



**IN THE AIR**—Dancers Robin Offley of the Admissions Office and Jonathan Clemons of the A. Major Dance company leap skyward in celebration of Martin Luther King's birthday. The two performed for MIT's 19th annual commemoration of the late civil rights leader's birthday. Principals in the program watch from behind. **Photo by Donna Coveney**

## NEW GIFT

## Tang Family Gives \$4.7M to MIT

MIT has recently announced a gift of \$4.7 million from the Tang family of California and Hong Kong. The Tangs, who have been represented at MIT for three generations, have designated the funds for two purposes: \$3.5 million will go toward the construction of the Jack C. Tang Center for Management Education, and \$1.2 million will be added to the Tang Scholarship Fund at MIT. This addition will bring the total of the Tang scholarship endowment to \$2.7 million, making it one of the largest scholarship funds at MIT.

The new Jack C. Tang Center, a planned four-story addition to Building E51 at the corner of Amherst and Wadsworth Streets, will be used primarily by the Sloan School of Management and the School of Humanities and Social Sciences. It will house a 300-seat auditorium, three case-method classrooms of 90-100 seats each, a stu-

dent-faculty lounge and a number of smaller rooms that will serve as student study and meeting spaces and interview rooms for students and recruiters.

"The Tangs have once again made a most generous gift to MIT and to education. They have been wonderful friends for many years," said MIT President Charles M. Vest in announcing the gift. "It is heartening to know that the family shares so deeply our commitment to scholarship and teaching, and we are very grateful."

Lester Thurow, dean of the Sloan School, says of the proposed center, "Team teaching and student collaboration have become very important to management education over the past decade. Until now, however, our students lacked the facilities to meet and work together easily. I think we are going to look back on the Tang gift as one of

the best investments for our students."

Ping Yuan Tang, the first in the family to attend MIT, received an SB degree in management in 1923. He returned to his native Shanghai and built up a conglomerate in textiles, cement and flour. Forced to flee China in 1948, he went to Hong Kong and established the South Sea Textile Manufacturing Company.

His son, Jack C. Tang, graduated from MIT in 1949 with an SB in chemical engineering. A prominent business leader in Hong Kong, he succeeded to the chairmanship of South Sea Textile at his father's death in 1971. He has been chairman of the MIT Club of Hong Kong and a member of the MIT Corporation Development Committee and has been active in fundraising for MIT in Asia.

Hisson, Martin Y. Tang, who earned *(continued on page 7)*

## 1,500 PIECES

## MIT Museum Acquires Holography Collection

By Charles H. Ball  
News Office

The MIT Museum has obtained the world's premier collection of historical, technical and artistic holography.

The announcement of the acquisition was made by Warren A. Seamans, the museum director, and by Dr. Stephen A. Benton, Allen Professor of Media Arts and Sciences in MIT's Media Laboratory and a leading researcher in holography and 3-D imaging.

The collection was acquired at bankruptcy auction from the Museum of Holography of New York City for \$180,000, Mr. Seamans said. The funds were provided by "a wide variety of donors," he said, "people who did not want to see the collection broken up."

"We are very pleased that this outstanding collection, of great historical and artistic value, has found a permanent and safe home where it can be enjoyed by new audiences," Mr. Seamans said. "And we are particularly pleased that this home is at MIT,

where so much work in holography has gone on in recent years, especially at the Media Laboratory and at the Center for Advanced Visual Studies."

Bidders from across the United States, and from England, France and Germany, were on hand for the auction. They included small collectors hoping to obtain individual pieces, but MIT's bulk bid—one of three—won out because it was slightly greater than the sum of the bids on individual items.

"More than 100 bidding tickets had been given out and bidding was vigorous and spirited," Mr. Seamans said, "but we had done our homework, going to New York prior to the auction to examine and price the collection, and we were delighted that our bid was accepted."

Both Mr. Seamans and Professor Benton said they had set out with the idea of preserving the collection in its entirety. "The collection could have gone 100 different ways," Professor Benton said. In a letter to the International Working Group on Holography, Professor Benton noted that the collec- *(continued on page 7)*

## VISITS NEXT WEEK

## Harding Is Named 3rd MLK Visiting Scholar

A widely-known black scholar, author and civil rights activist will come to the campus next week as the third Martin Luther King Jr. Visiting Scholar at MIT.

He is Dr. Vincent Harding, professor of religion and social transformation at The Iliff School of Theology on the University of Denver campus in Colorado.

The visiting scholar program was begun in 1991 as an extension of MIT's annual celebration of Dr. King's birthday, which was held this

year January 15 and 16.

Dr. Harding will visit MIT and Cambridge for three days next week on Thursday, Friday and Saturday, February 4-6, and again for two days sometime in March, according to Assistant Professor Leo Osgood, who co-chaired the planning committee for the Martin Luther King Jr. observance.

His schedule next week includes a talk at a forum Thursday evening, Feb. 4, sponsored by the Department of Urban Studies and Planning; breakfast with Community Fellows Program participants on Friday morning, Feb. 5, interaction with students from Cambridge Rindge and Latin High School, also on Friday morning; a possible meeting with students, staff and faculty of Roxbury Community College Friday afternoon; and a minority community luncheon at MIT on Saturday, Feb. 6, from noon-2:30, at which he will give a talk addressing the theme of this year's observance, *Where Do We Go From Here? Chaos or Community?*

"We are exceedingly fortunate to have Dr. Harding as our visiting scholar," Professor Osgood said. "His accomplishments and dedication to movements for peace and justice speak for themselves, and it is particularly fitting that he once served as director of the Martin Luther King Jr. Memorial Center in Atlanta."

Professor Osgood said the visiting scholar program is being held following the holiday observance, which occurred during IAP, to afford more students and other members of the community an opportunity to participate.

Dr. Harding, 61, was born in New York City. He has a BA in history from City College of New York, an MS in journalism from Columbia University, and both an MA and PhD in history from the University of Chicago. *(continued on page 7)*

## MIT WEST

## Industrial Liaison Program Opens Palo Alto Office

MIT has announced the establishment of a West Coast office to assist more than 20 companies there which are members of MIT's Industrial Liaison Program. The formal announcement was made at an MIT-sponsored conference January 22 in Silicon Valley.

The Palo Alto conference, "Doing Business in the Pacific Rim: The High-Tech Perspective," drew together fac-

ulty from MIT's Sloan School of Management, industry representatives, and other noted experts to define and discuss the strategic challenges facing high-tech management in the Pacific Rim.

At the conference, MIT President Charles M. Vest and Provost Mark S. Wrighton announced the opening of the West Coast office for MIT's Industrial Liaison Program, a service that

helps companies draw on the expertise and resources of MIT to inform and catalyze their technology strategies. The office in Palo Alto, in the heart of Silicon Valley, will be headed by Howard R. Engelson, a former Grumman Corporation vice president who has been with MIT since 1987. Mr. Engelson is a senior industrial liaison officer at MIT.

"A growing number of Industrial Liaison Program members are located on the West Coast," Dr. Vest said. "Because of the East Coast-West Coast time difference, the new office will effectively lengthen the business day by three hours and will allow the Program to stay in closer touch with the needs and interests of West Coast firms, helping them to build stronger and mutually beneficial ties to MIT."

About 25 Liaison Program members currently have major facilities on the west coast, including Apple Computer, Inc.; The Boeing Company; Hughes Aircraft Co.; Intel Corporation; Sun Microsystems; TRW, Inc.;

and Tektronix, Inc. There are now nearly 235 members worldwide.

MIT has had a strong impact on Silicon Valley. A recent study conducted by the Chase Manhattan Corporation showed that MIT alumni have founded nearly 180 companies in northern California, directly or indirectly providing more than 152,000 jobs in the state.

At the conference, Dean Lester C. Thurow of MIT's Sloan School of Management, led off a morning session of presentations by MIT faculty with a talk entitled "The Global Economy." Industry representatives presented their views on the strategic challenges of the Pacific Rim in an afternoon session. Speakers included Takashi Kiuchi, chairman and chief executive officer of Mitsubishi Electronics America; Morris Chang, chairman, Industrial Technology Research, Taiwan; David Brown, former vice chairman and chief operating officer, Quantum Corporation; Peter *(continued on page 7)*

## Epoxy Smoke Clears Building

A can of epoxy overheated in a basement laboratory of Building 37 Monday afternoon, giving off noisome smoke that led to the evacuation of the Vassar Street building, which houses the Space Engineering Research Center, for the rest of the day.

Paul A. Lagace, associate professor of aeronautics and astronautics, said the incident occurred in his department's Technology Labora-

tory for Advanced Composites. A student was heating the epoxy in an oven to consolidate it, he said, when a chemical reaction caused the glue to overheat and char. There was no fire and the epoxy had been cooled with chemical extinguishers before Cambridge firefighters arrived, he said.

Two Campus Police officers who inhaled the smoke were examined at the Medical Department and released.



FALL START

# Aero/Astro Introduces New SB Program

The Department of Aeronautics and Astronautics will introduce a new undergraduate program in the fall of 1993 to be offered first to the class of 1996.

"This major revision of our bachelor degree program is the first in many years," said Professor Earl M. Murman, head of the Department. "It is an outcome of our strategic planning process which portrayed a vision for aerospace engineering for the next twenty years."

"The end of the Cold War, increasing global economic competition, concern for the environment, and the role of the engineer in an ever more complex society are factors which led us to rethink our program," Professor Murman said.

"The new program is the result of a 2 1/2-year planning and design process which has engaged the entire department faculty. We also sought the advice of many industrial and government leaders as well as our own students," he added.

A single degree program will replace the present "Regular" and "Avionics" options of Course XVI. This new curriculum retains many strengths of the existing one, but differs in significant ways.

An increased emphasis on fundamental mathematics and engineering science, inclusion of aerospace information, decision, and control topics in the core curriculum, greater diversity in the choice of upper-class professional area subjects, greater depth in one professional area, and additional material on experimental methods are some of the key differences from the present curriculum.

Similarities include retention of a revised Unified Engineering (where all the topics taken by sophomores are presented in a unified manner), Experimental Projects, and senior de-

sign subjects as well as the "systems" view that is a central theme to aerospace engineering. 3.094 (Materials Technology) and 6.071 (Introduction to Electronics) will be dropped as requirements with the essential material included in the department core subjects. Probability and Statistics (6.041) will be added, with recitations in this and 8.03 (Physics III) offered by aero/astro faculty.

In addition to the subjects listed in the bulletin, topics of the "implicit curriculum" will be consciously addressed throughout the program. These include: written and oral communication skills and teamwork; the social, economic, and political context of aerospace engineering; professional skills such as modeling, estimation, design, and self-education; and professional responsibilities such as ethics.

The Department invites all interested freshmen to attend an informational meeting on Wednesday, Jan. 27, 3:30-4:30pm in Rm 35-225 so that spring subject selections can be made with knowledge of the new program. Any interested member of the MIT community is welcome at the meeting. Informal discussion and refreshments will follow. A detailed write-up of the rationale and design of the new curriculum can be picked up in the Department Undergraduate Office, Rm 33-208 or requested by calling x8-5946.

"A degree in aerospace engineering has long been considered a sound first step to either a career in the aeronautics and/or space industry, further education or other careers such as law or medicine," said Professor Murman. "The challenges of flight require a broad technical education which serves students well whether their eventual interests lie in aerospace or elsewhere."

## Libraries to Review Subscriptions

The MIT Libraries are again seeking faculty advice in identifying journal titles which may need to be cancelled because of continuing high inflation.

There are many reasons for the rapidly increasing prices: rising production costs, increased pages and volumes of some journals, a shift from publishing by scholarly societies to publishing by for-profit publishers, and the fluctuation of the dollar on the European currency market, which affects approximately half of MIT's titles.

Since 1986, the unit cost of journals purchased by the Libraries has increased 71 percent whereas the Libraries have increased expenditures by only 55 percent. Major cancellation projects in both 1988 and 1991 have resulted. The Libraries cancelled approximately

1,000 titles in each of those years.

Again this year, the increase in journal prices may outrun the Libraries' ability to pay. Whether cancellations will be necessary, and the extent of those cancellations, will not be known until the Libraries' FY1994 budget is set and year-end price data is available.

In order to be prepared to implement cancellations this summer if necessary, library subject specialists are now reviewing price, use, and citation data to draw up preliminary lists of titles. During February and March, librarians will contact academic departments to get faculty input on these lists. In a May meeting, the Faculty Committee on the Library System will review the Libraries' budget position before cancellations are implemented.

## Entrepreneurs Club Plans Event

The MIT Entrepreneurs Club, aka "The E-Club" will be celebrating its 5th year with a reunion, the traditional appreciation night, a networking party for new and returning alumni and an introduction for interested members of the MIT community to the Club's activities and services.

MIT students will also have an opportunity to meet with members of the 4th Annual \$10K '93 Student Competition mentors group.

Activities begin at 4pm on Saturday,

Jan. 30, in The Muddy Charles Pub, and for families who wish to participate, there will be kids' activities in Morss Hall with music, story-telling and a technology-devices "take-apart" party with tools and help provided. And of course there will be pizza for all.

Costs of the activity range from \$3 for kids and \$10 for members of The MIT Community. MIT alumni in business are asked to contribute \$25, and the fee for non-MIT corporations is \$35. All fees are on a per-person basis. MIT students registered as participants in the current 10K competition get in free.

For additional information, and to RSVP please, call the E-Club at x3-2000 or drop your check off with Cathy Cook in The International Scholars Office, Rm 4-105.

For further details on-line drop a note to Richard Shyduroff at <rdshydr@athena.mit.edu>.



**QUAKE FORCES**—An interesting demonstration of the fractional sliding and elastic strain release that occurs in earthquakes holds the attention of several students at a recent IAP event scheduled by the Department of Earth, Atmospheric and Planetary Sciences. At left, Assistant Professor Chris J. Marone operates an electric motor that slowly increases the loading on a spring attached to the smaller, slider rock. At first, friction holds the slider rock in place on the larger rock, but as the spring is slowly stretched, the load on the rock increases, producing a jerky, stick-slip motion. Seated at right is Associate Professor J. Brian Evans. Photo by Donna Coveney

## FOUR NEW CHAIRS

# Six Appointed to Professorships

The appointments of six faculty members to endowed chairs—four of them newly established—have been announced.

The new chairs and the first holders are:

The Lee and Geraldine Martin Chair, Professor Mario J. Molina, Department of Earth, Atmospheric and Planetary Sciences and Department of Chemistry.

The Rudge and Nancy Allen Chair, Professor Stephen A. Benton, head of the Media Arts and Sciences Program.

The Henry L. and Grace Doherty Chair in Ocean Science and Engineering, Professor Chryssostomos Chryssostomidis, Department of Ocean Engineering and director, MIT Sea Grant College Program.

The Rose Chair in Urban Economics, Professor Frank Levy of the Department of Urban Studies and Planning.

Endowed chairs established earlier and their holders are:

The Class of 1960 Fellow, Professor Thomas L. Magnanti of the Sloan School of Management, co-director of MIT's Leaders for Manufacturing Program.

John D. MacArthur Chair, Professor Paul R. Schimmel of the Department of Biology.

Professor Molina, a world leader in developing a scientific understanding

of the chemistry of the stratospheric ozone layer, has been selected to be the first holder of a chair established by the Martin Foundation, Inc., to support research and education activities related to studies of the environment.

A member of the faculty since 1989, Professor Molina was the principal author on the 1974 paper that put forward the original fluorocarbon-ozone depletion theory.

His major interests are in atmospheric chemistry, gas phase kinetics and photochemistry, and heterogeneous chemistry. He holds the chemical engineer degree (1965) from the Universidad Nacional Autonoma de Mexico, a postgraduate degree (1967) from the University of Freiburg, West Germany, and the PhD (1972) from the University of California, Berkeley.

Professor Benton's principal research interests are imaging physics, holography, three-dimensional imaging, optics and communication theory. In 1982, he founded and continues to



Benton

direct the Spatial Imaging Group at the MIT Media Laboratory.

He holds the SB (1963) in electrical engineering from MIT, the MSc in engineering (1964) and the PhD in applied physics (1968), both from Harvard University.

The Allen Chair is named for Rudge Allen, a member of the MIT Corporation at the time of his death in January 1990. Mr. Allen received a degree from the Department of Chemical Engineering.

Professor Chryssostomidis, who holds a chair made possible by the Henry L. and Grace Doherty Charitable Foundation, Inc., is a naval architect. His work since he came to MIT in 1970 has focused on the general area of design of marine structures. He has headed his department's Design Laboratory since 1973.

His most recent projects include the establishment of a new MIT laboratory for the development of technology and systems for advanced autonomous underwater vehicles. He is widely known for his work in developing computer-aided design systems for ships. He holds the BSc with honors (1965) from Newcastle Upon Tyne University, England; the SM (1967), the Naval Architect degree (1968) and the PhD (1970), all from MIT.

The chair Professor Levy holds, established with a gift from Daniel Rose, president of Rose Associates of New York City, a real estate development and management company, is the first at MIT for urban economics. Mr. Rose, a founding member of MIT's Center for Real



Levy

Estate, has a long-standing interest in the healthy functioning of cities.

Dr. Levy, nationally known for his research in US income trends, focuses on how changes occur in the occupational structure and what the occupations mean for the schools preparing students for the job market. He came to

MIT last fall from the University of Maryland's School of Public Affairs.

He holds the SB (1963) from MIT and the MA (1965) and the PhD (1969) from Yale. He was Clair Wilcox Lecturer in Economics at Swarthmore (1991).

Professor Magnanti, an expert on optimization of large-scale systems, is

co-director of MIT's Operations Research Center and director of the Institute's Decision Sciences Program. He is noted for his fundamental contributions to optimal design of communication and transportation

networks and for his work in manufacturing education. He joined MIT in 1971 and headed the Sloan School's Management Science Area from 1982 to 1988. Since 1985 he has held the George Eastman Professorship of Management Science. He was elected to the National Academy of Engineering in 1991. Professor Magnanti holds the BS in chemical engineering (1967) from Syracuse University and three degrees from Stanford University, the MS in statistics (1969), the MS in mathematics (1971) and the PhD in operations research (1972).

Professor Schimmel, widely known for his experimental work that revealed

part of a "second genetic code" and for his substantial contributions to understanding protein and enzyme chemistry in the cell, has been a member of the MIT faculty since 1967.

Professor Schimmel and a postdoctoral researcher, Dr. Ya-Ming Hou, published an article in 1988 in Nature concerning the chemical mechanisms by which proteins are synthesized from information stored in a cell's genetic material, DNA. A commentary article in the same issue of Nature, by the 1974 Nobel laureate Christian de Duve, emphasized the significance of Professor Schimmel's work, referring to it as "the second genetic code."

Professor Schimmel, a member of the National Academy of Sciences and of the American Academy of Arts and Sciences, holds the AB from Ohio Wesleyan University (1962), attended Tufts University School of Medicine (1962-63), and received a PhD (1966) from MIT.

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### It's a Fact

The American premiere of Gilbert & Sullivan's last operetta, The Grand Duke, was presented by MIT students on May 3, 1901, as the first student musical production.



**NEW AT SEA GRANT**

# Project to Generate Mooring Data

■ **By Carolyn Levi**  
MIT Sea Grant College Program

*(This article originally appeared in the Fall 1992 issue of Current Affairs, a biannual report from the MIT Sea Grant College Program.)*

Some small boats sit out hurricanes in safety. Others tear from their moorings, careen into other boats and smash themselves onto the shore. Boat owners would like to know how to put their boats in the former category and avoid the latter.

After seeing his boat stay tight, experiencing only minor damage while more than 100 boats moored in Marion Harbor went ashore under the power of Hurricane Gloria, Norman Doelling, MIT Sea Grant assistant director, wanted to know why he was spared while others suffered. Why do some moorings hold and some break?, he asked.

The quest was sharpened when Dr. Doelling encountered a fellow Marion Harbor boater, Professor Emeritus Stanley Backer of mechanical engineering, prowling the harbor. Professor Backer, an international expert on ropes, was also looking for answers.

"We found out that as soon as we asked a quantitative question, like what are the forces on mooring, we found a complete absence of data," Dr. Doelling said. "There are all kinds of recommendations on how big mooring lines should be, and there are all kinds of recommendations on how

big anchors should be, but the only existing measured data seems to be for Navy anchors, tested with big chains, holding down Navy cruisers, destroyers or battleships."

For smaller boats, the recommendations are based on "folklore or accumulated wisdom."

The only way to know how big moorings need to be for a boat to be secure is to understand something about the forces generated by a moving boat, he says. And once the forces are understood, it is necessary to find a way to test different mooring systems.

The way to test the forces, Dr. Doelling decided, was to outfit his boat with a host of recording instruments and then wait for the weather to take the boat through a course of ups and downs, backs and forths, and general movements at anchor.

Professor Jerome H. Milgram of ocean engineering and a yacht designer, offered to help with acquisition and analysis of the data. Additional help was provided by D. Noah Eckhouse, a research specialist in ocean engineering who also worked on the America's Cup.

The project was supported by the MIT Sea Grant College Program advisory funds and by the CIGNA Insurance Co.

The instruments included a strain gauge on a wire to the mooring line, as well as those needed to measure and record wind speed, boat heading, water depth and boat movement about the mooring.

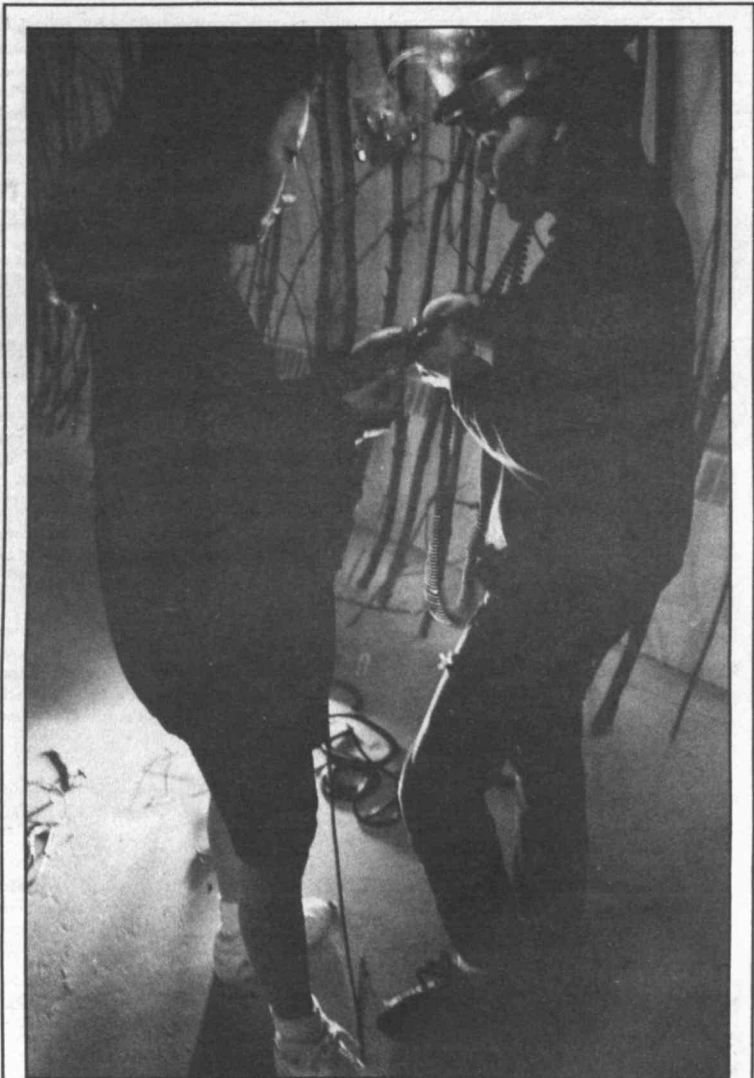
"The idea is to measure continuously over two- to five-minute periods and keep track of environmental variables—wind speed, direction and the position of the boat with respect to the wind as well as to water," Dr. Doelling said. "Then, we'll be able to say something about the kinds of things we can expect moorings, ropes and chains to withstand."

Initial tests of the force-measuring and recording system showed that the rope behaves like a non-linear spring. Importantly, the peak force on the mooring rope can be two or three times the average force. It is the peak force that will break the rope in a storm. In addition, the boat moves around with respect to the wind, so the forces the boat applies to the rope will be very aperiodic.

"The dynamics of the boat's movement, not just the strength of its pull on the rope, will be really important in understanding the forces involved," Dr. Doelling said.

The next step will be to obtain data in the spring, store it in the on-board computer and analyze it. If, through calculation and analysis, the researchers can derive the forces on the rope and mooring for many kinds of boats, they will be able to make data-based recommendations to the marine community.

Next hurricane season, perhaps, far fewer boat owners may arrive at marinas to find their boats unhappily ashore.



**INSTALLATION**—An interactive video art sculpture is being plugged in and tuned up by, left, Caroline Kwak, a junior in architecture, and Margaret Orth, a graduate student at the Center for Advanced Visual Studies. The opening of the piece was Friday night, and it runs all this week at CAVS. Photo by Donna Coveney

**EVERYONE INVITED**

## MITAC Marks 10th Anniversary

A special neon-pink flyer arrived in everyone's mail last week announcing a month-long celebration of the 10th anniversary of the MIT Activities Committee (MITAC).

The celebration will begin next Tuesday (Feb. 2) in Lobby 13 with balloons and refreshments from noon-2pm. A kick-off will be held at Lincoln Laboratory at noon Wednesday, Feb. 3, in the A Cafeteria. Stephen Fairfield, manager of the Office of Special Community Services will preside, assisted by members of the MITAC anniversary committee who will announce the

details of the celebration. Coupons and free neon-pink anniversary magnets will be distributed while they last.

The main feature of the celebration will be weekly drawings each Friday for dozens of prizes donated by MITAC vendors. Prizes include many gift and meal certificates, tickets to all kinds of entertainment, trips and hotel accommodations. In addition there are three grand prizes: The MIT Alumni/ae Travel Program has given an Intercoastal Waterway cruise for two and Omni Travel/Northwest Airlines and Thomas Cook/American

Airlines are offering trips for two to any destination within the 48 contiguous states. Details and limitations are included in the flyer.

MITAC was established to plan and promote discount-cost recreational and cultural activities for the MIT community. It advertizes its events in bright pink flyers distributed to everyone. Selected listings are also included in the Institute calendar. Word has gotten out. Over the past 10 years, there have been more than 36,000 individual sales, including some 200,000 movie discount coupons.

## Sports at MIT

**TUFTS TOPPERS**

Two MIT teams broke long-standing droughts in competition against Tufts University last week. The squash team defeated Tufts by a 7-2 score for the Engineers' first victory over Tufts in 15 years. The men's swim team stopped an even longer string. With the Engineer's win, a 20-year win streak by Tufts was snapped.

**GYMNASTICS**

Gymnast Julie Lyren of Akron, OH, has been named the Eastern College Athletic Conference (ECAC) Division III Gymnast of the Week. A senior captain, Lyren broke two Institute records in Saturday's meet against Yale University. Lyren scored a 9.2 on the beam and totaled a 36.1 in the all-around to break the records formerly held by 1992 graduate Lisa Arel. Lyren also earned an 8.85 average in the vault competition, tallied an 8.7 on the bars and finished with a 9.35 on floor exercise.

Women's gymnastics coach Catherine Rocchio, a 1990 graduate of the Institute, has been named the ECAC Division III Women's Gymnastics chairperson.

**BASKETBALL**

In basketball, both junior Mari Casserberg and freshman Keith Whalen were named to the ECAC New England Division III Honor Roll for the week ending January 10. Casserberg, a forward from Knife River, MN, scored 17 points, hauled in 13 rebounds, added four assists, and had five steals in the Engineers' 82-51 victory over Wentworth Institute of Technology. Whalen received his second ECAC honor of the season by scoring 20 points and grabbing eight rebounds in MIT's 82-57 loss to the Coast Guard Academy. A Londonderry, NH, native, Whalen is a center for the Engineers.

Women's basketball player Portia Lewis, a senior from Ettrick, VA, has been named to the Eastern College Athletic Conference New England Division III Weekly Honor Roll for the week ending January 17. The Engineers had a 1-1 record for the week with Lewis leading the way with 42 points on 17-for-23 shooting from the field. Lewis also totaled 22 rebounds. She leads the New England Women's 8 conference in scoring. The Engineers defeated Nichols College on January 23 for the first time in eight years. MIT outscored Nichols 19-4 over the last ten minutes of the contest to win 62-57.

**TRACK**

MIT had three winners at January's Beaver Relays. Sophomore Ethan Crain of Windham, ME, won the 3000 Meters with a time of 8:44.23. Brad Geilfuss, a junior from Bedford, MA, copped the 400 meters in 52 seconds flat. The distance medley relay team also placed first with a time of 10:56.23 over the 3600 meter distance.

**WRESTLING**

The MIT wrestling team recently took second place in the Constitution Athletic Conference Tournament. The Engineers were second to Worcester Polytechnic Institute. **Roger Crosley**



**MOVING CELEBRATION**—Suze Campbell, Laurie Quinn, who turned some old furniture funky and beautiful with imaginative painting, and Dottie Mark survey the fruits of their efforts at the grand reopening of the Furniture Exchange in its new quarters at 350 Brookline Street. The FX is now open Tuesday-Thursday, 10am-4pm. Photo by Donna Coveney



# MIT Museum Acquires Holography Collection

(continued from page 1)  
tion was "intact and safe."

The collection includes 341 lots of individual or grouped pieces—about 1,500 pieces in all. "Some fingering damage was suffered by some of the less well-protected pieces," Professor Benton said, "but in general the collection is in good shape."

The publication *Holography Marketplace* has described the collection as "the world's largest," noting that it includes many important archival materials. Another publication, *The Official Museum Director*, notes that the collection includes the first laser hologram, first white-light hologram, and early examples of reflection and integral holography.

Mr. Seamans said it includes documentary material from the laboratory of the inventor of holography, the late Dennis Gabor, who was awarded a Nobel Prize in physics in 1971 for his work in the field. The relatively modern science of holography—particu-

larly computer-generated holography—has applications in many areas, such as medicine, design and manufacturing.

Mr. Seamans said the collection has been shipped to Cambridge, where it will be cleaned up and catalogued. The museum has had several exhibitions of holography in recent years, primarily works from the Media Laboratory's spatial imaging group and the Center for Advanced Visual Studies.

"This is a tremendous collection," Mr. Seamans said, adding that a "reunion exhibition" is being planned for the newly acquired collection, possibly as early as the fall of 1993.

The MIT Museum is located at 265 Massachusetts Avenue in Cambridge. It has a large exhibition area of more than 10,000 square feet—and two galleries elsewhere on campus—that feature exhibitions of art/science-related works, as well as artifacts from MIT's own history.

# Harding Is MLK Scholar

(continued from page 1)

From 1961 to 1964 he and his wife, Rosemarie Freney-Harding, worked in various capacities as full-time teachers, activists and negotiators in the Southern freedom movement.

In 1968, after several years as chair of the history and sociology department at Spelman College in Atlanta, GA, he became director of the Martin Luther King Jr. Memorial Center and chairperson of the nationally televised "Black Heritage" series.

He was one of the organizers and the first director of the Atlanta-based Institute of the Black World. After several research appointments and visiting professorships, he joined the faculty of the Iliff School of Theology in 1981. He has lectured widely in this country and

overseas on history, religion, literature and contemporary issues.

Dr. Harding and his wife conduct workshops and lead retreats on the connections between personal spirituality and social responsibility.

Recently Dr. Harding was senior academic advisor to the Public Broadcasting System television series, "Eyes on the Prize." His essays, articles and poetry have been published in books, journals and newspapers.

His best-known book, *There Is A River*, has been in print for more than a decade and will soon appear in a new paperback edition. One of his most recent books, *Hope and History*, calls attention to the issues and lessons available from teaching the story of the modern African-American freedom movement.

# ILP Opens Office in Palo Alto

(continued from page 1)

Rosenblatt, director of strategic alliances, Hewlett-Packard Company; Hiroshi Yashuda, manager of semiconductor strategic alliance, Toshiba Corporation; and Robert Bishop, international president, Silicon Graphics.

Other specific topics covered by MIT faculty were the internationalization of R&D, importing human resource practices, strategy and technical innovation across borders, and a look back at US-Japan relations during the 1980s.

Sponsored by MIT's Sloan School

of Management, the Pacific Rim conference was the second part of a two-day Northern California Convocation and Career Forum planned primarily to address the continuing educational and career management needs of Sloan alumni/ae. On the first day, the forum allowed West Coast company representatives to meet informally with MIT/Sloan graduates and current students to discuss career opportunities in the region. Nearly 700 MIT/Sloan graduates now work in the northern California area.

## NO COINS, PLEASE

# Public Phone 2000 Is in Lobby 7

■ By Connie Abeln  
Telecommunications Systems

You may have seen one at Logan or other major airports. It looks like a combination pay phone and computer terminal, and it is. It's the AT&T Public Phone 2000. Now you can see and try one of these technological wonders on campus, in the pay phone cluster in Lobby 7.

Especially designed for business travelers and those with special needs, the AT&T Public Phone 2000 features the latest in telecommunications technology. It is equipped with a data port for connecting a laptop computer or portable fax machine. A built-in keyboard lets callers access their electronic mail or dial-up databases. The keyboard can also be used as a telecommunications device for the deaf (TDD), and the handset is hearing-aid compatible, with a volume control.

A 9-inch color monitor displays high-resolution graphics and text. Screen menus and function keys work like those of automated teller machines. Calling instructions can be displayed in French, Spanish, and German.

Graphical weather information, by state or nationwide, is the first on-line information service available through the Public Phone 2000. The 2000 provides speed-dialing access to travel and reservation services, and to these AT&T services:

- EasyLink, for electronic mail.
- Language Line, for telephone-based language interpretation of over 140 languages.
- Message Service, to record one-minute messages for delivery to specified telephone numbers.
- Dual-Party Relay, in states where such assistance is provided to hearing and speech-impaired TDD



**MANY OPTIONS**—AT&T's Public Phone 2000, located in Lobby 7, offers many new options. Photo by Donna Coveney

users (available in Massachusetts). You pay for Public Phone 2000 services in high-tech ways. Besides collect and third-party billing, the 2000 reads the magnetic strips on AT&T Calling Cards, AT&T Universal Cards, and most commercial credit cards. Coins are not accepted.

# Tang Family Gives \$4.7M to MIT

(continued from page 1)

an SM degree in management from MIT in 1972, represents the third Tang generation at MIT. After serving as a second lieutenant in the US Army, Martin Tang worked in San Francisco and in Taipei before returning to Hong Kong. He is now managing director of executive search consultants Spencer Stuart in Hong Kong. He has been president of the MIT Club of Hong Kong and secretary of the MIT Club of Taiwan and has served as an Educational Counselor.

In the early 1970s, Jack Tang, with

his mother and siblings, donated in Ping Yuan Tang's memory the Tang Residence Hall, the 24-story graduate dormitory on MIT's West Campus. In 1986, he established the Tang Scholarship Fund for needy students of Chinese descent with a gift of \$1.5 million. The recent \$1.2 million addition to the Tang Fund is designated for the support of any undergraduates in need.

Jack Tang's daughters, Leslie Tang Schilling, who graduated from the University of California at Berkeley, and Nadine Tang, who graduated from Boston University and also attended UC Berkeley, have also been instru-

mental in the family's decision to support MIT. Ms. Schilling is a real estate developer in San Francisco and Ms. Tang is a social worker in the counseling center at Mills College. Both are active in community cultural, educational and business groups in the San Francisco area. In appreciation for their education at the University of California, the Tang family has also pledged a \$4 million gift to Berkeley.

"Our family has always believed in giving back to the community," says Leslie Tang Schilling. "It is our hope that our gift to MIT will encourage others to be generous to MIT in their turn."  
Carla Lane

# United Way Drive Continues

The United Way of Massachusetts Bay campaign is almost \$3 million short of its goal of \$47 million and will keep the 1992 campaign books open until February 15. MIT will continue its campaign as well since we are short of our goal of \$326,500 (currently at 89 percent of our goal with 1,536 donations totaling \$287,659).

Overall donations are down this year at MIT with approximately 14 percent of MIT employee's having contributed. However, MIT's leadership giving (LG) donations (gifts of \$1,000 or more) are up from last year with 50 LG gifts totaling \$78,480, up from last year's 43 gifts for \$67,534.

MIT donations range from \$1.00 to \$10,000 with an average gift of \$187.30. If everyone would think about helping out those less fortunate by donating some time or money to the United Way, many of our friends and neighbors in need will have a happier 1993. There is still time to donate, so contact your department solicitor now. Or call

x3-7914 and speak with Susie Kendall or Barbara Gilligan in the Office of Special Community Services if you have a question.

Thanks for caring!

# Lecture Series To Begin February 3

Dr. Eric R. Kandel of Columbia University's Center for Neurobiology and Behavior will be the inaugural lecturer at noon Wednesday, February 3, in a series arranged by the MIT Center for Biological and Computational Learning. He will speak in Rm. E25-111.

Dr. Kandel will discuss "Molecular Biological Approaches to Long-Term Memory."

The biweekly series is supported by the National Science Foundation, the Department of Brain and Cognitive Sciences and the MIT Artificial Laboratory.



**STILL SMILING**—A couple of hardy snowpeople stand outside Kresge Auditorium as the snow turned to rain last week. Photo by Donna Coveney

## Here & There

■ MIT Campus Police officers don't necessarily limit their efforts to the campus. As a result, two murder suspects are in custody.

Sgt. **Stephen Daley**, the CP training coordinator, was on his way to work on the morning of December 27 when his car acted up and he pulled into the Shell gas station on Memorial Drive.

The officer, who was not in uniform, used the telephone inside the station to call CP headquarters for a cruiser to come get him.

While he was on the phone, a man entered the station office and heard the conversation. Then he became verbally abusive toward the officer and the gas station attendant. When Sgt. Daley asked him to leave, the man said no police officer was going to tell him what to do.

Then he attacked Sgt. Daley. As blows were being exchanged, Sgt. Daley shouted to the attendant to call the police. As the struggle continued, the officer and his assailant—who was six feet, five inches tall and weighed about 260 pounds—ended up outside the office near the station's pumps.

With the pumps between him and the man, Sgt. Daley said, he worked his way back to his car. At the same time, the assailant returned to the gas station office and began tipping drawers open behind the counter and assaulting the attendant.

Sgt. Daley, a certified defensive tactics instructor at the Massachusetts Criminal Justice Training Council, is also a certified instructor in the use of oleoresin capsicum, a ground-up red pepper solution used by police to subdue criminals.

He got an aerosol can containing the substance from his car and, as the man left the station and renewed his attack on the officer, Sgt. Daley used the spray. He was then able to hold the man until Cambridge and MIT police arrived.

The 31-year-old Charlestown man and a companion, who had remained in the car they arrived in, were charged with unarmed robbery. The Charlestown man also was charged with assault and battery and malicious destruction of property. Later, both men were indicted on murder charges in the slaying of the man who owned the car they were driving.

Did Sgt. Daley, who has been a police officer for 15 years, pick up any tips for his training sessions?

"Probably to avoid having your car break down," he said.

■ **Dr. Alan P. Lightman** is on a roll.

Soon after receiving accolades nationally for his textbook about the connections between science and the humanities, *Great Ideas in Physics* (MIT Tech Talk, Dec. 9), he has been showered with critical praise for his first novel, *Einstein's Dreams* (Pantheon Books).

Here's how New York Times reviewer Michiko Kakutani describes the book:

"Mr. Lightman... has begun this captivating book with a simple premise: he purports to set down what Einstein dreamed during the late spring and early summer of 1905 when he worked in the Swiss Patent Office in Bern and published several papers that would revolutionize 20th century physics... The dreams Mr. Lightman has given his fictional Einstein also deal with the mysteries of time and space... [and] with the human condition and its time-ridden existence. In each dream, Mr. Lightman postulates a different world in which time obeys different rules, rules that have a direct impact on psychology and behavior."

Dr. Lightman, a physicist, is professor of science and writing and head of the Program in Writing and Humanistic Studies. His other books include two graduate-level texts and

essays on the human side of science.

If Dr. Lightman's new book were a painting, the Times critic said, "it would have been painted by Magritte. Its images are beautiful but disturbing, meticulously rendered trompe l'oeil exercises with a haunting philosophical subtext..."

"By turns whimsical and meditative, playful and provocative, *Einstein's Dreams* pulls the reader into a dream world like a powerful magnet... In moving from science writing to fiction, Mr. Lightman has made an enchanting, delightful debut."

■ A more modest, but still notable writing effort is that of **Ann Davis Shaw**, associate director for Career Services and Preprofessional Advising in the Office of Career Services.

Her feature article, "How to Use Your Career Counseling and Placement Office," appeared in a job opportunities supplement to *The Black Collegian*, the career and self-development magazine for African-American students.

And some noteworthy magazine commentary:

■ By **Ellen T. Harris**, associate provost for the arts and professor of music, in the January/February issue of "Preview," the magazine of the Boston Museum of Fine Arts—a defense of Jenny Holzer's "Selections from Truisms, Inflammatory Essays, The Living Series, The Survival Series, Under a Rock Laments, And Child Text." While it has "raised the ire of some visitors to the MFA because of its graphic language and social commentary," Professor Harris writes, Holzer "encourages us to think about how much our perception of all that we see and not just her work, depends on us rather than on the object."

■ By **Dr. Lincoln P. Bloomfield**, professor emeritus of political science and senior lecturer, in *World Monitor*, the Christian Science Monitor Monthly—an essay on "Policing World Disorder." He asserts that the US-UN actions in the Gulf and Somalia represent "prototypes of something new under the sun... a new model of what might be called 'collective preemptive intervention'—a policing technique situated somewhere between unarmed 'peacekeeping' and outright community warfare against aggressors."

■ The Christmastime Salvation Army holiday kettle drive at MIT—conducted in front of 77 Massachusetts Avenue by volunteer bell ringers from the MIT community—raised \$844, reports **Paul Parravano**, assistant for community relations in the president's office.

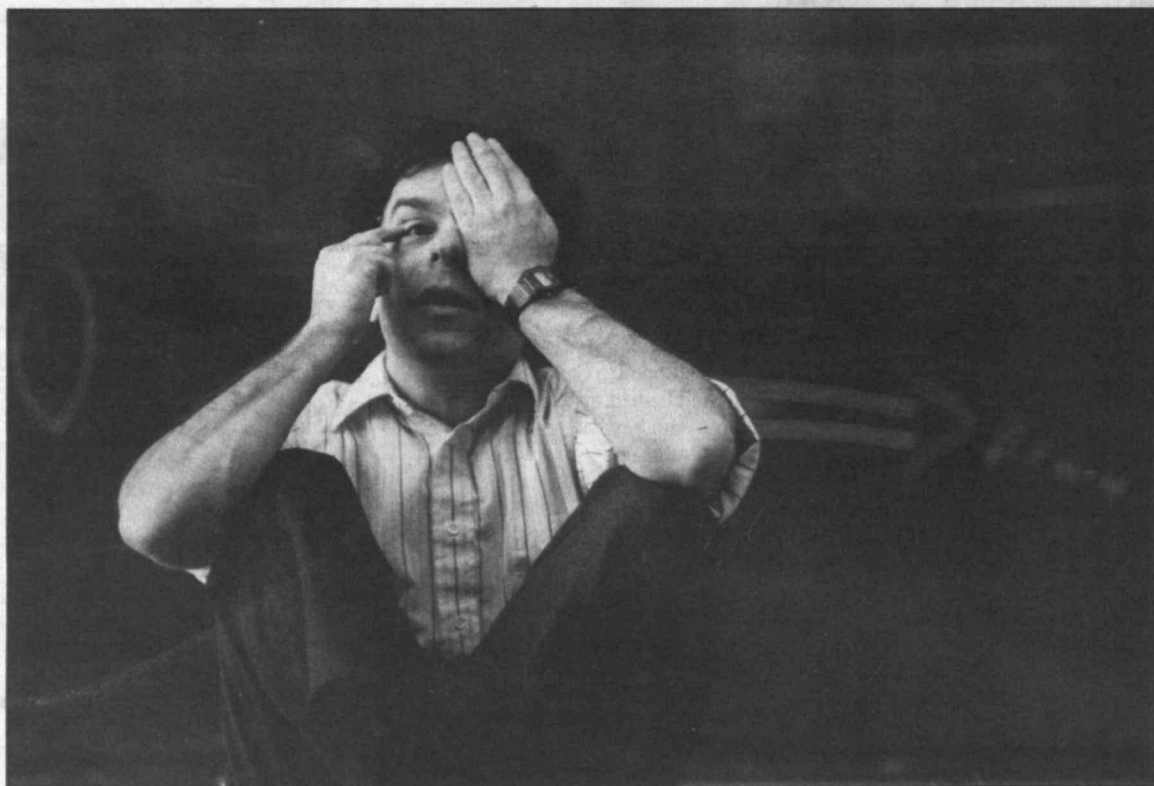
"While the temperature was right cold back on December 10," he told the volunteers in a letter, "money was running hot into the pot." The entire effort was marked by a "warm and generous spirit," he said, "demonstrating that the MIT community cares deeply about our less fortunate neighbors."

### QUOTES:

"I think people here realize we shouldn't be taking things for granted at all."—Professor **J. David Litster**, vice president and dean for research, in an Associated Press story on the increasing competition for research funds.

"Every time they come here it is like a funeral."—Professor **Michael L. Dertouzos**, director of the Laboratory for Computer Science, in a New York Times story on the potential effects of IBM's difficulties on the financing of computer science research.

**Charlie Ball**



**PEEK-A-BOO**—Jeremy Wolfe, visiting associate professor in brain and cognitive sciences, demonstrates one way to poke yourself in the eye during an IAP talk he gave last week. The talk was titled "Ten Things You Can Learn by Poking Yourself in the Eye." Photo by Donna Coveney

### IAP HIGHLIGHT

## How to Interpret a Poke in the Eye

■ By **Elizabeth A. Thomson**  
News Office

Close your eyes and gently rub the outside corner of one eye. Press a little harder. What do you see?

If you're like many of the approximately 50 participants at a talk last week by Jeremy Wolfe, visiting associate professor in brain and cognitive sciences, you saw a small white spot, or a black spot with a white rim. But where does the spot come from? What causes it?

According to Professor Wolfe, whose talk was titled "Ten Things You Can Learn by Poking Yourself in the Eye," "what you're seeing is the result of mechanically stimulating tissue that is ordinarily stimulated by light." In other words, the signals sent to the brain from the rubbing were interpreted as light, "even though you know [the signals] were caused by your finger."

As Professor Wolfe tried the technique again, he noted that what he was "seeing" also appeared to be a little bluish. "That's due to stimulating rods [one group of light-sensitive bodies], which are around the corners of the eye," he said. (Cones, the other group of light-sensitive bodies, are located more in the center of the eye.)

### DOT EVENT

## Transportation Center Plans Open House

Faculty members from MIT and the four other New England universities which comprise the US Department of Transportation's Region One University Transportation Center will take part in an open house Saturday, Feb. 6, on graduate education opportunities in the rapidly changing field.

The event will be held from 1-5pm in the Mezzanine Lounge of the Student Center. The snow date is Feb. 13.

Students preparing for graduate study, or already in a graduate program, are invited to attend. The wider public is also invited.

MIT is the lead university in the DOT's Region One University Transportation Center program. The event is being coordinated by Thomas F. Humphrey, director of the Region One center and a principal research associate and lecturer with MIT's Center for Transportation Studies (CTS), an interdepartmental organization with students and researchers from many academic departments. All five of MIT's schools are represented in the CTS.

And so began a series of demonstrations in eye-poking that taught more than 10 things about the eye and visual phenomena. Some of these are summarized above and below.

In one demonstration—an example of advanced eye-poking—Professor Wolfe asked the audience to "take a couple of fists and push straight back on your eyes. Notice the patterns that appear."

One person described seeing black and white checkers. Another expanded on that by noting that the squares of the checkerboard appeared to grow larger with distance from the center.

Professor Wolfe acknowledged that "we don't actually know what [that checkerboard] is, but it looks like you could be looking at your own visual cortex," or the part of the brain that handles vision.

Further, he continued, the growth of the checkerboard squares could correspond to the organization of the visual cortex. The small "squares" in the center represent cells that can make out fine details. These cells don't extend across the whole visual field because the human brain isn't big enough to process all of the information that would come in if they did. So with distance from the center, cells get progressively larger and less capable

of making out details.

In a brief aside, Professor Wolfe noted that some people see the same sort of "checkerboard" effect during migraine headaches. Here, he said, "you're almost definitely seeing your visual cortex."

Another demonstration involved slowly pressing on an eyelid, with the eyes open, while focusing on a certain object—in this case Professor Wolfe's nose. "Notice that I appear to move from side to side," he told the audience. "But where [is your brain] getting the signal for motion? With slow pushes, your eye is not moving." It turns out, he said, that by pressing on the eye "you're stretching your eye muscles." And these muscles have receptors in them that are telling the brain that the eye is actually in a different position. "So the brain says, 'the eye must have moved.'"

This happens, Professor Wolfe said, because "the brain is continuously trying to make the best of a bad deal in terms of what you're seeing."

Throughout his talk Professor Wolfe encouraged questions and explained what members of the audience said they were seeing. He was stumped, however, after one demonstration when a participant described "lots of color, then swirls, then a butterfly."

Dr. Joseph M. Sussman, the J.R. East Professor in the Department of Civil and Environmental Engineering and head of the department's Transportation Systems Division, will be the first speaker. He will outline the opportunities for graduate study in education.

"The transportation field is undergoing revolutionary changes with the integration of information and communications systems into the transportation context," he said in announcing the open house. "Development of new technologies, along with a new appreciation of the relationship between international competitiveness, national productivity and the effectiveness of the transportation system presents new opportunities for the transportation professional. New England is a region that is blessed with a number of important and innovative graduate transportation programs. Graduate education is a mechanism for people to enter the transportation field."

Faculty and students from MIT, University of Massachusetts-

Amherst, University of Connecticut-Storrs, University of Rhode Island and Harvard University will describe their graduate programs and will be available for questions after the presentations.

For more information contact the Region One Transportation Center at Rm 1-153, x3-0753.

### FirstSearch Extended

Unlimited free access to 20 large information databases in the OCLC FirstSearch online reference service through the MIT Libraries has been extended through June, but the authorization number and password have been changed.

To access FirstSearch databases over the internet, use this telnet command: <epic.prod.oclc.org>; authorization:100-089-681; password: hang.cxam.

(A full description of this service may be found in the 1992 TechTalk file in TechInfo, in the November 12 issue.)