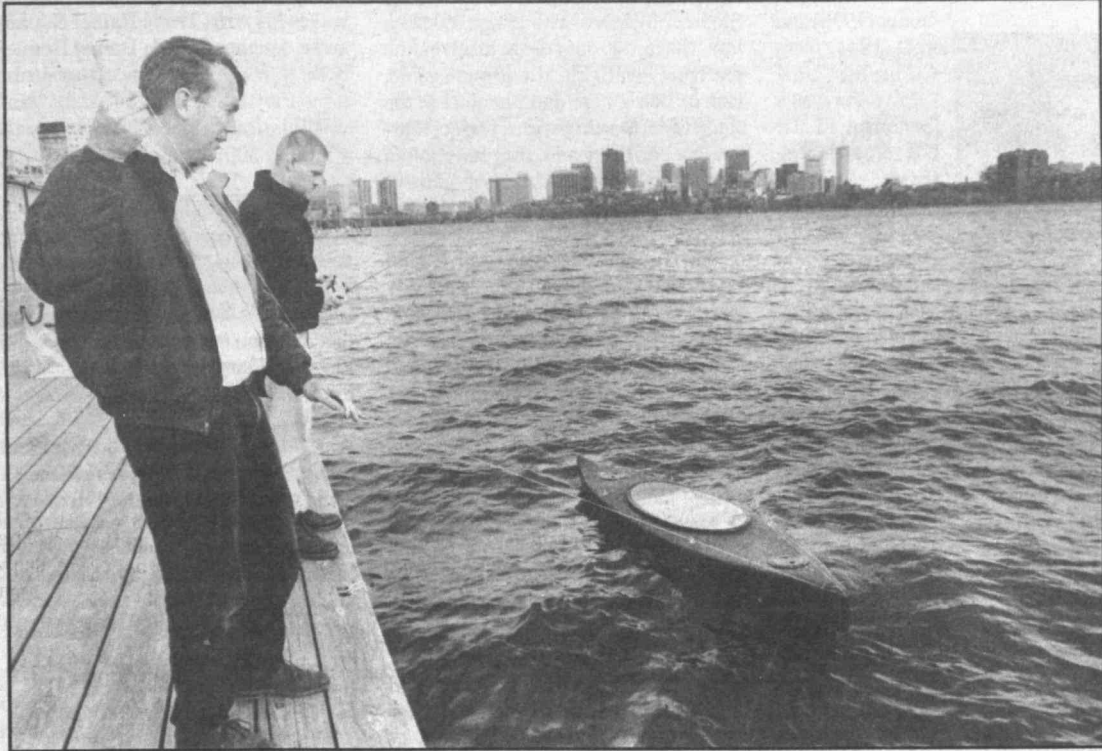


## Following fish



MIT Sea Grant research engineer Clifford Goudey and ocean engineering graduate student Justin Manley test the autonomous kayak they expect will be able to track tuna. The device will provide information about populations and migration of the fish.  
Photo by Donna Coveney

## Vice President Gore to speak at Commencement

Vice President Al Gore will be the speaker at MIT's 130th commencement on Friday, June 7, President Charles M. Vest announced last week.

"We are delighted that Vice President Gore can be with us on this happy occasion," Dr. Vest said. "It is always exciting to have someone of his stature with us, but his role as Commencement speaker is particularly appropriate at MIT because he has been a leader as congressman, senator and vice president in the areas of science, space and technology policy.

"Having coined the term 'information superhighway' 17 years ago—a program which will rely heavily on fiber-optic networks being developed at MIT—he is now the recognized public leader of the National Information Infrastructure.

"In addition," Dr. Vest said, "Al Gore's commitment and leadership on environmental issues is unparalleled. He has said repeatedly that the protection and preservation of the earth's environment is one of the most important issues facing this generation—a position that reflects the concerns of so many of us at MIT."

This will be Mr. Gore's second appearance at MIT in a year. He visited the campus in October for a speech to the Society of Environmental Journalists.

Mr. Gore's Congressional career began when he was elected to the US House of Representatives in 1976 where he served eight years representing what was then the 4th District of Tennessee. He was elected to the Senate in 1984 and was re-elected in 1990, becoming the first candidate in modern history—Republican or Democratic—to win all 95 of Tennessee's counties. A candidate for the Democratic nomination for president in 1988, Mr. Gore won more than 3 million votes and Democratic contests in seven states.

Within two months of taking office, President Clinton asked Mr. Gore to do a comprehensive survey of the entire federal government. The result was the "National Performance Review: Creating a Government that Works Better and Costs Less." It included specific recommendations and cost savings reforms to improve the federal government. When

President Clinton signed into law the Violent Crime Control and Law Enforcement Act of 1994, he designed the vice president as chair of the act's Crime Prevention Council. Vice President Gore also established the GLOBE program to increase the environmental awareness among children around the world.

Mr. Gore, the son of former US Senator Albert Gore, Sr., and Pauline Gore, received a degree in government with honors from Harvard University in 1969. After graduation, he enlisted in the US Army and served in Vietnam. Returning to civilian life, he became an investigative reporter with The Tennessean in Nashville. He attended Vanderbilt University Divinity School and Vanderbilt Law School and operated a small homebuilding business.

Vice President Gore is married to the former Mary Elizabeth "Tipper" Aitcheson. They have four children.

## VEST CITED IN SPEECH

Earlier this month, when Mr. Gore spoke to the annual meeting of the American Association for the Advancement of Science in Baltimore, he invoked the name of President Vest in his appeal for continued federal funding of research. He specifically referred to Dr. Vest's most recent annual report, which focused on the many critical

problems whose answers remain unknown to scientists.

Concluding his speech discussing the role of science in American society today, he said:

"Last year... Chuck Vest, president of MIT, decided to present his annual report as a series of questions his faculty told him were the most urgent in their fields. What he told us in that

report underscores the need to deliver on these crucial investments in science and technology.

"He reminded us that we don't know 'which aspects of climate change are predictable.' And we need to know.

"We don't know 'how best to use our information infrastructure and new media to promote learning among chil-

(continued on page 8)

## Page named to panel on gene policy

David Page, chair of the Whitehead Institute Task Force on Genetic Testing, Privacy and Public Policy, has been appointed to a special legislative committee created to grapple with the state's role in managing the use and dissemination of genetic information.

The Special Committee on Genetic Information Policy brings together Massachusetts legislators and experts in the fields of genetics, ethics, law and health policy. The co-chairs of the Committee are Reps. Harriette Chandler (D-Worcester) and Jay Kaufman (D-Lexington).

Scientists at Whitehead have played leading roles in the Human Genome Project (HGP), the international effort

to identify all of the 100,000 genes that make up a human being. The new legislative committee will gather information from a variety of sources, helping lawmakers make public policy decisions arising from rapidly increasing knowledge of individuals' genetic profiles that will result from the HGP.

"The information generated by the Human Genome Project will have an impact on health care, employment, education, insurance, reproductive decisions and even the relationship between physicians and patients," Dr. Page said. "The goal of the Whitehead Task Force has been to encourage broad public discussion about the changes ahead and to provide a resource for

those in the community with specific questions about the scientific advances underlying those changes." Dr. Page is associate professor of biology and associate director of the Whitehead/MIT Center for Genome Research.

"As scientists, public responsibility means we need to say what the

(continued on page 8)

## IN BRIEF

## AAP INSIDE

MIT's Affirmative Action Plan Summary for 1995-96 is included today as a 12-page pull-out supplement.

## RECOMMENDATIONS

The Student Services reengineering team has made recommendations for future redesign efforts relating to career assistance, support for co-curricular life, educational program support, orientation (exclusive of residence selection), housing, personal support, and provision of supplies and materials.

For details, refer to the Student Services web site at <<http://web.mit.edu/studentserve/www>> or request a paper copy from Peggy Enders, x3-3561. Comments are appreciated and may be sent via e-mail to <[studentserve@mit.edu](mailto:studentserve@mit.edu)>.

## Vest warns of perils to 'research partnership'

The "remarkably beneficial" partnership between the federal government, industry and research universities "is in danger of disintegrating," MIT President Charles M. Vest has warned, at a time when Japan, a major global competitor, is moving "very aggressively" ahead.

The situation in the United States is not surprising in a time of enormous change, Dr. Vest said in his keynote address February 26 at the Jerome B. Wiesner Symposium on the Future of the Government/University Partnership at the University of Michigan in Ann Arbor.

"It is less surprising still," he added, "in a highly politicized, economically troubled period in which distrust of

institutions is widespread and short-term thinking is continually rewarded."

Dr. Vest contrasted the situation in the US with that of Japan. That country currently invests about 2.8 percent of its gross domestic product in research and development, which is almost exclusively non-defense research and development, he said.

"Japan, a much smaller nation, spends essentially as many absolute dollars on non-defense R&D as the US," he said, adding, "While we in the US move toward a distinct R&D funding decline, the Japanese are operating under a law calling for a doubling of their investment in R&D by the year 2000."

Although it now appears that this

goal will not be fully met by 2000, he continued, "the Japanese science and technology budget is increasing by about 10 percent per year, despite the fact that the rest of their budget is flat.

"Furthermore, Japan is moving aggressively to build its infrastructure for scientific research. It is reforming its system of funding university research, and providing for 10,000 new doctoral and postdoctoral fellowships. It is planning to sell bonds to support a new system of centers of research excellence. Japan is moving very aggressively. We should remember this as we look to the future of our own R&D system."

Both Dr. Wiesner, who served as

(continued on page 8)

## Tuition and fees rise by 4.4 percent to \$28,350 in '96-'97

■ By Charles H. Ball  
News Office

MIT has announced a 4.8 percent increase in tuition for the 1996-97 academic year, raising tuition by \$1,000 to \$22,000. Nearly 60 percent of this year's undergraduates get financial aid based on need, and the average financial aid package covers 95 percent of the cost of tuition.

The increase in room and board in 1996-97 will average 3.3 percent, putting the overall cost for tuition, room and board at \$28,350. This is an increase of 4.4 percent, or \$1,200, over this year's figure of \$27,150.

The increases, approved by the MIT trustees on March 1, were announced by President Charles M. Vest. He noted that tuition historically covers about half the cost of a student's education, with the remainder met by earnings from endowment

and by unrestricted gifts and grants.

Dr. Vest said that tuition was one of three primary sources of revenue for MIT, the others being federal and industrial research funds and private support, primarily gifts and investment income. While tuition reflects the realities of the economy, by moderating its rate of growth and making financial aid available, MIT will remain accessible to bright students regardless of the family's income, he said.

This year, about 59 percent of MIT's 4,480 undergraduates receive financial aid through a combination of scholarships, loans and term-time jobs. The average aid for a needy student this year—to help pay the \$27,150 cost of tuition, room and board—is \$19,980. Scholarship grants from MIT are about \$27.2 million, or 80 percent of a total of \$34.2 million in grants from all sources. Loans and term-time work account for an additional \$22 million.

The university's nominal self-help level—the amount students are expected to provide from loans and term-time work before receiving scholarship assistance—will be raised \$450 to \$8,600, a 5.5 percent increase. MIT reduces the self-help requirements for students from families of very low income by as much as \$3,500.

Because students from wealthier families who fail to qualify for financial aid still receive scholarships from outside the financial aid system, it is estimated that only about 29 percent of MIT students and/or their parents pay the full amount.

## Student Notices

\* -Open to public  
 \*\* -Open to MIT community only  
 \*\*\* -Open to members only

### ANNOUNCEMENTS

**Green Card Lottery - Diversity Immigrant Visa (DV-97) Program\*\*—Through Mar 12:** The Immigration and Naturalization Service is holding a new DV-97 program (Green Card Lottery). Applications should be filed between Feb. 12 and Mar 12. Copies of the State Department Bulletin with detailed information on eligibility and procedures are available in the International Students Office, Rm 5-106.

**Career Services and Preprofessional Advising Recruitment Presentations\*\*—Mar 6:** *Segue Software*, 6pm, Rm 4-149. *Capital One Financial Corporation*, 6:30pm, Rm 4-145. *Sun Microsystems*, 6:30pm, Rm 4-145. *Cisco Systems*, 7pm, Rm 4-149. **Mar 10:** *Micro Strategy*, 5pm, Rm 4-145. **Mar 11:** *First USA*, 6pm, Rm 4-153. *U.S. West*, 6:30pm, Rm 4-145. **Mar 12:** *Applied Materials*, 6pm, Rm 4-153. *Sabre Decision Technologies*, 7pm, Rm 4-145. *Goldman, Sachs & Co. Information Technology*, 6pm, Rm 4-159. *Tandem*, 6pm, Rm 4-149.

### RELIGIOUS ACTIVITIES

The Chapel is open for private meditation 7am-11pm daily. Regular Chapel services are:

**Baptist Campus Ministry\*\*—Weekly events:** Tuesday night dinner at 5:15pm; Tuesday night bible study, 6pm; Monday graduate discussion, noon. Meets in Bldg W11.

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

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

**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 Westneek, x2-1780 or <chaplain@mit.edu>.**

**Lutheran-Episcopal Ministry at MIT\*—Regular Wednesday worship, 5:10pm, followed by supper in the Bldg W11 dining room. Bible Studies, Sundays at 5pm, Bldg W11. More info: x3-0108.**

**MIT Orthodox Christian Fellowship\*\*—Wednesdays at 5:30pm in Student Ctr DR 1 for dinner followed by Chapel Vespers. Mike Decerbo, Dorm x5-7569.**

**MIT Vedanta Society\*\*—Fridays, 5:15pm. Meditation and discourse on the Bhagavad Gita, with Swami Sarvagatananda. More info: Dr. Cyrus Mehta, 661-2011.**

Other religious meetings:

**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.**

**Graduate Christian Fellowship\*—Weekly**

meetings in Student Ctr, DR 1&2, Thursdays at 5:30pm. Also weekly Bible studies and Responsible Technology discussion group. Andrew Parris x3-2319 or <andrewp@mit.edu>.

**Hillel\*—Feb 28:** 5pm, Koshar Koop. 7:30pm, Israeli Folk Dancing. Feb 29: 7:45am, Shacharit. 12pm, Taste of Torah. 5:30 and 6:30pm, Hebrew Classes. Mar 17: Jerusalem 3000 Exhibition, a special presentation for the 3000th anniversary of the founding of the city of Jerusalem, 12-2:30pm, Student Center, Twenty Chimneys. More info: x3-2982. Events meet at Hillel, Bldg W11, unless otherwise noted.

**MIT Korean Baptist Student Koinonia (KBSK)\*\*—Friday Night Bible Study and Fellowship 7-8:30pm, Student Ctr DR 3. Chris Pak x3-9342 or 876-8594.**

**Lincoln Laboratory Noon Bible Studies\*—Wednesdays at noon, South Lab S2-410. Annie Lescard, Linc x2899.**

**MIT Muslim Students Association\*—5 daily prayers, Bldg W11; also Friday congregation 1:10-1:45pm, Rm W11-110. Info: x8-9285.**

### OPPORTUNITIES

**Travel Grants for Graduate Research on Italy.** MIT graduate students working on Italy may apply for small grants (up to \$4000.) for travel to and from as well as within Italy and research related expenses. Students should submit: (1) A five-page research proposal outlining the student's project; (2) A budget indicating how the proposed funding will be used; (3) One letter of recommendation from a faculty advisor familiar with the project; (4) Graduate school transcript. Completed applications and recommendations should be mailed to Professor Richard Locke at Rm E52-564 by March 15.

**Vera List Prize Competition.** See listing page 4, Arts. Deadline: Mar 22.

**I. Austin Kelly III Prize Competition 1995-96.** Two prizes of \$500 each for scholarly or critical essays in the following fields: anthropology, archaeology, art history, economic history, film and media studies, history, history of science and technology, literary studies, musicology, philosophy, politics, women's studies. Rules and guidelines available at History Office, Rm E51-285, x3-9846. Open to MIT undergraduates. Deadline: April 11.

**BFGoodrich Collegiate Inventors Program.** Submissions are now being accepted for this national competition which recognizes undergraduate and graduate students whose innovations, discoveries and research are deemed the year's most outstanding. The invention, idea or process submitted must be an original idea and the work of a student or team with his or her university advisor. In addition, the invention should be reproducible, and may not have been made available to the public as a commercial product or process or patented or published more than one year prior to the date of submission. The program is open to any student enrolled full time in a US college or university. Winners and advisors can receive prizes of up to \$5,000. More information is available from Nancy Schondorf in the Technology Licensing Office, Rm E32-300, x3-6966. Deadline for entries: June 4.

### VOLUNTEERS

The MIT Public Service Center has compiled the following volunteer opportunities.

**Chocolate Fools Day.** Sunday, March 10 from 1-

# Professor David Durand dies at 83

Dr. David Durand, a professor emeritus of management who was an early adherent of applying statistical methods—especially sampling—to problems in corporate finance and other fields, died February 26 at the MIT Infirmary. Dr. Durand, who lived in Lexington, was 83.

His family said the cause of death was aplastic anemia.

Raised in Ithaca, NY, Dr. Durand received the BA degree from Cornell University in 1934, and both a master's degree (1938) and PhD (1941) from Columbia University. He was a lieutenant in the US Naval Reserve during World War II, serving in the Hawaiian Islands and on Guam.



Durand

Before coming to MIT in 1953, he was associated with the National Bureau of Economic Research, then in Riverdale, NY, and the Institute for Advanced Study at Princeton University. He also did consulting work for the Twentieth Century Fund and taught part-time at Columbia.

It was at the National Bureau of Economic Research, said MIT economist Dr. Paul A. Samuelson, an Institute professor and Nobel laureate, that Dr. Durand "pioneered the empirical study of how long-term bonds usually require a higher yield than short. Everyone understands that today, but he was the first to document it."

Dr. Durand's first appointment at MIT was as a research associate at the Sloan School of Management. He became an associate professor in 1955 and professor in 1958. He retired in 1973.

In addition to the application of statistical methods to financial problems, his fields of specialization included term structure of interest rates and statistics.

His research in finance included a sampling analysis of default experience for consumer installment loans, farm mortgage lending experience and factors affecting bank stock prices.

His work with statistical methodology and techniques involved the early use of punch-card equipment for general statistical tabulation as well as for mathematical computation.

He was the author of a textbook, *Stable Chaos*, as well as many articles for professional journals. He was an associate editor of *Financial Management* for a number of years.

Some of Dr. Durand's strongly held views stirred lively debate with other members of the management faculty.

One of his former doctoral students, Don Lewin of Lewin Associates of York, PA, a consulting firm, said that Dr. Durand "used his keen intellect and statistical knowledge and skills to develop many ideas" and to question whether statistical models matched reality. "Frequently, this did not endear him to those enamored of a model. Indeed, his doubting approach caused him to be often in the center of a controversy."

In one such case involving the cost of capital, Dr. Durand wrote that two Sloan colleagues who disagreed with him "have cut out for themselves the extremely difficult, if not impossible, task of being pure and practical at the same time. Starting with a perfect market in a perfect world, they have taken a few steps in the direction of realism; but they have not made significant progress..."

Dr. Durand also insisted, Dr. Lewin said, that the model builder rely heavily on his or her own judgment. In *Stable Chaos*, Dr. Durand wrote, "Systematic procedures and objective tests serve to strengthen the analyst's judgment, not to replace it; they enable him to learn more quickly and more effectively from his own experience, and to sharpen his critical faculties."

Dr. Durand also championed good writing and enlivened some of his own journal articles with intriguing figures of speech. In one, he wrote: "To suppose that any imaginative analyst or responsible financial manager, interested in a comprehensive view, would be content to base an important appraisal and the subsequent investment decision on just one of the many useful numbers available is on a par with supposing that a hungry gourmet at a smorgasbord would be content to make a whole meal of pickled herring..."

Another former student, Dr. Paul D. Berger, professor and department chair in Quantitative Methods and Marketing at the Boston University School of Management, recalled Dr. Durand as "a special teacher and mentor to many students. He had a 'jolly' manner about himself that set students at ease and allowed them to enjoy the material he imparted to them. He cared about people and was dedicated to academic integrity and excellence."

Dr. Durand was a member of the American Economic Association, the Finance Association, the American Society for Quality Control, the American Statistical Association, the Econometric Society, the Biometric Society, the Institute of Mathematical Statistics and the International Association for Statistics in Physical Science.

He leaves his wife, Edith (Elbogen) Durand of Lexington, and a daughter, Marie Durand of Princeton, NJ.

There was no funeral service.

A memorial service will be held in the MIT Chapel on Saturday, April 13, at 1pm. Contributions may be made to Deep Springs College in Dyer, NV 89010.

### GEORGE P. BONNEY

George P. Bonney, 88, of Wayland, who was associated with Lincoln Laboratory from 1961 until his retirement in 1972, died on January 27. Mr. Bonney leaves his wife, Doris Hamel Bonney, and a daughter, Linda Hamel Bonney, both of Wayland. Memorial contributions may be sent to the Alzheimer's Association, One Kendall Square, Building 200, Cambridge, 02139.

### OTHER DEATHS

Word has been received of the deaths of the following people about whom no further information is available:

**John W. Barr**, 82, of Nashua, NH, died on January 4. Mr. Barr worked in Physical Plant from 1955 until his retirement 20 years later. He leaves a nephew, Arthur Goodall.

**Claire T. McKeon**, 68, of Medford, died on February 8. She was a technical artist at Lincoln Laboratory from 1958 until her retirement in 1988.

## TCF holds forum on Internet rights

The Technology and Culture Forum at MIT will sponsor a forum on "Human Rights and the Internet" at 7pm on Thursday, March 7, in Rm. 6-120.

The speakers will be Audrey Chapman, coordinator of the AAAS Science and Human Rights Project; Geoff Sears, executive director of the Institute for Global Communications, and Scott Harrison, program director for the US division of Amnesty International's Urgent Action Network.

## MIT TECH TALK

(USPS 002157)

March 6, 1996  
 Volume 40, Number 22

Publisher

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Editor

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GENEVIEVE PARENT LOATI

OF MIT GRAPHIC ARTS

### News Office

Director: Kenneth D. Campbell; Associate Director: Robert C. Di Iorio; Senior Assistant Director: Charles H. Ball; Assistant Directors: Donna Coveney, Joanne Miller, Kathleen M. Rowe, Elizabeth A. Thomson; Assistant Editor of Tech Talk: Alice C. Waugh; Administrative Assistant: Myles Crowley; Design/Editorial Assistant: Lisa Damtoft; Office Assistant, Mary Anne Hansen.

The Arts at MIT is produced by the Office of the Arts, Room E15-205, (617) 253-4003. Director of Arts Communication: Mary Haller; Administrative Staff Assistant: Lynn Heinemann.

### News Office World Wide Web URL:

<http://web.mit.edu/newsoffice/www/>  
 Office of the Arts URL:  
<http://web.mit.edu/arts/www/>

Tech Talk is published weekly except for most Monday holiday weeks by the News Office, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139-4307. Telephone: 617-253-2700.

Postmaster: Send address changes to Tech Talk, Room 5-111, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139-4307.

Tech Talk is distributed free to faculty and staff offices and residence halls. It is also available free in the News Office and the Information Center.

Domestic mail subscriptions are \$25 per year, non-refundable. Checks should be made payable to MIT and mailed to Business Manager, Room 5-111, MIT, 77 Massachusetts Avenue, Cambridge, MA 02139-4307.

Second class postage paid at Boston, MA.

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## Crimewatch

The following incidents were reported to the MIT Police between Feb 23 - 29:

**Feb 23:** Bldg 8, suspicious activity; West Lot, suspicious vehicle; Bldg E40, VCR stolen, \$535; Bldg 7, door handle stolen.

**Feb 25:** Student Ctr, 2nd floor lounge, boots and backpack stolen while person sleeping, \$900; MacGregor, speaker stolen, later returned.

**Feb 26:** McCormick, harassing phone calls; MacGregor, sudden death; Walker, 1) room broken into, \$500 in supplies stolen; 2) two CD players stolen, \$200; Bldg E39, computer stolen, \$1,800; 33 Mass. Ave., bike stolen; Bldg 26, ethernet damaged; Bldg 3, 1) suspicious activity; 2) laptop stolen, \$2,610.

**Feb 27:** Student Ctr, assault between persons known to each other; Student Ctr, bike stolen, \$150; Bldg 20, bike stolen, \$100; Bldg E40, powerbook stolen, \$3,000.

**Feb 28:** Bldg E51, laptop stolen, \$3,000.

**Feb 29:** Audrey St., '89 Nissan broken into; Bldg 4, textbooks stolen, \$500; Westgate, TV/VCR stolen, \$425; Barker Library, computer components stolen, \$500; Bldg 20, computer stolen, \$2,445.

The MIT Grounds Department, in preparation for commencement, has installed guide wires and roped off grass areas of Killian Court and other parts of the campus. Grounds has stated that people are securing their bicycles to the thin wire or rope. This is not secure and is a hindrance to the trees and shrubs. We ask that people please use bicycle racks, not wires, rope, trees or handrails.

Don't forget that bicycles illegally parked or attached to stairway handrails will be secured with an MIT Campus Police Department lock, ticketed and fined \$25; if you don't claim your ticketed bike after 24 hours the bike will be removed and a fine of \$50 will be imposed.

3pm in the Ballroom of The Charles Hotel at Harvard Square there will be a benefit for the Cambridge Performance Project, Inc. Come to this Chocolate Tasting Extravaganza and win chocolate awards, meet celebrity judges and play in a raffle. Admission is \$12.50 in advance and \$15 at the door. For more information call 354-8786.

### Big Brother and Big Sister Recruiting Drive.

College students who have considered becoming mentors to youngsters are urged by these two Boston-area organizations to act now. The Big Brother Association has more than 500 boys on the waiting list, and 260 girls are waiting for big sisters in the Boston area. The time commitment is as little as four hours a week with a youngster. For information, men should call the Big Brother Association at 542-9090, and women should call Big Sisters at 236-8060.

### The Computer Museum. Volunteers are needed

at the Computer Clubhouse at the Computer Museum. The Clubhouse is a model after school learning environment where young people ages 10-18 use technology to develop projects based on their own interests. The Clubhouse is looking for students and professionals who are interested in volunteering a few hours a week to provide a positive experience working with kids using technology. Hours of operation are Tuesday-Friday, 2-5:30pm and Saturdays, 10am-4pm. The Computer Museum is located at 300 Congress St. near South Station.

**La Alianza Hispana.** La Alianza Hispana is recruiting individuals to work as tutors one-on-one with low-literacy Spanish-speaking adults in their adult education program. Tutors can help students with English, math, reading and writing (in Spanish) or basic computer skills. No previous experience is necessary. Spanish

fluency is not a requirement. Daytime/evening/ weekend times available. Hours are flexible. Tutoring takes place at La Alianza or a location convenient for tutor and student. For more info call Hollis at 427-7175, ext. 232.

### CABLE

Frequent schedule updates now appear on TechInfo. For more information about cable at MIT, call Randy Winchester at x3-7431, Rm 9-050, e-mail: <randy@mit.edu>. World Wide Web: <<http://web.mit.edu/org/m/mticable/www/home.html>>.

**Mar 6: Channel 8:** 11am-12:30pm—Live coverage of the EECS/RLE Optics and Quantum Electronics Seminar: "Microcavity Devices," Fred Schubert, Boston University.

**Mar 11: Channel 8:** 4-5:30pm—Live coverage of the MIT EECS Colloquium: "Neurodynamic Programming," Dimitri Bertsekas, MIT, EECS.

**Mar 12: Channel 8:** 4-5:30pm—Live coverage of the MIT MTL VLSI Seminar: "A 433 MHz 64 bit Quad-Issue RISC Microprocessor," Paul Gronowski, Digital Semiconductor, Hudson, MA.

**Mar 13: Channel 8:** 11am-12:30pm—Live coverage of the EECS/RLE Optics and Quantum Electronics Seminar: "Optical Imaging at 10A Resolution Using a New Interferometric Apertureless Technique" Hemantha K. Wickramasinghe, IBM.

**Mar 14: Channel 8:** 3:30-5pm—Live coverage of the Laboratory for Computer Science Distinguished Lecturer Series: "The Internet and Electronic Commerce," Dr. James Clark, Chairman and CEO, Netscape Communications Corporation.

## Four are appointed to CD professorships

Four young faculty members have been named to career development chairs.

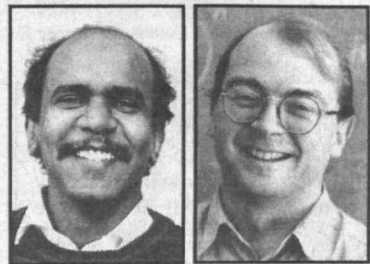
● Professors V. Michael Bove and Michael J. Hawley, both of Media Arts and Sciences, have been selected to be the inaugural holders of Alex W. Dreyfoos Jr. Career Development Professorships. Mr. Dreyfoos is a member of the Class of 1954.



Bove Hawley

● Professor Elfatih A.B. Eltahir of the Department of Civil and Environmental Engineering has been named a recipient of a Gilbert Winslow Career Development Chair.

● Professor Seth Lloyd of the Department of Mechanical Engineering has been selected to hold the Finmeccanica Career Development Professorship of Engineering.



Eltahir Lloyd

Professor Bove's research involves digital television, particularly scalable signal formats and system architectures, machine vision, image compression, multimedia systems and image processing for hard copy. He received the SB (1983) degree in electrical engi-

neering, the SM (1985) in visual studies and the PhD (1989) in media technology, all from MIT. He joined the faculty in 1989 and has been an associate professor of media technology since July 1993.

Professor Hawley, whose principal fields of interest are digital entertainment media, operating systems and human interfaces, received the BS/BA degree (1983) from Yale University and the PhD (1993) from MIT. He was a researcher with Bell Telephone Laboratories from 1979-83, a visiting researcher with IRCAM in 1983-1984, a research scientist with Lucasfilm, Ltd., from 1984-86, and a software engineer with NeXT Computer, Inc., from 1987-1993. He was a research associate at the Media Lab from September 1986 until 1993 when he joined the faculty.

Professor Eltahir's research interests include environmental data analysis, surface hydrology, hydro-climatology and the impact of deforestation on climate. He holds the BSc degree (1985) from the University of Khartoum, the MS (1988) from the National University of Ireland and the SM and the ScD, both from MIT in 1993. He joined the faculty in 1994. He received a NASA fellowship in global change research in 1991. He is a member of the American Geophysical Union, the American Meteorological Society and the Sudan Engineering Society.

Professor Lloyd's research areas include nanoscale information processing, memory simulators, digital computation, quantum mechanical effects and the physics of information. He holds the BA degree (1982) from Harvard, a Certificate of Advanced Study in Mathematics (1983) and the MPhil (1984) in history and philosophy of science, both from Cambridge University, and the PhD (1988) in theoretical physics from Rockefeller University. Before joining MIT he was a director's postdoctoral fellow at the Los Alamos National Laboratory and at the California Institute of Technology.

## MIT wins regional round in College Bowl championship

The MIT College Bowl squad defeated the defending national champions from Harvard University in the New England regional championship on Sunday, Feb. 25, at Tufts University.

This victory in the self-proclaimed "Varsity Sport of the Mind" qualifies the team as one of 16 contenders for the national championship, to be held in late April at Arizona State University.

The team consists of team captain Jason Sugg, a senior in electrical engineering and computer science, Peter McCorquodale, a graduate student in mathematics, Jamie Coffin, a senior in EECS, Ryan Scranton, a junior in phys-

ics, and Dominic Ricci, a freshman. They were selected from the outstanding players participating in the IAP intramural tournament which attracted more than 100 participants. About 20 MIT students meet each Tuesday evening in Rm 1-136 to practice. Practice sessions are open to all interested students.

College Bowl matches are knowledge competitions between collegiate teams with questions based on academic knowledge and current events. Two types of questions are asked during a match, which is played in two seven-minute halves. Toss-up questions are open to both teams. The team of the player who correctly answers the toss-up question earns the chance to answer a bonus question. Success requires a trade-off between speed (to beat the opponents out on the toss-ups) and depth of knowledge (to maximize the points scored on bonuses).

Fifteen teams competed in the two-day intercollegiate tournament, including the perennial powerhouses of MIT, Harvard, Dartmouth, Boston University and Williams College.

MIT College Bowl squads have participated at the national level in 1988 (finishing seventh), 1990 (finishing second), and 1992, when MIT was first in the nation. The team is sponsored by the Student Center Committee and supported by the Campus Activities Complex and the IAP Office.

"They've got their work cut out for them," said James W. Bales, PhD '91, the team's coach and a research engineer in MIT's Sea Grant program. "But having won New England, one of the toughest regions in the nation, this team has shown it is capable of beating the best."

## Intellectual gifts



Intel Corp. has given the Laboratory for Computer Science (LCS) 100 Pentium and Pentium Pro processor-based workstations and servers, a gift valued at more than \$500,000. Professor Michael L. Dertouzos, center, director of the LCS, said "Intel's generous donation makes it possible for the Lab to maximize critical research efforts designed to provide the highest socio-economic benefits." Dave Shrigley, right, vice president of Intel's Corporate Marketing Group, said the company was pleased to participate in LCS "initiatives that shape the way technology impacts society." The donation, he said, is part of Intel's "commitment to providing support for science and engineering education and to helping schools and students play a part in inventing our future." Intel is the world's largest chip maker and a leading manufacturer of personal computer, networking and communications products. At left is senior research scientist Victor W. Zue, associate LCS director. The Intel machines—one of which is shown in the foreground—will be used for theoretical and experimental LCS research including Web-related activities, spoken language interfaces, cryptography and biomedical and programming languages initiatives. Photo by Donna Coveney

## CAES launches K-12 initiative

For years, engineers in the workplace have relied on films and videotapes produced by MIT's Center for Advanced Educational Services (CAES) to keep up with what's happening at the leading edge of their world.

Now, high school students can also look to the CAES—using the World Wide Web.

The CAES has announced a new program that combines presentations by MIT professors during regular high school classes, and an opportunity for follow-up activities in the days after the lecture using the World Wide Web.

The new program began February 29 when Professor Arnold I. Barnett,

whose statistical studies of crime, air travel and Vietnam War service have drawn international attention, lectured to a Lexington High School class about the "uses and abuses" of statistics as presented in the news media. Dr. Barnett, who is professor of operations research and management at the Sloan School, addressed the Global Civilizations class. The lecture was recorded for editing and distribution to other high schools.

Professor Richard C. Larson, the CAES director, said the video will point to a designated URL to which students can send homework or submit questions and find references to other Web links. "It's a new form of

Cliff notes," he said.

The server is part of MIT's Networked Multimedia Information Services (NMIS) project based in the CAES and funded by the National Science Foundation. One of the NMIS functions is to create indexed video databases aimed at K-12 and distribute the content via the Web. The server includes compressed video segments, a text of the audio of each video, teacher's guides and a search engine. One of these high-speed links has been established with Lexington High School.

The new program is the first in a series of CAES K-12 initiatives. For more information contact Tracy Pierce at <tracy@mit.edu> or x3-5472.

## NRC cites MIT for P-32 violation

The Nuclear Regulatory Commission has issued a citation to MIT for what was termed "an alleged violation of NRC requirements" following an investigation into the ingestion of a small amount of phosphorus 32 by a researcher last year and a later inspection.

The NRC, however, did not propose a fine.

Professor J. David Litster, vice president for research and dean for graduate education, said MIT has taken careful note of the NRC communication. "The fact that MIT was not fined

when the NRC had that option indicates that the commission staff is satisfied with the actions we have taken since their visit in October," Professor Litster said.

The announcement said an investigation team visited MIT from October 17-18, with a follow-up inspection from December 4-6. In October, investigators were able "to enter several unlocked, unattended laboratories where radioactive material was stored in unlocked refrigerators," the announcement said. In December, an inspector found that "radioactive materials were

stored in an unlocked laboratory in an unlocked, unattended storage area."

The February 27 announcement said MIT was cited "for two examples of failing to secure from unauthorized removal or access" radioactive laboratory materials which MIT is licensed to possess. No unauthorized removal occurred from these two instances.

The announcement said that MIT was not fined "because of its good recent enforcement history and because the NRC determined [MIT's] corrective actions were prompt and comprehensive."

The NRC visit in October came a day after MIT informed it of the August 14 ingestion of phosphorus 32 by an MIT researcher. The December inspection was conducted "to assess MIT's progress on commitments made following the ingestion," the NRC announcement said. In December, the NRC reported that while it could not "identify exactly how the ingestion occurred," it concluded "that it's more probable that it was deliberate than that it was accidental." The amount ingested was 579 microcuries which is below the permissible one-time and annual limit of 600 microcuries for a researcher using P-32. The NRC report said the amount ingested would not have caused the researcher any health problems.

## Erratum

Matthew J. Turner, the 1996 class president who received a Dr. Martin Luther King Jr. Leadership Award (Tech Talk, February 28), has a double major in mechanical engineering and political science, not mechanical engineering and architecture.

## Addendum

The names of three researchers were inadvertently omitted from a February 14 Tech Talk story on a new technique to treat rheumatoid arthritis that involves bombarding the affected joint with subatomic particles. The researchers, who also have appointments at Brigham and Women's Hospital, are Dr. Clement Sledge and Dr. Alun Jones, research affiliates in the Harvard-MIT Division of Health Sciences and Technology, and Sonya Shortkroff, research affiliate at the Nuclear Reactor Laboratory.

## Press to issue King book

A new book, to be published by MIT Press in mid-March, commemorates two decades of MIT's annual celebration of the life of Dr. Martin Luther King Jr.

*Reflections of the Dream, 1975-1994: Twenty Years Celebrating the Life of Dr. Martin Luther King Jr. at the Massachusetts Institute of Technology* has been edited by Dr. Clarence G. Williams, special assistant to the president of MIT, ombudsperson and adjunct professor of urban studies. Dr.

Williams has played a major role in the annual events honoring Dr. King as a long-time member of the Planning Committee for the Martin Luther King Jr. Celebration Activities.

The book presents the words of the keynote speakers at the MLK celebration, concluding with the remarks of Coretta Scott King, delivered on the 20th anniversary of the observance in 1994. The 1995 speech by A. Leon Higginbotham is included as an appendix.

# Institute Calendar

\*-Open to public  
\*\*-Open to MIT community only  
\*\*\*-Open to members only

March 6 - 17

## ■ SPECIAL INTEREST

**Views from a Garden of Worldly Delights\***—Mar 13: Lecture by Daniel Kleppner, Lester Wolfe Professor of Physics, Killian Award Lecturer 1995-96. The James R. Killian Jr., Faculty Achievement Award Lecture, 4pm, Rm 10-250.

## ■ SEMINARS & LECTURES

WEDNESDAY, MARCH 6

**Microcavity Devices\***—Fred Schubert, Boston Univ. EECS/RLE Seminar Series on Optics and Quantum Electronics, 11am-12pm, Rm 36-428. More info: x3-8504.

**The Matching and Learning of Structural and Spatial Representations with Neural Networks\***—Steven Gold, Dept. of Computer Science, Yale. The Center for Biological and Computational Learning Seminar Series, 12-1pm, Rm E25-401.

**DOE and the CTB\***—Joan Rohlfing, Dept. of Energy. The Defense and Arms Control Studies program Seminar, 12-1:30pm, Rm E38-615. Bring a bag lunch, refreshments provided. More info: x3-0133.

**The Influence of the Seasonal Mixed Layer on Oceanic Uptake of CFCs\***—Tom Haine, MIT. Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915.

**Modal Interactions in Bubbles and Drops\***—Prof. Frank Feng, MIT. Informal Fluid

Dynamics Seminar, Dept. of Mathematics, 1:30-2:30pm, Rm 2-338.

**Satellite Reconnaissance and its Outgrowth\*\***—Prof. Stanley Weiss, MIT. Sponsored by the Massachusetts Space Grant Consortium, 3pm, Rm 37-212. More info: x8-5546.

**An Invisible Minority: Brazilians in New York City\***—Maxine L. Margolis, Dept. of Anthropology, Univ. of FL, Gainesville. Inter-University Seminar on International Migration, 4-6pm, Rm E38-615. More info: x3-6764.

**Mineral Physics Constraints on Upper Mantle Dynamics\***—Prof. Michael Brown, Univ. of WA. Sponsored by the Dept. of Earth, Atmospheric and Planetary Sciences, 4pm, Rm 54-915. Refreshments, 3:30pm, Ida Green Lounge.

**New Frontiers in Carbon Research\***—Prof. Mildred Dresselhaus, MIT. CAES/LLP Distinguished Lecture Series, 4-5pm, Rm 34-101 (Edgerton Hall). Refreshments, 3:30pm.

**The Challenge of Hindu Nationalism to Secular Politics\***—Stanley Tambiah, Dept. of Anthropology, Harvard Univ.; discussant: Michael Fischer, STS, MIT. Peoples and States: Ethnic Identity and Conflict, jointly sponsored by MIT Anthropology Program and CIS, 4:30pm, Rm E38-714. Refreshments. More info: x3-3065.

THURSDAY, MARCH 7

**Theory Choice\***—Larry Laudan, Univ. of Hawaii. Dibner Institute Lecture, 4pm, Rm E56-100.

**Ethnic Violence: Problems of Disengagement with a Focus on Northern Ireland\***—Prof. John Darby, International Programme on Conflict, Resolution and Ethnicity, Univ. of Ulster. Ford Development Seminar, CIS,

4-6pm, Rm E38-714. Refreshments. More info: 621-7919.

**Piston-ring Dynamics and Gas Flow Model with Ring Twist\***—Tian Tian, MIT graduate student. Sloan Automotive/Reacting Gas Dynamics Laboratories, 4-5pm, Rm 31-161. Refreshments, 3:45pm.

**After-Sales Service Logistics Systems: The Saturn Strategy\***—Morris A. Cohen, Codirector, Fishman Davidson Center for Service and Operations Management, The Wharton School, UPenn. Operations Research Center and Decision Sciences Program Seminar, 4-5pm, Rm E40-298. Refreshments. More info: x3-6185.

**The Limits of Kerr-Lens Mode Locking of Ultrafast Lasers and Applications in Semiconductor Physics\***—Dr. Steven T. Cundiff, AT&T Bell Laboratories. Special EECS Seminar, 4:15pm, Rm 34-401A. Refreshments, 4pm.

**Matter at High Energy Density—Insights from Heavy Ion Collisions\***—Barbara V. Jacak, Los Alamos National Lab. MIT Physics Colloquium Announcement, 4:15pm, Rm 10-250. Refreshments, 3:45pm, Rm 26-110.

**Solar Power Satellites (SPS)\***—Peter Glaser. Sponsored by the Boston Chapter of the national Space Society and the MIT chapter of Students for the Exploration and Development of Space, 7:30pm, Rm NE43-8000. More info: Draper x8-2828 or <bam@draper.com>.

FRIDAY, MARCH 8

**Finite-Beta Minimum Energy States of Two-Fluid Flowing Plasma\***—Prof. Loren C. Steinhauer, Univ. of WA. Plasma Fusion Center Seminar, 11am, Rm NW17-218.

**Telecommunications: Accepting the Challenge of Growth\***—Mr. Jorma Ollila, President

and CEO, Nokia Group. Sponsored by the Sloan School of Management and the School of Engineering, hosted by the Center for Technology, Policy and Industrial Development, 11:30am-1pm, Tang Center (Bldg E51), Wong Auditorium.

**Novel Stellarator Configuration\***—Dr. Paul Moroz, Univ. of WI, Madison. Plasma Fusion Center Seminar, 3pm, Rm NW17-218.

MONDAY, MARCH 11

**Computer Graphics Techniques for Modeling and Rendering Weathered Materials\***—Julie Dorsey, MIT. Building Technology Lecture, 12:30-2pm, Rm 1-277.

**Rare Earth Oxyorthosilicates: Interesting New Gamma-Ray Detectors\***—Dr. Jeffrey Schweitzer, Vice President, Schlumberger-Doll Research. Dept. of Nuclear Engineering/American Nuclear Society Seminar, 3:30pm, Rm NW12-222. Refreshments, 3pm.

**Social Mindscapes\***—Eviatar Zerubavel, Rutgers Univ. Spring Colloquium sponsored by the Program in Science, Technology, and Society, 4pm, Rm E51-095. More info: x3-4062.

**Numerical Modeling of Airflow and Mass Transport in the Human Nasal Cavity\***—Dr. Keyvan Keyhani, Fluid Mechanics Lab, MIT. Mechanical Engineering Fluid Mechanics Seminar, 4-5pm, Rm 5-234. Refreshments. More info: x3-7952.

**Neurodynamic Programming\***—Dimitri Bertsekas, MIT. MIT-EECS Colloquium, 4-5pm, Rm 34-101 (Edgerton Hall). Refreshments, 3:30pm.

**Education Reform in Massachusetts and the Nation: How Are We Doing?\***—John C. Rennie, founder of the Massachusetts Business Alliance for Education, Chariman and

CEO, Pacer Systems. Sponsored by the Council on Primary and Secondary Education and the Museum of Science, 4-6pm, Rm 6-120.

**Uniform Learnability, Model Selection, and Neural Networks\***—Prof. Andrew Barron, Dept. of Statistics, Yale Univ. Applied Math Colloquium, 4:15pm, Rm 2-105. Refreshments, 3:45pm, Rm 2-349. More info: <http://web.mit.edu/mathdept/www/AppliedMathColloq/spring96> or x3-4347.

**Secession and Diasporas\***—Yossi Shain, Tel Aviv Univ. Inter-University Seminar on International Migration and MacArthur Transnational Security Issues Seminar, 5:30-7:15pm, Rm E38-714. More info: x3-6764.

TUESDAY, MARCH 12

**Corporate Restructuring and Innovation\***—Prof. Edward H. Bowman, The Wharton School. Sponsored by MIT International Center for Research on the Management of Technology, 11:30-1pm, Rm E52-175. Bring your lunch, beverage and dessert provided.

**Ocean Convection: Theories and Observations\***—Prof. John C. Marshall, MIT. Autonomous Underwater Vehicles Seminar sponsored by MIT Sea Grant, Draper Labs and the Dept. of Ocean Engineering, 12pm, Rm E38-300. More info: x3-9314 or <consi@mit.edu>.

**A 433 Mhz 64 Bit Quad-Issue RISC Microprocessor\***—Paul Gornowski, Digital Semiconductor. MTL VLSI Seminar Series, 4pm, Rm 34-101. Refreshments, 3:30pm.

**Success Factors in Technology Development\***—Mr. John T. Preston, Co-director, Entrepreneurship Center at MIT; President &

(continued on page 5)

## Institute Arts

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

March 6-17

## ■ MUSIC

**MIT Chapel Concerts\***—March 7: David Schulenberg, harpsichord; Lucy Yates, soprano. Works of Monteverdi, Frescobaldi and Handel. March 14: Glorienne Collver Jacobson, guitar. 12noon, Chapel. x3-2906

**New England Collegiate Jazz Festival at MIT\***—March 9: James O'Dell, host. College Band Performances 10am-5pm. Concert at 8pm features the MIT Festival Jazz Ensemble and 2 bands chosen by the Festival judges. Admission: \$5. Kresge Aud. x3-2826

**Advanced Music Placement Student Recitals\***—March 13: Andrew Newberg '97, piano. Schumann's Arabesque, Op. 18; Beethoven's Bagatelles, Op. 126; Schubert's Drei Klavierstücke, D. 946. 12noon, Killian Hall. x3-2826

**Senior Recital\***—March 15: Leonard Kim '96, piano and cello. Gabrieli's Third and sixth ricercari, Jean Balthasar Triklir's 1st Sonata and 6th Sonata, Donald Martino's Suite of Variations on Medieval Melodies, Edward Cohen's Sonata, Camille Saint-Saëns' Suite, Opus 90, Haydn's Sonata, Hob. 35 and Sonata, Hob. 42, L. Kim's Eight Variation-fragments of Junior lab, Gottschalk's *The Banjo*, Fantasie Grottesque and An American Sketch, Opus 15. Guest performers include Senior Lecturer Edward Cohen, piano and former MIT students Kurt Roth, cello and Mary Beth Rhodes '94, violin. 8pm, Killian Hall. x3-2826

**An Evening of Yiddish Stories and Folk Songs\***—March 15: Storytelling by David Braun, MIT PhD candidate in Linguistics and Yiddish Theater at Columbia University; Yiddish singing led by Beth Silberman, vocalist for Shirim Klezmer Band and Yiddish teacher. Sponsored by MIT Hillel. 8:30pm, Hillel Center (W11, 40 Mass Ave). x3-2982

**MIT Symphony Orchestra\***—March 16: David Epstein, conductor. Beethoven's Egmont Overture, Bartók's Dance Suite, Strauss' Burleske with Elaine Chew (G), piano, and Jacques Ibert's Concerto for Flute and Orchestra (1934) with Euree Kim '96, flute. \$2 at the door. 8:30pm, Kresge Aud. x3-2826

**MIT Symphony Orchestra Concerto Competition\*\***—March 22 deadline. One winner will be selected from the MIT/Wellesley student body to perform a con-

certo with the orchestra during the 1996-97 season. Soloists who have already performed with the MITSO are not eligible. All concerto repertoire will be considered. The entire work must be prepared for the audition. Accompanists are not necessary. Applications may be picked up at the Concerts Office (Rm 14N-207) or downloaded from <http://web.mit.edu/mta/www/music/concerto.html>. Auditions will be held on Sunday, April 14, from 9am-3pm in Kresge Aud. Entrants will be notified of their audition time by Monday, April 8. x3-2826

**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. Call Ken, 784-6114.

## ■ MUSIC/DANCE

**Dancers and Musicians of Bali Lecture-Demonstration\***—March 17: Dancers and Musicians present spiritual dances, sacred rites of exorcism, ceremonial performances of religious offering and story-telling morality plays. Lecture-Demonstration features The Musicians and Dancers of Bali with guests, renowned Balinese dancer and MIT artist-in-residence Nyoman Catra and MIT's Gamelan Galak Tika. Space limited. 11-12:30pm, Kresge Little Theater. 876-4275

## ■ DANCE

**Israel Folkdance Festival Folk Dance Party\***—March 16: Participatory dance preceding the 1996 Israel Folkdance Festival (see below) features open dancing and requests and a videotape showing of the 1995 Israel Folkdance Festival. 7-10:30pm, Student Center Sala de Puerto Rico. x3-2982

**The Israel Folkdance Festival of Boston\***—March 17. 20th year celebration. The Festival, sponsored by MIT Hillel, will feature 15 dance groups from Canada and the Eastern US. Special guest artists for this anniversary performance will be an ensemble made up of members of the Klezmer Conservatory Band, which celebrates the Eastern European heritage of Jewish music brought to America. Tickets: \$12 at the door; \$1 discount for seniors and children, as well as for group tickets. Tickets are on sale at MIT Hillel (W11). 3pm, Kresge Aud. x3-2982

**MIT Folkdance Club\***—Sun—International Dancing: Early teaching for beginners—7-8pm; Teaching & requests—8-11pm, Sala de Puerto Rico or Lobby 13. Tues—Advanced Balkan Dancing: Regular teaching & requests, 8-11pm, Student Center 4th floor. Weds—Israeli Dancing: Early teaching for beginners—7-8pm; Teaching & requests—8-11pm, Sala de Puerto Rico or Lobby 13. MIT/Wellesley students free, 25¢ others. Call 253-FOLK for locations on a given week.

## ■ THEATER

**Nite at the Improv\***—March 9: Head-to-head competition of New England college improv troupes hosted by MIT's Roadkill Buffet.

Benefit event run by AEPi, an MIT sorority, for Chaim Sheba Medical Center in Israel and The General Israel Orphans' Home for Girls. Admission: \$4 in advance, \$5 at the door. 8pm, Walker Memorial Hall. For more information: Ashwini Deshpande, x5-7591. Also see <http://www.mit.edu:8001/activities/roadkill/home.html> or email <rbk@mit.edu> to subscribe to their information list "rbk-info"

**The Tempest\***—March 14-16, March 21-23: Shakespeare Ensemble at MIT production incorporates shadow theater, masked theater and Balinese-style movement into Shakespeare's text. Music provided by Gamelan Galak Tika, MIT's Balinese percussion ensemble. \$7, \$5 MIT/Wellesley students w/ID (\$1 off each ticket for groups of ten or more). 8pm, Student Center Sala de Puerto Rico. x3-2903

## ■ READINGS

**Poetry@MIT. Stephen Kelen and Sharona Ben-Tov\***—March 7: Stephen Kelen, an Australian, has had poetry published in Australian journals and newspapers, broadcast on the Australian Broadcasting Corporation's Radio National and have appeared in journals in the UK, US, Canada, Japan and in cyberspace. Sharona Ben-Tov, poet-in-residence at Mishkenot Sha'ananim in Jerusalem and teaches creative writing and English at Bowling Green State University in Ohio. She is currently finishing a second volume of poems, *Time and Loss*, which deals, in part, with the Israel Science Corps, a secret group of scientists who developed weaponry during Israel's War of Independence of which her father was a member. Sponsored by MIT Program in Writing and Humanistic Studies and the Literature Section. 7:30pm, Bartos Theater. x3-7894

**Staff Poets Wanted\*\***—April 1 deadline. The Poetry@MIT series seeks MIT staff members to read their poems at the final reading in the series (May 2). Send 3-5 poems to Nancy Young, Rm 14E-303 for consideration. Info: x3-9469 or email <youngn@mit.edu>.

## ■ FILM

**Taiwanese Film Festival\***—"Image of the City" presents films set in Taipei, the capital and largest city of Taiwan, produced in the 1990s. March 8—*Vive L'amour*, 7-9pm; March 9—*Red Lotus Society*, 1-3pm; March 10—*The Rebel of Neon God*, 1-3pm. All shown in Rm 1-390. Sponsored by the MIT Republic of China Student Association. Also see the ROCSA display case in the Infinite Corridor. Info: email <cpyeong@mit.edu> or <chyeang@mit.edu>

**Foreign Films @ MIT\***—March 6: *The Blue Angel* (German, Josef von Sternberg, 1929, Germany). 7pm, Rm 14E-310. March 7: *Rules of the Game* (French, Jean Renoir, 1939, France)—7pm, Rm 2-105. *Touki Bouki* (Wolof, Djibril Diop-Mambety, 1973, Senegal)—7pm, Rm 14E-310. March 8: *Cortazar* (Spanish, Tristan Bauer, 1994, Argentina)—5pm, Rm 14E-310. March 13: *Triumph of the Will* (German, Leni

Riefenstahl, 1935, Germany)—7pm, Rm 14E-310. March 14: *Yeelen* (Bambara, Souleymane Cisse, 1989, Mali)—7pm, Rm 14E-310. *Open City* (Italian, Roberto Rossellini, 1945, Italy) and *Shoeshine* (Italian, Vittorio de Sica, 1946, Italy)—7pm, Rm 2-105. March 15: *El Silencio de Neto* (Spanish, Luis Argheta, 1994, Guatemala)—5pm, Rm 14E-310. English subtitles. x8-6745

**Japan Program Films\***—March 15. Two of "The Most Memorable" Japanese films. *Woman in the Dunes*—6:30, *The Ballad of Narayama*—8:45 in Rm 2-105. Both in Japanese with English subtitles. \$1-2 donation requested. x3-8095

## ■ EXHIBITS

**List Visual Arts Center (E15)\*—Asia/America: Identities in Contemporary Asian American Art.** The work of 20 foreign-born Asian American visual artists who in their paintings, sculptures, photographs and mixed media installations deal with the complex questions of identity faced by Asians living in the West. *Unquiet: A New Installation* by Kim Yasuda. MIT artist-in-residence. California-based Yasuda creates installations that expand the conventional notions of fixed identity by orchestrating text, objects, photographs and video projections to communicate the psychological terrain of the mind into a physical landscape. Shows run through Mar 24. Curatorial Office Hours—Meet the curatorial staff for informal discussions and questions about art—Weds, 12:30-1:30pm. List Visual Arts Center Hours: T/Th/F 12-6; W 12-8pm; Weekends 1-5; closed holidays. More info: x3-4680.

**MIT Museum (N52)\*—Samuel V. Chamberlain '18: A Celebration.** Original drawings, lithographs, watercolors and illustrations celebrating the 100th anniversary of the birth of Sam Chamberlain. Ongoing: *Schooners and Whalers: The Watercolors of Benjamin Russell*; *Holography: Artists and Inventors*; *MIT Hall of Hacks*; *Light Sculptures* by Bill Parker; *Math-in-3D: Geometric Sculptures* by Morton C. Bradley, Jr.; *MathSpace*. 265 Mass Ave. Tues-Fri 10-5, Weekends 1-5. More info: x3-4444.

**Compton Gallery\***—Richard Bertman, Sculptor. An exhibition of Boston architect Richard Bertman's (MIT Class of 1960) whimsical sheet metal and steel rod sculptures. Show runs through May 3. Weekdays: 9-5. More info: x3-4444.

**Hart Nautical Gallery\***—*Ships for Victory: American Shipbuilding's Finest Hour.* Shipbuilding production during World War II. Permanent Exhibition of MIT Museum's Ship Models. Ongoing. Weekdays 9-5pm. More info: x3-5942.

**The Dean's Gallery\***—*Variations on Life and Times.* Oil on canvas paintings by Millan Slade. Expressions of human activities and modern ethics. The Dean's Gallery, Sloan School of Management, E52-466. Show runs through March 12. Weekdays 8-5pm. Info: x3-9455 or <http://web.mit.edu/deans-gallery/www/>

**Rotch Library of Architecture and Urban Studies: Berlin Facades 1994-95.** Photography and video exhibition by Camila Chaves Cortes, research fellow, Dept. of Urban Studies and Planning. Exhibit examines the changes in Berlin as a result of the move of the government to Bonn and includes historical documentation of Alexander Platz, Pariser Platz, Schloss Platz and other sites undergoing renovation. The show also features manipulated hand-painted Polaroid transfers of the Berlin Wall and *The Legend of the Reichstag*, a 20-minute video that depicts the history of the Reichstag and how Christo and Jean Claude wrapped the building in Summer, 1995. *Berlin Facades 1994-95* also includes a three-dimensional sculpture on the Reichstag project. Show runs through May. Rm 7-238. This exhibition can also be seen in the World Wide Web at <http://web.mit.edu/berlin-gallery/www/>.

## ■ OTHER

**The Japanese Art of Flower Arranging\***—March 14: Japanese Lunch Table class taught by Keiko Ther. 12:30-2pm, Bldg E38 7th floor Conference Rm. Mitsuko, 723-8788

**Arts Grant Deadline\*\***—March 15: Final of three deadlines for 1995-96 Council for the Arts Grants funding. Forms available at the Office of the Arts, E15-205, x3-2372

**Arty Techy Show and Tell\***—March 15: Bring slides, video, poetry, something to read, show, perform, and/or consume. Sponsored by MIT Electronic Research Society. 9pm, Rm 20B-119 (18 Vassar St., 2nd floor). Info: email <robot@mit.edu>.

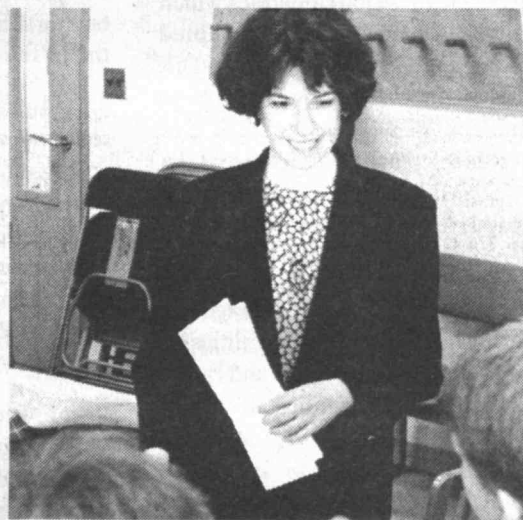
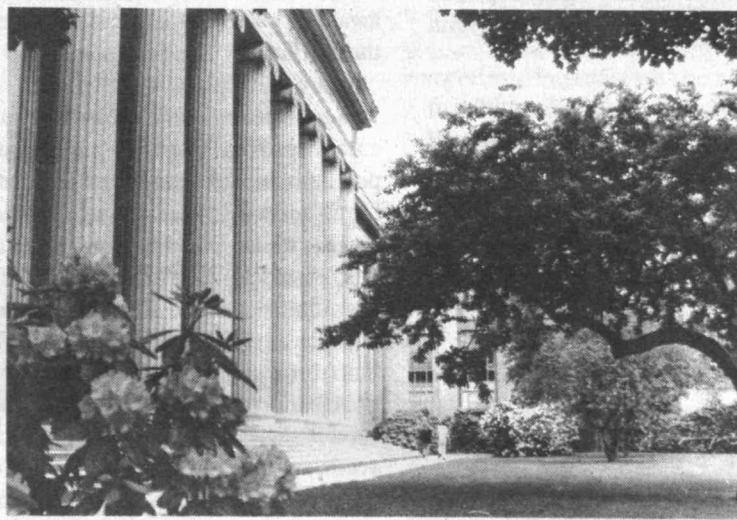
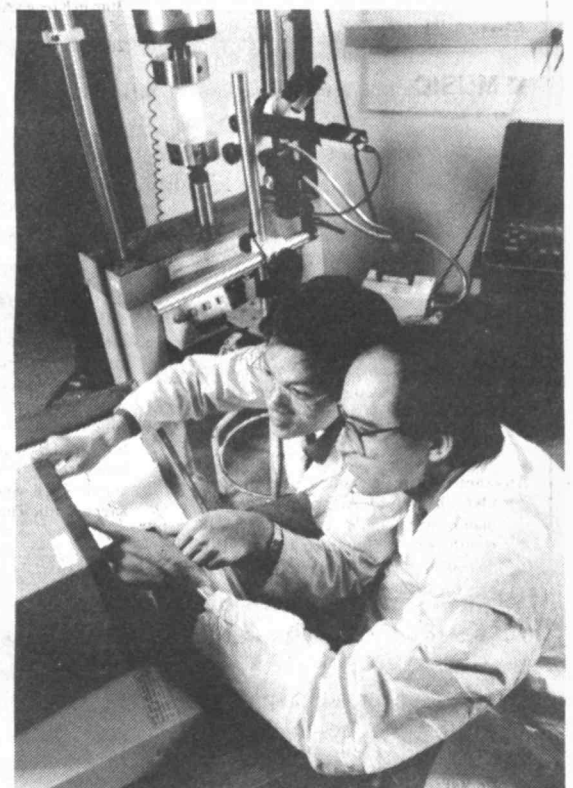
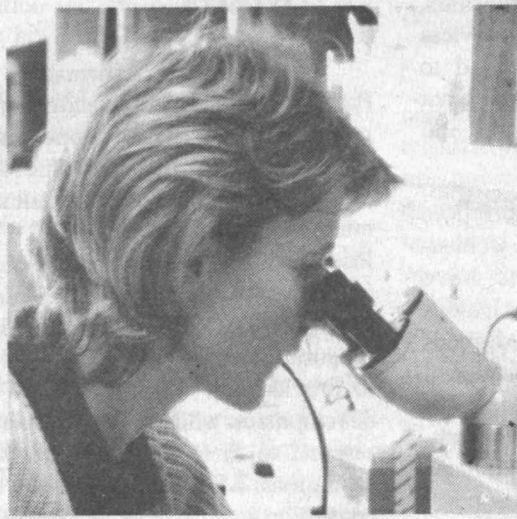
**Deadline for Entries for Vera List Prize Competition**—March 22: Contest for \$500 prize to full-time MIT student who demonstrates unusual and thoughtful expression on some aspect of contemporary art. This year's competition coincides with the List Center's *Asia/America: Identities in Contemporary Art*, and the concurrent film series *Memory, Tradition, Displacement: Asian American Identities in Recent Film*. Students are encouraged to concentrate on the exhibition or film series or on individual artworks or films as the focus of their proposal, particularly as a film or artwork may compare or contrast to personal experience. Students are also welcome to pursue their own particular focus for the competition. Non-written admissions are allowed as well; however, students considering less conventional formats are encouraged to consult List Center staff prior to submission. Entries due by 5pm. Info/competition guidelines: Ron Platt, x3-4400 <rplatt@mit.edu>.

**Applications for Wiesner Student Art Gallery\*\***—All students welcome to apply for exhibits for summer & fall. Information: Ted Johnson, Campus Activities Complex, Rm W20-500.

# Affirmative Action Plan Summary

## Massachusetts Institute of Technology

### 1995-1996



The nation is engaged in a broad debate about the efficacy of federal affirmative action policies. Regardless of the outcome of this debate and of any changes in government policies and programs which may ensue, MIT will remain firmly committed to acting affirmatively in pursuit of our vision of an academic community of the highest level of excellence whose members reflect the changing face of our nation.

I call your attention to the following statement, which was originally issued in January 1994, and ask that we all renew our dedication to its implementation.

#### STATEMENT OF COMMITMENT

These are times of rapid change in our society. We at MIT respond to change by generating or incorporating new ideas and new knowledge in our professional and scholarly lives. We must become equally adept at incorporating cultural and demographic change into our life as an academic community if we are to maintain our high quality and our relevance to the world. To do this, we must recognize and draw on the full range of talents brought to us by women and men from many different racial, cultural, economic and ethnic backgrounds. Our greatest challenge in this regard is to reduce the underrepresentation and underutilization of women and minorities at MIT.

This requires, first, that we work to create at MIT an atmosphere of civility, collegiality, and mutual respect in one that stimulates and supports all of our faculty, students, and staff.

Second, we must take renewed, affirmative action to ensure equality of opportunity in education and employment at the Institute. Specifically, thoughtful and effective recruitment and career development of women and minorities for positions at all levels is necessary to ensure their greater and more effective participation in MIT's workforce.

MIT has always been a place where people with exceptional talents and intellect have gathered to work, to explore, to learn, and to teach. Success in these efforts will enable us not only to reflect the changing face of America, but to draw on the full range of talents needed to meet the challenges of a changing world.

Charles M. Vest  
President

## I. INTRODUCTION

The following is a summary of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology. It is not intended that this summary replace the contents or distribution of the more comprehensive Plan; rather, its purpose is to reaffirm and further communicate the Massachusetts Institute of Technology's commitment to equal opportunity and increasing the diversity of those who work and study at MIT. Copies of the Plan in its entirety can be obtained through the campus Personnel Office, the Human Resources Office at Lincoln Laboratory, and the MIT Libraries.

## II. REAFFIRMATION OF MIT'S COMMITMENT TO EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION

For many years the Institute, through its Affirmative Action Program, has sought to expand its efforts to guarantee equality of opportunity in employment and in education, and to reduce underutilization of women and minorities at MIT. For all categories of employment, our objectives are to achieve a representation of women and minorities that is at least in proportion to their current availability.

In accordance with these overall objectives, numerical goals and timetables for increasing representation at the Institute have been set and are contained in the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology for each organizational unit. Achievement of these goals and attainment of the longer range objectives of the Institute Affirmative Action Program require us to continue working with the following principles in mind:

1. All categories of employment at the Institute having fewer minorities and women than is indicated through availability analyses of their representation in the workforce will be identified and communicated to hiring supervisors. These imbalances must be addressed through vigorous and systematic recruitment efforts in hiring, and through efforts to actively support the career advancement of women and minorities within the MIT community.

It is important to note that many unreasonable limitations and inequities in employment have been rooted in occupational segregation and in the stereotyping of roles in our society. Therefore, equality of opportunity requires that we work actively to recruit qualified women and minority group members to those job categories which traditionally have been occupied predominantly by white males. This includes continuing our efforts in recruitment of women and minorities to the faculty and research areas, as well as positions at the executive and managerial levels, where underutilization has been identified.

2. All employees will be encouraged to make the fullest use of their abilities by participating in educational and career development opportunities offered by the Institute, including benefits programs such as tuition assistance. Employees are also encouraged to take advantage of opportunities for job transfer and promotion at the Institute as are consistent with both the needs of the Institute and the individual's abilities and aspirations. Special efforts will be made to ensure that women and minorities are made aware of specific opportunities that may arise.

3. Compensation and benefits will continue to be provided without regard to race, color, gender, sexual orientation, religion, disability, national or ethnic origin, age, or status as a disabled or Vietnam-Era veteran.

4. It will be our goal to increase the numbers of women and members of minority groups within our undergraduate and graduate student bodies. This goal can be attained only by a vigorous program to recruit potential applicants and to increase the interests in, preparation for, and availabilities of minorities and women for careers in science and technology. While ultimate success will result in substantial changes in admission patterns, our immediate efforts must concentrate on enlarging the pool of qualified women and minority applicants from which we admit students.

5. Access to educational programs, financial assistance, and other services and facilities will be provided to students in a manner that does not discriminate against women and minority students.

6. Procurement procedures and practices will ensure that minority and women-owned business concerns have maximum opportunity to participate as suppliers of Institute required goods and services, including construction of Institute facilities, whether purchased with contract, grant, or Institute funds. All Institute purchase orders and related agreements will incorporate the equal opportunity provisions of Executive Order 11246 which prohibit suppliers from discriminating against employees or applicants for employment because of race, color, religion, gender, or national origin, and which require suppliers to take affirmative action to ensure that persons are employed, and treated during employment, without regard to their race, color, religion, gender, or national origin.

The primary responsibility for following these principles, and for fostering an atmosphere in which the principles and goals of the Institute's Affirmative Action Program are supported, rests with supervisors at all levels and with each person having administrative responsibility within the Institute.

As an institution, we are committed to changing in ways which will achieve true equality in employment and education and which may in the future eliminate the need for specific programs of affirmative action. This commitment underlies the creation of the program policies and initiatives outlined in the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology.

Joan F. Rice  
Vice President for Human Resources,  
MIT Equal Opportunity Officer and  
Title IX Coordinator

## III. EQUAL OPPORTUNITY POLICY

The Massachusetts Institute of Technology does not discriminate in its programs and activities on the basis of race, color, national or ethnic origin, sex, disability, age, sexual orientation, religion, or disabled veteran or Vietnam-Era veteran status.

This nondiscrimination policy applies also to the Institute's employment policies and procedures, including hiring, promotion, rates of pay and other forms of compensation, and selection for training programs. In addition, the Institute has adopted plans calling for affirmative action in employment on behalf of women, members of designated minority groups, individuals with disabilities, and disabled veterans and veterans of the Vietnam-Era.

The following person has been designated to handle inquiries regarding this policy and other nondiscrimination policies as reiterated in the sections below:

Joan F. Rice  
MIT Equal Opportunity Officer  
and Title IX Coordinator  
Building E19, Room 291  
(617) 253-6512

## IV. AFFIRMATIVE ACTION POLICY FOR THE EMPLOYMENT OF MINORITIES AND WOMEN

The Institute's Affirmative Action Program is intended to expand our efforts to guarantee equality of opportunity in employment and in education and to reduce underrepresentation and underutilization of minorities and women at MIT. For all Institute categories of employment, our objectives are to achieve a representation of minorities and women that is at least in proportion to their current availability and to provide new opportunities for career development which both stimulate and respond to their changing interests and aspirations. MIT's obligations as a federal contractor under Executive Orders 11246 and 11375 include the development of an affirmative action program which provides for analysis of utilization of minorities and women in all job groups in each organizational unit.

The Institute has a job posting system for all non-academic jobs openly available on the MIT campus and at Lincoln Laboratory. These positions are listed in the bi-weekly insert to the MIT publication Tech Talk entitled "MIT Positions Available," in the campus Personnel Office, and in the Human Resources Office at Lincoln Laboratory. This open announcement of job opportunities serves to make all members of the MIT community aware of career opportunities that exist at the Institute.

A Serious Search procedure has been established to identify candidates for positions including salaried appointments for an academic year or longer to the three faculty ranks (including visiting faculty) and instructors, and salaried full-time appointments to the Administrative Staff, the Sponsored Research Staff, or the Medical Staff for a duration of one year or more. This search procedure ensures that qualified candidates are sought, especially in those areas where underrepresentation of minorities and women have been identified.

(See Section VI, of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology, "Affirmative Action Program for the Recruitment of Women and Minorities," for details on search procedures.)

## V. AFFIRMATIVE ACTION POLICY FOR THE EMPLOYMENT OF INDIVIDUALS WITH DISABILITIES

The Institute's program for the employment of individuals with disabilities is intended to expand MIT's efforts to provide opportunities for employment and advancement for qualified persons with disabilities. The Institute will not discriminate against any employee or applicant for employment because of physical or mental disability in regard to any position for which the employee or applicant is qualified.

MIT's obligations as a federal contractor under Section 503 of the Rehabilitation Act of 1973 include an assessment of all employment practices to assure that any adaptation that permits the employment or advancement of individuals with disabilities is reasonably accommodated, provided it does not cause undue hardship to the employer. Some individuals may require flexible work schedules, worksite accommodations, or auxiliary aids in order to perform the required duties of a job. Reasonable accommodation to needs such as these is the Institute's affirmative action responsibility under the law.

(See Section X of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology, "MIT's Affirmative Action Plan for the Employment of Individuals with Disabilities.")

## VI. AFFIRMATIVE ACTION POLICY FOR THE EMPLOYMENT OF DISABLED AND VIETNAM-ERA VETERANS

In compliance with the Vietnam-Era Veterans Readjustment Assistance Act of 1974, as amended, MIT does not discriminate against any qualified employee or applicant for employment because he or she is a disabled veteran or Vietnam-Era veteran. MIT, in this respect, takes affirmative action to employ, advance in employment, and treat without discrimination, disabled veterans and veterans of the Vietnam Era.

MIT also invites qualified disabled veterans and veterans of the Vietnam Era who wish to benefit under this program to voluntarily identify themselves to the Personnel Officer of their organizational area or to the employment interviewer.

Questions relating to the employment of veterans should be directed to the Personnel Officer for the department, the MIT Manager of Employment, or to the MIT Assistant Equal Opportunity Officer.

(See Section IX of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology, "MIT's Affirmative Action Plan for the Employment of Disabled Veterans and Veterans of the Vietnam Era.")

## VII. COMPLIANCE WITH SEX DISCRIMINATION GUIDELINES

MIT makes no distinctions on the basis of sex with regard to any condition of employment, including: opportunities for consideration for employment; definition of occupational qualifications; employment recruitment and advertisement of available positions; and compensation and employee benefits. The following is a summary of those Institute procedures and policies intended to preclude discrimination on the basis of sex.

### A. Employment Opportunities

Applications for employment for all positions at the Institute are accepted without regard to the sex of the applicant. There are no positions for which there are qualifications requirements which exclude members of either sex, and no work environments which have been identified as being limited to either men or women.

### B. Employment Recruitment and Advertising

Specific procedures related to the employment process for academic and non-academic positions are outlined in Section II of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology, "Responsibility for Affirmative Action Plan Implementation." These procedures promote particular measures for attracting qualified minorities, women, individuals with disabilities, and Vietnam-Era and disabled veterans in accordance with MIT's Affirmative Action Plan.

When engaged in recruitment activities, MIT will seek to recruit qualified employees of both genders for positions. Employment opportunities (other than faculty openings) are posted in the MIT Positions Available listing. (An exception to this is made for union-represented positions filled through a negotiated internal post and bid process.) Advertising of Institute positions in external publications also includes the statement that MIT is an equal employment opportunity/affirmative action employer.

### C. Distinctions Based on Marital Status

There is no consideration of marital status in the stated requirements for any position at the Institute or in the consideration of any applicant for employment, male or female. The only distinctions made on the basis of marital status are noted below.

In the Institute's policy regarding the "Employment of Members of the Same Family," married spouses and others "whose living arrangements approximate family relationships" are restricted from having a supervisor-employee relationship with one another or from involvement in decisions for one another with respect to conditions of employment, salary, or promotion at the Institute. These restrictions apply equally to men and women in such relationships.

There are some benefits provisions, such as health and dental plan coverage for spouses and "spousal equivalents," which are offered to married employees and to gay and lesbian employees. Such coverage options are offered equally to male and female employees and their partners of either sex who meet the applicable eligibility criteria.

## D. Wage and Salary Administration

MIT has a formal salary administration program which has as its goal the provision of "an equitable and systematic means of compensating various categories of employees in relation to their assigned duties and responsibilities . . ." (from 7.1 of the MIT Personnel Policy Manual, "Salary Administration Program"). Wage rates, salary ranges, and annual allocations for salary increases are determined in relation to the particular requirements of each job classification and to individual performance levels. Such factors apply equally to men and women in all Institute job groupings.

## E. Employee Benefits

The Institute offers a comprehensive benefits package to its employees, including such benefits as health and life insurance plan coverage, tuition assistance and children's scholarship assistance, retirement benefits, and paid vacation and sick leave allowances.

These benefits are offered equally to all male and female employees who meet the specific eligibility criteria for each benefit plan.

## F. Pregnancy/Childbirth Leaves and Leaves Related to Care of Family Members

Disabilities associated with pregnancy and childbirth are treated like any other health condition or temporary disability under the Institute's regular sick leave and disability leave policies. (This includes wage replacement benefits during sick leave in accordance with provisions of the applicable sick leave policies.)

Leaves for the purpose of caring for newborn or newly-adopted children, or to care for a seriously-ill family member, are available equally to male and female employees.

MIT policy statements regarding "Family Care Leave" and "Family Care Leave Following Sick Leave Associated with Childbirth" are provided in the MIT Personnel Policy Manual and in the appendix section of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology (pages 393-395).

## VIII. Policy on Harassment

Harassment of any kind is not acceptable behavior at MIT; it is inconsistent with the commitment to excellence that characterizes MIT's activities. MIT is committed to creating an environment in which every individual can work, study and live without being harassed. Harassment may therefore lead to sanctions up to and including termination of employment or student status.

Harassment is any conduct, verbal and physical, on or off campus, which has the intent or effect of unreasonably interfering with an individual's or group's educational or work performance at MIT or which creates an intimidating, hostile or offensive educational, work or living environment.

Some kinds of harassment are prohibited by civil laws or by MIT policies on conflict of interest and nondiscrimination.

Harassment on the basis of race, color, gender, disability, religion, national or ethnic origin, sexual orientation, age, or status as a disabled or Vietnam-Era veteran includes harassment of an individual in terms of a stereotyped group characteristic, or because of that person's identification with a particular group.

Sexual harassment may take many forms. Sexual assault and requests for sexual favors which affect educational or employment decisions constitute sexual harassment. However, sexual harassment may also consist of unwanted physical contact, visual displays of degrading sexual images, sexually suggestive conduct, or offensive remarks of a sexual nature.

The Institute is committed under this policy to stopping harassment and associated retaliatory behavior. All MIT supervisors have a responsibility to act to stop harassment in the areas under their supervision.

Any member of the MIT community who feels harassed is encouraged to seek assistance and resolution of a complaint. To implement the policy on harassment, MIT provides a variety of avenues by which an individual who feels harassed may proceed. These procedures are intended to provide confidentiality, prevent reprisal, and achieve prompt resolution of complaints, while protecting the rights of the person bringing the complaint and of the person accused of harassment. General complaint procedures are described in the MIT Personnel Policy Manual and in MIT Policies and Procedures: A Guide for Faculty and Staff, and Dealing with Harassment at MIT.

## IX. APPLICABLE EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION REGULATIONS

The Institute's policies on equal opportunity and affirmative action efforts for women, minorities, individuals with disabilities, and Vietnam-Era and disabled veterans are subject to a number of federal and state laws, including the following:

- ◆ Title VI and VII of the Civil Rights Act of 1964, as amended.
- ◆ Title IX of the Education Amendments Act of 1974, as amended.
- ◆ Americans with Disabilities Act of 1990, as amended.
- ◆ Massachusetts General Law Chapter 151B.
- ◆ Executive Order 11246, as amended.
- ◆ Rehabilitation Act of 1973, as amended.
- ◆ Vietnam-Era Veterans Readjustment Assistance Act of 1974, as amended.

## X. RESPONSIBILITY FOR AFFIRMATIVE ACTION PLAN IMPLEMENTATION

The MIT President has appointed Joan F. Rice, Vice President for Human Resources, as Institute Equal Opportunity Officer with responsibility for the administration and oversight of the Affirmative Action Program. In addition, Ms. Rice serves as the Institute's Title IX Coordinator, and handles inquiries regarding the Institute's nondiscrimination policies, in accordance with Title IX of the Education Amendments of 1972. Specific program initiatives, preparation of related statistical reports, and maintenance of the MIT Affirmative Action Plan and related policy statements and communications are the responsibility of the Assistant Equal Opportunity Officer in the campus Personnel Office.

In general, the responsibility for meeting the Plan objectives rests with the department head or the director of each office, center, or laboratory. For certain staff positions, the responsibility of good faith efforts is vested in the Dean or the Vice President responsible for the specific organizational unit, and the Academic Council which considers the serious search effort in periodic reviews of certain staff appointments.

For academic staff positions, including faculty, recruitment and selection processes occur in academic departments, with oversight by department heads, designated search groups, and with final approval of the academic deans.

For the recruitment, referral, and hiring of candidates in non-academic categories, there is a sharing of responsibility between the departmental leadership and the Personnel Office on campus (and comparably, the Human Resources Office at Lincoln Laboratory). Specifically, in order to assist each department in meeting its affirmative action goals, the Personnel Office attempts to attract minority and women applicants according to their availability. It is the responsibility of individual departments to supply the Personnel Office with basic, essential job requirements for each available position in sufficient time to allow for a serious search, or other means of recruitment, to produce qualified minority and women candidates, either from within the Institute or from external recruitment sources.

The senior officer of each area has appointed a designee as equal opportunity representative for the area. These equal opportunity representatives have specific responsibilities in plan preparation, implementation, and monitoring for their organizational unit. A bi-annual review and analysis of all employment categories is undertaken by the equal opportunity representatives and the Personnel Office to monitor progress toward full representation of minority and women employees at MIT. Minority and women referrals and transfer requests from each department will be included in this analysis. These data will be supplied by the Personnel Office in cooperation with each of the departments, laboratories, offices and centers.

The following is a summarized listing of individuals in the current MIT organizational structure with responsibility for affirmative action program efforts in their organizational areas, including designated equal opportunity representatives: (For a complete listing see Section II, beginning on page 12, of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology, entitled "Responsibility for Affirmative Action Plan Implementation.")

### AFFIRMATIVE ACTION REPORTING STRUCTURE

#### OFFICE OF THE PRESIDENT

Charles M. Vest, President  
Joan F. Rice, Vice President for Human Resources and Institute Equal Opportunity Officer  
TBA, Special Assistant to the Vice President for Equal Opportunity and Affirmative Action

#### SECRETARY OF THE MIT CORPORATION; EXECUTIVE ASSISTANT TO THE PRESIDENT; AND DIRECTOR, PUBLIC RELATIONS SERVICES

Kathryn A. Willmore, Secretary of the Corporation; Executive Assistant to the President; and Director, Public Relations Services  
Nancy D. Kelly, Administrative Officer (Equal Opportunity Representative)

#### OFFICE OF THE PROVOST

Joel Moses, Provost  
Doreen Morris, Assistant Provost for Administration (Equal Opportunity Representative)

Lincoln Laboratory  
Walter E. Morrow, Jr., Director  
Joyce Yaffee, Director of Human Resources

#### ASSOCIATE PROVOST FOR THE ARTS

Ellen Harris, Associate Provost for the Arts  
Alan Brody, Associate Provost for the Arts (newly appointed)

#### OFFICE OF THE DEAN FOR UNDERGRADUATE EDUCATION AND STUDENT AFFAIRS (and ROTC)

Rosalind H. Williams, Dean for Undergraduate Education and Student Affairs

#### OFFICE OF THE DEAN OF THE GRADUATE SCHOOL

Isaac Colbert, Acting Dean of the Graduate School

#### SCHOOL OF SCIENCE

Robert J. Birgeneau, Dean  
Evelyn L. Perez, Assistant Dean for Personnel Administration (Equal Opportunity Representative)

#### SCHOOL OF ENGINEERING

Robert A. Brown, Dean  
John B. Vander Sande, Associate Dean  
Donna R. Savicki, Assistant Dean of Engineering for Administration  
Sheila M. Kanode, Administrative Officer, Office of the Dean of Engineering (Equal Opportunity Representative)

#### SCHOOL OF HUMANITIES AND SOCIAL SCIENCE

Philip S. Khoury, Dean  
Douglas W. Pfeiffer, Assistant Dean for Finance and Administration  
Susan Mannett, Assistant to the Dean for Personnel (Equal Opportunity Representative)

#### SLOAN SCHOOL OF MANAGEMENT

Glen L. Urban, Dean  
Thomas J. Allen, Senior Associate Dean  
K. Paul Asquith, Senior Associate Dean  
Alan F. White, Senior Associate Dean  
Donna M. Behmer, Associate Dean and Chief Financial Officer (Equal Opportunity Representative)

#### SCHOOL OF ARCHITECTURE AND PLANNING

William J. Mitchell, Dean  
Bernard J. Frieden, Associate Dean  
Diane E. McLaughlin, Assistant Dean for Administration (Equal Opportunity Representative)

#### VICE PRESIDENT AND DEAN FOR RESEARCH

J. David Litster, Vice President and Dean for Research  
Charlene M. Placido, Assistant Dean for Research (Equal Opportunity Representative)

#### SENIOR VICE PRESIDENT

William R. Dickson, Senior Vice President  
Susan E. Crowley, Administrative Assistant to the Senior Vice President (Equal Opportunity Representative)

#### VICE PRESIDENT FOR HUMAN RESOURCES AND MIT EQUAL OPPORTUNITY OFFICER

Joan F. Rice, Vice President for Human Resources and MIT Equal Opportunity Officer  
TBA (see below for Acting Assistant), Special Assistant to the Vice President for Equal Opportunity and Affirmative Action  
Cynthia L. Vallino, Acting Assistant for Equal Opportunity and Affirmative Action  
Robert J. Lewis, Assistant Director of Personnel Services and Labor Relations

#### VICE PRESIDENT FOR ADMINISTRATION

James J. Culliton, Vice President for Administration  
Nancy Murphy Crosby, Administrative Assistant to the Vice President (Equal Opportunity Representative)

#### VICE PRESIDENT FOR FINANCE AND TREASURER

Glenn P. Strehle, Vice President for Finance and Treasurer  
Elizabeth J. Griffin, Executive Assistant to the Vice President for Finance (Equal Opportunity Representative)

#### VICE PRESIDENT FOR INFORMATION SYSTEMS

James D. Bruce, Vice President for Information Systems  
Katherine K. Allen, Administrative Assistant to the Vice President, Information Systems (Equal Opportunity Representative)

#### VICE PRESIDENT FOR RESOURCE DEVELOPMENT

Barbara G. Stowe, Vice President for Resource Development  
Elizabeth M. Ogar, Director of Finance and Administration (Equal Opportunity Representative)

#### ALUMNI ASSOCIATION

William J. Hecht, Executive Vice President and CEO  
Genevieve M. Hammond, Personnel and Operations Administrator (Equal Opportunity Representative)

#### A. Dissemination of Affirmative Action Plan

An important means of disseminating the Institute Affirmative Action Plan is through annual publication of this summary in the MIT Tech Talk. Additionally, a reference copy of the detailed 1995-96 MIT Affirmative Action Plan is available in each Institute department and in the MIT libraries. Offices with special responsibilities regarding the Plan (i.e., the Personnel Office, MIT Information Office, and offices of the equal opportunity representatives, in each senior officer area) will have copies available upon request.

Each organizational unit at the Institute has responsibility for the method of dissemination to be used in informing persons in its departments about Plan requirements. Each department, center, and laboratory plan at the Institute is reviewed by members of the Institute administration, including the procedures for dissemination to all employees.

The intent and substance of the Plan have been discussed extensively with individual members of the Academic, Faculty, and Administrative Councils and they are periodic agenda items for these groups.

The Labor Relations staff in the Personnel Office will meet with union officials to inform them of Institute policies with regard to affirmative action. In negotiations for new agreements with unions representing employees at MIT, the issue of a nondiscrimination clause in agreements and review for any possible discriminatory aspects will be raised.

All documents relating to Institute policy and procedure will include, where appropriate, a statement of affirmative action policy taken from the Institute's Plan. This statement of policy has already been incorporated in the Policies and Procedures: A Guide for Faculty and Staff and the MIT Personnel Policy Manual.



There are many recruitment sources who receive a Positions Available listing which includes all nonacademic openings at the Institute. This publication contains a statement of MIT's equal employment opportunity policy in each issue. The majority of these recruitment sources specialize in the placement of women and minority candidates. (The total list of recruitment sources is available for review at the campus Personnel Office.) These sources are continually reviewed for their effectiveness in supporting MIT's efforts to attract qualified women and minority candidates.

Section VIII of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology, "Affirmative Action in Procurement and Construction," describes the policy for construction contracts, vending, and procurement. In addition, all vendors are informed of MIT's Affirmative Action Program and the actions required of them as MIT suppliers. The MIT Purchasing Office will keep on file, and have available for review, a list of current suppliers and their statement of understanding of MIT's commitment to affirmative action.

## XI. AFFIRMATIVE ACTION PLAN DEFINITIONS OF PROTECTED CLASS GROUPS

### Definitions of Protected Class Groups

Protected class groups are defined as follows:

- ◆ **American Indians or Alaskan Natives:** Persons with origins in any of the original peoples of North America who maintain cultural identification through tribal affiliation or have community recognition as American Indians or Alaskan Natives.
- ◆ **Asians or Pacific Islanders:** Persons with origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands. This area includes, for example, China, Japan, Korea, the Philippine Republic and Samoa; and, on the Indian Subcontinent, includes India, Pakistan, Bangladesh, Sri Lanka, Nepal, Sikkim and Bhutan.
- ◆ **Blacks (not of Hispanic origin):** Persons having origins in any of the Black racial groups of Africa.
- ◆ **Hispanics:** Persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race. This does not include persons of Portuguese descent or persons from Central or South America who are not of Spanish origin or culture.
- ◆ **Women, Vietnam-Era and Disabled Veterans, and Persons with Disabilities:** These are also protected class members.

## XII. AFFIRMATIVE ACTION PROGRAM FOR THE RECRUITMENT OF WOMEN AND MINORITIES

### A. Serious Search Initiatives and Monitoring of Adverse Impact

In furtherance of MIT's commitment to affirmative action in the employment of underrepresented minority groups, Institute policy requires a thorough search of the relevant employment market for qualified candidates, including female and minority candidates.

### B. Groups for which Serious Search is Required

For particular groups of positions, approval of the appropriate senior officer for the area must be obtained prior to making an offer of appointment. These positions include:

- i) salaried appointments for an academic year or longer to the three faculty ranks (including visiting faculty) and instructors, and;
- ii) salaried full-time administrative staff and sponsored research staff appointments with a term of one year or more for MIT Campus. (Exceptions may be made in the case of certain postdoctoral research staff appointments limited to two years or less.)

### C. Development of a Search Plan

At the time a search is begun, the department head or laboratory director will forward to the appropriate senior officer for review a statement containing a plan for the search. Search plans include an accurate job description, a statement of the qualifications being sought, plans for posting and advertising the available position, and specific steps to identify and actively recruit minority and women candidates.

In cases for which a search committee is established, especially for faculty appointments, the department head ensures that at least one member of the committee is assigned the specific responsibility to see that an active search for minorities and women candidates is carried out. In cases where a search committee is not formed, the person having major responsibility for candidate evaluation also serves as the equal opportunity representative for the search. The department head advises the equal opportunity representative and encourages exploration of ways to strengthen the search process.

In developing a search plan, departments work closely with the Personnel Office, and send the relevant Personnel Officer a copy of the proposed search plan.

### D. Final Search Report

When the search is completed and the candidate of choice is determined, the department forwards a report on the search, together with a recommendation for an appointment offer, to the appropriate senior officer. In some instances, a senior officer may prefer that the report be forwarded through the Personnel Officer for the area.

Regardless of the race or gender or the proposed candidate, the search report should include:

the job description, with reference to the search plan approved previously by the senior officer;

- ◆ a description of the search process, specifying, for example, how many candidates were interviewed;
- ◆ the number of applicants generated, including the number of minority and female applicants and their relative standings among other candidates;
- ◆ the name, and resume, of the candidate of choice and a statement of the principal reason(s) for his or her selection over other finalists;
- ◆ the names, and resumes, of minority and female finalists and, for each person, a specific statement of the reason(s) why he or she was not the preferred candidate.

### E. Waiver of the Serious Search Requirement

Under special circumstances, the search requirement may be waived. For example, a promotional opportunity within a department, office, laboratory, or center may be an acceptable reason for not conducting a search. Certain postdoctoral appointments limited to two years or less may have a waiver of the search requirement. Waivers may also be requested when unusual factors, associated with the work performed, make it highly unlikely that a search will produce other candidates. Waiver requests should be submitted in writing to the appropriate senior officer with guidance from the relevant Personnel Officer for all non-faculty appointments.

### F. Search Report Log

Each senior officer maintains a current log of all appointments and approvals in a format designed for these purposes. This log includes written search plan reports, including written requests and approvals giving justification for each waiver of search granted by the senior officer. Such information is open to review at any time by the Equal Opportunity Officer, and will be available (through the respective Personnel Officer) to the Personnel Office for statistical reports on Adverse Impact, for response to inquiries, and for other Institutional purposes. This information will be assembled into a report and submitted to the Academic Council for review twice each year.

## XIII. ADVERSE IMPACT MONITORING

In accordance with Chapter 60, #60-3.4, from the Code of Federal Regulations, MIT maintains summary records for its applicant recruiting, hires, promotions, transfers, terminations and reclassifications and calculates possible indicators of adverse impact according to the four-fifths rule and the whole person difference. The equal opportunity representatives at each senior officer area carefully investigate each occurrence of an adverse impact indicator for minorities or women, and give feedback to the hiring supervisors on the overall results of the recruitment process.

## XIV. SPECIAL INITIATIVES AND SUPPORT OF COMMUNITY ACTION PROGRAMS

### 1. Participation in the Cambridge Teen Work Program

Each year, MIT develops a number of jobs specifically for local area high school students in conjunction with the Cambridge Teen Work Program. Through this program, students participate in job readiness workshops and are then referred to the MIT Personnel Office for placement in available jobs. Over 100 students have worked at MIT in such positions as receptionist, lab assistant, mail clerk, and data entry operator. Students are selected for employment based on grades, demonstrated reliability, motivation, need for employment, and teacher recommendation. In addition to full-time summer jobs, which last eight to ten weeks, MIT also employs students from the Teen Work Program on a part-time basis during the school year. Several graduates of the Teen Work Program have been offered regular employment at MIT following the completion of their schooling.

Of the Teen Work students recently employed by MIT, 75% were minorities and/or female. In addition, 80% of those Teen Work students who were employed at MIT in part-time positions for the 1993-94 school year were minorities and/or female.

The MIT Personnel Office continues to aggressively work with department supervisors at the Institute to identify opportunities for employment of Teen Work Program participants.

### 2. Participation at Department of Employment and Training Job Fairs

During the past four years, a representative from the MIT Personnel Office has attended job fairs coordinated by local Department of Employment and Training offices in order to interview interested applicants for positions at MIT. Job fairs were attended at several of the DET offices in Cambridge and Boston, as well as at offices in Lynn and Woburn.

## XV. CONSIDERATION OF WOMEN AND MINORITIES NOT CURRENTLY IN THE WORKFORCE

The Campus Personnel Office works with the Department of Employment and Training (DET) Office in Cambridge to list information on MIT employment opportunities on the DET state-wide database. Current openings at Lincoln Laboratory are provided to the Waltham DET office on a regular basis.

In addition, the MIT Positions Available publication is mailed to contact persons at each local area DET office with information on positions in all MIT job categories.

As mentioned in Section XI, for all regular exempt positions at MIT Campus (faculty, administrative staff, and research staff appointments) a "serious search" process is followed in which a review of the details of the search is done by the dean or vice president for the area, prior to the approval of any hiring decision.

Applicants for faculty openings and other academic positions are instructed to send their resumes or curriculum vitae to the hiring department at MIT. The schools specifically target promising protected class members currently at training institutions. Applications and resumes for non-academic positions (support, service, technical and research staff) are received in the personnel offices on campus and at Lincoln Laboratory.

Currently, the staff in the campus Personnel Office uses an "Applicant Referral Form" to refer employment applications and resumes which are received by the Personnel Office to hiring departments. This form contains a section for the department interviewer to record information on the disposition (selection or the reason for non-selection) of each applicant referred. Department interviewers are asked to complete and return forms in a timely manner. The information received back from department interviewers is then recorded in the Personnel Office's applicant tracking computer program. The Lincoln Laboratory Human Resources Office utilizes a comparable process for referral of resumes to department hiring managers.

For non-academic positions (support, service, technical and research staff) in areas where underutilization or underrepresentation of women or minorities has been identified, the personnel staff on campus and at Lincoln Laboratory review disposition information of applicants and discuss this with department hiring supervisors prior to extending an offer of employment for positions.

Organizations offering special employment services for minority group members and women are included in lists of regular recruitment sources maintained by the personnel staff on campus and at Lincoln Laboratory. These organizations receive MIT's listing of available positions twice monthly and will be contacted in efforts to seek applicants from among those not currently in the workforce.

Employment representatives from MIT regularly attend a number of job fairs, career days, and other recruitment events at local junior colleges, business schools, and vocational training programs, including: the Boston Business School, Aquinas Junior College, Mt. Ida Junior College, Marion Court Junior College, and the Women's Educational and Industrial Union. The majority of participants at these recruiting events are women who are not currently in the workforce. There is also significant representation of minority group members at most events attended.

The Special Assistants to the President at MIT, who have extensive networks among minority groups and women's groups in the community, are also asked to assist in recruitment efforts in areas where we seek to increase the representation of minorities and/or women.

## **XVI. ACTION ORIENTED PERSONNEL PRACTICES AND PROCEDURES**

Additionally, the following personnel practices and procedures have been designed to maximize outreach efforts towards women and minorities:

The campus Personnel Office currently maintains a detailed listing of approximately 240 recruitment sources, including many organizations offering special employment services for minorities and women. These organizations receive the MIT Positions Available publication twice monthly. The personnel staff is also assisted by the advertising firm, JWG Associates, Inc., in identifying effective advertising sources for women and minorities, particularly for specific professional and academic job listings.

For technical positions at Lincoln Laboratory (the majority of which require advanced technical degrees), there are extensive recruitment efforts made at college and university job fairs for minority and women students. General recruitment advertising is also done regularly in publications associated with the Society of Women Engineers and the National Association of Minority Engineering Program Administrators.

Lincoln Laboratory also supports the recruitment and development of minority students through a "Summer Minority Internship Program" for undergraduate students. Program participants are encouraged to pursue advanced degree programs at MIT which may lead to full-time employment. In addition, the Laboratory supports program participants who are admitted to MIT graduate programs through tuition and stipend assistance.

For open positions in any staff category at Lincoln Laboratory which are made available for external posting, efforts are made by the personnel staff to expand on the recruitment advertising sources for minorities and women.

A recruitment activity log has been developed to allow the personnel staff to record information about and review recruitment advertising for positions on campus and at Lincoln Laboratory. Summary reports of advertising activity (showing specifically the amount of advertising in publications for women and minorities) will be generated annually for review by the Personnel Officers and the Employment Managers.

A recruitment source survey form has been designed to assist in updating contact information for organizations which receive MIT's positions listings. Updated recruitment source information will be distributed annually to department hiring supervisors by the personnel staff.

## **XVII. ACTION-ORIENTED PROGRAMS TO ALLEVIATE UNDERUTILIZATION OF MINORITIES AND WOMEN**

In Section V of the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology, each organizational unit discusses, in narrative form, particular job groups within the area where minorities and/or women are underrepresented. Numeric affirmative action hiring goals were also outlined in the Plan by each school or organizational area for each of the four minority groups and women. (See chart entitled "Affirmative Action Goals for 1995-96 by School or Organizational Area" on the final page of this Summary.)

Plan narratives and hiring goals were developed within the context of planned budget reduction initiatives which may affect employment opportunities in each respective area, and with consideration of how best to make use of employment opportunities that do occur in order to fulfill the Institute's continuing affirmative action obligations.

The following excerpts, taken from Section V of the Plan, outline action oriented programs administered by each organizational unit to alleviate identified underrepresentation and to meet the defined goals.

### **OFFICE OF THE PROVOST**

The Office of the Provost does not hire faculty; however the non-faculty positions within the area are quite diverse, requiring a variety of recruiting methods. Internal candidates are recruited through postings in Tech Talk and Administrative Officer query (electronic bulletin board used by MIT administrators). For some positions, advertisements are placed in external publications including The Boston Globe and The Chronicle of Higher Education. For positions requiring specialized training, we have used professional contacts and specialty publications. For instance, the serious search process for the Libraries requires that all professional vacancies be posted in at least one affirmative action source. Recruitment for the majority of these professional positions involves a full national search where The Affirmative Action Register most often serves as our female and minority recruitment source. Full or limited local searches are implemented on occasion to fill professional positions with specified terms. The Bay State Banner is the source most often used for these searches. The full national search for the Libraries professional positions always includes the distribution of vacancy announcements to chairpersons; or newsletter editors of women and minority groups of the American Library Association. These include: American Indian Library Association, Asian/Pacific American Librarians Association, ALA Black Caucus, Chinese American Librarians Association, REFORMA (Association of Hispanic Librarians), and Women in Libraries. Ads are regularly placed in the newsletters of these associations, with the exception of Women in Libraries, which does not accept job listings for its newsletter.

Staff referrals also result in a number of qualified candidates. For instance, the Assistant Provost often interacts closely with hiring supervisors; she has been able to develop a small pool of minority and women applicants from lists of candidates which she forwards, along with the appropriate resumes, to hiring supervisors. In addition, the new applicant database in the Personnel Office will make it easier to identify minority and female candidates. However, there are some obstacles to the affirmative action progress — notably, a reduction in hiring.

The Libraries is the single largest employer in the Office of the Provost and, accordingly, it has the most opportunities. The Libraries, in an effort to increase diversity among its staff, has submitted the following specific goals as part of its five-year plan: 1) develop a minority internship program in collaboration with Simmons College, Graduate School of Library and Information Science 2) promote information about the desirability of the MIT Libraries as a site for practicums for minority students to the accredited library schools 3) continue to foster relationships with Boston and Cambridge high schools that includes promoting academic librarianship as a career option for college-bound minority students 4) undertake recruiting for academic librarianship from local undergraduate institutions that have significant minority populations (e.g. U Mass Boston) 5) explore expending the minority recruitment program for faculty to the professional library staff 6) encourage MIT minority support staff to enter graduate programs in the library science.

In May 1995 the Libraries sponsored a program on "Recruiting, Hiring and Working with a Diverse Staff" presented by Kriza Jennings, the Program Officer for Diversity and Minority Recruiting at the Association of Research Libraries. The program included an open session for all interested Libraries staff on "Diversity in Higher Education - Terminology, Concepts, Why the Emphasis, and Making it Happen." This program was followed by working sessions for supervisors of professional and support staff. These sessions were devoted to discussions on recruiting and hiring practices and general issues surrounding diversity in the workplace. In addition, there was a lunch session attended by selected Institute staff with personnel responsibilities (Assistant Provost for Administration, Assistant Dean for the School of Science, Assistant Dean for the School of Engineering, the Personnel Director of Lincoln Laboratory, and the Personnel Officer for the Office of the Provost and Libraries). The day's program provided participants with a useful introduction to concepts and practical methodologies related to promoting diversity in the workplace.

The Office of the Provost will continue to support the Council for Advancement and Support of Education (CASE) internship program to attract minority professionals to the prospect of advancement at higher education institutions. This is a nine-month internship program for minority professional staff to be trained in another field of higher education. MIT's two participants have received training in Resource Development — one of the participants had been in the student services area and the other had been in the Purchasing Department. The Institute's first participant concluded her internship in the summer of 1992 and has returned to the Institute in a new position funded by the Provost. The second participant completed her internship at Harvard and returned to the Institute early in the academic year to assume the position of research analyst in the Department of Resource Development.

Under the aegis of the Provost's Office with the leadership of J.J. Jackson, Staff Intern, MIT has established an MIT-centered, national program to enhance the representation of women and members of minority groups on science and engineering faculties of research-intensive universities. The Institute currently enjoys an exceptionally strong group of undergraduate women and members of minority groups, and the remarkable progress in building this diversity provides evidence that Institutional resolve can yield progress in this important area. MIT proposed first to build on the strength of its undergraduate program, and will encourage its women and minority students to pursue graduate degrees. Secondly, since future faculty are drawn from doctoral degree recipients and post doctoral students, we will focus much of the new programmatic effort on this group. Our aim is to enhance interest and increase the success of women and members of minority groups in pursuing academic careers. Historically, MIT has been an extraordinary contributor to academic personnel, with approximately 10% of all engineering faculty in the U.S. having one or more degrees from MIT. With the large number of outstanding women and minority students at MIT, there is good reason to suggest that MIT should be effective in contributing to filling the academic pipeline with some of these outstanding candidates.

The new initiative will focus on the following:

- ◆ Encouraging more women and minority students at MIT and other research-intensive universities to proceed to graduate programs with the aim of obtaining a doctorate.
- ◆ Efforts will include enhancing the highly successful program of summer research experiences for minority students interested in science and engineering.
- ◆ Building a network among key research-intensive universities to mentor and prepare women and minority doctoral and post doctoral students for faculty positions.

This effort will build on NSF-coalitions and will involve lead faculty from several key universities in such coalitions.

- ◆ Creating programs to prepare women and minority students for academic careers.
- ◆ Including workshops, seminars, and courses to deal with issues such as developing research programs and research support; addressing the unique issues confronting those women employed in academia in balancing professional and family responsibilities; and communicating the pathways for academic success in teaching, research, and service in strong academic departments.
- ◆ Providing important role models for women and minority students interested in academic careers in science and engineering.

Successful women and minority faculty will be supported as key participants in programs to prepare students for careers in academia.

## IN CLOSING

It is generally acknowledged that success in the recruitment and retention of women and minority individuals depends, in part, on the creation of an atmosphere that welcomes and affirms diversity. During the past couple of years, Professor S. Jay Keyser has been giving training sessions to many members of the MIT community, including department heads, faculty and other supervisors, on handling harassment and incivility. Every member of the MIT community received a sixty-eight page guide describing MIT's system for handling concerns or complaints with respect to harassment. This publication is part of an ongoing process at the Institute to create an environment of civility and mutual respect — one in which everyone can pursue their studies and work unhindered.

## SCHOOL OF SCIENCE

The departments, laboratories, and centers in the school continue to work actively to increase the representation of minorities and women in all ranks. Since the School and its units are directly responsible for the recruitment at the faculty, academic, and staff ranks, we will address those programs below. We include highlights of faculty initiatives that were not part of last year's reports. In addition, we include a section on special efforts to increase the pool of women and minorities at the student ranks. We consider this to be the key to increasing representation at the faculty, postdoctoral, and research ladder ranks.

The School's Personnel Officer works very closely with us on the recruitment at the staff ranks. We share information on new recruitment resources and participate in job fairs to increase our visibility to female and minority applicants.

As described in last year's narrative, the recruitment of support and service staff is done centrally through the Personnel Office in cooperation with departments, laboratories, and centers.

## FACULTY

The School continues to make the recruitment of minorities and women a top priority. As we described in the Affirmative Action Plan of the Massachusetts Institute of Technology 1994-95, the general methods of searching for minority and women faculty vary by department. Following is a summary of the highlights of school-wide activities for this academic year.

Each of the six academic departments in the school is represented by a senior faculty member on the Women Faculty Initiative Committee and on the Minority Faculty Initiative Committee, which report to the Provost as part of the program to attract women and minority faculty to MIT. These representatives from the school meet with other representatives from throughout the Institute and exchange ideas which are brought back to the departments for discussion.

One of the most significant events of 1994-95 was the formation of the Committee on Women Faculty in the School of Science. This committee was created as the result of an initiative which involved all of the senior women in the School of Science. The committee has multiple purposes and responsibilities. First, the committee will collect data to be used in assessing the status and equitable treatment of women faculty in the School of Science. Second, the committee will facilitate communications between the women faculty and the dean and department heads. Third, the committee will act as a resource for the Dean of Science and the department heads. Finally, it is anticipated that the committee will also serve as a resource to the MIT community as a whole, to provide advice about issues of concern to women faculty at MIT.

## STUDENTS

The departments in the school have committees and special activities in place to attract and retain women and minority students. These efforts have met with varying degrees of success and we will summarize highlights in the following paragraphs:

The Physics Department has an NSF Minority UROP (National Science Foundation Minority Undergraduate Research Opportunities Program), which is in its third and final year, and is truly a success story. The total number of students impacted over the three years that the program has been in place is 70, with 25 students enrolled this summer. All students graduating from the program have gone on to, or plan to attend, graduate school. Unfortunately, the RCMS (Research Careers for Minority Scholars) program has been discontinued and the department is looking for alternative funding sources for the program. In addition, the department is testing a program with a student from Hampton University in an effort to recruit students from HBCU (Historically Black Colleges and Universities) for a joint program between MIT and the HBCU. The emphasis is strong on an experimental focus to research work. The student works with a faculty mentor at the HBCU, and an experimental facility (such as CEBAF - Continuous Electron Beam Accelerator Facility, located in Newport News, VA) during the year and continues research at MIT during the summer with a faculty mentor. The students participate in the MIT Summer Science Research Program managed by the Office of the Dean of the Graduate School, but their recruiting, mentoring, and funding are handled through the department. This year there are three students working with faculty at Bates; and the department anticipates that they will repeat this experience next summer.

Professor Frank Solomon, Graduate Officer of the Department of Biology and member of the Center for Cancer Research, visited Morehouse College, Clark-Atlanta College, and Spelman College. He met with faculty members at these three schools and discussed minority education in biology. Professor Solomon is arranging a two-year seminar program for faculty in the department to visit Morehouse.

Dr. Tom Chang, of the Center for Space Research, brings in undergraduate women and minorities for the summer term to work with his group. He continues to apply and receive minimal funding through NASA for the support of this small, but active, program during the summer. His portion of this program is administered through the Office of the Dean of the Graduate School.

The School continues to be an active participant in the MIT Summer Science Research Program. The program brings minority undergraduates to MIT to give them exposure to science and engineering, and was highlighted in the Affirmative Action Plan of the Massachusetts Institute of Technology 1994-95.

## SCHOOL OF ENGINEERING

The action-oriented programs and plans to alleviate underutilization of protected class members in the School of Engineering will be discussed in three segments due to the clear division in responsibility for affirmative action efforts. Faculty affirmative action efforts are controlled and maintained by the department heads of the academic units in cooperation with the Dean. All other positions requiring a serious search (i.e. non-exempt contemporary employees), are managed by the unit administrators in cooperation with the Dean's Office. On the other hand, the MIT Personnel Office plays a very strategic role in cooperation with each School of Engineering unit in the affirmative action efforts for all other job categories.

### Summary of Faculty Action-Oriented Programs to Alleviate Underutilization Departmental Affirmative Action Representatives

In accordance with the Provost's Program to Attract Women Faculty and the Program to Attract Minority Faculty to MIT, each department head has appointed a senior faculty member to develop and maintain up-to-date files of potential women and minority faculty candidates. It is these Programs that also encourage entrance to the tenured faculty ranks by a means other than promotion from within. The Women Faculty Initiative Committee is comprised of 25% women; while the Minority Faculty Initiative Committee is comprised of 38% minorities.

### Discipline Focused Search Committees

These committee members work in cooperation with discipline focused search committees in their units. These focused search committees are encouraged to actively engage a wider cross-section of their department in these efforts. The Department's Affirmative Action Representative assists the work of these committees by acquainting them with the additional steps required to identify women and minority candidates. Prior to making faculty offers, the departments must submit a detailed affirmative action report, on each search conducted, to the Dean. Most recruitment of Blacks and Hispanics is accomplished through identification of protected class members coming through graduate school here and at sister Schools. There is diligent tracking of these promising candidates via this strong network.

### Dean Involvement

The Dean continues to encourage the department heads to actively engage him in the pursuit of candidates. He makes personal phone calls and/or meets with each prospect when it is deemed appropriate. This past year, the Dean provided space and funding for the female faculty to meet weekly to discuss issues of concern including the recruitment and retention of women to tenure track positions. This female population includes 1 Black and 2 Asians.

### Family Leave Policy

The School's Family Leave Policy recognizes the need for faculty to take time from academic matters to assist in the care of new family members. We believe that this encourages the appointments of female faculty, but still find females reluctant to utilize this opportunity given the competitive nature of some faculty and non faculty positions.

### Ensuring a Larger Future Applicant Pool

Since there is often a gap of several years between the time an individual is identified as a potential candidate for a faculty appointment and the time a decision is made, much of the committees' efforts involve making contacts and maintaining relationships with individuals who may be years away from considering an academic career. The School circulates brochures to attract women, and other protected class members, to graduate studies in the School. It is our hope that these efforts will increase our future applicant pool. The development of these brochures is a cooperative effort and attempts to involve all protected class members in the faculty ranks, and a representative population in the student body. It has strengthened the School of Engineering's relationship with BAMIT (Black Alumni of MIT); departments have the opportunity to include articles on research, and educational programs as well, and to post faculty position openings in the BAMIT Journal.

MITES (Minority Introduction to Engineering and Science) is a comprehensive summer program of academic enrichment and support for motivated and talented minority high school juniors. This rigorous six-week program is designed to introduce United States minority high school students to careers in engineering and science. In fact, each year an average of 25% of the incoming Black, Hispanic and Native American freshman are alumni of the MITES experience.

There are many Institute-wide organizations that support a diverse population. In addition, there are some that are special to Engineering. The MIT chapter of the National Society of Black Engineers, and the Society for Hispanic Professional Engineers are part of nationwide organizations supporting the recruitment, retention and successful graduation of minority engineering students. These organizations receive annual financial support from the Dean. There are other programs, operating on a more ad-hoc basis, that prove supportive of minorities and women, and include outreach to high schools and industry. They include the Second Summer Program, which provides opportunities for minority students to spend summer months working as paid engineering aides in the design or research departments of major U.S. corporations, and the MIT student section of the Society of Women Engineers.

### G.E. Faculty for the Future Program

For the past three years, the School has been the recipient of a grant from the GE Foundation. This grant supports programs that encourage women and minorities to pursue academic careers. One program provides funds for women and minority undergraduates to take active roles in ongoing faculty research projects. The second program provides loans to women and minority Ph.D. candidates. The loans are forgiven at the rate of 25% a year for each year the individual holds a faculty position at a U.S. college or university. The third program provides unrestricted funds to new women or minority faculty members to assist them in developing their own research programs.

### Summary of Other Serious Search Oriented Programs to Alleviate Underutilization

Employment opportunities in the iOther Academic-MIT Campusi and iResearch Staffi job categories are discipline driven and therefore the search committees place advertisements selectively in discipline related publications; in addition to writing and telephoning the Deans and placement offices of other Engineering Schools. All departments utilize the minority alumni mailing lists for searches.

Administrative Staff positions, the iProfessional job category, are advertised in the MIT produced Tech Talk and The Boston Globe. Copies of the position descriptions are often sent to MIT's Equal Opportunity Officer and the Special Assistant to the President, as well as to minority employees in the School. In addition, position descriptions are sent to target publications such as the Bay State Banner, Black Issues in Higher Education, and the Chronicle of Higher Education. The African-American Administrators Group receives separate copies of position listings.

### Summary of Non-faculty/Non-research Action-Oriented Programs to Alleviate Underutilization

As discussed earlier, the affirmative action recruitment efforts for the remaining job categories comprised of support positions are carried out primarily by the MIT Personnel Office in cooperation with the hiring organizational/departamental unit. All positions are listed in MIT Tech Talk. These listings are sent twice a month to over 100 organizations that offer employment services for protected class members.

MIT is represented at job fairs, career days, and other special events at vocational schools and junior/business colleges where women and minorities are in attendance. In addition, a representative from the MIT Personnel Office attends job fairs of the Department of Employment and Training. Resumes received by the MIT Personnel Office are logged in RESTRAC, a computerized resume database. When a position becomes available the School of Engineering's Personnel Officer scans RESTRAC for candidates, especially qualified protected class members.

We are about to pilot a new appointment process system which will ultimately store all applicant and candidate information, making identification of and reporting on qualified minority applicants much more streamlined.

## SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

### FACULTY AND ACADEMIC STAFF

The School has formulated, in conjunction with the SHSS EOC, a specific set of guidelines for conducting searches for minority and women candidates for appointments. Conformity to these search and reporting procedures (including documented search plans and post-search reports) is required for all faculty and staff ranks within the School, with the exception of temporary positions of one year or less. Depending on the circumstance, the EOC recognizes that serious national searches are sometimes inappropriate and allows for the occasional limited or local search (normally due to time constraints or an abundance of qualified candidates in the particular field) or a waiver of search (in cases where it is clearly demonstrated that any reasonable search would fail to identify any other candidates whose qualifications would match those of a particular candidate at hand) as appropriate.

SHSS remains deeply committed to increasing the representation of women and minorities on the faculty, and as such, has formed a committee of faculty members across the School to investigate possible minority "target-of-opportunity" appointments. In addition we continue to pursue non-traditional methods of recruitment in the hope that they will lead to faculty appointments, such as the appointment of a Hispanic woman in the Music and Theater Arts Section. She was hired through the Provost's Program to Attract Women and Minority Candidates as an Artist-in-Residence in 1993, while working to complete her Ph.D., and will join the faculty on July 1, 1995, as an Assistant Professor. Another such appointment was made this year to a Black woman with a J.D. Degree, who received her university education at Harvard University. She has been given a two-year lectureship in the Program in Writing and Humanistic Studies (effective July 1, 1995), and the faculty hope to mentor her during this time for a regular faculty position at the rank of Assistant Professor. Also through these efforts, a Black man will join Music and Theater Arts this coming year as an Instructor, while he completes his Ph.D. It is expected that he will join the faculty as an Assistant Professor in Academic Year 1997. This year we were also successful in the recruitment of an Afro-Caribbean (Haitian) linguist, currently at Michigan University, who will be joining the faculty in the Department of Linguistics and Philosophy in Academic Year 1997; an Asian (Indian continent) male who will join the Literature Section as Assistant Professor; and an Asian woman who will join the Foreign Languages and Literatures Section as Assistant Professor of Japanese.

The School continues to support various affirmative action initiatives such as the ongoing search for minority political scientists, wherein each year the head of the department of Political Science writes personally to approximately 350 members of the APSA Black Caucus, and 140 Latino political scientists, in order to identify minority students and faculty. Their latest effort has resulted in the appointment of a Black political scientist (effective July 1, 1995) through the Dr. Martin Luther King, Jr. Visiting Professor Program. The MLK Visiting Professorship was established by the Provost to recognize and enhance the contributions of minority scholars, enhance the presence and contributions of minority scholars at MIT, and honor the life and

contributions of the late Martin Luther King, Jr. The Department of Economics continues its efforts to recruit both qualified women and minorities for faculty appointments and graduate student admissions, including initiating a program in which MIT alumni/ae (faculty members at other universities) will mentor promising minority undergraduates at major universities and excellent colleges. The Economics faculty hopes to interest these students in both economics and in MIT.

### RESEARCH STAFF, MANAGERS, PROFESSIONALS, AND OFFICE & CLERICAL

In the School of Humanities and Social Science, we are committed to increasing the representation of all female and minority groups through responsible promotion and recruitment efforts, in accordance with the Guidelines of the SHSS Equal Opportunity Committee and to strengthening our mentoring system for female and minority research staff, administrators, and support staff.

When positions in any of the above categories (Research, Administrative or Support Staff) become available, the department/section/program/center works directly with the MIT Personnel Office. (Research Staff positions must also be approved by the SHSS EOC.) Positions are posted in the MIT Tech Talk and the listings are sent twice a month to over 100 organizations that offer employment services for minorities and women. MIT is also represented at job fairs, career days and other special events at vocational schools and junior/business colleges where women and minorities are in attendance. In addition, a representative from the MIT Personnel Office attends job fairs of the Department of Employment and Training.

### SLOAN SCHOOL OF MANAGEMENT

We are already working on a number of strategies to increase the number of females and minorities into the community at the Sloan School. The makeup of the Diversity and Community Committee, which was appointed by Dean Glen Urban in 1994, is one Black female undergraduate, an Asian Master's student, a Black Ph.D. student, three white female administrators, a Black male associate professor, a white male professor, a Black male technical systems analyst, and 2 female and 1 male support staff. The charge of the committee is to develop ways to strengthen and improve the diverse community in which we work and to explore ways to improve the diversity of our community. The committee spent this year working to improve the recruiting and hiring processes for women and minorities which target faculty, staff, research staff, and students. The committee suggested we a) develop of list of all minority and female doctoral students; b) follow up with a request for a vita; c) develop a network of potential candidates and advisors that would potentially lead to the identification of individuals who will or are considering an advanced degree and who are interested in pursuing a career in teaching and/or research; d) follow up with faculty to encourage participation in the Provost's initiative to grant authorization for any faculty group that proposes to hire women and minorities into the faculty ranks; and e) explore a more formal contract with higher education search firms that provide ifeederi candidates from the women and minority pools into our administrative positions.

Our efforts to increase the minority population in the student body have been fruitful. This year, the Sloan School was able to attract a total of 15 new minority students. This success was a direct result of the increase in minority scholarships offered to incoming master's students. Each year we schedule a special reception for prospective minority students for the Master's program. We plan to ask alumni to speak about their experience at the School and to provide prospective candidates with a School perspective that will encourage them to attend. This level of personal attention will clearly put us at a competitive advantage relative to our peer schools.

We are committed to expanding our development efforts to maintain and increase the minority population in the future. Next year we hope to have a candidate to nominate for the Martin Luther King Visiting Professor Program. We will report on the progress made with respect to these initiatives over the next few months, and look forward to successfully hiring and promoting women and minorities over the next year.

## SCHOOL OF ARCHITECTURE AND PLANNING

The School of Architecture and Planning seeks more creative ways to increase the numbers of women and minorities. Traditional search methods have not succeeded in bringing diversity to our School. For this reason, emphasis is placed in the search process on active solicitation of women and minorities through the informal networking of colleagues. Additionally, we have found that part-time visiting appointments that become available are opportunities to bring members of minority groups here. Historically, part-time and temporary appointments, although limited in number, have the mutual benefit of increasing our diversity as well as providing these individuals the special advantages and opportunities of being at MIT. In addition, these opportunities may lead to full-time positions here or at other universities.

During this reporting period two new outreach activities have increased our involvement in the Boston community. The School of Architecture and Planning sponsored a mentoring program — the MIT/Youth Voice Collaborative with the Boston YMCA. Twenty-two youths (14-17 years of age) from a variety of Boston Schools with 12 volunteer mentors from the Departments of Architecture and Urban Studies and Planning and the Media Laboratory participated. Mentors met with their partners once a week for 2-3 hours with the objective of introducing them to the Internet, producing a web page and exploring the opportunities that exist on-line. This current year the program will be repeated with a focus on training the participating youths to instruct others in what they learn. The idea is that these youths will be able to go back to their schools and communities and teach others about using the Internet.

In addition, during the summer of 1995, the School hosted a week-long Technology Seminar Institute for 60 Boston public school teachers and 20 parents. The Institute offered "hands-on training" in technology as well as support in developing and implementing local technology plans.

We consider both programs to be important in reaching out to the minority communities to develop opportunities for participants both at MIT and elsewhere. The advantages to our School of this diversity is especially important as we begin to educate a newly diversified population of students.

In the area of faculty recruitment, through the Provost's special initiatives, we have been very successful in attracting women and minority faculty to our School. These programs recognize the fact that special efforts need to be made to reach out to these groups. Although two attempts to bring minority faculty to our School in the last year were turned down, we will continue this aggressive recruitment of faculty to our School.

We recognize that as our School's workforce becomes more diverse, we must make special efforts to integrate new employees into our community. Programs to mentor our students and staff in recognizing the value of a variety of outlooks on life will become increasingly important for our success.

## VICE PRESIDENT AND DEAN FOR RESEARCH

The Laboratories and Departments that report to the Vice President and Dean for Research take direct responsibility for Affirmative Action procedures in their own units. Some of the larger areas have formal personnel committees that are charged with this responsibility. In the smaller areas, recruitment and hiring is handled by the Laboratory or Department Head and the Administrative Officer or Personnel Administrator. The Administrative Officers and Personnel Administrators are convened as a large group during the year and in a smaller working group to develop strategies for more effective targeting of women and minorities. Mailing lists that reach these groups are maintained in each unit and when disciplines allow, these lists are shared. Many Laboratories and Departments have worked to develop contacts in industry and at universities from which underrepresented minorities can be recruited.

During this year, we will be working together to see that the goals that have been established are communicated and fully understood in all the areas involved. Further analysis of problem areas will be conducted and specific strategies for meeting goals will be developed.

## SENIOR VICE PRESIDENT

Responsibility for adhering to MIT's commitment to affirmative action is shared among the 11 department heads, the department's Personnel Officer, and the Senior Vice President and his staff.

Generally, recruitment for positions is done through advertisement in MIT's weekly newspaper, Tech Talk; The Boston Globe; and two local publications, the El Mundo and the Bay State Banner which are geared toward the Hispanic and Black communities respectively. Job postings are listed via the electronic mail bulletin board providing access to the Institute's internal candidate pool. The computer internet is now also used to post jobs around the country. For positions requiring specialized training or skills, the departments have special trade and professional publications where job openings are advertised. In addition, the Personnel Office attends job fairs and career days where women and minority candidates are present.

Resumes which are received by the Personnel Office are kept in a data base for future job openings. Also, selected resumes that are received by the Senior Vice President are forwarded to appropriate senior officers, or sent to the Assistant Director for Personnel Services and Labor Relations.

A number of MIT staff are used as resources in the hope of attracting women and minority candidates. Dr. Clarence Williams, Special Assistant to the President, Ombudsperson, and Adjunct Professor of Urban Studies; Dr. Mary Rowe, Special Assistant to the President, Ombudsperson, and Adjunct Professor of Management; and various minority members of the Senior Vice President's areas are informed of job openings in an effort to try and identify a larger pool of minority candidates.

When possible, positions are scaled down to entry-level status with the expectation that with less experience requirements a larger and more diverse pool of candidates may qualify. The Campus Police have applied for a grant through the COPS Universal Hiring Program in conjunction with the U.S. Department of Justice. This is a recruit position, which has much less police experience required than a regular Campus Police Officer position. Departments are also forming committees to discuss jobs, their requirements, and pool their knowledge of possible candidates — both within and outside of MIT. This networking should lead to identifying new pools of qualified female and underutilized minority candidates for jobs.

## VICE PRESIDENT FOR ADMINISTRATION

The Vice President for Administration, his department heads, and the area Personnel Officer share responsibility for adherence to MIT's affirmative action plan.

Available openings are advertised in MIT's Tech Talk, The Boston Globe, The Bay State Banner and El Mundo. These latter two publications are targeted at the Black and Hispanic communities. We continue to utilize them as a resource, however, the response to advertisements in these newspapers has been minimal. Posting of available jobs are also made in publications of professional organizations, particularly in the Medical area.

Recruitment of minorities by way of word of mouth from our own employees has had some positive results. Minority members have been attracted to available positions when made aware of those openings by friends who work at MIT. These messengers, over all, are able to present MIT as a challenging, interesting place to work and an institution committed to diversifying its workforce.

The two Special Assistants to the President, Dr. Clarence Williams, and Dr. Mary Rowe, are also used as resources to help attract minorities and woman candidates to MIT.

The Vice President for Administration's area remains committed to diversifying the workforce at MIT. In the past decade, MIT has made great strides in the diversification of its student body. We hope, as job opportunities present themselves, to mirror that diversification in the employee ranks of the Institute.

## VICE PRESIDENT FOR HUMAN RESOURCES and EQUAL OPPORTUNITY OFFICER

The Personnel and Employment Services area continues to support efforts across the Institute to recruit women and minorities for positions in all job categories. All job listings are published twice each month in the MIT Tech Talk newspaper for broad distribution on campus. This newspaper is also sent to over one hundred outside recruitment sources, many of which specialize in employment services for women and minorities. Several offices of the Massachusetts Department of Employment and Training also receive notices of open positions at MIT, and assist in identifying qualified women and minority candidates.

In addition, there have been very specific initiatives this past year to attract job candidates. OSA Partners, a Cambridge-based search firm which locates minority candidates, has been assisting in recruitment efforts for positions within the Personnel Office. Several members of the personnel staff have attended recruitment events for women and minorities, including job fairs sponsored by the City of Boston, networking sessions sponsored by professional organizations for minorities and women, etc. The Vice President for Human Resources, in her role as Equal Opportunity Officer, also maintains contact with the MIT Special Assistants to the President regarding potential minority candidates for open positions.

These types of initiatives will continue into the coming year. There will also be specific efforts made to review the status of women in lower level support staff positions within this area, and to promote or hire additional women into upper level support positions as they occur.

The Vice President for Human Resources will also continue to speak regularly with each Personnel Manager regarding her commitment to increasing diversity within the office as opportunities arise.

## OFFICE OF THE PRESIDENT

We have made progress in promotional opportunities for women in our area, and we will continue to track qualified women and minority employees for development opportunities. Our most difficult challenge is to find new and more successful ways to recruit and retain minorities - Blacks, Hispanics, and Asians.

Although we will continue to rely on our usual avenues - the two Special Assistants to the President and Ombudspersons - whose networks are large and widespread both locally and nationally, special recruitment sources identified by MIT's Personnel Office, and professional organizations for public relations professionals, we will also put more effort into attracting and training a larger pool of candidates. For entry-level and feeder positions, we will advertise in local and targeted newspapers to try to attract a more diverse pool of applicants. In Public Relations Services, the managers have been asked to consider participation in the CASE (Council for Advancement and Support of Education) internship program to attract minority professionals to institutional advancement at higher education institutions.

During 1995-96, the Institute is training all administrative and support staff personnel in performance appraisal. In the creation of the training program for staff in the President's Office, we are changing or creating modules that we believe will have a positive impact on our ability to retain minorities and women - one is on diversity and the other is on leadership styles. The latter will provide supervisors with skills that should improve their ability to manage their staff. We believe these modules will prove beneficial to all staff, but especially to women and minorities, providing them a more supportive environment in which to work and develop skills.

### VICE PRESIDENT FOR FINANCE AND OFFICE OF THE TREASURER

The staff makeup of the office of the Vice President for Finance and Treasurer since the reconfiguration in June 1994 consists of 166 women (51.6%), and 36 minorities (11.2%) represented by 8.7% Blacks, 2.2% Asians, and .3% Hispanics, out of a total of 322 employees. Our goal is to increase the number of qualified minorities and women in the job categories where there is underrepresentation based on calculated availability, and to sustain and improve on the diversity of the present workforce. Supervisors will be instructed to identify candidates for hiring and advancement, and to provide the necessary training that will prepare them for increased responsibility.

Employees are encouraged to take advantage of the courses offered by the Institute. The MIT Personnel Office offers training to improve communications skills as well as to develop skills for managerial and supervisory positions. Information Systems provides important training for those seeking opportunities in computer programming and advanced computer technology. Employees are also encouraged to use the MIT Tuition Assistance program to continue their education at MIT, and other institutions, that will sharpen their skills preparatory to advancement. During the Independent Activities Program period in January each year, accelerated MIT courses are available to members of the Institute community; and supervisors are requested to schedule work assignments in such a way that interested employees can participate. Professional staff are encouraged to join professional associations, and to attend seminars, workshops and conferences where the programs and the attendees will benefit their career development.

The Comptroller's Accounting Office participates in Northeastern University's cooperative education program. Northeastern's undergraduate students take courses for a certain period of time and are then employed for a similar period performing work that relates to their degree program. Through this process, MIT is training potential employees in anticipation of hiring them upon graduation. There are presently 2 Asian students sharing a position in the 5T category. This program offers opportunities for expanding minority and female hiring and will be utilized in other areas as appropriate. In addition, college students, including women and minorities, are hired for summer employment, again providing a future source of trained staff.

In financial operations, general recruitment is conducted with the assistance of the MIT Personnel Office. Staff positions are generally advertised in The Boston Globe, and in the minority newspapers serving the Black and Hispanic communities. When appropriate, positions are advertised in the Chronicle of Higher Education. In addition, some of the universities serving predominantly minority students and have undergraduate and/or graduate business programs are notified of openings. All positions are advertised in the MIT newspaper, Tech Talk. Attracting minority candidates has been most successful through "word of mouth" with present employees. Other resources include administrative staff membership on the Greater Boston Inter-University Council, the African-American College and University Administrators Association, and the Association of African-American Administrators at MIT where information on open positions is circulated.

Advertisements for investment professionals have been placed in The Boston Globe and to reach the minority community, open positions have also been advertised in Black Issues in Higher Education and Hispanic Outlook. In addition, members of the Institute's Investment Committee and Corporation are kept informed of openings, as are the organizations and banks that provide auditing, management and custodial services to the Institute. Through membership in such professional organizations as the Boston Economic Club, the Treasurer's Club, the Boston Security Analysts Society and the Association for Investment Management and Research, the Treasurer, Deputy Treasurer and professional staff are able to publicize openings for investment staff to a diverse audience. Letters are sent to local educational institutions with business programs notifying them of openings. These include Boston College, Boston University, Harvard College, Simmons College School of Management, Suffolk University and MIT's Sloan School of Management.

We have just received from the Personnel Office information on diversity media options in finance, accounting and investment, that will be circulated to supervisors for use as a resource in hiring women and minorities in the future.

In the Office of Capital Gifts and Legal Affairs open positions require a legal background at both the managerial and secretarial levels. Positions advertised in Lawyer's Weekly have produced excellent candidates, and a woman was recently hired into the secretarial/administrative/clerk, level 5 category.

The Vice President for Finance and Treasurer is dedicated to diversifying the staffs of both financial operations and the Treasurer's Office. Supervisors are being informed of the new statistical goals for this year and will be instructed to make a good faith effort to find ways to bring more qualified women and minorities into our workforce. Serious search plans will continue to be reviewed carefully to assure that minority and women candidates receive appropriate consideration. The Executive Assistant to the Vice President for Finance and Treasurer monitors affirmative action activities and will continue to work with financial operations and Treasurer's Office supervisors to develop ways to diversify staffing.

### VICE PRESIDENT FOR INFORMATION SYSTEMS

The Information Systems Group has had a detailed Search Plan for Administrative Staff for a number of years. This plan, which will be followed as we seek to meet our goals, requires that specific steps be followed by managers to identify qualified, underutilized minority and women candidates. Hiring staff are responsible for:

- ◆ Seeing that advertisements for open positions contain explicit statements highlighting our desire to fill these openings with qualified women and/or minority candidates.
- ◆ Contacting the Minority Organizations and Contacts on the attached list which is maintained by Information Systems. Each organization is contacted directly by the IS manager responsible for the search to request help in filling the specific position.
- ◆ Establishing contacts with the MIT Alumni Association, Office of Career Services and Preprofessional Advising, Office of the Dean of the Graduate School, Office of the Special Assistant to the President, the Vice President for Human Resources and Equal Opportunity Officer, the Lincoln Laboratory Personnel Director, and others who may have particular knowledge of qualified minority candidates.
- ◆ Continuing the search process for a reasonable period to assure that all qualified minority and women candidates are considered before a final decision is made.
- ◆ Working with the MIT Personnel Office and the Office of Equal Opportunity to investigate avenues whereby minorities and women currently employed elsewhere at MIT, who have endeavored to increase their knowledge of computers and information systems, are regularly considered for career path changes, using entry-level positions within IS.

Past and future Information Systems endeavors to hire qualified minorities include working with a minority search firm, participating in minority job fairs, and subscribing to and advertising in minority publications.

In addition, all support and administrative staff openings in Information Systems are advertised in MIT's community newspaper, Tech Talk. Its circulation of some 20,000 includes a wide variety of colleges and universities, as well as other organizations with minority and female representation in Boston. Notice of all open positions in Information Systems are electronically mailed to all employees in the department, and are frequently circulated on external mailing lists and bulletin board systems such as USENIX.

When advertising outside of MIT, the IS Search Plan requires that advertisements be placed in The Boston Globe and the Bay State Banner, a minority publication that is published weekly and serves the Greater Boston area. For those open positions where a scarcity of qualified candidates is anticipated and/or the opening is at a management level, the position may be advertised nationally in such publications as The Chronicle of Higher Education, The EDUCOM Bulletin, or other publications targeting the specific readership required to attract qualified candidates.

Information Systems maintains close relationships with other academic institutions through its memberships in professional organizations such as Coalition for Networked Information (CNI), Association of Computer Machinery (ACM), Interuniversity Educational Communications Council (EDUCOM), New England Regional Computing Users Group (NERComP), Association for Computing and Information Technology in Higher Education (CAUSE), College & University Machine Records Conference (CUMREC). We also maintain contact with a number of non-academic organizations such as the Association of Users of IBM Computers (SHARE), Open User Recommended Solutions (OURS), New England Telecommunications Association, and the out-placement offices of NYNEX and AT&T. It is the responsibility of all staff in IS to identify qualified minority candidates who would be strong additions to IS. These professional organizations are one such source.

It is our belief that our current policies and procedures will permit us to achieve the goals as stated in Table 1 to improve underutilization of minorities and women. These mechanisms have proven successful in improving diversity within the Information Systems Group. We will also continue to develop and utilize new ways to reach qualified minority and women candidates for open positions.

### VICE PRESIDENT FOR RESOURCE DEVELOPMENT

Resource Development continues to participate in the Council for the Advancement and Support of Education (CASE) Minority Intern Program to encourage minorities to enter the field of institutional advancement. A CASE intern joined the department in July 1994 as a Research Analyst and was promoted in July 1995 to the position of Senior Research Analyst. In addition, another Black female who formerly entered the department as a CASE intern was promoted from Major Gifts Officer to Senior Major Gifts Officer in August, 1995.

We seek qualified candidates through a variety of sources. It has been determined that organizations such as Women in Development and the New England Development Research Association provide strong pools of women candidates for the research positions. Recently, we have also begun to advertise on various electronic bulletin boards, such as the one provided by CASE, to attract qualified minority candidates. We have found that advertising in The Boston Sunday Globe which serves the diverse population of greater Boston and New England has produced good results. Senior positions are advertised in The Chronicle of Higher Education and occasionally the Chronicle of Philanthropy which are standard reading material for those in education and fundraising. We have in the past, and would again, engage the search services of a fundraising consultant to assist in the national effort to identify qualified minority and female candidates for senior positions in the Department.

Resource Development staff are members of professional organizations, including Professional Fundraisers of Color in New England, New England Association of Development Researchers, National Society of Fundraising Executives, CASE, Women in Development, Planned Giving of New England, and American Prospect Research Association; and many serve as officers and board members of these organizations. These organizations are a resource for professional staffing of minorities and women. Alumni/ae and associates, and organizations with which MIT and Resource Development interact, can be helpful to Resource Development during a search. These include private foundations, corporations and corporate foundations, professional organizations, and other educational institutions.

In a continued effort to diversify the Department's staff and to increase our representation of minorities, we have advertised in the Bay State Banner, a local newspaper that serves the Black community, and in Black Issues in Higher Education, as well as La Semana which serves the Hispanic community.

Resource Development will continue its good faith efforts to fill open positions in keeping with statistical goals. Each department head and manager is being informed of the goals, and the Vice President will review hiring recommendations to be sure that every reasonable effort has been made to achieve these goals. Further, it is the Department's objective to increase the representation of qualified minorities and women even in categories without statistical goals.

## ALUMNI ASSOCIATION

We remain committed to achieving the goals set before us, as well as our own internal goals of achieving a greater diversity among the staff in general. All of the actions detailed in earlier reports continue to apply: seeking out networks of minority professionals, both within and without the Institute, to achieve word-of-mouth "advertising" of openings in the Association; use of targeted advertising venues, such as Women in Development, Black Issues in Higher Education, etc.; and continued investigation by the Personnel Administrator/Equal Opportunity Representative of new venues for discussion, or advertising of all available positions in the Association. In addition, we have begun to more-widely advertise our Support Staff openings (previously only posted internally at MIT); we have placed ads in local town newspapers and this has already yielded a greater diversity of candidates for these excellent entry-level opportunities; one result was the hiring of a Black female. We have created a search committee for a new job opening (Publisher, Technology Review), which has actively sought out the largest possible pool, yielding a few women candidates, and hopefully some other underrepresented minorities as well.

## LINCOLN LABORATORY

Despite financial constraints and resulting employment restrictions, Lincoln Laboratory will expand affirmative action programs to recruit, train and promote qualified females and minorities. Listed below are some of the items Lincoln Laboratory programs will include.

### Recruitment Programs

In an effort to recruit qualified female and minority candidates for potential administrative staff and support staff employment opportunities, the Lincoln Laboratory will:

Continue to support the Laboratory's Summer Minority Internship Program. This program offers summer research internships to minority college students specializing in electrical engineering, computer science and physics. Through this program, undergraduate students have the opportunity to improve their scientific and engineering skills through unique hands-on experience in a high-tech R&D environment. Program participants are encouraged to pursue advanced degree programs at the Massachusetts Institute of Technology as preparation for full-time employment. Students who are formally admitted to graduate programs at MIT are eligible to receive substantial financial support for their graduate education. A diverse group of more than fifty colleges and universities are recruitment sources for this program. Among the colleges and universities whom the Laboratory contacts in this regard are Dillard University, Howard University, Grambling State, Morehouse College and others.

Continue to participate in minority and female career fairs to expand employment efforts. These programs have been vital in helping the Division to identify and recruit promising graduates. In addition to the Massachusetts Institute of Technology, the Laboratory's Office of Human Resources has become affiliated with the Society of Women Engineers at Cornell University, Purdue University and the University of Wisconsin. The Laboratory recruits technical staff at minority job fairs and Society of Women Engineers events.

Continue to advertise technical positions in publications associated with the Society of Women Engineers and the National Association of Minority Engineering Program Administrators engineering journals.

Will continue to work with and provide student chapters of the Society of Women Engineers, the National Society of Black Engineers, and the Society of Hispanic Professional Engineers with recruitment material and a list of available positions.

Advertise non-technical positions in major local newspapers having a large minority readership, for example: the Lowell Sun and the Cambridge Chronicle.

The Human Resources Department will continue to list all employment openings (except executive and top management positions; positions that will be filled from within MIT; and positions lasting three days or less) with the Commonwealth of Massachusetts' Department of Employment and Training office in Waltham, Massachusetts, each year.

The Human Resources Department will identify female and minority job placement organizations and associations and provide them with a listing of any available Lincoln Laboratory positions.

Continue to recruit for positions through the Laboratory's Positions Available booklet, The Boston Globe and The Lowell Sun. In addition, in order to expand our position listings exposure to minority communities, Lincoln Laboratory will advertise in two local publications: the El Mundo and the Bay State Banner, which are geared towards the Hispanic and Black communities respectively.

Positions requiring specialized training or skills will be advertised in trade and professional publications.

### Internal Laboratory Programs

Lincoln Laboratory will demonstrate its good faith efforts, when the opportunity occurs, to increase the representation of qualified women and minorities through the following measures:

Communicate to those supervisory personnel responsible for recruitment and promotions their affirmative action obligations;

Provide hiring managers with an underutilization report every six months as a basis for development, with human resources assistance, of strategies to recruit qualified women and minorities;

Continue to identify female and minority superior performance employees, and for the individuals so identified, conduct career counseling conferences at the time of their performance reviews to mutually assess career goals and the means to achieve career advancement;

Continue to identify training and development recommendations for female and minority employees in administrative staff performance evaluations.

In the case of vacancies in administrative staff mid-level managerial positions for which there are no female and minority applicants, and for which no apparently qualified female and minority candidates can be identified within the Lincoln Laboratory community, the Laboratory will conduct an external search;

Conduct a needs assessment through Lincoln Laboratory's Office of Human Resources to identify possible additional on-site training programs to enhance the skills of female and minority employees;

Conduct a workshop on fair employment procedures to update hiring managers on affirmative action recruitment procedures and resources;

Institute a diversity training program to increase awareness and support of the Laboratory's affirmative action and equal employment objectives;

Establish a mentoring program to help acquaint minority employees with Laboratory systems and to assist in networking;

Continue to monitor the administrative staff performance evaluations, wherein supervisors' effectiveness relative to EEO/Affirmative Action programs is rated;

Continue to offer tuition assistance and on-site job training programs;

Continue to encourage child care programs such as the day care services offered by Lincoln Laboratory Children's Center and the child care referral services provided for Lincoln Laboratory by a consulting and management firm.

Through the implementation of these action-oriented programs, the Laboratory plans to alleviate underutilization of females and minorities. Vice President for Human Resources and Equal Opportunity Officer

Massachusetts Institute of Technology - SUMMARY OF EMPLOYMENT (Calculated 05/01/95 - Including Lincoln Laboratory)

| Job Category                                       | TOTAL         | TOTAL Female | TOTAL Male   | Black Female | Black Male | Hisp. Female | Hisp. Male | N. Am. Female | N. Am. Male | Asian Female | Asian Male | White Female | White Male   |
|--|---------------|--------------|--------------|--------------|------------|--------------|------------|---------------|-------------|--------------|------------|--------------|--------------|
| <b>FACULTY</b>                                     |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Faculty - Tenured                                  | 639           | 54           | 585          |              | 7          |              | 11         |               |             | 2            | 35         | 52           | 532          |
| Faculty - Non Tenured                              | 255           | 60           | 195          | 4            | 6          | 1            | 3          |               |             | 3            | 29         | 52           | 157          |
| <b>EXECUTIVES / MANAGERS</b>                       |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Executives   | 120           | 10           | 110          |              | 2          |              | 2          |               |             |              | 5          | 10           | 101          |
| Data Processing Managers                           | 63            | 26           | 37           | 1            | 1          | 1            |            |               |             |              |            | 24           | 36           |
| Financial Planning Managers                        | 89            | 29           | 60           | 3            |            |              |            |               |             |              |            | 26           | 60           |
| Media/Publicity/Communication Managers             | 61            | 38           | 23           | 2            |            | 1            |            |               |             | 2            |            | 33           | 23           |
| Operations Managers                                | 80            | 18           | 62           | 1            | 2          |              |            |               |             |              |            | 17           | 60           |
| Resource Development/Human Resources Managers      | 78            | 45           | 33           | 3            | 6          |              |            |               |             |              | 1          | 42           | 26           |
| Student and Academic Administrative Managers       | 121           | 72           | 49           | 7            | 9          | 2            | 2          |               |             | 4            | 1          | 59           | 37           |
| <b>RESEARCH STAFF</b>                              |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Academic Instructors, Except Visitors              | 417           | 89           | 328          | 5            | 5          | 3            | 3          |               |             | 8            | 12         | 73           | 308          |
| Academic Instructors, Including Visitors           | 80            | 17           | 63           |              |            |              | 1          |               |             | 3            | 4          | 14           | 58           |
| Academic Researchers, Except Visitors              | 675           | 158          | 517          | 9            | 6          | 8            | 13         |               | 2           | 27           | 137        | 114          | 359          |
| Academic Researchers, Including Visitors           | 976           | 227          | 749          | 5            | 7          | 7            | 10         |               |             | 32           | 141        | 183          | 591          |
| Senior Researchers                                 | 49            | 2            | 47           |              |            |              |            |               |             |              | 4          | 2            | 43           |
| Principal Researchers                              | 105           | 9            | 96           |              |            |              |            |               |             |              | 12         | 7            | 84           |
| Research Scientists/Engineering Associates         | 329           | 58           | 271          | 1            | 4          | 1            | 4          |               | 1           | 8            | 32         | 48           | 230          |
| Research Specialists/Technical Assistants          | 150           | 80           | 70           |              | 5          | 3            | 1          | 1             | 1           | 14           | 1          | 62           | 62           |
| Sponsored Research Staff                           | 283           | 52           | 231          |              | 1          |              | 1          |               |             | 7            | 21         | 45           | 208          |
| <b>Categories Exclusive to LINCOLN LABORATORY</b>  |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Group Leader                                       | 47            | 0            | 47           |              |            |              | 1          |               | 1           |              | 3          |              | 42           |
| Associate Group Leader                             | 33            | 2            | 31           |              |            |              | 1          |               | 1           |              |            | 2            | 29           |
| Assistant Group Leader                             | 44            | 3            | 41           |              |            |              |            |               |             |              | 3          | 3            | 38           |
| Senior Staff                                       | 75            | 1            | 74           |              |            |              | 1          |               |             | 1            | 4          |              | 69           |
| Technical Staff                                    | 471           | 37           | 434          | 1            | 2          |              | 3          |               | 1           | 7            | 26         | 29           | 402          |
| Associate Staff                                    | 124           | 26           | 98           |              |            |              | 1          |               |             | 2            | 1          | 24           | 96           |
| Assistant Staff                                    | 329           | 64           | 265          | 2            | 4          |              | 5          |               |             | 2            | 7          | 60           | 249          |
| Research Specialist                                | 90            | 10           | 80           |              |            |              |            |               |             |              |            | 10           | 80           |
| <b>ADMINISTRATIVE STAFF</b>                        |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Administrative Professionals, Level 1              | 242           | 184          | 58           | 7            | 5          | 3            |            | 1             |             | 6            |            | 167          | 53           |
| Administrative Professionals, Level 2              | 103           | 61           | 42           | 3            | 4          |              |            |               |             | 2            |            | 56           | 38           |
| Data Processing Professionals                      | 204           | 71           | 133          |              | 9          |              | 1          |               | 1           | 8            | 11         | 63           | 111          |
| Financial Planning Professionals                   | 199           | 114          | 85           | 8            | 10         | 2            |            |               |             | 4            |            | 100          | 75           |
| Health Service Professionals                       | 90            | 52           | 38           | 2            | 4          | 1            |            |               |             | 3            |            | 46           | 34           |
| Library and Museum Professionals                   | 85            | 56           | 29           |              |            |              |            | 1             |             | 4            | 1          | 51           | 28           |
| Media/Publicity/Communication Professionals        | 119           | 76           | 43           |              |            | 1            |            |               |             | 2            | 1          | 73           | 42           |
| Operations Professionals                           | 143           | 19           | 124          | 3            | 9          |              |            |               |             |              | 1          | 16           | 114          |
| Physicians   | 64            | 20           | 44           | 2            | 2          | 1            |            |               |             | 2            | 2          | 38           | 25           |
| Resource Development/Human Resources Professionals | 77            | 49           | 28           | 8            | 1          | 1            |            |               |             |              |            | 38           | 25           |
| Academic and Student Administrative Professionals  | 97            | 42           | 55           | 5            | 2          | 1            |            |               |             | 1            | 6          | 35           | 47           |
| <b>SUPPORT STAFF</b>                               |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Library Support                                    | 118           | 68           | 50           | 1            | 4          | 2            |            | 1             |             | 2            | 1          | 62           | 45           |
| Office Machine Operator/Data Processing            | 108           | 46           | 62           | 5            | 7          | 1            | 1          |               |             |              | 1          | 40           | 53           |
| Secretarial/Administrative/Clerical, Levels 2-3    | 143           | 106          | 37           | 11           | 6          | 3            | 2          |               |             | 8            | 1          | 84           | 28           |
| Secretarial/Administrative/Clerical, Level 4       | 615           | 512          | 103          | 55           | 10         | 5            |            | 1             |             | 13           | 4          | 438          | 88           |
| Secretarial/Administrative/Clerical, Level 5       | 841           | 730          | 111          | 52           | 12         | 11           | 2          |               | 1           | 15           | 2          | 652          | 94           |
| <b>TECHNICAL STAFF</b>                             |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Graphic Arts/Photography/Drafting                  | 88            | 30           | 58           | 3            | 1          | 1            |            |               |             |              | 1          | 26           | 56           |
| Health Service Technicians                         | 27            | 25           | 2            | 4            | 1          | 3            |            |               |             |              |            | 18           | 1            |
| Laboratory and Animal Testing                      | 57            | 34           | 23           | 4            | 3          |              |            |               |             |              | 8          | 27           | 9            |
| Machinists, Mechanics and Related Technicians      | 140           | 2            | 138          |              | 7          |              |            | 1             |             |              | 1          | 2            | 129          |
|  | 394           | 38           | 356          | 1            | 13         |              | 4          |               |             |              | 3          | 37           | 336          |
| <b>TRADE AND CRAFTS WORKERS</b>                    |               |              |              |              |            |              |            |               |             |              |            |              |              |
|  | 134           | 3            | 131          |              | 8          |              | 1          |               | 1           |              |            | 3            | 121          |
| <b>SERVICE STAFF</b>                               |               |              |              |              |            |              |            |               |             |              |            |              |              |
| Buildings, Grounds and Food Service Workers        | 104           | 19           | 85           | 2            | 7          | 1            | 1          |               |             | 1            | 2          | 15           | 75           |
| Custodial and Related                              | 328           | 86           | 242          | 26           | 55         | 4            | 4          |               |             |              |            | 56           | 183          |
| Distribution and Transportation Services           | 113           | 6            | 107          | 1            | 13         |              | 1          |               |             |              |            | 5            | 93           |
| Security and Protective                            | 139           | 10           | 129          | 1            | 12         |              | 1          |               |             |              | 1          | 9            | 115          |
| <b>TOTAL</b>                                       | <b>10,555</b> | <b>3,646</b> | <b>6,909</b> | <b>248</b>   | <b>272</b> | <b>68</b>    | <b>85</b>  | <b>6</b>      | <b>11</b>   | <b>199</b>   | <b>526</b> | <b>3,125</b> | <b>6,015</b> |

The following is a summary of affirmative hiring goals established by each school or organizational area for 1995-96. These goals are based on analyses in each job group (within each general job category) of current utilization of protected-class members, external and internal available pools, and estimated hiring and promotional opportunities for the period. Detailed information pertaining to this analysis for each organizational area and goals for specific job classifications (or "job groups") are contained in the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology.

Goals have been established as targeting devices, and not as hiring "quotas." In addition, for each job category, percentage hiring goals have been established equal to "availability" figures (i.e., external and internal available pools), which will be applied as employment opportunities arise.

AFFIRMATIVE ACTION GOALS for 1995-96 by SCHOOL or ORGANIZATIONAL AREA

| JOB CATEGORY         | PROVOST                    |        |       |       |        | SCHOOL of SCIENCE            |        |       |       |        | SCHOOL of ENGINEERING      |        |       |       |        | HUMANITIES & SOCIAL SCIENCE  |        |       |       |        |  |
|----------------------|----------------------------|--------|-------|-------|--------|------------------------------|--------|-------|-------|--------|----------------------------|--------|-------|-------|--------|------------------------------|--------|-------|-------|--------|--|
|                      | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. |  |
| Faculty              |                            |        |       |       |        | 7                            | 6      | 1     | 1     |        | 10                         | 40     | 3     |       |        |                              | 6      |       |       | 2      |  |
| Research Staff       |                            | 4      | 2     |       |        | 1                            | 4      | 9     | 6     | 1      | 5                          | 7      | 3     | 1     | 2      | 1                            | 2      | 1     |       | 3      |  |
| Executives/Managers  | 2                          | 1      |       |       |        |                              | 2      | 1     |       |        | 1                          | 1      | 1     | 1     |        | 1                            | 3      | 2     |       |        |  |
| Administrative Staff | 1                          | 4      | 5     | 1     |        |                              | 2      | 1     |       |        | 3                          | 1      | 5     | 1     |        |                              | 3      | 1     | 1     |        |  |
| Support Staff        | 4                          | 27     | 7     | 3     |        | 3                            | 3      | 6     | 2     |        | 3                          | 1      | 5     | 1     |        |                              | 3      | 1     | 1     |        |  |
| Technical Staff      |                            |        |       |       |        | 2                            | 5      | 1     | 1     |        | 1                          | 5      |       |       |        |                              |        |       |       |        |  |
| Trade and Crafts     |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        |                              |        |       |       |        |  |
| Service Staff        |                            |        |       |       |        |                              | 1      | 1     |       |        |                            |        |       |       |        |                              |        |       |       |        |  |
| JOB CATEGORY         | SLOAN SCHOOL of MANAGEMENT |        |       |       |        | ARCHITECTURE & PLANNING      |        |       |       |        | VP and DEAN for RESEARCH   |        |       |       |        | SENIOR VICE PRESIDENT        |        |       |       |        |  |
|                      | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. |  |
| Faculty              | 3                          | 3      | 2     |       |        | 1                            | 1      |       |       |        | 1                          | 1      |       |       |        |                              | 1      |       |       |        |  |
| Research Staff       |                            | 3      | 1     |       |        | 1                            | 7      | 3     | 3     | 2      | 1                          |        | 2     | 3     |        |                              | 1      |       |       |        |  |
| Executives/Managers  |                            | 3      | 1     |       |        |                              | 2      |       |       |        | 1                          | 3      |       |       |        | 1                            | 10     | 1     | 1     |        |  |
| Administrative Staff |                            |        | 1     |       |        |                              | 3      | 1     |       |        | 1                          | 27     | 5     | 1     |        |                              | 12     |       |       | 1      |  |
| Support Staff        | 1                          | 1      | 3     | 1     |        | 1                            |        | 4     | 1     |        | 1                          | 5      |       |       |        |                              | 8      | 2     | 1     |        |  |
| Technical Staff      |                            |        |       |       |        |                              |        |       |       |        | 2                          | 24     | 1     | 1     |        | 1                            | 19     |       | 2     |        |  |
| Trade and Crafts     |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        | 1                            | 1      |       | 1     |        |  |
| Service Staff        |                            |        |       |       |        |                              |        |       |       |        | 3                          | 1      | 1     |       |        | 7                            | 24     | 10    | 44    |        |  |
| JOB CATEGORY         | VP for ADMINISTRATION      |        |       |       |        | VP for HUMAN RESOURCES & EOO |        |       |       |        | OFFICE of the PRESIDENT    |        |       |       |        | VP for FINANCE and TREASURER |        |       |       |        |  |
|                      | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. |  |
| Research Staff       |                            |        | 1     | 1     |        |                              |        |       |       |        |                            |        |       |       |        | 1                            | 19     | 4     | 1     |        |  |
| Executives/Managers  | 1                          | 1      |       |       |        |                              |        |       |       |        | 2                          |        |       |       |        | 1                            | 15     | 1     | 1     |        |  |
| Administrative Staff | 5                          | 3      |       | 2     |        |                              |        |       |       |        |                            |        | 1     |       |        | 1                            | 5      | 2     | 2     |        |  |
| Support Staff        |                            | 2      |       | 1     |        |                              | 1      |       |       |        |                            |        | 1     |       |        |                              |        |       |       |        |  |
| Technical Staff      | 2                          | 3      | 1     |       |        |                              |        |       |       |        |                            |        |       |       |        |                              | 3      | 2     |       |        |  |
| Trade and Crafts     |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        |                              |        |       |       |        |  |
| Service Staff        |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        |                              |        |       |       |        |  |
| JOB CATEGORY         | VP for INFORMATION SYSTEMS |        |       |       |        | VP for RESOURCE DEVELOPMENT  |        |       |       |        | ALUMNI/ALUMNAE ASSOCIATION |        |       |       |        | LINCOLN LABORATORY*          |        |       |       |        |  |
|                      | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. | Asian                      | Female | Black | Hisp. | N. Am. | Asian                        | Female | Black | Hisp. | N. Am. |  |
| Research Staff       |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        | 1                            | 8      | 1     |       |        |  |
| Executives/Managers  |                            |        |       |       |        |                              | 5      |       | 1     |        | 1                          | 1      | 1     |       |        | 28                           | 60     | 10    | 6     |        |  |
| Lincoln Groups 31-38 |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        | 2                            | 42     | 3     | 1     |        |  |
| Administrative Staff |                            | 8      | 1     | 2     |        |                              | 4      | 1     |       |        |                            | 3      | 1     |       |        | 6                            | 23     | 12    | 2     |        |  |
| Support Staff        | 2                          | 14     |       |       |        | 1                            | 1      | 1     |       |        |                            | 1      |       |       |        | 10                           | 30     | 14    | 3     |        |  |
| Technical Staff      |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        | 1                            | 1      | 1     |       |        |  |
| Trade and Crafts     |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        |                              |        |       |       |        |  |
| Service Staff        |                            |        |       |       |        |                              |        |       |       |        |                            |        |       |       |        | 4                            | 28     | 8     | 8     |        |  |

\* Please note that the summarized affirmative action goals shown for Lincoln Laboratory reflect the addition of goals for 10 separate divisions at Lincoln Laboratory. See the 1995-96 Affirmative Action Plan of the Massachusetts Institute of Technology for further detail.



### Remember to close those windows

Physical Plant is reminding members of the MIT community to be aware that open windows, doors and other avenues of cold air into buildings can cause frozen pipes or failures in mechanical equipment, coils, pump housings, etc.

With such cold temperatures as winter continues, a window left open only an inch or two can result in frozen and ruptured pipes. The re-

sulting flood can jeopardize equipment and experiments, causing not only property damage but personal inconvenience as well.

Remember to close windows and doors when leaving your work area. If you notice open doors or windows in unoccupied areas near you, please report the location to the Physical Plant Operations Center, x3-1500.

# Talks to feature CEOs, MIT experts

### NOKIA'S JORMA OLLILA

Jorma Ollila, president and CEO of the Nokia Group, the world's second-largest manufacturer of mobile telephones, will discuss the ongoing liberalization in telecommunications markets on Friday, March 8, at 11:30am in the Wong Auditorium (Rm E51-115).



Ollila

With sales of more than \$6 billion in 1994, the Finnish-based Nokia reversed three years of losses by shedding ancillary businesses, renewing its focus on core competencies in telecommunications and expanding globally. Dr. Ollila's talk will focus on the world market as well as his own company's role in developing new technology in a 90-minute presentation entitled "Telecommunications: Accepting the Challenge of Growth."

Dr. Ollila joined the Nokia Group in 1985 and became its president and CEO in 1992. He holds master's degrees in policy, economics and engineering and a PhD in political science.

The talk is part of the "Industrial Leaders in Technology and Management" lecture series, which brings CEOs from leading corporations to MIT. The series is co-sponsored by the School of Engineering and the Sloan School of Management and hosted by the Center for Technology, Policy and Industrial Development.

The lecture is open to the MIT community. For more information, call x8-7897 or refer to the CTPID home page at <<http://web.mit.edu/ctpid/www>>.

### JAMES CLARK OF NETSCAPE

On Thursday, March 14, Dr. James Clark, founder and CEO of Netscape, will speak to faculty and students on "The Internet and Electronic Commerce" as the Laboratory for Computer Science's Distinguished Lecturer. The talk will begin at 4pm in Rm 26-

100 following a reception at 3:45.

Before founding Netscape, Dr. Clark was chairman of Silicon Graphics, Inc., a computer systems company he founded in 1982 that now has annual revenues of \$1.5 billion and is among the Fortune 500's fastest-growing companies. He has also been an associate professor at Stanford University, where he and a team of graduate students developed the initial technology on which Silicon Graphics was built.

Dr. Clark, who holds a PhD in computer science from the University of Utah, resigned as chairman of Silicon Graphics in February 1994 to undertake a new venture with the young programming team that created the widely used Mosaic graphical user interface.

Previous lecturers in the Distinguished Lecture Series at the LCS, initiated in 1976 by Michael Dertouzos, have included Bill Gates of Microsoft Corp.; Mitch Kapor of Electronic Frontier Foundation and founder of Lotus; Robert Metcalfe, Ethernet inventor and founder of 3Com Corp., and Steve Jobs, founder and former chairman of Apple Computer.

### MILDRED DRESSELHAUS

Institute Professor Mildred S. Dresselhaus, an award-winning solid state physicist and president-elect of the American Association for the Advancement of Science (AAAS), will be the next speaker in a series focused on emerging trends in technology and the economy.

She will discuss "New Frontiers in Carbon Research" at 4pm today (Wednesday, March 6) in Rm 34-101. Professor Dresselhaus is a National Medal of Science winner whose research has helped unlock the mysteries of carbon. Her current research is focused on various carbon-based systems, including fullerenes and nanotubes, low-dimensional thermoelectricity, magnetism and high-temperature superconductivity.

The series, arranged by the Center for Advanced Educational Services in conjunction with the Industrial Liaison Program (ILP), is open to the extended

MIT community, both in Cambridge and beyond, including alumni/ae and ILP member companies.

For more information, contact MIT/CAES x3-7444 or e-mail <[caes-courses@mit.edu](mailto:caes-courses@mit.edu)>.

### JOHN T. PRESTON

John T. Preston, president and CEO of Quantum Energies Technology Corp, and co-director of MIT's Entrepreneurship Center, will speak on "Success Factors in Technology Development" on Tuesday, March 12, at 4pm in Rm 6-120, preceded by a reception. Mr. Preston, who has participated in the founding of many companies, is the former director of technology development in MIT's Technology Licensing Office. His talk will focus on the quality of technology, management, and investment necessary for a successful new venture.

His talk is cosponsored by the Center for Intelligent Control Systems and the Laboratory for Information and Decision Systems. For more information, call Nancy Young-Wearly, x3-6171.

### MBAE'S RENNIE

A report card of sorts on education reform in Massachusetts will be presented by John C. Rennie, founder of the Massachusetts Business Alliance for Education (MBAE) and chairman and CEO of Pacer Systems, Inc. of Billerica. His talk is scheduled for Monday, March 11, at 4pm in Rm 6-120 and is the first in a Forum on Public Education sponsored jointly by MIT's Council on Primary and Secondary Education (CPSE) and the Museum of Science.

Mr. Rennie and the MBAE successfully led a five-year effort for sweeping reform in the state's K-12 education system, resulting in the Public Education Reform Act of 1993 under which changes are now taking place. Mr. Rennie's talk will focus on how education reform is progressing in Massachusetts and the nation.

For further information, call the CPSE, x3-7607.

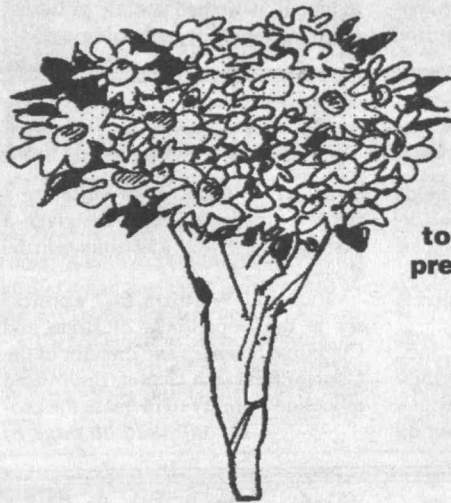
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(continued from page 4)

**CEO, Quantum Energy Technologies Corp.** Colloquium sponsored by the Center for Intelligent Control Systems and the Laboratory for Information and Decision Systems, 4-5pm, Rm 6-120. Reception, 3:45pm.

### WEDNESDAY, MARCH 13

**Optical Imaging at 10<sup>Å</sup> Resolution Using a New Interferometric Apertureless Technique\***—Hemantha K. Wickramasinghe, IBM. EECS/RLE Seminar Series on Optics and Quantum Electronics, 11am-12pm, Rm 34-401B. More info: x3-8504.

**Ocean Mapping Using Autonomous Underwater Vehicles\***—James Bellingham, Sea Grant Program, MIT. Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915.

**The Dilemma of Manchu Identity\***—Nicola di Cosmo, Dept. of East Asian Languages and Civilizations, Harvard Univ.; discussant: Peter Perdue, History Dept., MIT Peoples and States: Ethnic Identity and Conflict, jointly sponsored by MIT Anthropology Program and CIS, 4:30pm, Rm E38-615. Refreshments. More info: x3-3065.

**Seawolf Program\***—RADM Millard Firebaugh, USN (ret.). The Defense and Arms Control Studies program Seminar, 12-1:30pm, Rm E38-615. Bring a bag lunch, refreshments provided. More info: x3-0133.

**Some Unsolved Problems in Earthquake Hazard Estimation\***—Prof. David Jackson, UCLA. Sponsored by the Dept. of Earth, Atmospheric and Planetary Sciences, 4pm, Rm 54-915. Refreshments, 3:30pm, Ida Green Lounge.

**Towards Millimeter-Scale Resolution in Single Photon Emission Computer Tomography\***—Prof. Harrison Barrett, Radiology and Optical Sciences, Univ. of AZ. Responders: Prof. Robert Rubin, M.D., Director HST Center; Prof. Lee Grodzins, Dept. of Physics; J. Anthony Parker, M.D., PhD, Radiologist, Beth Israel Hospital, Port, Harvard Medical School. Frontiers of Technology & Biomedical Science, sponsored by HST Center for Experimental Pharmacology & Therapeutics, the Dept. of Physics, and the Center for Biomedical Engineering, 4-6pm, Rm 26-414

**Views from a Garden of Worldly Delights\***—Daniel Kleppner, MIT. See Special Interest, page 4.

**The Dilemma of Manchu Identity\***—Nicola di Cosmo, Dept. of East Asian Languages and Civilizations, Harvard Univ. Discussant: Peter Perdue, MIT. Peoples and States: Ethnic Identity and Conflict, co-sponsored by Anthropology Program and Center for International Studies, 4:30-6pm, Rm E38-615. More info: x3-3065.

### THURSDAY, MARCH 14

**Modeling NO Production in Multi-dimensional Simulation of Diesel Combustion\***—Wole Akinyemi, MIT graduate research asst. Sloan Automotive/Reacting Gas Dynamics Laboratories, 4-5pm, Rm 31-161. Refreshments, 3:45pm.

**Self-Organizing Logistics Systems\***—John J. Bortholdi, III, Professor, School of Industrial and Systems Engineering, Georgia Institute of Technology. Operations Research Center and Decision Sciences Program Seminar, 4-5pm, Rm E40-298. Refreshments. More info: x3-6185.

**Interactive Democracy? The World Wide Web and Campaign 96\***—Prof. Henry Jenkins, MIT. MIT Communications Forum, 4-6pm, Rm E15-070 (Bartos Theatre).

**The Internet and Electronic Commerce\***—Dr. James Clark, Chairman and CEO, Netscape Communications Corp. The Laboratory for Computer Science Distinguished Lecturer Series, 4pm, Rm 26-100. Refreshments, 3:45pm.

**Avoiding the Next U.S.-Japan Crisis\***—Honorable Nobuyasu Abe, Consul General of Japan in Boston. Technology Forum Talk sponsored by the MIT Japan Program, 5:30-6:30pm, Rm E38-714. More info: x3-8095.

### FRIDAY, MARCH 15

**Organometallic Chemical vapor Deposition: From Molecules to the Colors of the Rainbow\***—Klavs F. Jensen, MIT. Sponsored by the Dept. of Chemical Engineering, 3pm, Rm 66-110. Reception, 2:45pm.

### COMMUNITY CALENDAR

**Credit Union Dinner Dance\*\*\***—Mar 23: Lantana's in Randolph, 6:30pm. Tickets \$10/person and limited to two per member. They will be available Mar 1, on campus from 12-2pm in E18 Lobby, at Lincoln Laboratory from 11:30am-12:30pm in Bldg A-220, at Draper from 12-2pm in the Human Resource Office, Rm 2112.

**Family Resource Center Seminars\***—Mar 6: Insights Into Children's Development from Recent Research, 12-1pm, Rm 10-105 (Bush Rm). Mar 13: Lesbian Parenting, 12-1:30pm, Rm 14E-304. Preregistration required for all seminars, call x3-1592.

**Figure Skating Club Annual Figure Skating Exhibition\***—Mar 9: Johnson Athletic Center, 7:30-9:30pm.

**Health Education Programs for Parents and Parents-To-Be\*\***—Mar 13: Getting Your Baby to Sleep, Eat and Play When You Want. 12-1pm, Rm E23-297. Children welcome, no preregistration necessary, sessions are free. Sponsored by MIT Health Education Service. More info: x3-1316.

**Infant-Toddler Child Care Briefing\*\***—Mar 4: Introductory discussions for expectant parents and those new to parenting or child care, covering types of care, costs, finding and evaluation care, and parental leave. Sponsored by the Family Resource Center, 12-1:30pm, Rm 4-144. Preregistration required, call x3-1592.

**Informal Needlework Group\*\***—Sponsored by the MIT Women's League, 10:30am-1:30pm, Rm 10-340 (Emma Rogers Room). Upcoming meetings: Mar 6, 20, Apr 3, 17, May 1, 15.

**Libraries Booksale\*\***—Mar 14: 10am-3pm, Hayden Basement Cage, Bldg 14S. Excellent selection of books and other materials from diverse subject areas. Free materials at every sale. Proceeds benefit the Libraries' Preservation Fund. More info: x3-5693.

**Retirement Seminar\*\***—Mar 12: Faculty Club, 9:30am-4pm. Presentation will include topics such as Social Security and Medicare, MIT retiree health insurance, MIT Retirement Plans, TIAA-CREF income option, Q&A. Reservations required, x3-4276, leave your name, SSN, MIT address, phone no.

**Summer Camp Briefing\*\***—Mar 7: An overview of resources to help identify and select day camp and summer enrichment programs for children. Sponsored by the Family Resource Center, 12-1pm, Rm 4-144. Preregistration required, call x3-1592.

**Wives' Group\*\***—Mar 6: "An Informal Discussion with Charlotte Schwartz and Kristin Swoszowski." Meetings are from 3-5pm, Rm 400 Student Ctr. Babysitting available in Rm 491. All members of the MIT community are welcome. Info: x3-1614.

### MITAC

Note: MITAC will be closed Wednesday, March 20.

The MIT Activities Office (MITAC) is a non-profit employee service that serves the cultural and recreational needs of the MIT community (including MIT's retirement community), their families, and friends. Two locations: (1) Room 20A-023, 18 Vassar St, Cambridge, 9:30am-3:30pm, Monday, Wednesday, Thursday, and Friday (closed Tuesday and all Institute holidays); (2) Room LLA-218, x6130, Lincoln Lab., Lexington, 1:15-4pm, Thursday and Friday only. Call x3-7990 at 20A-023 or e-mail <[julieh@mit.edu](mailto:julieh@mit.edu)> for further information. Please note that MITAC accepts only cash or a personal check (with a valid MIT ID) made payable to MIT. (Include MIT ID#, room number, and extension on checks.) Credit cards not accepted.

See the MITAC monthly flyer distributed to all MIT employees for further information regarding the events listed below as well as other recreational and cultural events and various types of discounts currently offered to the MIT community by local organizations and businesses either through a special coupon or by showing your MIT ID card. See our current flyer for a detailed listing of current discounts offered to the MIT community.

**Harlem Globetrotters\*\***—Mar 29: 7:30pm, FleetCenter, Boston. Tickets \$17.50 (reg. \$19).

**Oedipus Rex by Sophocles\*\***—Apr 12: 8pm, Lyric Stage, Boston. Tickets \$15.50 (reg. \$19).

**Big Apple Circus\*\***—Apr 19: 7pm, Fan Pier, Boston. Tickets 413.25 (reg \$16). On sale Mar 7.

**World Figure Skating Champions\*\***—Apr 19: 8pm, FleetCenter, Boston. Tickets \$39.50 (reg \$40). On sale Mar 7.

**Connecticut Homes of Literary Greats\*\***—Apr 27: Tickets \$28.50. Must be purchased by Apr 12. On sale Mar 7.

**Atlantic City Weekday Trip\*\***—May 1-3: Double or triple occupancy at the Trump Plaza Regency Hotel, New Jersey. \$125pp. Purchase by Mar 22.

**Nick's Comedy Stop\*\***—Tickets \$5.50 (\$5 + 50¢ svc charge), admits 2 people.

**Discount Movie Tickets\*\***—Sony/Loews Theatres, Showcase Cinemas, General Cinemas \$5 (\$4.50 plus 50¢ svc chrg); Kendall Square Cinema tickets, \$5.50 (\$5 plus 50¢ svc chrg), exp. 10/96.

### MOVIES

Admission to below Lecture Series Committee Movies is \$2.00, and MIT or Wellesley identification is required. For the latest Lecture Series Committee movie and lecture information, call the LSC Movieline, x8-8881, or check TechInfo or the Web. All movies are in Rm 26-100 unless otherwise noted.

**Mar 8:** Seven, 7 & 10pm, Rm 26-100. Dial M for Murder, 7:30pm, Rm 10-250. **Mar 9:** Goldeneye, 7 & 10pm, Rm 26-100. **Mar 10:** The Shining, 7 & 10pm, Rm 26-100. **Mar 15:** Leaving Las Vegas, 7 & 10pm, Rm 26-100. **Gigi (1958), 7:30pm, Rm 10-250. Mar 16:** Braveheart, 6:45 & 10:30pm, Rm 26-100. **Mar 17:** Thelma & Louise, 7 & 10pm, Rm 26-100.

**Next deadline for listings: 12 noon Friday, March 8.** Covers events from Wednesday, March 13 through Sunday, March 23. Listings for the Institute Calendar and Student Notices may be e-mailed to <[calendar@mit.edu](mailto:calendar@mit.edu)> or mailed to Calendar Editor, Rm 5-111. Faxes are not accepted. Early submissions encouraged.

# Underwater fluorescence draws MIT Sea Grant researcher

■ By Andrea Cohen  
MIT Sea Grant College Program

While most scuba divers plunge into the underwater world to escape urban annoyances like fluorescent light, Charles Mazel dives in search of fluorescence.

Under ultraviolet light, many otherwise drab corals, anemones, shrimps and other organisms mysteriously fluoresce in brilliant colors. Such displays are in many circumstances still a mystery, with little known about what causes the illumination within tissues or the function of such brilliance.

To study this phenomenon, Dr. Mazel, a research engineer in ocean engineering and assistant director of the Edgerton Center, designed and built a prototype instrument to measure the spectral distributions of underwater fluorescence. Lydia Chan and Quoc Tran, students in mechanical engineering who have since graduated, collaborated on the project.

The device has now caught the eye of researchers who study how light interacts both with the sea floor and the organisms that live there. As a result, Dr. Mazel has been using it for research in the waters off Southern California and Florida, and will be heading to the Caribbean this summer.

"The light that comes into the ocean affects what grows and what pigmentation it has, and that affects light coming off the bottom," Dr. Mazel explained. Thus, researchers curious about sediments, sea grasses and coral reefs look to light to illuminate their subjects.

Much of the gathering and re-

ording of information from marine environments is accomplished by remote sensing. These techniques include photography, spectral detectors and laser-based sensing, using platforms ranging from satellites and airplanes to unmanned vehicles. Such methods allow scientists to rapidly acquire large amounts of information. However, interpreting the significance of all this data is another matter.

By recording measurements of fluorescence from different sources, Dr. Mazel hopes to understand the biological processes that produce fluorescence and equip scientists with "a library of signatures" for interpreting the vast quantities of data available.

## WEARABLE ON WRIST

The device that Dr. Mazel and his colleagues built uses a light source, filters and fiber optics to excite the fluorescence of corals and other organisms. A low-cost spectrometer which measures incoming light is hooked up to a computer that logs and stores the spectral data. While some instruments measure a limited range of wavelengths, this device, which Dr. Mazel calls the Benthic Spectrofluorometer, measures the entire spectrum of light emitted. Housed in two watertight plastic boxes, the contraption is small enough to be strapped to a diver's wrist or chest.

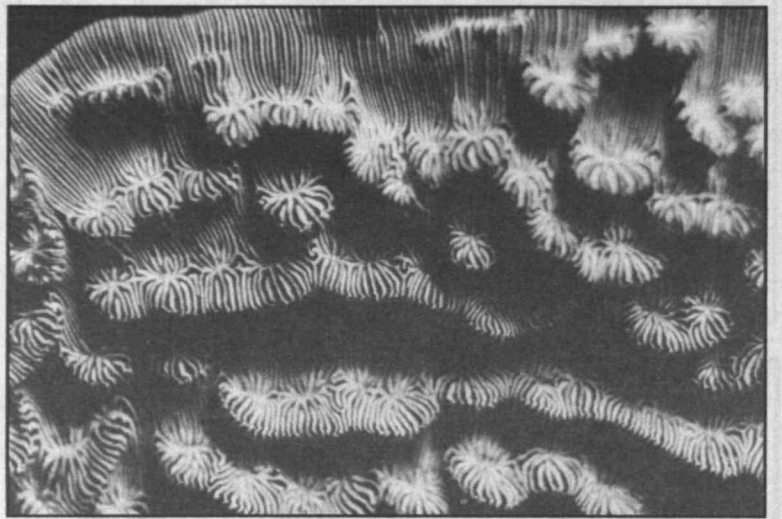
Dr. Mazel's investigation of underwater fluorescence began as a sideline while he was pursuing his master's degree in ocean engineering at MIT. What started out as qualitative work, limited to visual observation and photography, turned quantitative—measuring spectral distributions of fluorescence—while he was completing his PhD at Boston University. During that time, Dr. Mazel conceived of an instrument for making these measurements underwater instead of having to collect specimens and bring them back to the laboratory.

Dr. Mazel's MIT Sea Grant-funded research has led to four new related research projects. In a project funded by the Office of Naval Research's Environmental Optics Program, Dr. Mazel and ocean engineering graduate student Eran Fux traveled last summer to Florida's Dry Tortugas with the fluorometer to study both fluorescent and re-

flected light of corals as part of a multi-disciplinary team.

A Naval Research Lab contract took the researcher to Southern California in October, where he conducted measurements of light reflected from the sea bottom. Dr. Mazel also received funding to build a copy of his instrument for a scientist at Western Washington University. That work took him and Mr. Fux to the Florida Keys in June.

The ONR's Environmental Optics Program has also funded Dr. Mazel to study fluorescence in the Caribbean through photography, video and spectral measurement. That work will be coordinated with efforts to better understand why coral fluoresces and why it does so with varied spectral characteristics, intensity and distribution.



A colony of sunray lettuce coral fluorescing on a coral reef in Honduras at a depth of 20 feet.  
Photo by Charles H. Mazel

## Laibinis chosen for Doherty Professorship

Paul E. Laibinis, assistant professor of chemical engineering, has been awarded the 1996 Doherty Professorship in Ocean Utilization from the MIT Sea Grant College Program.

Every year, the program selects one new faculty member for a supplemental award of \$25,000 per year for two years.



Laibinis

Dr. Laibinis' research focuses on chemical synthesis, the design of new chemicals and chemical structures. His teaching goals include the creation of a core graduate subject focused on issues of molecular reactivity and physicochemical response. Under the Doherty fellowship, Dr. Laibinis will work to develop an organic, hydrophobic coating for metals that will reduce corrosion and leaching. In marine environments, such a coating would greatly increase the lifetimes of metals and decrease the rates at which metal ions are leached into waterways and oceans.

In 1995, Heidi Nepf, assistant professor of civil engineering, was named to the two-year chair for her proposal to

study the role of marsh systems in regulating the flux of land-source pollutants and nutrients to coastal waters.

The Doherty Fellowship, endowed by the Henry L. and Grace Doherty Charitable Foundation, encourages promising, non-tenured

professors to undertake marine-related research that will further innovative uses of the ocean's resources. The area of research may address any aspect of marine use and/or management, whether social, political, environmental or technological.

## Stroke treatment progress noted

A Lexington company which holds development and commercialization rights to technology patented by MIT has reported significant improvement in the recovery of stroke patients treated with citicoline.

Interneuron Pharmaceuticals, Inc., reported that patients who received 500 milligrams of the drug were more than twice as likely to show minimal or no

disability 12 weeks after suffering a stroke as patients who were given a placebo. There were 259 patients in the study.

Richard J. Wurtman, MD, a professor in the Department of Brain and Cognitive Sciences and director of the Clinical Research Center, discovered citicoline's ability to increase the pro-

(continued on page 8)

## Photos on display

Charles Mazel's photographs of fluorescing corals, already the subject of an exhibit in MIT's Strobe Alley, will be part of a two-person show at the headquarters of the National Academy of Sciences in Washington this spring. Twenty of Dr. Mazel's photographs will be featured in the show, which runs from April 2 to June 28. For more information call (202) 334-2436.

## Classified Ads

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

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

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

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

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

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

Deadline is noon Friday before publication.

### ■ FOR SALE

Sleeper sofa, \$150; sleeper, \$150; futon mattress w/ frame, \$150; Q-sz bed, \$250; single bed, \$200; computer desk, \$130; washer & dryer, \$300; vacuum, \$80. All exc cond. Yukio 489-5171.

Rollerblade in-line skates, fairly new, \$35. Darren Wong <wongkwd@mit.edu> or 577-5523.

BSO tickets, concerts on March 16 and 30 eves, one pair tix for each, \$95/pr. Roger x3-0538 or <rsamuel@mit.edu>.

Double sleep sofa, white nubby fabric, posturepedic mattress, clean, \$150. Call 354-4935 (Camb).

Moving sale: video camera, turntable, CD player, tape deck, tuner, speakers, child car seat, baby swing, kiddieswing, kitchen appl, oil painting, bandsaw. Call 252-1013 or <bwbrisso@mit.edu>.

Colorado Jumbo 350QIC-80 internal tape backup unit w/TC-15 high sp controller (ISA), Win/DOS swtware, manuals, 10 tapes, worth \$380 new, \$150 orbst. Doug, Linc x3986 or <gwhite@ll.mit.edu>.

Slide viewer: Gaf Pana-Vue automatic for 2"x2" slides & two metal storage boxes with handles, each with 150 holders, exc cond, \$20 for all. Rosalie 776-3748.

Six gallon water heater, 110V, almost new, ideal for small or motor home, \$55; maple syrup for sale. Call 508-681-1812.

Delta round-trip coach ticket, flight reservation by Mar 15; M's 10-sp, old, OK trans, \$10; L's 10sp, gd trans, \$20. Steve, Draper x8-3374.

### ■ HOUSING

Brookline: furn room, priv bath, TV & laundry, kitchen priv, on Green Line, Wash Sq bus stop, walk to library, stores, restaurants, non-smkrs, \$125/wk. Call 566-6762.

Cambridge: 3BR carriage house w/yard on quiet street in mid-Cambridge, walking distance to MIT and Harvard, \$340,000 by owner. Call 492-3761 (h), x8-5250 (w) or <lehmann@wi.mit.edu>.

Cambridge: from late April to early June, less than 15 min walk from campus and T, 1BR + lrg study, 1.5b, furn, deck, skyline vw, kitchen w/skylt, elev, 2 people max, no pets, \$1600. Call 621-1331.

Lexington: 3BR house avail June 26-Sept 3, ideal for short summer stay, askg \$3300 for entire period. Call 862-6997.

Maine: attractive waterfront house near Wiscasset, deck, spruces, rocky point, avail May 28-June 29, \$400/wk. Bob x3-0683 or Lucy 489-2465.

### ■ WANTED

Visiting professor April - June 1996 needs housing, prefer close to MIT. Phyllis <pcollymo@mit.edu> or x3-0946.

Healthy subjects needed to study the effects of a dietary amino acid on blood vessels, study takes ~5 hrs, involves 3 blood draws, pays \$50. Human Use #2264. Call x3-3684 or <sheriff@mit.edu>.

### ■ ROOMMATES

Arlington, E: Sk 1F to share 3BR 2b nr bus & T, prkg avail, no pets or smokers, \$333+. Contact <Katrina\_Harris@gatormail.wi.mit.edu> or x2-1987 or 643-0439.

### ■ LOST AND FOUND

Found: scarf on Vassar St. on Tues., Feb 27, near entrance to Bldg 20, call to describe. Larry x3-7810.

### ■ MISCELLANEOUS

Great South End studio (non live-in), 750 s.f., 10 min walk from MFA/Mass Art, \$300/mo w/ht & utils incl. Also small studio (380 s.f.), \$175 w/ht & utils. Call 427-1153.

Would your teenager like to improve his/her French living in village nr nat'l forest N of Provence? French family sks summer exch w/their teenager(s). Email <Lafrance@ix.netcom.com>.

## 1996 Spring Parenting Programs

### •••New Parent Survival Strategies•••

Getting Your Baby To Sleep, Eat and Play When You Want  
Wednesday, March 13; 12:00-1:00PM • E23-297

What Do I Do When My Baby Cries?  
...Am I Spoiling My Baby?  
Wednesday, March 20; 12:00-1:00pm • E23-297

Discipline In The First Year  
Wednesday, April 3; 12:00-1:00pm • E23-297

### •••Kids And Careers•••

Becoming A Working Parent  
Wednesday, April 10; 12:00-1:00pm • E23-297

Getting Out Of The House  
...And Other Impossible Challenges  
Wednesday, April 24; 12:00-1:00pm • E23-297

Child Development For Working Parents  
Wednesday, May 1; 12:00-1:00pm • E23-297



Approaches To Discipline  
Wednesday, March 27; 12:00-1:00pm • E23-297

Raising Ethical Children  
Wednesday, May 8; 12:00-1:00pm • E23-297

Temperament and Personality  
Wednesday, May 15; 12:00-1:00pm • E23-297

Gender Differences: Biology or Environment?  
Wednesday, May 22; 12:00-1:00pm • E23-297

Programs free • children welcome • no registration

MIT Medical Department  
Health Education  
E23-205 • 253-1316

# New prize established for work in visual arts

Thanks to the generosity of an MIT alumnus and his wife, MIT students now have a new opportunity to receive recognition for their work in the visual arts.

The entry submission deadline—Monday, April 8—for the first Harold and Arlene Schnitzer Prize in the Visual Arts has been announced by the Student Art Association (SAA). The SAA has established the awards through an endowment from Harold and Arlene Schnitzer of Portland, OR. Mr. Schnitzer, a real estate investor, graduated from MIT in 1944 with a degree in metallurgy.

Three prizes will be awarded based on a student's body of work. First prize is \$1,000, second prize is \$600 and third prize is \$400.



Schnitzer

Artists, who must be registered MIT students, are required to submit at least three pieces of original work or one piece of original work and visual representations of other originals (to be available for later viewing). The artist must also submit a written statement concerning his/her creative interest as it pertains to the works and art in general.

The Schnitzers are collectors of contemporary art with a particular interest in artists of the American Northwest. "They believe that training the

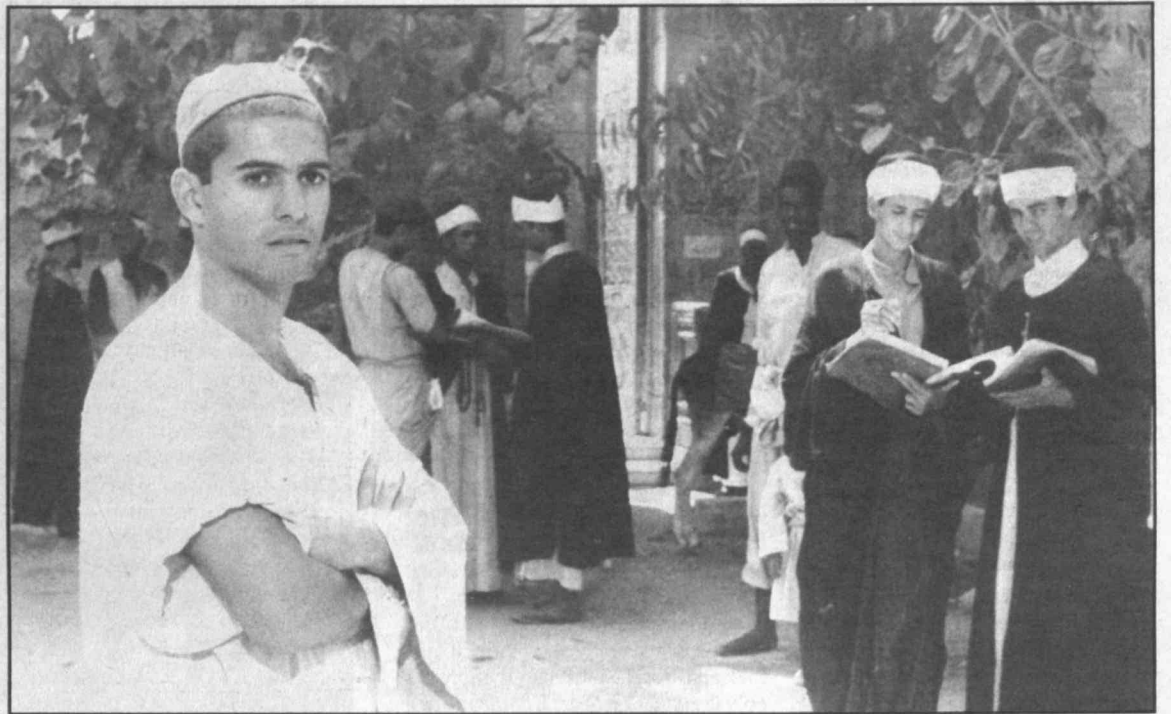
eye is very important in dealing with the visual imagery in our lives," noted former Associate Provost for the Arts Ellen T. Harris. "They feel this is especially true for engineers, recognizing a very strong relationship between engineering training and visual arts training."

"The Schnitzer Award will add validity, vitality and quality to the marriage of art and technology here at the Institute," said Ed McCluney, director of the Student Art Association. "The prize will attract students who might otherwise consider their artistic efforts to be minor or simply avocational. Although part of their interest is monetary, the bigger picture shows a burst of creative, competitive energy as they seek to rise to the challenge."

A panel from the Student Art Association and the visual arts community will judge the artists' overall artistic talents and creative concept on Wednesday, April 10, and announce the winners April 18-19. Winning entries will be displayed in the Wiesner Student Art Gallery from the week of May 13 through mid-June. There will be a reception in the gallery for the winners and a plaque inscribed with the names of each year's winning artists will be permanently installed on the wall of the Wiesner Gallery.

Students can pick up guidelines and applications at the SAA (Rm W20-429), the Campus Activities Complex (Rm W20-500) and the Office of the Arts (Rm E15-205). For more information, call Ed McCluney at x3-7019 or Ted Johnson at x3-3913.

## Arts at MIT



Youssef Chahine, director of *Adieu Bonaparte*, and its lead actor Mohsen Mohieddin (left), were able to visit MIT with the help of a CAMIT Grant to Betty Lou McClanahan.

## CAMIT Grant Profile: Egyptian film festival

Betty Lou McClanahan credits David Lean's 1962 epic film *Lawrence of Arabia* with shaping her life. "I was young and impressionable when I saw it," she says, explaining that the film propelled her to study Arabic at the State University of New York at Binghamton and continue with graduate work in Arabic literature at Columbia University, accept a US Department of Education fellowship at Egypt's Alexandria University and live in Alexandria for three years.

Though she works in the Media Lab as assistant to Professor Marvin Minsky, her love of cinema and the Arabic world found an outlet through the Grants Program run by the Council for the Arts at MIT (CAMIT). In 1986, the Council awarded Ms. McClanahan a grant to spend a week in Egypt, meeting and interviewing Youssef Chahine, Egypt's foremost film director, and to arrange for him to visit MIT for a series of Egyptian films, including his newly released *Adieu Bonaparte*. Mohsen Mohieddin, the lead actor of *Adieu Bonaparte*, also visited MIT for Ms. McClanahan's series and seminar.

"It was the support of the Council for the Arts, and particularly the personal encouragement of Dr. Jerome Wiesner, that enabled me to explore the cinema of Egypt, and to share it with others," Ms. McClanahan said.

The Council's initial grant was supplemented by support from the Film/Video Section, the School of Architecture and Planning, the School of Humanities and Social Science and the Technology Development Program.

Non-MIT funding was provided by the Egyptian Embassy, Misr International Films, New Yorker Films and special sponsorship by the Minister of Culture of France, Jack Lang.

The success of the program encouraged Ms. McClanahan to apply for and receive additional grants from the Council for the Arts for two subsequent film series, during Independent Activities Period in 1990 and 1992.

Since then, she has continued to help many organizations including the Boston Museum of Fine Arts, the Brooklyn Museum of Art, High Museum of Art in Atlanta and the Pacific Film Archive gain access to the works of Mr. Chahine.

### NEXT DEADLINE MARCH 15

MIT students, staff and faculty are all eligible to apply to the Council's Grants program which provides financial support for arts projects in all disciplines. (Note: travel funds are no longer awarded.) Friday, March 15, is the final deadline for proposals in this academic year. Applications are evaluated on the quality and innovation of the project with a particular emphasis on the potential for participation by MIT students. Grant awards may range from a few hundred to several thousand dollars.

The Council, a volunteer organization of MIT alumni and friends who are committed to the advocacy and support of cultural programs for the Institute community, has awarded over \$1 million since 1974 to more than 1,000 arts projects.

Guidelines and application forms are available in Rm E15-205. For more information, call x3-4005 or e-mail <cohen@media.mit.edu>. "If your passion is art in any of its forms, apply for a grant," urged Ms. McClanahan.

### LATEST GRANT RECIPIENTS:

Council for the Arts Grants awarded in the last application cycle are:

- Central Square Public Art Project—Ritsuko Taho, assistant professor in the Visual Arts Program, \$7,000.
- 25-Year Retrospective Exhibition—Jan Wampler, professor of architecture, \$5,000.
- *Shooting Back*, networked digital video surveillance projected onto the World Wide Web—Steve Mann, PhD candidate in media arts and sciences, \$3,000.
- *Harvest Chair*, an outdoor installation work of a 12-foot high chair celebrating and commemorating some 170 foods and medicinal herbs—Barbara Broughel, visiting artist, \$1,300.
- "Out for Laughs '96: An Evening of Women's Comedy"—Women's Studies Program, \$1,500.
- *For Amber Waves of Grain: The Garden in the Machine* (Planting a wheat field in Lobby 7)—Scott Raphael Schiamberg, graduate student in architecture and urban planning, \$1,815.
- Production of *Home* by Samm-Art Williams—Black Theatre Guild, co-founded by Kenya Taylor, junior in electrical engineering and computer science, and sophomore April Griffin, \$1,500.
- *Life Outside the Ivory Tower: Photographs of Rural American Farmlands: People, Places, Things* for exhibition in Rotch Library—Teresa Coates, administrative assistant in ocean engineering, \$1,000.
- *Crossroads: A Work for Soprano and Small Ensemble*—Nancy Howells, administrative assistant in the MIT Alumni/ae Association, \$1,100.
- Funding for The Dean's Gallery—The Dean's Gallery at the Sloan School of Management, \$1,000.
- Concert of trios for horn, violin and piano—Jean Rife, affiliated artist and chamber music coach in music and theater arts, \$1,000.
- Traditional Japanese Taiko Drummers: A Concert—MIT Japan Program, \$700.
- *Resident Alien: The Search for Asian-American Identity*, group art exhibition at the Wiesner Student Art Gallery—Jin Park, senior in electrical engineering and computer science, \$500.

## Arts News

■ **Otto Piene**, director emeritus of the Center for Advanced Visual Studies, currently has simultaneous shows in Boston and New York City. He's one of 30 contemporary artists invited to participate in the 1996 Invitational Exhibition of Painting and Sculpture at the American Academy of Arts and Letters in New York. Professor Piene's *Four-Foot Light Cube* is one of two sculptural installations chosen for the exhibition, which runs through March 31. Closer to home, *Excerptis*, an exhibition of canvases, tempera works and video by Professor Piene is currently on exhibit at the New England School of Art and Design at Suffolk University. Presented in collaboration with the Goethe Institute in Boston, the show runs through March 28 at the gallery on the second floor at 81 Arlington St. Professor Piene will present an artist's talk at 7:30pm on Thursday, March 21, at the Goethe Institute at 170 Beacon St. in Boston.

■ Institute Professor **John Harbison** is one of the composers featured in this year's annual music festival at the New England Conservatory in which 70 works by 59 composers will be presented by more than 250 performers in four days. Professor Harbison's *Moments of Vision* (1975) will be performed on Thursday, March 7, as part of the NEC's exploration of "The American Century," which traces the evolution of the modern American composer. The free concert is at 7pm in Jordan Hall. Also this month, Professor Harbison will conduct a concert series called "Voices of the Spirit," by soprano Dawn Upshaw in New York City. The interrelated concerts of material from many religious traditions includes a performance of *A Samuel Chapter* by Professor Harbison and takes place March 13, 20 and 27 at the 92nd Street Y.

On Sunday, April 28 (rescheduled from March 2), baritone Sanford Sylvan and pianist David Breitman

will perform the world premiere of Professor Harbison's *Flashes and Dedications* in a recital to benefit Emmanuel Church.

■ **Helaine Posner**, curator of the List Visual Arts Center, was featured as one of "five Boston-area women who have forged successful careers in the visual arts" in a story that ran in the Boston Globe on Sunday, Jan. 28. Referring to the List Center as "arguably the Boston area's most adventurous presenter of the visual arts" the article noted themes in Ms. Posner's work such as "the body, psychological insights and feminist revisionist theory." Being a woman does affect her curatorial practice—"I hope," she said, "in a thoughtful way rather than in terms of quotas."

■ The Boston Phoenix listed lecturer **Kermit Dunkelberg's** performance in *Letters from Sarajevo* at the Boston Center for the Arts as one of the year's best in their year-end round-up, "Stars that Lit the Stage." The February edition of NEED (New England Entertainment Digest) also awarded Mr. Dunkelberg an honorable mention as one of 1995's best performers.

■ **Wellington (Duke) Reiter**, assistant professor of architecture, has garnered excellent reviews for *Island Culture: A Sculptural Investigation of Isolation and Containment*, an exhibition at the Massachusetts College of Art in February. "It must be both exhilarating and intimidating to an artist to have the chance to fill the huge balconied space of the Huntington Gallery at the Massachusetts College of Art," wrote Christine Temin of the Boston Globe. "Boston artist/architect/MIT professor Wellington Reiter has made the most of the opportunity, filling the gallery with a 2,500-square-foot topographical map of the islands in Boston Harbor..."

## Australian and Israeli share spotlight at poetry event

Two poets of international backgrounds, Australian Stephen Kelen and Israeli Sharna Ben Tov, will read from their works in the poetry@mit series on Thursday, March 7, at 7:30pm in Bartos Theater (Building E15).

Mr. Kelen's poetry has been published in Australian journals and newspapers as well as journals in the United Kingdom, the United States, Canada, Japan and in cyberspace and broadcast on the Australian Broadcasting Corp.'s Radio National.

His latest book, *Trans-Sumatran Highway and Other Poems* was published in 1995. His other books are *Atomic Ballet* (1991) and *Dingo Sky* (1993). In 1995, Mr. Kelen received a Writer's Project Grant from the Literature Board of the Australia Council and in 1996 is visiting writer at the University of South Dakota. Sharna Ben Tov is poet-in-resi-

dence at Mishkenot Sha'ananim in Jerusalem and teaches creative writing and English at Bowling Green State University in Ohio. Her first book, *During Ceasefire*, appeared in 1985 and her scholarly book, *The Artificial Paradise: Science Fiction and American Reality*, was published last summer by the University of Michigan Press in the series "Studies in Literature and Science." Ms. Ben Tov is currently finishing a second volume of poems, *Time and Loss*, which deals

in part with the Israel Science Corps, a secret group of scientists (of which her father was a member) who developed weaponry during Israel's War of Independence.

The poetry@mit series is sponsored by the Program in Writing and Humanistic Studies and the Literature Section. For more information, call x3-7894.



Kelen



Ben Tov

### Arts Quote

"What makes the arts so special at MIT is that the teachers involved genuinely care about and respect their students. They treat them as equal partners in the artistic growth process. Atmospheres like that aren't available at arts schools."

—Adrian P. Childs, SB '94 (mathematics and music)

# Vest warns of danger to 'research partnership'

(continued from page 1)

president of MIT from 1971 to 1980, and Dr. Vest came to MIT from the University of Michigan. Dr. Wiesner, who died last year, was educated there. Dr. Vest received his advanced degrees at Michigan, served on the faculty and was the provost and vice president for academic affairs when he became MIT president in 1990.

"As we enter this era," Dr. Vest said, "we find that our highly successful national innovation system is threatened. Indeed, it is in danger of disintegrating."

He defined the innovation system as "the government, industrial and academic institutions working in at least a loosely coupled manner to produce new scientific and technical knowledge. [They] recognize its relevance to public and commercial good, translate some of it into industrial practice, and prepare people to develop, implement and market it."

Dr. Vest said the United States traditionally has held the belief that the federal government has a responsibility to foster and fund scientific research and that universities should conduct most of it—thereby combining the functions of education and research.

While fundamental, long-range, largely university-based research remains strong, he said, "it is increasingly under financial duress." And in the years ahead, he added, "we are very likely to see serious deterioration in federal investment in R&D."

In 1993, he said, the US invested 2.7 percent of its gross domestic product in research and development, which included investment by both government and industry. By next year, he said, it appears this national investment in R&D will drop to 2.2 percent of the GDP, although the White House Office of Science and Technology has suggested that investing 3 percent would be an appropriate national goal.

Dr. Vest said the federal government currently invests about \$70 billion annually in R&D, or just under one-half of one percent of its expenditures.

"However, close inspection of these budgets discloses that only about \$35-40 billion funds anything that this audience would consider research and development," he said, amounting to a little more than 0.5 percent of the GDP. "The remainder is largely for objectives such as testing weapons systems," and "the bottom line is that the federal government devotes only about a quarter of one percent of its outlays to real

scientific and engineering research.

"The likely future of US R&D funding is not very attractive. The budgetary turmoil in Washington makes prognostication difficult," he explained, but the current congressional budget resolution, as analyzed by the American Association for the Advancement of Science, is headed toward a 30-35 percent decrease in real dollars by fiscal year 2000, almost uniformly across agencies.

Meanwhile, he added, industrial spending on R&D, currently about \$102 billion annually, "also is on the decline" and "has not grown in real terms for seven years."

In addition, Dr. Vest said, industrial R&D is increasingly short term in outlook and "for the most part it improves only the situation of each company or a small cooperating group of companies."

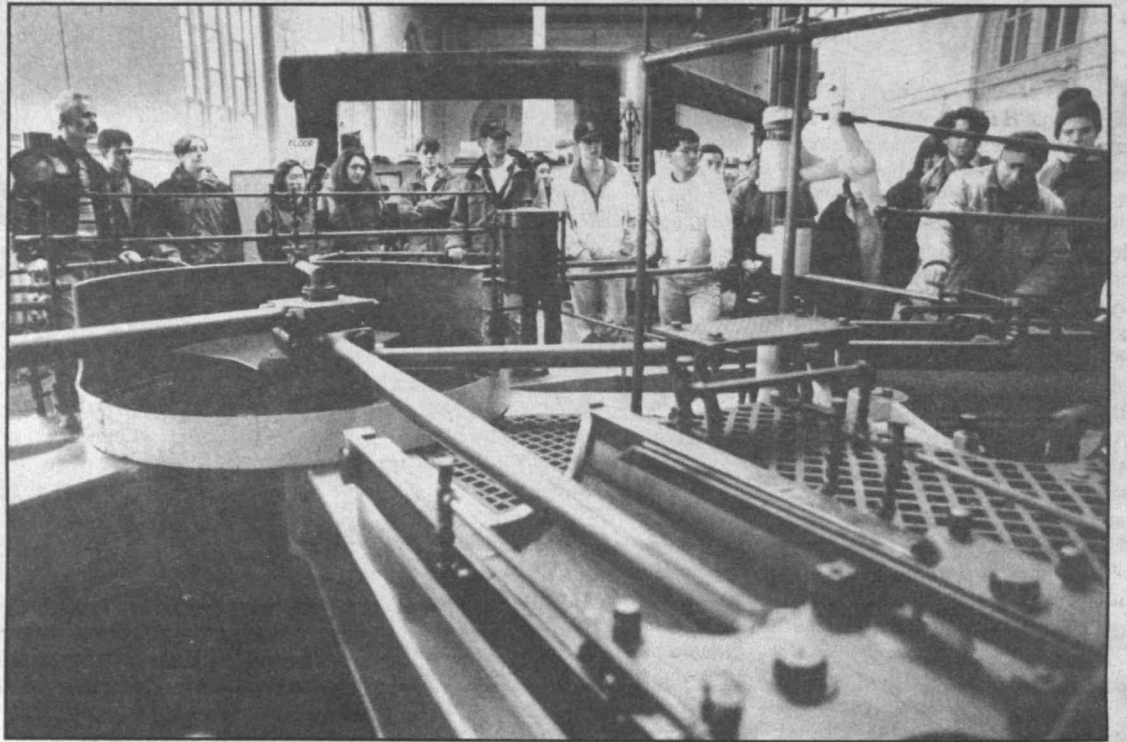
The result, he said, is that university-based, long-range research "is chunking along, despite wear, tear and rusting bearings" while industrial research "is spinning fast on freshly-oiled bearings, but is using up all its stored energy for short-term optimization and is not investing sufficiently in the future."

Finally, Dr. Vest warned against several "policy pitfalls" that include categorizing research programs as "strategic," or "basic" or "applied"; failing to recognize research and advanced education as an investment; driving wedges between public and private research-intensive universities; and separating education and research, which he described as "shortsighted and dangerous."

In the latter case, he said, "federal sponsors, through a variety of mechanisms, originating in both Congress and the executive branch, are retreating from paying the full costs of the research they sponsor. This forces universities to shift the unreimbursed costs to their only other sources of revenue—tuition, gifts and endowment income, and state support. These resources generally should be devoted directly to our teaching programs and environments."

To secure the country's future, Dr. Vest said, "our national innovation system must be just that—a system. Government, industry and academia must be in greater discourse and partnership to attain our goals. We [universities] are great economic engines in the near term through our R&D activities. We can be even greater economic engines for the long run through improved education of our students."

## Sewer history



Paul Levy (far left), professor of urban studies and planning, recently took students from his "Solving the Infrastructure Crisis" class on a field trip to the Chelsea Headworks and the East Boston Pumping Station (pictured). The pumping station, built as part of an effort to control cholera and typhus, was a triple expansion steam pump with a capacity of 45 million gallons a day (mgd). Construction began in 1890, and the pump was in operation from 1895-1990. The modernized facility now includes four 20-mgd pumps and three 50-mgd pumps.

Photo by Donna Coveney

## Page named to state committee on gene policy

(continued from page 1)

potential power of this technology is, alerting the people who control the legal system and making people aware of the potential problems," said Gerald Fink, director of the Whitehead Institute. "Doctors are going to have a lot more predictive information, and so are insurance companies and employers. People at Whitehead and MIT are performing an important public service in being proactive about this."

Rep. Kaufman said, "With improved diagnosis, treatment and prevention of human disease made possible by the mapping of the human genome, the benefits are clearly enormous. But along with that comes a real and pressing need to ensure safe and responsible use of genetic information."

The Special Committee on Genetic Information Policy grew out of a series of discussions co-sponsored by the Whitehead Institute Task Force on Genetic Testing, Privacy and Public Policy and Rep. John E. McDonough, House chair of the Joint Committee on Health Care, and Sen. Marc Pacheco, former

Senate chair of the Health Care Committee (Tech Talk, November 8, 1995).

Eve Nichols, coordinator of the Whitehead Task Force, said the group's other outreach activities have included co-sponsoring an educational program for insurance executives with the Massachusetts Commissioner of Insurance in January, and conducting special briefings on the HGP for members of the attorney general's office and key

state commissioners, as well as the state's Superior Court judges. The Whitehead Task Force also sponsored a roundtable discussion on genetic testing and genetic privacy with consumer representatives and health care providers. Future plans include a presentation in June titled "Genetic Testing: The New Legal Frontier," for the Northeast Regional Meeting of the American College of Trial Lawyers.

## Retirement notes

### STATEMENTS ISSUED

The personalized statements for those eligible for the Special Retirement Incentive Program have been distributed through Institute mail. The statement shows benefit estimates and the effects of the incentive enhancements on retirement benefits.

A guide to the MIT RetireLine is also included in the statement to assist employees in making their incentive program elections.

If you were notified by the Benefits Office that you are eligible for the Special Retirement Incentive Program and you have not received a statement, call the special hotline, 258-7777, to request one. When you call, please leave your name, office or lab address, office or lab telephone number, and your MIT ID number. Your statement will be sent out to you promptly.

### CORRECTION DEADLINE

Today is the last day to make any corrections to the personal information section of the personalized statement you received last week. If you need to make any corrections, please call the hotline at 258-7777. If the corrections affect the estimated benefits shown on your statement, a new statement will be issued to you promptly.

Please make sure that you have called the MIT RetireLine to acknowledge receipt of your statement. You can call the MIT RetireLine at (800) 250-2859.

### ERRATUM

The telephone number for Social Security in last week's Q&A was wrong. The correct number is 1 (800) 772-1213.

## Awards & Honors

■ Dr. JoAnne Stubbe, John G. Sheehan Professor of Chemistry and professor of biology, has won the Theodore William Richards Medal for 1996.

The Richards Medal is awarded every two years by the Northeastern Section of the American Chemical Society for conspicuous achievement in chemistry.

"Professor Stubbe has made outstanding contributions to our understanding of how enzymes work, an area of great importance to bioorganic chemistry and biology," the award committee said.

The award is named after Theodore William Richards, a Nobel laureate in chemistry in 1914 and a professor of physical chemistry at Harvard. Presentation of the medal to Professor Stubbe will take place on March 14 at the Harvard Science Center.

■ A widely acclaimed book on negative political advertising co-authored by Dr. Stephen D. Ansolabehere, assistant professor of political science, has been selected as the winner of the 1995 Goldsmith Book Prize.

The \$5,000 prize is awarded an-

nually to the author or authors of "the best book that aims at improving the quality of government or politics through an examination of the press and government or the intersection of press and politics in the formation of public policy."

The Goldsmith Awards Program, which includes prizes for investigative reporting and excellence in journalism, is administered by the Joan Shorenstein Center on the Press, Politics and Public Policy at Harvard's John F. Kennedy School of Government.

One of the central findings of *Going Negative: How Political Advertisements Shrink and Polarize the Electorate* (The Free Press, New York) is that negative ads drive independent voters away from the ballot box. Professor Ansolabehere wrote the book with Professor Shanto Iyengar of the University of California at Los Angeles, where he taught before coming to MIT.

The book's conclusions are based on surveys and experiments involving California voters, using ads from the 1990 and 1992 gubernatorial and senatorial campaigns.

■ Dr. Regis M.N. Pelloux, professor emeritus of materials engineering, has been elected an honorary Fellow and

Life Member of the International Fatigue Congress Series.

The honor recognizes Professor Pelloux's "significant contributions to the understanding of fatigue crack growth mechanisms in metals." He will be formally recognized at the next International Fatigue Congress in Berlin in May.

The Congress is the largest international forum for the presentation of research in the general area of fatigue of metals. Dr. Subra Suresh, Richard P. Simmons Professor of Metallurgy and professor of mechanical engineering, has been invited to deliver the closing plenary lecture at this year's meeting.

■ One of 10 scholars giving talks at the 17th annual Salem State College Darwin Festival is Dr. Heidi B. Hammel, a principal research scientist in the Department of Earth, Atmospheric and Planetary Sciences.

Dr. Hammel led a Hubble Space Telescope team that investigated Jupiter's atmospheric response to its collision with fragments of the comet Shoemaker-Levy 9. Her talk is entitled "The Comet Crash of 1994: Its Effects on Jupiter and on Earth."

## Gore is graduation speaker

(continued from page 1)

dren.' And we need to know.

"We don't know 'how to produce materials with no waste by-products.' And we need to know.

"We don't know 'how to extract all the energy from existing fuel sources.' And we need to know.

"We don't know 'how and why cells die.' And we need to know.

"We don't know how old the universe is, what it's made of, or what its fate will be; we don't understand what mechanism generates mass in the building blocks of matter.' And we need to know.

"We need to know these things. We need to understand these things. We need to discover these things. We need to create a learning society, a society that harnesses the power of distributed intelligence and uses it to lift our lives. And as the very embodiment of that ideal, you have an obligation to help make it happen.

"As always in America, it's pos-

sible—but it's up to us. As always in America, it's possible—because it's up to us. Let's get to work."

## Stroke treatment progress noted

(continued from page 1)

duction of brain membranes and acetylcholine. Stroke-damaged nerve cells must manufacture new membrane elements to normalize brain function. Dr. Wurtman, the Cecil H. Green Distinguished Professor at MIT, proposed the use of citicoline for a variety of conditions. MIT patented his discoveries and licensed them to Grupo Ferrer, a Spanish pharmaceutical company.

In 1993, Ferrer granted Interneuron exclusive development and commercialization rights in the United States and Canada. Dr. Wurtman is the scientific founder of Interneuron.