events>.

Technology Review celebrates its 100th year with symposium

(continued from page 1) fessor of chemistry who was named in the field of biotechnology, said of the symposium, "It was most impressive. I think they did a tremendous job of putting on a good show. It felt like real TV.

'As someone there said, 'usually the sports stars are the heroes. But on that day the technerds were the winners.' It made me feel pretty good about myself," said Professor Seeberger.

INNOVATIONS CONVERSATION

The Innovations Conversation," as the symposium was called, turned Kresge Auditorium into a TV studio for a live webcast on CNBC. The symposium consisted of three "conversations" among the five to eight panelists selected for each topic, all moderated by Mr. Moyers.

While he and the panelists sat in a semicircle on the brightly lit stage, the audience sat in a darkened auditorium watching the interaction between panelists or viewing the speakers one at a time in closeup shots on the large, compelling video screen that hung

Following each of the approximately 30-minute discussions, Ms. Stahl stood in the aisles of Kresge and addressed the panelists with written questions from the audience, much as a talk show host wades through the seated crowd with a microphone.

Panelists for the first and very lively conversation about "The Making of a Successful Entrepreneur" were Mark Cuban, president and co-founder of Broadcast.com; Marleen McDaniel, chair and CEO of Women.com Networks; Robert Metcalfe (SB 1968), vice president of International Data Group; Jeff Taylor, founder and CEO of Monster.com; and President Charles

When asked by Mr. Moyers to list the telltale signs of a successful entrepreneur, Mr. Metcalfe named persistence and described seeing a certain passion for the idea in those who make it.

"I can begin to tell when I've seen them for the sixth or seventh time. It's also about the time I begin to figure out what they're talking about," said Mr.

The panelists said that in the past 20 years, the qualities one needs to be a successful entrepreneur have changed, in large measure because of the web.

"Before, there were gatekeepers," said Mr. Cuban, referring to the bankers and lawyers who once controlled access to capital. Now there's the Internet. When he started Broadcast.com, he said, "I didn't even have a business plan."

"There's a saying that goes 'cut, cut, cut, cut, cut, measure," said Mr. Taylor of Monster.com, turning the old adage 'measure twice, cut once" on its head.

Marleen McDaniel, a self-proclaimed "habitual entrepreneur" who has started six companies, described entrepreneurism as a calling. "The call to bring new technologies forward" was much more compelling than the call to take care of more individual demands, she said. Successful entrepreneurship requires an "aggressive, persistent tenacity. It takes a lot of

"It's hard to intellectualize entrepreneurship," said President Vest. "So you create a culture that says entrepreneurship is important to society. You provide mentoring, then let it run."

Mr. Cuban said, "I retired at age 31. People always said to me, 'You're going to be bored.' But I say, there are six billion people in the world and I've only had a beer with about a thousand of them. The easiest thing to do is to keep motivated."

The second group of panelists, for "Capitalizing Innovation," included four from the TR100 list. Panelists for the third conversation, "Emerging Technologies, 2000-2010," included Institute Professor Phillip Sharp of the biology department, and Profesor Neil Gershenfeld of the Media Lab



TR 100 panelists for the "Innovation Conversation" symposium were (left to right) President Charles Vest, Marleen McDaniel of Women.com Networks, Robert Metcalfe of International Data Group, broadcast journalist Bill Moyers, Jeff Taylor of Monster.com, and Mark Cuban of Broadcast.com. **Photo by Donna Coveney**

Tech Review lists young innovators

Following are the MIT affiliates who appeared on the TR100, the 100 als, Professor of Chemistry. The search top young innovators named by Technology Review magazine "who exemplify the spirit of innovation in science, technology, and the arts." They are listed below by name, age, category of expertise and affiliation. Those who are currently at MIT are listed first with a short profile edited from Technology Review. The second group is of MIT alumni/ae. To see the entire list and profiles of each innovator, go to .

MIT TR100 INNOVATORS

Bonnie Berger, 34, Software, Associate Professor of Applied Mathematics. Bonnie Berger is leading a group of computational biologists to develop software that uses mathematical algorithms to predict protein folding based on the sequence of amino acids. Such insights could eventually lead to new drugs to combat viral disease such as AIDS.

als, Professor of Chemistry. The search for as-yet-unknown reactions, and the accompanying technological potential, is an unending pursuit of inorganic

> chemistry. Kit Cummins has already forged a reputaworld tion... His most notable success: finding a way, at room temperature and pressure, to break apart the extremely strong triple bond that holds the atoms of

a nitrogen molecule together. Yoel Fink, 33, Materials, graduate student, Department of Materials Science and Engineering. The "perfect mirror"

Yoel Fink invented last year could mean radical new ways of directing and manipulating light. Potential applications range from a flexible light guide for delivering laser light to a specific internal organ, to new devices for optical communications.

Joseph Jacobson, 34, Hardware, Assistant Professor, Program in Media Arts & Science, Media Lab. Joseph Jacobson and his group have developed a system using "micro-spheres" two-toned particles about the size of grains of laser toner-embedded in a sheet of paper to display text and graph-

ics in electronic pages.

Steven Leeb, 34, Hardware, Carl Richard Soderberg Associate Professor of Power Engineering, Department of Electrical Engineering and Computer Science. Leeb is working in a field known as "mechatronics," a combination of mechanical engineering, electronics and intelligent computer control that gets machines to work together intelligently. Leeb's forays could ultimately pay off in a remarkable range of fields: from artificial muscles to drug delivery to control of electricity and lighting in buildings.

Peter Seeberger, 32, Biotech, Assistant Professor of Chemistry. Carbohydrates play a key role in everything from healing wounds to heart disease. Yet their chemistry remains somewhat mysterious. Seeberger has set out to change all that. He has already dreamed up new ways to string carbohydrates together from their simple sugar building blocks, and also spearheaded the assembly of the most complex carbohydrate ever made by man.

Jackie Ying, 33, Materials, St Laurent Associate Professor of Chemical Engineering. Jackie Ying is more interested in explaining uses of her nanoscale materials than in discussing arcane details of their chemistry. Ying ticks off the potential benefits of her precisely tailored nanomaterials: safer pharmaceuticals, more efficient processes for making industrial chemicals, better catalysts to cut air pollution from automobiles. Her group is also interested in using the materials to make nanoscale wires for microelectronics and "smart" drug-delivery systems.



Adam Arkin, 33 (PhD 1992 in chemistry), Biotech, Lawrence Berkeley National Laboratory

David Blundin, 32 (SB 1988 in electrical engineering and computer science [EECS]), Software, DataSage

Eric Brewer, 32 (SM 1992, PhD 1994 in EECS), Software, Inktomi Amy Bruckman, 33 (SM 1991 archi-

tecture, SM 1991 in media arts and sciences, PhD 1997), WWW, Georgia Institute of Technology Isaac Chuang, 30 (SM 1990 in physics, SB

1991 in EECS, SM 1991 in EECS), Hardware, IBM Almaden Research Center Daniel DiLorenzo, 33 (SB 1987 in EECS, SM 1999 in health sciences and technology, SM 1999 in management, PhD 1999 in HST), Biotech, University of Utah Medical School

Isy Goldwasser, 29 (SB 1993, materials science and engineering), Materials, Symyx

Helen Greiner, 31, (SB 1989 in mechanical engineering, SM 1990 in EECS), Hardware, IS Robotics Bruce Lahn, 30 (PhD 1998 in biology),

Biotech, University of Chicago Håkon Wium Lie, 34 (SM 1991 in architecture, SM 1991 in media arts

and sciences), WWW, Opera Software Akhil Madhani, 31 (SM 1991, PhD 1998 in mechanical engineering),



Hardware, Walt Disney Imagineering Maja Mataric, 34 (SM 1990, PhD 1994 in EECS), Hardware, University of South ern California Samir Mitragotri,

28 (PhD 1996 in chemical engineering), Biotech, Sontra Medical Christopher Murray, 32 (PhD 1995 in

chemistry), Materials, IBM Thomas Pinckney, 25 (SB 1997, MEng 1997, EECS), Software, Exotec

Mark Prausnitz, 33 (PhD 1994 in chemical engineering), Biotech, Georgia Institute of Technology

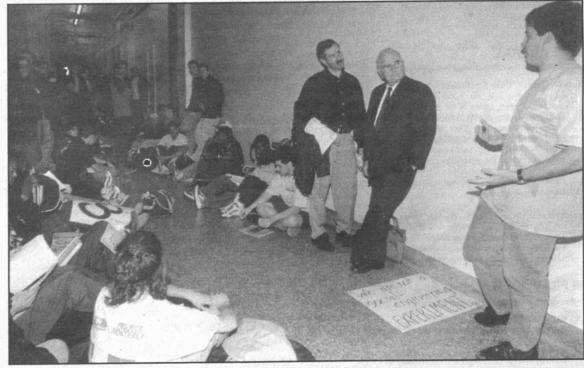
John Rogers, 32 (SM 1992 in chemistry, physics), Materials, Lucent Technologies' Bell Labs

Lawrence Saul, 30 (PhD 1994 in physics), Software, AT&T Labs

Michael J. Saylor, 34 (SB 1987 in aeronautics and astronautics, SB 1987 in humanities and engineering), Software, MicroStrategy

Thad Starner, 30 (SB 1991 in physics, SB 1991 in EECS, SM 1995 and PhD 1999 in media arts and sciences), Hardware, Georgia Institute of Technology

Students protest housing decision



Students staged a sit-in to protest proposed housing policy changes. Listening to students are Professor Steven R. Lerman, chair of the faculty (standing, left), and Professor and President Emeritus Paul E. Gray (standing, **Photo by Donna Coveney** center).

bout 150 students participated in An orderly two-hour sit-in outside President Charles M. Vest's office Friday afternoon to protest the decision to house freshmen on campus starting in 2001. The demonstration was organized by MIT Choice, a student group formed in September.

The students, who carried signs and chanted "Choice/Not Change," convened in Lobby 7 at 12:30pm and march-

ed upstairs one flight to Building 3 about 15 minutes later. They sat against both walls in the corridor outside the President's offices.

While the participants do not feel that the housing system is without flaw, they do not support a change which would severely limit the diversity of residence options for students," MIT Choice said in a press release.

While there, the students exchanged

views with Chancellor Lawrence Bacow, Professor (and President Emeritus) Paul Gray, Chair of the Faculty Steven Lerman and Dean for Student Life Margaret R. Bates before dispersing. Others at the event included Associate Deans Kirk Kolenbrander and Kim Vandiver, and Paul Parravano of the Office of Government and Community Relations.

President Vest was not in his office during the sit-in.