

Faculty meeting

The Interim Report of the Committee on the Changing Nature of Information is scheduled for discussion by President Paul E. Gray at the regular meeting of the faculty today (Wednesday, March 16) at 3:15pm in Huntington Hall (Rm 10-250). The report was published as a supplement to Tech Talk last week (March 9).

Also on the agenda will be the report from the Committee on the Writing Requirement and proposed adjustments to the Humanities, Arts and Social Science Requirement, including a motion to endorse the adjustments.

Instructors' note

Freshmen will be giving you their mid-term performance evaluation forms over the next few days. The Undergraduate Academic Support Office encourages you to complete these forms for all freshmen in your classes, even for freshmen who did not give you a form, so that the students and their advisors will get a clear picture of their academic progress this term.

Freshmen have been asked to give you their forms by Friday, March 18, and completed evaluations should reach freshman advisors by Monday, March 28. Evaluations can be sent either to the advisor directly or via the UASO (Rm 7-103).

Extra forms are available in your departmental undergraduate office or from the UASO.

Van Maanen talk

"Doing New Things in Old Ways" will be the topic for the next talk in the Perspectives series to be given by Dr. John Van Maanen. The talk will be given Tuesday, March 22, noon-2pm in Rm E25-111.

Dr. Van Maanen, whose research interests include adult socialization and organization and occupational careers, has subtitled his talk "How People Move into and through Organizations." He has been a member of the faculty since 1972.

The Perspectives series is designed to acquaint the MIT community with research being carried out here. It is co-sponsored by the Personnel Office, the Provost's Office and the Sloan School of Management. The talks are open to all.

CU banquet

Tickets for the annual MIT Employees Federal Credit Union Banquet will go on sale Friday, March 18, at noon in Rm A-010 at Lincoln Laboratory, and at 4:30pm in the Maclaurin Lobby. Tickets are \$13 per person and will be limited to two per member.

The banquet will be held Saturday, April 9, at the Palace (formerly the Chateau de Ville) in Saugus. No tickets will be sold at the door.

Thanks from TCA

The Technology Community Association, sponsors and organizers of the MIT blood drives, have asked Tech Talk to express their thanks to the community for the highly successful drive that ended Friday.

The drive collected 1,480 pints—100 more than expected for a spring drive—according to Fariba Zarinetchi of TCA. In addition to thanking the donors, she cited more than a dozen groups and individuals who helped with funding, publicizing and staffing the drive.

"The commitment of all these people made the spring drive a community effort of which we can all be proud," Ms Zarinetchi said.



Panelists at Monday discussion on MIT-industry relationships were, from the left: Professor Graham C. Walker, Professor Adel F. Sarofim, Professor Merton C. Flemings, Jr., George H. Dummer, Professor Kenneth A. Smith and Professor James D. Bruce.

Forums to address funding issues

By CHARLES H. BALL
Staff Writer

The first in a series of four discussions on the influence on universities of funding from industry and other sources was held at MIT Monday, March 14.

The four sessions, under the heading, "The Influence of Funding on Academic Freedom and the Integrity of the University," stem from a meeting on the subject by five university Presidents, including MIT President Paul

E. Gray, nearly a year ago at Pajaro Dunes in California.

That meeting did not define or recommend policy, except in broad terms. The participants, however, hoped it would encourage further discussion on their home campuses to assist in the eventual formulation of policies.

The first of the MIT meetings, which are under the auspices of the MIT Technology and Culture Seminar, was on the topic, "MIT Industrial Links: Where Are We Going?" The chairman session was Professor James D.

Bruce, director of the MIT Industrial Liaison Program, and the speaker was Professor Kenneth A. Smith, associate provost and vice president for research.

Panelists were George H. Dummer, director of the Office of Sponsored Programs; Merton C. Flemings, Jr., head of the Department of Materials Science and Engineering, Toyota Professor of Materials Processing and director of the Materials Processing Center; Adel F. Sarofim, Joseph R. Mares Professor of Chem-

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Congress gets 'freeze' letter

By ROBERT M. BYERS
Staff Writer

An open letter to Congress opposing the nuclear arms race signed by 3,258 members of the MIT community was presented to the House of Representatives and the Senate in separate ceremonies at the Capitol in Washington Tuesday, by an eight-member student-faculty delegation.

One copy was presented to Rep. Thomas P. (Tip) O'Neill, Jr., of Cambridge, Speaker of the House of Representatives, in public

ceremonies in the Speaker's Office for transmission to the House. Also present were Rep. Marcy Kaptur of Toledo, O., and Rep. Bruce A. Morrison of New Haven, Conn., Rep. Howard E. Wolpe of Lansing, Mich., Rep. Fortney H. (Pete) Stark of Oakland, Calif., and Rep. Edward Markey of Malden, Ms. Kaptur was a first year graduate student in urban studies and planning in 1982 when she withdrew to run for Congress. Mr. Morrison, a 1965 graduate of MIT in chemistry, also was elected last fall. Mr. Wolpe received the PhD degree in

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Major energy program begins

MIT has launched a major program of interdisciplinary research to develop ways of improving the energy efficiency of buildings.

When fully operational, total support for the program from grants and sponsored research is expected to be about \$1.5 million a year.

"Residential and commercial buildings account for one third of the total energy consumption in the United States, but actual gains in energy efficiency in the last decade have only been modest," said Leon Glicks-

man, senior research scientist in the Department of Mechanical Engineering and director of the program.

The primary goals of the new Joint Program for Energy-Efficient Buildings and Systems, Dr. Glicksman said, are:

—To develop more energy-efficient technologies and designs both in regard to the buildings themselves and their energy systems.

—To organize and disseminate research findings to practitioners.

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Wilson offers reminders for taxpayers

Kerry B. Wilson, manager of compensation and employment in the MIT Personnel Office, offered some reminders this week for MIT people preparing their 1982 tax forms.

Those who have tax-deferred annuity contributions deducted from their salaries do not have to show those deductions on their federal forms, he said. The federal income shown on the W-2 form is already reduced by the amount of the contributions.

"You pay taxes on a lower income," he said. "That's how you receive the tax-deferred benefit."

That does not apply to state taxes, however. Massachusetts does not allow salary reductions for annuity contributions. That is why, Mr. Wilson said, state income shown on the W-2 is higher.

Mr. Wilson said some MIT people have wondered if the imputed income shown on their special W-2s representing the value of MIT's group term life insurance was calcu-

lated with old or new Internal Revenue Service tables. The answer is the old tables, Mr. Wilson said. IRS is drawing up new tables, but they are not yet in use.

There are two ways to determine your annual health insurance payments. You can add up the monthly deductions on your paycheck stubs. Or you may use a table of 1982 health insurance deductions available from the Compensation Office, x4271. But if you use the table, you must be certain to adjust if you changed, stopped or started plans, switched from individual to family, or changed payrolls.

Some retirees, Mr. Wilson said, have asked about new regulations IRS has adopted on withholding federal taxes from pension checks. Those have just gone into effect and do not apply to last year's taxes, Mr. Wilson said. An explanation of the new rules will be sent to all retirees this month or will be enclosed with the April 1 pension checks.

'Measles alert' issued to students

The MIT Medical Department has issued a "measles alert" to students and others who are planning to visit Florida or Bermuda during spring vacation.

A mild epidemic of regular measles has broken out at two colleges in Indiana and could become a larger epidemic as students intermingle in warmer climates during vacation.

The Medical Department recommends that persons born between 1956 and 1967 get a measles vaccination unless:

—He/she has already received the live measles vaccine (not the killed vaccine used between 1963-67).

—He/she has had a physician-diagnosed case of regular measles.

—He/she has been a student in a Massachusetts public school since 1977.

—She is pregnant.

The Medical Department will provide and administer the vaccine free of charge to students and urges students who are unsure of their immunization status to check with their parents or physician.

Committee seeks Edgerton nominees

Nominations are invited from all members of the community for the first annual Harold E. Edgerton Award to be given to a junior faculty member for distinction in teaching, research and scholarship.

The Edgerton Award was established by gifts of the faculty to the Leadership Campaign for the purpose of recognizing outstanding achievement by junior faculty members. It carries an honorarium of \$5,000.

Preliminary nominations with a brief description of the candidate's qualifications should be sent as soon as possible to Professor June L. Matthews, chairman of the Selection Committee, Rm 26-435. After choosing a short list of candidates, the Committee will return to the respective nominators for fuller documentation.

Other members of the Selection Committee are Professors Frederick C. Hennie III, Jean E. Jackson and Robert B. McKersie.

INSTITUTE NOTICES

MIT GO Club*—Play an Oriental game of high strategy, every Thurs, 8pm, Rm 1-136. Will teach beginners. GO sets and books available.

MIT Judo Club**—Mon & Wed at 7pm, Sunday at 4pm, Special Fitness Rm.

The MIT Soaring Association**—holding monthly meeting Thurs, March 17, 7pm, Rm 491, Student Center. Anyone interested is encouraged to attend. Refreshments served.

MIT Women's Water Polo Club*—Organizational meeting for everyone interested in playing this Spring, Thurs, March 17, 5pm, Alumni Pool. Beginners welcome.

Religious Activities

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

Charismatic Prayer Group*—Mon evenings, 6:45, Ashdown Dining Room. Pot-luck supper followed by prayer meeting, Bible sharing, music & praise. Jim Mahoney, x3-3074.

Christian Science Organization at MIT**—Weekly Testimony Meeting, Thurs, 5:15pm, 6th flr Lounge, Ashdown.

Islamic Society*—Daily prayers held in Ashdown House (basement) 5 times a day. Call 225-9837 for congregation schedule. Friday prayer, Ashdown House 1-2pm, Khutba starts at 1:15pm, congregation at 1:45pm.

Jewish Services*—Call x3-2982.

Lincoln Laboratory Noon Bible Studies*—Tues & Thurs, Kiln Brook III, Rm 239. Call Annie Lescard, x2899.

Morning Bible Studies*—Fri, 7:30-8:30am, L-217. Ed Baylias x3456, Linc.

Noon Bible Study*—Every Tues, Rm 3-465, bring your lunch. Ralph Burgess, x3-8121. (Since 1965)

Prayer Time*—Friday afternoons, 1-2pm, weekly Bible Class, Rev. Miriam R. Eccles, founder & director of Alpha and Omega Missionary Society. Guest speakers, & refreshments. Center for International Studies, Seminar Rm III (E38-6th floor).

Tech Catholic Community*—Sunday Mass only, 9am, noon, 5pm, Chapel; week day Mass, Tues, Thurs, 5pm; Fri, noon, Chapel. Bible study, Thurs, 7:30pm, Ashdown, 6th flr Lounge. Call x3-2981.

St. Patrick's Day*—A Celebration of God's Mercy. The Sacrament of Penance. Tech Catholic Community, Thurs, March 17, 9pm, MIT Chapel.

The Gospel of John*—Bible study. How Christ came to be man's life to produce God's dwelling place on earth. Tues, noon-1pm, Rm 8-119.

The Church of Christ in Cambridge—Christians meet for worship, study, discussions, fellowship, Tang Hall, 1st & 3rd Sunday eve each month, 6:30pm. Call Robert Randolph x3-4861/3-5085 or Claudia Lewis, 494-1326 (Ashdown).

Vedanta Society*—Meditation and discourse on the Gita by Swami Sarvagatananda of the Ramakrishna Vedanta Society of Boston, Fri, 5:15pm, MIT Chapel.

MIT Baha'i Association*—Fireside discussion. MIT Baha'i Association, March 23, 8pm, Ashdown Lounge, 1st flr.

The Lutheran Ministry and Episcopal Ministry—Hold weekly service of Holy Communion Wed, 5:10pm, Chapel. Supper, scripture study & discussion follows at 312 Memorial Drive. Call x3-2325 or x3-2983.

Campus Crusade for Christ**—Family time, 7:15pm, Friday eves, Rm 37-252, (Marlar Lounge). Come for Fellowship, scripture teaching, prayer, singing, refreshments & fun. Tues, prayer time, 7:30-9am, W20-441, Student Center. Call x5-9153.

Cable Television Schedule

March 16-30

Wed, March 16
Channel 8
10am 6.343 Digital Speech Processing
4pm Highlights of the 9th Annual Student Film Awards*
5:30pm Short subjects by Vin Grabill and Jack Campbell

Channel 10
10am Tracking the Supertrains
11am Short subjects by Vin Grabill and Jack Campbell
4pm Boston VA Medical Grand Rounds "Talking to the Dying Patient" Theodore Nadelson, MD, chief of psychiatry, VA Med Center**
5pm Committee on Immunology "Idiopathic Regulation of B Cell Tumors, Models for Lymphocyte Function," Dr. Abul K. Abbas, Department of Pathology, Brigham and Women's Hospital

Thurs, March 17
Channel 8
10am Highlights of the 7th Annual Student Film Awards*
11:30am Short subjects by Vin Grabill and Jack Campbell
Noon Highlights of the 8th Annual Student Film Awards*
1:30pm Short subjects by Vin Grabill and Jack Campbell
5pm Highlights of the 9th Annual Student Film Awards
6:30pm Tracking the Supertrains
7:30pm Jules et Jim, directed by Francois Truffaut, presented for 21.301, French New Wave Cinema.

Channel 10
10am Community Service Fund Spring Campaign
5pm Biochemistry and Molecular Biology Seminar, Sequence Sensitive DNA Separations and Helix Melting Theory, Prof. Leonard S. Lerman, Dept of Biological Science, SUNY-Albany**
7:30pm 8.02 Help Session with Professor Lewin, This program will be repeated until 3am.

Fri, March 18
Channel 8
10am Highlights of the 6th Annual Student Film Awards*
11:30am Short Subjects by Vin Grabill and Jack Campbell
Noon Highlights of the 7th Annual Student Film Awards*
1:30pm Short subjects by Vin Grabill and Jack Campbell
4:20pm Tracking the Supertrains

Channel 10
10am Community Service Fund Spring Campaign

Sat, March 19
Channel 8
2am Jules et Jim, see March 17 for details

Mon, March 21
Channel 8
10am Highlight of the 9th Annual Student Film Awards*
11:30am Short Subjects by Vin Grabill and Jack Campbell
Noon Highlights of the 6th Annual Student Film Awards*
1:30pm Short subjects by Vin Grabill and Jack Campbell
4:20pm Tracking the Supertrains

Channel 10
10am Community Service Fund Spring Campaign
4:30pm Dept. of Biological Chemistry "Sex determination in Drosophila" Dr. Bruce Baker, Biology, U. of Calif**

Tues, March 22
Channel 8
10am Highlights of the 7th Annual Student Film Awards*
11:30am Short subjects by Vin Grabill and Jack Campbell
12:15pm Harvard Medical Area Showcase The Suicidal

Graduate Studies

Woodrow Wilson Women's Studies Research Grant—The Woodrow Wilson National Fellowship Foundation offers research grants to encourage original and significant research about women. The grants, which average \$1,000 are awarded to students in doctoral programs in any field of study at graduate schools in the U.S. who have completed all pre-dissertation requirements. Applications must be endorsed by the candidate's dissertation advisor and graduate dean. Contact the Graduate School Office, Rm 3-136, for further information or write directly to: Woodrow Wilson National Fellowship Foundation, Department W.S., Box 642, Princeton, N.J. 08540.

The AFL-CIO—is accepting applications for its Labor Research Internship Program for the year beginning July 1, '83. Interns will work with senior staff members in the AFL-CIO Economic Research Department on a variety of issues involving economic analysis. Applicants must be U.S. citizens who will have completed at least one year of graduate study by June 1983. Salary is \$355 per wk & health insurance. Applications are available in the Graduate School Office, Rm 3-136. Deadline; Mar. 31, 1983.

UROPO

For more detailed information on UROPO opportunities listed, MIT undergraduates should call or visit the Undergraduate Research Opportunities Program Office, Rm 20B-141, x3-5049 or x3-4849 unless otherwise specified in the listing. Undergraduates are also urged to check with the UROPO bulletin board in the main corridor of the institute.

Notes on Summer Funding—It's not too early to plan ahead for summer funding and to get your proposals together since we will begin accepting them beginning March 28. See us now for information concerning how to begin, how to receive credit or wages, etc.

Eloranta Summer Fellowship Program—Three \$4,000 research fellowships for MIT undergraduates will be awarded this spring for work done during the summer months. Areas of study may be in any field, science, engineering, humanities. Travel is encouraged, originality is rewarded. Deadline: April 1, 1983. Contact Ms. Norma McGovern, UROPO, for details.

Data Acquisition and Control Systems—Mechanical and control systems development of hardware and software for fluid and solid mechanics simulations. Pay Available. Contact Eric Cigan, 1-008, x3-2318, or Prof. M.P. Cleary, 3-356, x3-2308.

Laboratory Simulation of Shale Oil Extraction—Tests are being conducted to simulate the processes which occur during in-situ retorting to extract the hydrocarbon content (Kerogen) from oil shale. This involves radio-frequency (dielectric) heating in the field but we use conductive heat transfer in the lab. The equipment involves a jacketed sample inside a heated pressure-vessel and associate transducers, controls, plus a hydrocarbon release (venting) system. Contact Aaron Heintz, 1-008, x3-2318 or Prof. M.P. Cleary, 3-356, x3-2308.

Experiments in Growth and Interaction of Hydraulic Fractures*—laboratory simulation of the growth and interaction of (many simultaneously) propagating hydraulic fractures, using cement blocks inside high-pressure vessels. Post-fracturing observation of growth and linking patterns for different geometry/load configurations, and correlation with theoretical predictions. Develop most of capability to produce and sustain multiple fractures from a single borehole. Pay Available. Contact Jim Papadopoulos, 1-008, x3-2318 or Prof. Cleary, 3-356, x3-2308.

Numerical Simulation of Underground Hydraulic Fracturing—Will handle general programming and maintenance of engineering computer programs. Solid FORTRAN programming experience essential. Familiarity with relevant mathematical equations governing physical problems in mechanics and thermo. would be an advantage so that student can generate own programs as well. Pay Available. Contact Mohan Narendran, 1-008, x3-2318 or Prof. Cleary, 3-356, x3-2308.



STEINBERG PRIZE AWARDED—Harvey Steinberg, Class of '54, left, presents the annual Steinberg Prize sponsored through the Steinberg family to Koorosh Mozayeny. The prize is awarded annually to a senior in civil engineering who has demonstrated both a high level of academic achievement and a commitment to further his or her education toward a career in the field of construction management. Mr. Mozayeny has had exemplary academic performance at MIT and has made a "distinctive contribution in the many civil engineering subjects he has taken," the award announcement said. Mr. Steinberg, a graduate of Course 17, Building Engineering and Construction, is president of Beacon Construction Company, Inc., a Boston-based building firm.

Math in 3D talk set

A discussion about the sculpture exhibition, Math in 3D, now at the Margaret H. Compton Gallery, will be presented Thursday, March 17, at 5:30pm in the Bush Room, (10-105) by Louis Rosenblum '42. There will be a reception at 6pm in the Compton Gallery, attended by sculptor Morton C. Bradley and his associates. Members of the MIT community are invited.

Plasma Fusion Center—A physics or EE student is needed to participate in experimental research in the Alcator Controlled Thermonuclear Research Program. The student will learn laboratory techniques related to radiation measurements in a fusion device. Duties will include computer programming and assisting in experiments using neutrons and hard x-ray diagnostic systems for Alcator experiment. A soph or jr., who may eventually want to develop the project into a senior thesis, would be preferred. Credit only. Contact Danial Pappas, NW16-2512, x3-5502.

Placement

The following companies will be recruiting in the Career Planning and Placement Office, Rm 12-170, on these dates.
March 16: Fairchild Republic Co.; The Kendall Co.; Bureau of Jewish Education of Greater Boston; Codenoll Technology Corporation; E-Systems, ECI Division; Lotus Development; McKinsey & Co, Inc.; M/A-Com DCC, Inc.; McNeil Pharmaceutical; Metcalf & Eddy, Inc.; Morgan Stanley & Co., Inc.; Shugart Assoc; S.D. Warren Company.
March 17: Advanced Marine Enterprises, Inc.; Children's Hospital Medical Center; Pipelot; The Gillette Company; IMEC Corp; Kaman Sciences Corp; McNeil Consumer Products Company; Meridian Corp; New England Technology Group; SofTech, Inc.; Social Security Administration.
March 18: Atari, Inc.; The Boston Company; CIBA GEIGY Corp; Computer Corp of America; Continental Forest Industries, Inc.; Control Data Corp; CNR, Inc.; Cummins Eng Co; Hencckels, Haas & Brown, Inc.; Mass. Public Interest Research Group (MASSPIRG); Mellon Bank; Merrill Lynch White Weld Capital Markets Group; National Security Agency; Scientific Systems, Inc. WYSE Technology.
March 28: Advanced Engineer Technologies; Energy Management Associates, Inc.; Illinois Bureau of the Budget; Production Services Corp; U.S. Navy.
March 29: ITP, Inc.; VLSI Technology Inc.

Student Jobs

More jobs are available. Contact Student Employment Office, Rm 5-119.

The MIT Writing Center is looking for students to help tutor. Qualifications are: must be an MIT graduate or undergraduate; must be a good writer, must be responsible and able to work without supervision. All applicants will be trained in tutoring, etc.; they do not need a complete knowledge of grammar rules etc. Available hours: Tues, Thurs: 1-5, Fri: 12-4, (\$8/hr) Contact Steven Strang, Director of the Writing Center (14N-317), x3-3090.

Summer internship positions are available with RCA Automated Systems in Burlington, MA. They prefer students living locally with high academic standing (GPA at least 4.2), graduating in '84 or '85, and majoring in EE or CS. Requires good theoretical and practical understanding of Electrical Engineering and/or Computer Science. The salary will be approximately \$300-\$390/month, depending on experience. Interested students may leave a resume in the Student Employment Office, Rm 5-119, Attn: Lucy Dinin) and we will forward all appropriate resumes to RCA.

Are you still looking for a summer job? The Student Employment Office still has some copies of the Summer Employment Directory. This directory is not a list of available jobs, it is a list of summer employment resources available to MIT students.

TECH TALK



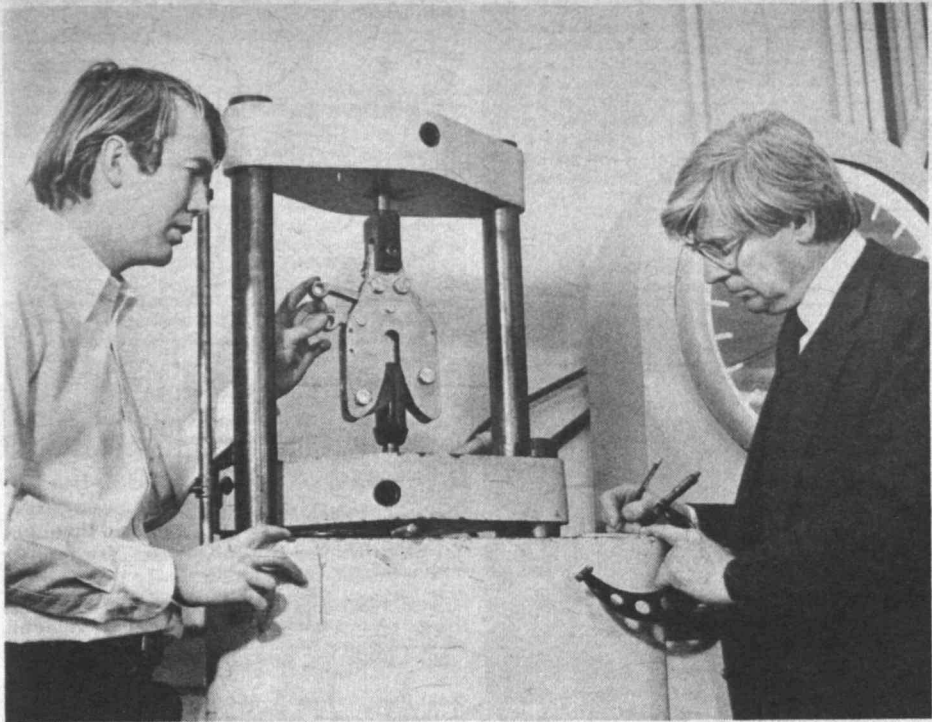
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* videotapes courtesy of the Univ Film Study Center
** courtesy of Harvard Video Services



SEA GRANT HOOK TESTED—A slightly redesigned version of the prototype quick-release hook by which a lifeboat is lowered and raised was subjected to stress testing last week as part of a Coast Guard evaluation program. An earlier prototype has been in use since 1980 aboard the Coast Guard cutter Alert. The Coast Guard required a larger unit for fleet-wide deployment and it is the modified version being tested here. At left is Clifford A. Goudey, naval architect and fisheries engineer with the MIT Sea Grant Program's marine advisory services. Mr. Goudey developed the lifeboat hook from a device some years ago in another Sea Grant research program for use as a hook-up block to secure and release towing cables to the stern of commercial side trawlers. At right is Eugene C. Haciski, a Coast Guard engineer. He holds a micrometer which he used to measure the distortion in the hook as the hydraulic testing machine applied tension. Coast Guard specifications call for the hook to withstand 30,000 pounds of tension. The hook withstood 42,400 pounds of tension. The Coast Guard is expected to seek bids for commercial production of the device soon. Mr. Goudey's work was done in the Laboratory for Manufacturing and Productivity and he cited contributions of Frederick P. Cote, Frederick H. Anderson, technical instructors, and Ralph Whittmore, project technician, of the lab.

Oil exec to give Lewis lecture

In these uncertain economic times, is there a future for chemical engineering graduates? George M. Keller, Standard Oil Company of California's board chairman and chief executive officer, says there is and will tell why when he delivers the annual Warren K. Lewis Lecture in Chemical Engineering April 15 in Rm 66-110 at 3pm.

Mr. Keller, head of the nation's fourth largest oil company is an MIT alumnus (SB, chemical engineering, 1948). He has served on the Corporation Development Committee and various visiting committees and as a Sustaining Fellow and was named a member of the MIT Corporation in 1981. He is a member of the Friends of the Practice School Committee in the Department of Chemical Engineering and is past president and a long-time director of the MIT Club of Northern California.

Mr. Keller, in his lecture titled "Frontiers of Chemical Engineering in the Oil Industry," will make the point that the country needs bright, innovative chemical engineers to lead it out of the economic doldrums, especially now because the "easy oil" has already been found and new ways will be needed to coax the remaining oil and gas reserves out of the ground.

The distinguished lectureship honors the memory of Warren K. Lewis (1882-1975), who is considered the father of chemical engineering. Dr. Lewis, who received the SB degree in chemistry from MIT and the ScD in physical chemistry from University of Breslau, Germany, in 1908, spent nearly his entire professional career at MIT. In 1920 he became head of the newly established Department of Chemical Engineering, the oldest in the

United States. His professional achievements are pertinent to the founding of the modern concept of the discipline of chemical engineering, the developing of generations of leaders in industrial and academic chemical engineering, and the pioneering of industrial processes such as fractionation and fluidized catalytic cracking of petroleum.

Mr. Keller joined the engineering department of his firm in 1948. During the next 17 years he was engaged in the design of process facilities, both chemical and petroleum plants, for nearly every refining center of the company.

In 1965 he transferred to the company's foreign operations staff, where he began a 15-year involvement with the operations of the Arabian American Oil Company (Aramco). He served on its board of directors from 1971 to 1980. In 1967 Mr. Keller was named manager of foreign operations and later that same year, assistant vice president-foreign. The following year he was promoted to assistant to the president. He was named vice-president for the corporation in 1969 and a director of Caltex Petroleum Corp. Caltex (jointly owned by Standard Oil of California and Texaco) is primarily engaged in refining and marketing petroleum products in more than 60 countries in the Eastern Hemispheres. He served on the Caltex board of directors until 1981.

Mr. Keller was elected to the Standard Oil of California board of directors in 1970. He was named vice chairman in 1974, with his responsibilities extended to include all of the company's international operations. He became chairman of the board in 1981.

10 receive UROP Course I awards

Nine freshmen and one sophomore have received \$600 traineeships in the annual Civil Engineering competition for the Undergraduate Research Opportunities Program (UROP).

The competition was started several years ago to stimulate undergraduates, especially freshmen, to participate in the research being carried out in the department. Letters including the research interests of faculty members in the department are circulated to students in the fall term encouraging them to ally themselves with faculty members and write proposals during IAP.

This year's winners, their faculty advisors and projects are:

Joseph Cherian of Malacca, Malaysia, Professor Victor C. Li, Fracture resistance for the Parkfield earthquake.

Carolyn Hertzberg of Tarrytown, N.Y., Professor Harold F. Hemond, Study of organic compounds in water samples by ultraviolet radiation.

Jesus Jimenez of Quezon City, Philippines, Dr. Robert J. Olson, Investigating stationary phase of phytoplankton cells.

John Kenny of Bothell, Wash., Dr. Gail Harrison, The effect of heavy metals on algae.

Anthony Kolb of Sheboygan, Wisc., Professor David H. Marks, Computer operation model of the High Aswan Dam.

Melise Leib of Norwalk, Conn., Professor Hemond, Nitrous oxide biogeochemistry in rivers subject to municipal sewage.

John Lin of Montoville, Pa., Professor Robert D. Logcher, Microcomputer CPM scheduling system for teaching.

Carolyn Ruppel of Cincinnati, Ohio, Professor Li, Nonlinear strain accumulation of plate boundaries.

Martin St. George of Hingham, Mass., Dr. Carl D. Martland, Microcomputer applications to railroad operations.

Diana Tener of Rego Park, N.Y., Professor Donald R.F. Harleman, Multiport diffusers for waste disposal in rivers.

Swedish academy honors E.N. Lorenz

Professor Edward N. Lorenz, former head of the Department of Meteorology and Physical Oceanography, is the 1983 corecipient of the Crafoord Prize of the Royal Swedish Academy of Sciences.

The Academy cited Professor Lorenz "for your fundamental contributions in the field of geophysical hydrodynamics that in a unique way contributed to our understanding of the large-scale circulation of the atmosphere and the sea."

The corecipient with Professor Lorenz was Professor Henry M. Stommel of the Woods Hole Oceanographic Institution. They will share an honorarium of approximately \$54,000 and each will receive a gold medal at a ceremony to be held in Stockholm in September.

Utterbeck named ILP director

Dr. James M. Utterbeck, associate professor of engineering at MIT and an expert in the management of technology, has been named director of industrial liaison at MIT, effective July 1.

Professor Utterbeck will succeed Professor James D. Bruce, who has been in the post more than four years. Professor Bruce has been appointed Director of Information Systems at MIT.

Professor Utterbeck's appointment was announced by Professor Samuel A. Goldblith, vice president for research development, who said that Professor Utterbeck's extensive contacts with industry make him an excellent choice to direct MIT's industrial liaison activities and to advance the interchange of information between MIT and industry.

One of Professor Utterbeck's major goals, Professor Goldblith said, will be the continued development of liaison with industry in general as well as of the Industrial Liaison Program.

The Industrial Liaison Program, now international in scope, was organized in 1948 to give companies access to the state-of-the-art in the fields of engineering, science, architecture, the humanities, labor relations, economics, finance and management.

Professor Goldblith said Dr. Utterbeck would continue to seek the cooperation of the Institute's faculty, some 50 per cent of whom are participating in industrial liaison activities. "Interaction of our faculty with the member companies is a key to the program's success," he commented.



Professor Utterbeck, through his association with MIT's Center for Policy Alternatives, has done extensive research on factors that influence innovation, including corporate behavior and government policy. In the past 12 years, he has also been a consultant to many American companies as well as several European ones.

He also has served on both state and national government committees, has testified before Congressional committees and has participated in conferences sponsored by various government, university and private groups.

Since 1979, Professor Utterbeck has been United States editor for the journal, *Research Policy*. His own writings are extensive, including more than 40 papers and other publications. He also has delivered many lectures before university and industrial groups in the past 10 years.

He is a member of the Academy of Management, the American Association for the Advancement of Science, the American Institute for Decision Sciences, the Institute of Electrical and Electronic Engineers, the Institute for Management Science and Sigma Xi.

Professor Utterbeck received both the BS and MS degrees in industrial engineering from Northwestern University, in 1963 and 1965, and the PhD in management from MIT, in 1968.

He was on the faculty of the Indiana Graduate School of Business in 1968-72, served as a visiting associate professor at the Harvard University Graduate School of Business Administration in 1974-76 and was a visiting professor at Chalmers University in 1980-82.

He was a research associate at MIT from 1974 to 1979, when he became an associate professor with tenure. He served as acting director of the Center for Policy Alternatives in 1980.

Gray testifies on immigration

MIT President Paul E. Gray, in testimony before a House subcommittee in Washington Thursday, March 10, called for changes in an immigration bill that he said could have "an adverse impact on the quality of education and research in the United States."

It would do this, he said, "by making it more difficult for highly educated scientists, engineers and scholars to remain temporarily or permanently as teachers or researchers."

"We would be deprived of an invaluable source of talented people who have much to offer the United States," President Gray told the House Subcommittee on Immigration, Refugees and International Law. "Our universities must have access to the best faculty in all academic disciplines and from all sources. This bill, if unamended, would limit that access."

President Gray presented his testimony, and an accompanying written statement, on behalf of the American Council on Education, which represents nearly all US colleges and universities, and the Association of American Universities, which represents America's research universities.

Noting that a "significant fraction" of faculty and researchers at US universities and colleges are foreign citizens, including about 15 per cent at MIT, President Gray told the committee, "We need to leave the immigration door open enough to allow those who have the potential to benefit our nation to come to or to stay at our US universities."

The bill under consideration is the Immigration Reform and Control Act of 1983.

President Gray gave his support to a provision in the House version of the bill that requires the Secretary of Labor to determine that "equally qualified," as opposed to minimally qualified, American workers are available for a faculty position before denying an alien's work certification. The Senate deleted the provision.

"It is important to America's economy and security that US colleges and universities be able to choose the best qualified people for teaching and research positions," President Gray said.

He also supported an amendment proposed by Rep. Barney Frank, D-Mass., and incorporated in the House bill, that expands this provision to college and university researchers with doctoral degrees.

President Gray also called for a change in a provision that requires many foreign students to return to their home countries for two years following completion of their studies.

"Many students, particularly in the sciences, spend a year or two doing postdoctoral research after completing a degree," he explained. "This additional training is important to their future careers in their home countries and to the advancement of science."

He said that waivers included in the bill for students who have been offered faculty appointments in mathematics, science and engineering were inadequate because they are limited to "high technology" disciplines and would expire in 1989.

Seminar leaders needed for fall term

The Undergraduate Seminar Program is recruiting faculty members to offer seminars in the forthcoming fall term.

Professor Judah Schwartz, program chairman, and Peggy Richardson, executive officer, sent a letter to the faculty earlier this month together with a form for proposing seminars. Deadline for returning the proposals is March 28.

The seminars provide an opportunity for faculty members to meet on a relatively informal basis with undergraduates, especially freshmen. They also can explore subject matter not included in the regular curriculum.

A typical seminar might be interdisciplinary in nature, Professor Schwartz explained, and could include laboratory work, field trips or guest speakers.

The seminar format is particularly valuable in introducing students to a department or discipline in which they can explore material

in depth before making a commitment to a major or research project, he added.

Some faculty members may also be interested in coupling giving a seminar with being a freshman advisor, with the advisees as seminar participants.

For further information, get in touch with Peggy Richardson, Rm 7-103, x3-3621.

Cooperative research proceedings published

Cooperative Research, the proceedings of a conference held at MIT in February 1980, under the joint auspices of MIT's Laboratory for Manufacturing and Productivity and the National Science Foundation, has been published by the NSF. The book is edited by Professor Nam P. Suh, director of the laboratory, and Professor Bruce M. Kramer, both of the Department of Mechanical Engineering.

Dr. Robert C. Seamans, Jr., dean of the School of Engineering when the conference was held, writing in the book's preface, says the book is unique because it contains "the advice, opinions and reactions of a spectrum of American leaders in a single volume. It is hoped that these proceedings... will eventually contribute to the development of innovative cooperative research efforts which will strengthen academia, American industry, and indeed, the country itself."

Oberlin elects Rotberg

Dr. Robert I. Rotberg, professor of political science and history at MIT, has been elected a trustee of Oberlin College in Oberlin, Ohio. He is a 1955 graduate of Oberlin and recently served as president of the Oberlin Alumni Association. Oberlin is the nation's oldest educational institution of higher education, having been founded in 1833. It now has 2,700 full-time undergraduates.

THE INSTITUTE CALENDAR

March 9-20

MISS THE TECH TALK DEADLINE?

Put your announcement on the MIT Cable System. "Today at the Institute" runs 24 hours a day on Channel 12 and can be viewed in Lobby 7, Lobby 10, and anywhere the cable is connected.

Simply submit announcement in writing to Rm 9-030. We prefer a day's warning, but faster action may be possible.

Useful also for correcting errors, notifying about cancellations, and dealing with emergencies.

Note: If you have met the Tech Talk deadline, your announcement is automatically put on the cable (except for exhibits and some multimeetings programs).

Freshmen are encouraged to attend departmental lectures and seminars. Even when these are highly technical they provide students one means to learn more about professional work in a department and field.

Events of Special Interest

Special Writing Center Mini-Sessions*—March 16, 5pm; April 6, 4:30pm, 14N-317.

International Cooking: An Evening of International Cuisine*—Come and enjoy demonstration of "Austrian" cooking by native Austrian. Technology Wives Organization, March 16, 7:30pm, Emma Rogers Rm 10-340. Admission: \$5.00 members; \$1 non-members.

St. Patrick's Day*—A Celebration of God's Mercy. The Sacrament of Penance. Tech Catholic Community, Thurs, March 17, 9pm, MIT Chapel.

Doing New Things in Old Ways—How People Move Into and Through Organizations*—Professor John Van Maanen, Sloan School of Management. A Perspectives Talk sponsored by the Personnel Office, the Provost's Office and Sloan School of Management, Tues, March 22, noon-2pm, Rm E25-111.

Seminars and Lectures Wednesday, March 16

High Performance Single-Mode Diode Lasers*—A.D. Ceruzzi, Laser Diode Laboratories. Optics and Quantum Electronics Seminar, 11am, RLE Conference Rm 36-428.

Some Generalizations of Objective Analysis*—Dr. Everett Carter, Harvard. Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915. Coffee, tea served, bring lunch.

Writing Center Mini-Sessions*—Verb Tenses and Sequence of Verbs, 1:15pm, Writing Center, 14N-317.

Megaprojects and How to Sell Them*—Arnold R. Vogel, Vice President, C.E. Lummus Construction Engineering and Management '83 Seminar, 3:30pm, Rm 3-270. Coffee at 3pm.

Spin Echos, Loschmidt's Paradox and the Second Law*—Professor John Waugh, Department of Chemistry, MIT. Thermodynamics Seminar, Miller Rm 1-114, Coffee at 3:45pm.

Poverty and Revolution in El Salvador*—Professor Martin Diskin, Professor of Anthropology, MIT Humanities Department. CIS Energy Policies in Latin America Seminar, 4pm, Rm E38-615.

Analytical Modelling of Hydrogen Transport in Reactor Containments*—Vincent P. Manno and Kang Y. Huh, Nuclear Engineering & Doctoral Seminar, 4pm, Rm NW12-222.

Geologic Arguments Supporting the orbital Theory of Pleistocene Ice Ages*—Prof. John Imbrie, Department of Geological Sciences, Brown University. Department of Earth and Planetary Sciences Seminar, 4pm, Rm 54-915. Tea at 3pm, Rm 54-923.

Some Practical Aspects of Refraction Diffraction Modeling*—Dr. Arthur Mynett, Delft Hydraulics Lab. Hydrodynamics Seminar, 4pm, Rm 48-308.

New Techniques in High Resolution Track Etch Autoradiography*—John Kirsch, Nuclear Engineering Department. Applied Radiation Physics Seminar, 4pm, Rm E25-202.

Large Space Structure Model Reduction and Control System Design*—Yeung Yam, graduate student, Dept. of Aero & Astro. Aeronautics Seminar, 4pm, Rm 33-206.

Thursday, March 17

The German Federal Elections: Results and Implications*—Dr. Guido Goldman, Executive Director, Center for European Studies, Harvard University. Center for International Studies Seminar, 12:15pm, Rm E38-762.

Building Energy Management Systems*—Thomas F. Vacha, Superintendent of Building Operations, MIT, and Andrew M. MacDougall, Jr., Facilities Control System Manager, MIT. MIT Joint Program for Energy Efficient Buildings and Systems, noon, Rm 1-114. Following the presentation there will be a tour of the MIT Facility from 1-2pm.

The Number of Pivots Required in the "Average" Linear Program*—Professor Richard Stone, Harvard University. Operations Research Center Seminar, 4pm, Rm E40-298. Refreshments served.

Thermal Techniques in the Measurement of Perfusion: Applications in Surgery, Hyperthermia, and Physiology*—H. Frederick Bowman, III, PhD. Assoc. Prof. Electrical Engineering, Northeastern U; Sr. Academic Administrator, Harvard/MIT Div of HST. Harvard/MIT Division of Health Sciences and Technology. HST 590 Biomedical Engineering Seminar, 4pm, Rm E25-117, Whitaker Bldg.

Math in 3D: Concepts and Construction Discussion of Compton Gallery Exhibition*—Louis Rosenblum, '42; sculptor Morton C. Bradley and his associates. MIT Museum,



"Sleeper's Cave, 1982," gouache on paper by artist Judith Linhares of New York, whose work is being shown along with that of Marilyn Holsing of Philadelphia in the Hayden Corridor Gallery through May 1. Entitled "Strange Stories" the exhibition deals with human myths, riddles and dilemmas. Ms. Linhares, an abstract expressionist painter who turned to figuration some 20 years ago, has said she is committed to the processes and experiences of the unconscious.

5:30pm, Bush Room (10-105). Reception following in Compton Gallery, 6pm.

Allocating the Satellite Orbital Arc*—Don Jansky, Steven Levy, Frank Subaran. Research Program on Communications Policy Seminar, 4pm, Rm 37-252.

The Role of the Non-Commissioned Officer*—The Sergeant Major of the Army, William A. Connelly, Department of Military Science, 4pm, Rm 4-270.

Estimation of Three-dimensional Tumor Size Distributions from Samples of Two-dimensional Cross Sections*—Professor Grace Wahba, Department of Statistics, University of Wisconsin, Madison. Statistics Seminar, 4pm, Rm 2-146. Refreshments at 3:30pm, Rm E40-111.

Microbial Polysaccharides—Evolving Polymers*—Dr. I.W. Sutherland, Department of Microbiology, University of Edinburgh, Scotland. Department of Nutrition and Food Science Seminar, 4pm, Rm 16-134.

A Solution Method for Planar and Axisymmetric Contact Problems*—Anil Chaudhary, graduate student. Structural Engineering Seminar, 4pm, Rm 1-236.

Can Time be a Dynamical Variable?*—Professor T.D. Lee, Columbia University. Department of Physics Seminar, 4pm, Rm 26-100. Refreshments at 3:30, Rm 26-110.

Friday, March 18

The Solubility of Various Solid Compounds in Several Chemically Different Supercritical Gases*—William J. Schmitt, Chemical Engineering Seminar, 2pm, Rm 66-110.

Phase Equilibria at Elevated Pressures Related to Supercritical Fluid Extraction*—Prof. Michael E. Paulaitis, Department of Chemical Engineering, University of Delaware. Chemical Engineering Seminar, 3pm, Rm 66-110.

Low Frequency Stability of Hot Electron Plasmas*—Tom Antonson, University of Maryland. Plasma Fusion Center Seminar, 4pm, Rm NW14-2209. Refreshments at 3:45pm.

Small Angle Neutron Scattering Studies of Strongly Interacting Colloids*—Professor S.H. Chen, Department of Nuclear Engineering, MIT. Center for Materials Science and Engineering Colloquium, 4pm, Rm 9-150. Coffee at 3:30pm.

Role of Basal Ganglia in Movement: Single Cell Studies in Behaving Primates*—Dr. Mahlon Delong, Department of Neurology, John Hopkins School of Medicine. Psychology Colloquium, 4:30pm, E25-111.

Monday, March 21

U.S. Policy Towards Mexico*—Professor Peter H. Smith, Humanities. Alumni Council Program, 5:30pm, Morse Hall, Walker Memorial. Admission: \$10/person at door.

Tuesday, March 22

Endothelial Permeability of The Squirrel Monkey*—Ronald Tompkins, MD, Health Sciences Technology, Chemical Engineering, MIT. Health Sciences Technology (HST) and Chemical Engineering Seminar, 2pm, Rm 66-350, Lewis Room.

The Orion-KL Infrared Cavity*—Professor Reinhard Genzel, University of California, Berkeley. Astrophysics Colloquia, 4:15pm, Marlar Lounge, Center for Space Research, Rm 37-252.

Thursday, March 24

The Role of Agencies Which Fund and Use Research on Women and Development*—Jocelyne Albert, USAID Office of Women and Development, and Katherine McKee, Program Officer, Rural Poverty and Resources program, Ford Foundation. MIT/Harvard Women and International Development Group, 4pm, Rm E38-762.

Friday, March 25

Emission Near the Plasma Frequency During Lower Hybrid Current Drive Experiments on PLT*—Philip Ethimion, Princeton Plasma Physics Laboratory. Plasma Fusion Center Seminar, 4pm, NW14-2209.

Monday, March 28

Magnetic Bearings New Solutions and Problems in Machine Dynamics*—Professor G. Schweitzer, Institut für Mechanik, Eidgenössische Technische Hochschule, Zurich. Mechanical Engineering Special Seminar, 3pm, Rm 5-134.

Topology and Evasiveness*—Professor Jeffrey Kahn, MIT Department of Mathematics. Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served at 3:30pm, Rm 2-349.

Mussel Watch 1976-1978 Data: Status of Chemical Contamination of U.S. Coastal Waters*—John Farrington, WHOI. Water Resources and Environmental Engineering Seminar, 4pm, Rm 48-316.

Waste Heat Recovery in Diesel Engines*—Professor J.P. Ioannidis, Marine Engineering Seminar, 4:15pm, Rm 1-190.

Tuesday, March 29

Gait Analysis and Its Application to Osteotomy Patients*—Robert Fijan, MS Candidate, Mechanical Engineering Department & Andrew Hodge, MD, Clinical Assistant in Orthopedic Surgery, Mass General Hospital. Rehabilitation Engineering Seminar, 4pm, Rm 1-114.

Size, Power and Speed*—Maurice V. Wilkes, Digital Equipment Corporation, Hudson, Ma. & MIT. VLSI Seminar, 4pm, Rm 9-150.

New Ages for Clouds and Stars*—Dr. Steve Stahler, Harvard-Smithsonian Center for Astrophysics. Astrophysics Colloquia, 4:15pm, Marlar Lounge, Center for Space Research, Rm 37-252. Refreshments at 3:45pm.

Statistics Center Seminar*—Professor Theo Cacoullos, Statistics Unit, University of Athens, Greece. Seminar, 4pm, Rm E40-298. Refreshments served.

Organization of DNA Sequences and Replication Origins at Yeast Telomeres*—Dr. Bik-Kwoon Tye, Biochemistry, Molecular & Cell Biology, Cornell University, Ithaca, N.Y. Biology Colloquium, 4:40pm, Rm 10-250.

Wednesday, March 30

Solitons in Optical Fibers*—L.F. Mollenauer, Bell Laboratories. Optics and Quantum Electronics Seminar, 11am, RLE Conference Rm 36-428.

SST Changes, Downwelling Kelvin Waves and the Onset of the 1982 Equatorial Pacific Warm Event*—Dr. Ed Harrison, MIT. Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915. Coffee, tea served, bring your lunch.

Gerunds, Participles, and Infinitives*—A Mini-Session, 1:45pm, Rm 14N-317, The Writing Center.

Emerging Trends in Public Project Financing*—Robert Snowber, Vice President, Parson, Brinckerhoff, Quade & Douglas. Construction Engineering and Management 1983 Seminar, 3:30pm, Rm 3-270. Coffee at 3pm.

Department of Earth and Planetary Seminar*—Dr. Wallace Broecker, Lamont-Doherty Geological Observatory, Columbia University, 4pm, Rm 54-915.

Some Thermodynamics and Electrochemical Aspects of Phosphoric Acid and Molten Carbonate Fuel Cells*—Dr. H. Russell Kunz, Power Systems Division, United Technologies Research Center. Thermodynamics Seminar, 4pm, Rm 1-114.

Estimator Design for Helicopter Individual Blade Control*—Robert McKillop, graduate student, Department of Aero & Astro. Aeronautics & Astronautics Seminar, 4pm, Rm 33-206.

Agrarian Policies in Latin America: Implications of Recently proposed Agricultural Agreements Between the United States and the EEC*—Oscar Ruiz, Research Fellow, MIT International Food and Nutrition Program. CIS Energy Policies in Latin America Seminar, 4pm, Rm E38-615.

Thursday, March 31

Difficulties of Identifying Serious High-Rate Criminal Offenders*—Dr. Jan Chaiken, The Rand Corporation. Operations Research Center Seminar, 4pm, E40-298.

Use of Streptomyces Phage Vectors for Cloning Antibiotic Production Genes*—Dr. Keith Chater, The John Innes Institute, Norwich, England. Department of Nutrition and Food Science Seminar, 4pm, Rm 16-310.

The Development of Bioengineering at Massachusetts General Hospital*—Dr. Ron Newbower, MGH. Harvard-MIT Division of Health Sciences & Technology. HST 590: Biomedical Engineering Seminar, 4pm, Rm E25-117, Whitaker Bldg.

Friday, April 1

Transportation Planning: A Shipper/Carrier Partnership*—Ray J. Michel, Corporate Distribution Manager, Digital Equipment Corp., Center for Transportation Studies Luncheon Seminar, noon, Mezzanine Lounge, Student Center.

Study of Polycyclic Aromatic Hydrocarbons in an Atmospheric Flat Flame Burner*—Samuel Amponah, Chemical Engineering Department Seminar, 2pm, Rm 66-110.

Combustion of Moist Coals and Coal-Water Mixtures*—Professor L. Douglas Smoot, Dean College of Engineering, Science, and Technology Brigham Young University. Chemical Engineering Seminar, 3pm, Rm 66-110.

Present and Future Aspects of Mechanical Heart Development*—Vicotr Poirier, Director, Artificial Heart Program, Thermo Electron Corporation. Mechanical Engineering Seminar, 3pm, Rm 3-133.

Physics Goals of the Advanced Toroidal Facility*—James Rome, Oak Ridge National Laboratory. Plasma Fusion Center Seminar, 4pm, NW14-2209. Refreshments at 3:45pm.

Monday, April 4

Long Waves Generated by Groups of Shoaling Short Waves*—Chiang C. Mei, MIT. Water Resources and Environmental Engineering Seminar, 4pm, Rm 48-316.

Stability of Inviscid Karman Vortex Streets*—Professor Philip Saffman, California Institute of Technology, Pasadena, Calif. Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments at 3:30pm, Rm 2-349.

Balancing of Internal Combustion Engines*—Professor J.P. Ioannidis, Marine Engineering Seminar, 4:15pm, Rm 1-190.

Tuesday, April 5

Culture in its Place: Anthropology and Architecture*—Edward Robbins, Assistant Professor of Architecture, MIT. Anthropology and Architecture Program, noon, Rm 20B-136.

Design of Orthopedic Implants*—Peter Walker, MD, Director of Biomechanics, Brigham & Women's Hospital and the VA Medical Center, W. Roxbury. Rehabilitation Engineering Seminar, 4pm, Rm 1-114.

Device Technology Comparison in the Context of Large Scale Digital Applications*—Paul Solomon, IBM, T. J. Watson Research Center, Yorktown Heights, N.Y. VLSI Seminar, 4pm, Rm 9-150.

Real-time Systems*—Acoustical and Behavioral Research Center, Bell Labs Visiting Professor of Music and Technology, MIT. 4pm, Rm 66-110.

Engine Starting*—Mr. R. Mazzawy, Pratt & Whitney Aircraft, E. Hartford, Ct. MIT Gas Turbine and Plasma Dynamics Laboratory-Department of Aeronautics and Astronautics Seminar, 4:15pm Rm 31-161.

Community Meetings

MIT Cambridge Chapter, American Association of Retired Persons*—Chapter meeting, wine tasting, Tues, March 22, 5pm, Student Center Mezzanine Lounge.

Alcohol Support Group**—meets Weds, 7:30am, sponsored by MIT Social Work Service. Call Ruth at x3-4911.

Overeaters Anonymous**—Will meet weekly in Rm 4-149 on Sunday morning, 9:30am-11am. All welcome.

Parents Support Group**—Supportive system for working parents of the MIT Community, open to prospective parents as well as new parents, March 22, April 5, April 19, Rm E23-501. Call x3-6320 or x3-1744.

Al-Anon*—Meetings held every Tuesday, 12-1pm, Moore Room, 6-321; every Friday, 12-1pm, Health Education Conference Rm E23-297. The only requirement for membership is that there be a problem of alcoholism in a relative or friend. Call Ruth or Shirlee, x3-4911.

Reflexology and Health*—Bettina Richichi, every Tues, noon-1:30pm, Rm 1-134. Sessions demonstrate benefits of reflexology. Call x3-3979.

MIT Faculty Club**—The Club is open Mon-Fri. Luncheon hours: Noon-2pm; Dinner hours: 5:30-8pm. March 16: Complimentary Crackers & Cheese; March 18: Luncheon Buffet. March 24: Italian Night, chicken cacciatore, etc., \$9.75 + tax. For reservations call x3-4896.

Nightline*—We're a student-run hotline from 7pm-7am on the MIT campus. For information or just to talk, give us a call at x3-7840.

MIT Women's Forum**—Part of a lecture series conducted by women professionals in the Boston area. March 21: Dr. Irene Stiver, Women and Work: Out of the Frying Pan into the Fire, noon, Bush Room; April 1: Ideas of Inferiority Throughout the Life Cycle, Dr. Paula Wolk, noon, Bush Room.

Weekly Exercise Classes**—Patricia Murray, one of Maggie Lettvin's teachers. Technology Wives Organization. Thurs thru-May 12, 7:30-8:30pm, Exercise Rm, 2nd flr, DuPont Gym. \$2/TWO members; \$2.50/non-TWO members per class.

Maggie Lettvin's Exercise Class**—For less capable women, Thurs, 11am, Rm 8-219. Wear loose, comfortable clothing. Athletic card req.

Maggie Lettvin's Self-Designed Fitness Satellite Classes**—First class every Mon, Wed & Fri, Alumni Pool area, 1-2pm, taught by Janice Novak. 2nd class Wed & Fri, Rm 8-219, 1-2pm taught by Suzanne Walker. Wear leotards & tights or sweat suits. Athletic card req.

Maggie Lettvin's Self-Designed Fitness Classes**—Mon-Fri, noon, wrestling Rm, DuPont Gym, 5pm class, T-Club Lounge, gym, begins Feb. Wear loose, comfortable clothing. Athletic card req.

DeJeuner Francais*—Dominique Rabate, Visiting instructor from the Ecole Normale Supérieure. Foreign Languages & Literature. A French lunch every Tues, noon, Muddy Charles Rm. For information call x3-4771.

Wife's Group*—Mar. 16: Life Styles of Married Academic Women, Prof. Reinharz, Sociology Dept., Brandeis University, 3-5pm, Rm 491, Student Center; Mar. 23: Having a Baby in Boston, Barbara Merrifield, midwife/nurse/practitioner, 3-5pm, Mezzanine, Student Center; Mar. 30: Demonstration of Easter Egg Decorations, European members, 3-5pm, West Lounge. All women in the MIT Community welcome. Babysitting available during afternoon groups in Rm 473. Morning Group-Mar. 16: Science Museum; Mar. 23: Shopping tour of Boston; Mar. 30: Children's Museum. Meet at East-gate Roof Lounge at 9:15am.

AARP Wine Tasting Party*—United Vinters representing Inglenook Wines. Short presentation by the Area Coordinator for the AARP Defensive Driving Program, March 22, 5pm, Mezzanine Lounge, Student Center.

Technology Wives Organization—is accepting applications March through April 11 from those wishing to sell at the Spring Crafts Fair, to be April 26 & 27, must be a member to participate. For information call 494-0253.

Volunteers*—to help organize May 1, Walk For Hunger, assist in registering, driving, etc. For information call Jackie, x3-1957 or 58 to schedule organizing meeting.

Activities Committee

For further information on MITAC events, call the MIT Quarter Century Club at x3-7914. Anyone interested in joining the MIT Activities Committee should contact Richard Caloggero at x3-4643.

New England Flower Show*—Sat, March 12-Sun, March 20. Bayside Exposition Center, Exit 17 off the Southeast Expressway. Open 10am-10pm, except Sundays when doors close at 8pm. Discount tickets are \$4. (regular \$6 tickets).

"Shear Madness"—Wed, March 23, Charles Playhouse, Boston's longest running comedy. Discount tickets are \$11 (regular \$13 seats) must be purchased by Fri, March 11. 8pm performance.

Boston Breakers of the New U.S.F.L. vs The Oakland Invaders*—Sun, April 10. Boston University Stadium, 1:30pm. Tickets are \$12 and must be purchased by Fri, March 18.

MITAC, the MIT Activities Committee offers discount movie tickets for General Cinema and Sack Theaters. Tickets are \$2.50 each and are good 7 days a week, any performance. Regular theater admission is \$4 so you can save \$1.50 per ticket. In addition MITAC will be selling discount passes for the Museum of Science which are good anytime through Dec. 31, 1983. Passes are \$1. plus \$1. at the door, a \$2.50 savings on the regular \$4.50 adult admission.

Social Events

Acquaintance Luncheon for Filipino Community at MIT and Greater Boston Universities*—MIT Filipino Association, Sat, March 19, noon, Ashdown House Dining Hall.

Movies

Camelot*—LSC Movie, Mar. 18, 6:30 & 10pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

Bambi*—LSC Movie, Mar. 19, at 2, 7, & 9:30pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

Papillon*—LSC Movie, Mar. 20, 6:30 & 10pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

The Sound of Music*—LSC Movie, Mar. 25, 6 & 10pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

The Black Stallion*—LSC Movie, Mar. 26, 7 & 10pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

South Pacific*—LSC Movie, Mar. 27, 6:30 & 10pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

Quick Billy, Castro Street, and All My Life*—Bruce Baillie. Film/Video Section, Mar. 28, 7pm, 275 Mass. Ave.

The Gold Rush*—LSC Classic Movie, April 1, 7:30pm, Rm 10-250. Admission: \$1 w/MIT or Wellesley ID.

Pink Floyd: The Wall*—LSC Movie, April 1, 7 & 9:30pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

2001: A Space Odyssey*—LSC Movie, April 2, 7 & 10pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

2001: A Space Odyssey*—LSC Movie, April 3, 6:30 & 9:30pm, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

La Quarantaine*—Anne-Claire Poirier. Film/Video Section, April 3, 7pm, Rm 54-100.

Dance

Ongoing Yoga Classes*—Begin now. Intermediates, Monday, 5:45; beginners, 7:20; Thursday, lunchtime, 12:05. All levels begin in Feb., Rm 10-340. For information call Ei Turchinetz, 862-2613.

Preschool Dance Classes**—Instructor, Pamela Day. Dance/Creative Movement Classes for children, ages 3-4. Classes begin now and meet Mon and Wed, 2-3pm. Classes are ongoing and children may join anytime. Pamela, x3-5758.

MIT Dance Workshop**—Regular meetings Beginning Technique, M, W, 3-5, T-Club Lounge in Dupont; Composition/Improvisation, Th, 3-5; Intermediate Technique, T, Th, 5:30-7pm, Walker 201. Beth Soll, Director. For information call x3-2877.

Wellesley Events

Wellesley College Exhibition
Gallery Talks*—Sundays at 3pm for general public, by special request for groups of more than 10. Interpreter for hearing impaired available second Sunday each month. Access for the handicapped available. Admission: Free. Hours: Mon.-Sat 10am to 5pm; Sundays 2 to 5pm.

Drawing Exhibition*—through April 10. Recent work by Judith Davies, Bill Drew, Arlene Grossman, Bunny Harvey, James Rayen and Susan Schmidt. Jewett Arts Center.

Coordinating Family and Work*—March 31. Laura Lein, PhD & Lydia O'Donnell, PhD. Wellesley College Center for Research on Women, 12:30, Cheever House Library.

Readings

Readings from the MIT Writing Program*—Claudia Von Canon, novelist, MIT Music Faculty, *The Inheritance*, Mar. 17, 5pm, Rm 14E-304; Toni Cade Bambara, novelist, *The Salt Eaters*, Mar. 29, 7pm, Student Center, Mezzanine Lounge.

Music

Chapel Concert Series*—Thurs, March 17: harpsichordist, Dorothy Wang and John Tyson, recorders; March 24: harpsichordist, Mitzi Myerson; March 31: Louise Treitman, viola da gamba; Anthony Martin, baroque violin; harpsichordist, Mitzi Myerson. Noon, Chapel.

Piano Recital*—MIT affiliated artist Paul Orgel, plays Copland, Mozart, Debussy and Mussorgsky. March 16, 8pm, Kresge Auditorium.

When Is Again: The Paradox of Repetition*—Faculty Forum Music Lecture. Jeanne Bamberger, MIT music faculty, Martin Brody, Wellesley College music faculty, March 17, Rm 4-160, 5:15pm.

Computer Music: New Freedoms in Musical Expression*—Michael McNabb, Center for Computer Research in Music and Acoustics, Stanford University, Seminar, March 30, 7pm; Concert: Computer Music from Stanford, 8:30pm, Rm 10-250.

Exhibits

COMMITTEE ON THE VISUAL ARTS

Hayden Gallery: Wakeby Day/Wakeby Night*—Exhibition of largest monotypes made, commissioned from artist Michael Mazur, Boston, for MIT's new dormitory, including two completed triptychs, sketches, drawings and intermediary scale monotypes. Public opening: March 11, 5-7pm. Artist will attend. Through April 24, 10am-4pm. Free.

Hayden Corridor Gallery: Strange Stories*—Paintings on paper by two artists, Judith Linhares of New York and Marilyn Holsing of Philadelphia, reworking traditional myths in contemporary forms. Through May 1. Free.

THE MIT MUSEUM

New exhibits at The Museum: AXE*—Understanding the Afro-American experience. Photographs, electrostatic prints and "Afro-ethnographs" by visual anthropologist and artist Reginald L. Jackson. Through March. **Witness and Belief***—Oil painting by Roy Howard Brown. Through March. Weekdays 9am-5pm, 265 Massachusetts Avenue. Free.

Ongoing exhibits: **Jan Van Goyen (1596-1656)***—Five chalk drawings by the Dutch landscape master; **Mechanical Computing:** slide rules, slide rules, and more slide rules; **George Owen '94 Yacht Designer***—Drawings, half-models and photographs of sailing vessels by a master ship builder and designer (MIT '94); **A Bunch of Electrics: An MIT Electrical Engineering Retrospective.** Including the Bush Differential Analyzer and the Edison Dynamo given to MIT by Thomas A. Edison in 1887. Through June.

Margaret Hutchinson Compton Gallery*—Math in 3D: Morton C. Bradley's richly colored geometric sculptures revolve in space to evoke Plato's thought: "Perfect beauty is geometric beauty." Through March. Weekdays: 9am-5pm; Saturday 10am-4pm. Rm 10-150. Free. —Related discussion, **Math in 3D: Concepts and Construction**, see Thursday, March 17.

Hart Nautical Galleries*—William A. Baker '34: A Tribute. A memorial exhibition of his watercolors, drawings, plans of historic vessels, etchings and models. Through June. Daily 9am-10pm, Rm 5-126. Free.

Ongoing exhibits: **MIT Seagrant**—A review of MIT ocean research; **English Harbor Scenes 1829**—Etchings by E.W. Cooke. Etchings published in London in 1829 show the variety of ships and craft to be found in English harbors at the beginning of the Industrial Revolution; **Collection of Ship Models**—Half-models and drawings. Historical view of the design and construction of ships.

Corridor exhibits: Building 1 & 5, 2nd floor: **John Ripley Freeman Lobby.** Building 4: **Samuel Cate Prescott, Rogers Building, Norbert Wiener, Karl Taylor Compton, Community Service Fund, Ellen Swallow Richards.** Building 6: **Laboratory for Physical Chemistry.** Building 8: **Solar Energy, Society of the Sigma XI.** For information call MIT Museum, X3-4444.

CREATIVE PHOTOGRAPHY LABORATORY

Stereoptics*—A selection of creative and technical spatial images in a variety of 3D formats, from stereoscopes to holograms. Opening March 14. Monday-Thursday 9am-11pm; Friday 9am-6pm; Saturday 10am-6pm; Sunday noon-8pm. Rm W31-310. Free.

Stroboscopic Light Laboratory Corridor*—Permanent exhibit of high speed photographs. Main corridor, near Rm 4-405.

Rotch Visual Collections*—Changing exhibitions pertinent to the School of Architecture and Planning. Weekdays 8:30am-6pm. Rm 7-304. Free.

Department of Urban Studies and Planning*—On and Off the Clock: **Aspects of the Work Experience**, photographs by Barry Cohen. Through Mar. 25, Mon-Fri, 9-5, Rm 7-335.

Exhibition of work by MIT Student Art Association Drawing Group*—Art Show, March 15-20, 11am to 8pm, Student Center, West Lounge.

Projects from "Make a Quilt" - IAP '83*—Rotch Visual Collections, Rm 7-304, 8:30-6pm weekdays. Through March 18.

*Open to the public

**Open to the MIT community only

***Open to members only

Send notices for Wednesday, March 30, through Sunday, April 10, to Calendar Editor Rm 5-113, before noon, Friday, March 25.



Apple Hill Players to perform

The Apple Hill Chamber Players will give a special concert in Kresge Auditorium Monday, March 21, at 8:30pm to conclude a day-long meeting of atmospheric scientists from throughout the world.

The nationally recognized Apple Hill group who were called "positively irresistible" in a recent New York Times review, will perform some favorite music of the late Professor Jule Gregory Charney, former head of the MIT Department of Meteorology and Physical Oceanography. Events of the Charney celebration day are being organized by his MIT colleagues and the American Meteorological Society.

The concert will be open to the public with a general admission price of \$4, \$1 for students and senior citizens. Tickets may be obtained at the box office, one hour before the performance; in Lobby 10, from 11:45 to 1:30, Friday, March 18, or through Jane McNabb, Rm 54-1712, either in person or by mail.

Program for the concert will be Mozart's *Fantasia in F Minor* for piano four-hands, K. 608; *Piano Quartet in A Minor* Opus 67, by Joaquin Turina and Schubert's *Quintet in A Major*, D. 667, "The Trout".

The Apple Hill Chamber players are a seven-person group with a 13-year history as

artists-in-residence at the Apple Hill Center for Chamber Music in Nelson, N.H. They frequently tour New England and have made several national tours.

In recent time they have increased their attention to new work by American composers. In late February they gave the first Boston performance of the *Piano Quintet* of John Harbison, professor of music at MIT who is now on leave to serve as Exxon composer-in-residence with the Pittsburgh Symphony Orchestra.

Writing in the Boston Globe March 1, music critic Richard Buell praised both the composer and the performance by the Apple Hill group. He said "If so much of what is being written today all too obviously comes out of an exhausted and hermetic museum culture, this music stated in compelling terms that that need not be so."

Writing of the musicians, he said "Their music was fresh, direct, unaffected... it must be in them, for it abides from season to season." Mr. Buell cited especially Robert Merfeld, piano; Anthony Princiotti and Sue Rabut, violins; Betty Hauck, viola, and Beth Pearson, cello "for a performance unlikely to be excelled for energy, rightness of sound and manifest commitment."

16 win minority scholarships

Ten upperclass students from five departments in the School of Engineering, and six first-year students have received scholarships totaling \$32,600 from the National Action Council for Minorities in Engineering (NACME) during the current academic year.

The council scholarships are awarded annually to minority students who have demonstrated the interest and academic ability necessary to succeed in engineering, and who need financial assistance. MIT is one of 125 engineering schools selected to receive the NACME Incentive Grants. Schools are chosen because of their demonstrated commitment to recruiting and graduating increasing numbers of minorities, the NACME said.

The following MIT students are the recipients of this year's grants:

Class of 1984: Lance Parker (VI) and Nkervewe Udofia (X).

Class of 1985: Leola Alfonso (VI), Lloyd Bela (XVI), Randall Cook (XVI), Yancy Dennis (X), Courtney Grey (II), Linda

Maxwell (II), Alejandra Menchaca (X) and Sylvia Zachary (VI).

Class of 1986: Juan Alvarez, Mary Bugman, Elaine Levy, Rose Pena, Elliott Williams, Noel Zamot.

The NACME is a coalition of corporate leaders, university administrators, local program directors and others committed to increasing the number of minority engineers in the United States in future years. Its goal is 8,000 graduates in 1988. Financial support for the NACME is provided by major industrial organizations that are seeking to recruit minorities for technical and managerial careers. It is cochaired by John R. Opel, president and chief executive officer of IBM, and Walter F. Williams, president of Bethlehem Steel Corp.

Selections of the MIT recipients was carried out by the MIT Financial Aid Office, with cognizance of the Office of Minority Education and the Office of the Dean of Engineering.

Von Canon's second novel published

Claudia Von Canon, a lecturer in music at MIT, will read from her newly published novel, *The Inheritance*, Thursday, March 17, at 5pm in Room 14E-304 as part of the spring reading series of the MIT Writing Program.

This is her second novel published by Houghton Mifflin Company of Boston. Her first, *The Moonclock*, tells a story of the final year in the life of a spirited 17th-century Austrian girl. The New York Times said it "is filled with the intriguing details of menus and costumes, of drawing room conversations and below-stairs folk remedies. The author... has created a remarkably appealing and effective portrait."

Ms. Von Canon was born and educated in Vienna and came to this country in 1956 after studying the harpsichord and voice in Austria. She has said that her desire to write the lives of people in other times arose from the experiences of her childhood and youth in Vienna. "I know these times," she said. "I grew up with them because I grew up in Vienna. When you walk to school there every day you walk through seven centuries."

The new book set in the 16th century involves a 19-year-old student who returned home from his medical studies to take over his family estate after his father committed suicide to avoid death at the stake because of the Inquisition. Ms. Von Canon said she wanted

to tell the story of the confrontation with ideas of a young student in that time of scientific "opening" in the midst of religious, political and social upheavals. Just as the young student has first learned to think, she said, he has to apply his skills to the problems he has to solve in the violent world of his time.

Publication date for *The Inheritance* is April 27. The reading is free and open to the public.

Wine tasting set

The next meeting of the MIT Cambridge chapter of the American Association of Retired Persons will be held Tuesday, March 22, at 5pm in the Student Center Mezzanine Lounge.

Feature of the meeting will be a wine tasting sponsored by United Vintners representing Inglenook Wines. Also on the program will be a short presentation by the area coordinator on the AARP defensive driving program and a brief business meeting.

Membership in the chapter is open to all persons in the community who are age 55 or older, whether or not they are retired. For further information, call the chapter office, x3-7914.

Novelist to read

Novelist Toni Cade Bambara, who wrote *The Salt Eaters*, will spend an afternoon and evening at MIT, Tuesday, March 29.

She will give a reading from her work at 7pm in the Mezzanine Lounge of the Student Center. Sponsored by the MIT Writing Program, it is free and open to the public.

From 3 to 5pm students and faculty are invited to meet with her in an informal discussion at the Writing Program office, Rm 14E-310. Copies of selected stories as well as an excerpt from her forthcoming book on the Atlanta murders are available now at the same office.

CLASSIFIED ADS

Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and extension. Ads must be submitted in person to the Tech Talk Office or mailed to Rm 5-113. Persons who have no extensions or who wish to list only home telephones must present Institute identification. **Deadline is noon on the Friday before publication.**

For Sale

10 pc Colonial correlated bedroom set, solid maple, 12 antique pine by Hale, \$800; solid pine loveseat, 2 matching platform rockers, treatle coffee tbl, \$500. both exc cond. Call 389-9263.

Single bed, exc cond, \$30. Call x3-5150 or 876-7990.

Z80 softcard for Apple, 16K dynamic ram, Fortran software, all best offer. Call 936-1300.

78rpm records of 20's; 30's; semi classical; 16 mm model E Kodak movie camera. Call 497-4197.

Hammond organ "piper" model, 12 choices, 7 rhythms, auto/man, chords, vibrato, reverb, bass, swell pedal, music bench w/storage & instruction/music bks, \$350. Fred, 438-9363.

Typewriter, Sears manual type, hardly used, lks and works like new, comes w/case, first \$15 takes it. Dan, x3-2050.

Chippendale love st, blue vinyl tufted, exc cond, \$300; Qn Anne tufted arm chr, exc cond, \$80. Richard, x3-3025 or 262-2863.

Longdon Fog, L sz 14, new cond, \$50; handmade Norwegian sweater, sz s, \$45; wool upholstery material, brown, best offer, GE AM/FM radio, \$15, oriental rug, \$400. Call x3-6085.

2 LR lamps, \$10/per; 2 LR mahogany step end tbls w/coffee tbl, \$65/for three; 3 pc LR set, worn, nd covers, grn, \$75. John, x183-270, Bates Linac Middleton, Mass.

HP-41C memory modules, (82106A), 2 for \$35. Tom, x3-5641.

Damaged 23" Ross 10-spd, gd for parts. Beth, x5-9867, dorm.

10-spd Pro-Am bicycle, 1 1/2 yrs old, \$50. Call, 494-1163 or x3-8468.

9 in. b&w monitor, exc cond, hooks directly into Apple II, \$50/best. Jeff, x5-9507 eves.

Holographic jewelry, clear, colorful, 3-dimensional, white light holograms w/chains & pendants, reasonable priced. Tom, 225-8846.

13" Toshiba color TV, 1 1/2 yrs, like new, \$230/best. Linda, x3-8114 or 494-8925.

Precision roller skates, \$60, new, hardly used, \$35. Steve, 536-1300.

Iceboat w/skates & interchangeable wheels for yr round use, new \$650, now \$424/best. Steve, x3-5318 or 331-6709 eves.

Stereo loudspkr, Dynaco, 3-way, acoustic suspension, \$200/pr; integrated amp, Heathkit, 50 watts/ch rms, \$200; must sell, negot. Dan, x4432 Lincoln or 738-7949 eves.

Refrig, GE 16 cu ft frost free, exc cond, 3 yrs old, \$300. Call x3-5967 or 646-8123 eves.

IBM Model C elec typewriter, wide carriage, \$150; Smith Corona Coronamatic prot elec typewriter, \$110. Charles, x2584 Lincoln.

Natural wood living rm furn, love seat, coffee tbl, end table, nag rack, paid \$500, ask \$250. Full bed, \$95. misc, living country. Call 738-7079.

Tent trailer, 1981 model, used 1 season, slps 8, incl sink, gas stove, ice box, immaculate, \$2,800. Roger, x3-7818.

7 ft dk blue, lt blue & wht striped sofa, gd cond, glass top chrome base coffee tbl, asking \$200/both. Linda, x3-4905, 3-5pm.

VW parts incl trailer hitch, rebuildable htr boxes, valve cover gaskets, useable transm & misc hardware, \$30/lot; Beetle roof rack, old but useable, \$25. Guy, x4810 Lincoln or 862-5017.

Unibus cards, cor memory, dynamic memory, 8 kn, 16 kw, communications boards, 4 port multiplexed serial board, misc others. Also DL-11A, DL-11B's. Really cheap. Brian, x5-8452, 3pm-2am.

HP-97 calculator, \$280; sz 9-12 Chipewak, Vibram soled, insulated bts, \$36; 12x18x30 trunk, \$20; all exc cond, prices negot. Ken, x3-6082 or 782-7515.

Bed rm set, 1 tall dresser, 1 dresser w/mirror, hd board & frame, full sz, \$200/best; sound design stereo w/cassette & trnbl, \$150; couch, \$30; chr, \$30. Nate, 569-4849 lv message.

Manual typewriter, gd cond, \$35; beginner's darkrm set w/enlarger, safe-light, trays, etc, \$40; 35 mm SLR Kowa camera w/normal lens, \$35. Mike, 497-7763 after 4pm.

Small mahogany desk w/glass top, \$95; wicker desk, \$65; no drawer, recent purchase from Pier 1. Call 646-4207.

PDP-11/23 w/¼ MB memory, 5 MB hard disk, terminal, software, cabinet, will split up/change configuration, \$600/negot. Call 262-0609 late eves.

Upright piano nds few strings & tuning, otherwise, gd cond, \$100/best. Sue, x3-2148 or 782-8547.

4-drawer file cabinet, gd cond, \$75/best. Katy, x3-4425.

Stove pipe, 8 in. triple wall for fireplace; 1/2 retail price, hospital bed, \$250/best. Jake, x8-1478 Draper.

Piano, Starr spinet, 39" hi, walnut cabinet w/bench, gd starter or practice piano, \$500. Call x3-6998 or 547-0150.

Guitar, black Ibanez Les Paul copy, rarely used. Jeremy, 267-4935.

Wooden drop leaf tble, \$35; b&w TV, \$50. Beth, x3-4680 or 666-0858.

Gd old refrig, \$50; 2 small tables, \$25/ea; 1 round K oak tbl, \$200; 1 grn couch, \$50. Call x3-7944 T. Th or 495-9275 M,W,F.

Red Sox tickets, 1 pr, lower box left field, Sun, 4/17, Tex, 9/4 Sea. \$16/pr. Call x3-1427.

Panasonic color TV, \$150; z-SA800-2 8" floppy disk drives, rack mount & power supply, 175 each; also selling z-SA900 8" disk drives at \$75/ea. All items full operational. Clive, 628-7876.

Small wood desk, dbl mattress & kitchen supplies. Miriam, x3-2982 or 566-5528/

Leica bick 135 Elmarit M f2.8 lens w/finder attachment, new (box, shade, caps & blank warranty cards) Leitz cat. #11829, \$450; Hasselblad 12 exposure back, exc cond, \$150. Claudio, 353-2607.

Yashica 42-75 zoom lens, under warranty, w/case & filters, \$80; men's 21", 10-spd, gd cond, \$75; women's dnhill ski bt, sz 8, \$20. Call x3-1691 or 876-4366.

Gibson elec guitar, Les Paul series, nat walnut, looks sounds good, hard case, \$250. Joe, 536-1780.

Two BSO tickets for April 5, second balcony, \$11/ea. John, x8-2002 Draper.

Schwinn 10-spd W, bicycle, hvy, sturdy, perf for city use, \$75; access avail, swivel rocking chr, gold uphol, nds incl, \$50. Marilyn, 181-4818 Lincoln.

Zenith 10" b&w TV almost new, \$70/best; Whirlpool 6000BTU, air cond, vy gd cond, \$75/best; '73 Mazda RX3 wgn, \$1,500/best. Call 267-9187 8am-10pm.

'78 Ford Fiesta, hatchbk, 57K, 30 mpg, standard, 4 cyl, asking, \$2,350; humidifier, \$15; 3 leg tbl & chr, \$10; baby clothing vy inexpensive. Call 494-8383.

Raleigh "Mountie" boy's bike, 20" frame, 14" whl, suitable ages 5-11, exc cond, \$45; child's birch desk & chr, top 18x32, ht 27", 2 drws, solid construction, exc cond, \$40. Larry, x3-7810.

Optical benches, 14x54, Leitz, 24x36 Sagem, 6x72 Gaertner, plus fittings, \$400-\$500/ea; Pioneer PL-10 turntbl, \$50; '73 4 spd, Capri, gd cond, \$900; functional mens', 3 spd bike, \$30. Craig, x3-5019, 4619 or 494-9133.

Ladies lther bts, low hl, sz 1 1/2, worn once, don't fit, \$65. Susan, x3-5369.

Hitachi SR-5010 stereo recvr, 50 w per channel, exc cond, \$180. Marcia, x5-8584.

HP memory module cat #82106A, \$8; 24" whl, 19" frame, boys' bicycle, \$8. Call x3-7290 or 776-9595 eves or wkends.

Vehicles

'66 Mustang 289 auto runs gd, nds body work, orig owner, to be restored, \$800. Mike, 258-4562.

'68 AMC Javelin, new battery, new tires, new windshield, rebuilt starter, engine in exc cond, nds reverse on transm, \$300. Call 258-2843, 8-5pm.

'70 Nova, 6 cyl, new battery, water pump, muffler, no rust/dents, \$900. Marsha, x3-1501.

'70 Olds Cutlass, 68K, exc run cond, many new parts, \$850. Ahmet, x3-6860 or 494-0110 eves.

'71 Plymouth Scamp, 2 dr black vinyl roof, cassette player, gd running cond, some body rot, asking, \$475/best. Call 396-2691.

'73 Hornet Hatchback, exc eng, many new parts, body damage, not worth fixing, accept any offer, may even give away, x3-2308.

'74 Norton Commando 750 cc cycle, new tire, rr sets, miuni carbs, \$1,050/best. Call 492-1850.

'74 Vega, runs well, some rust, 4-spd GT, well maintained, \$550/negot. Aryeh, x3-2469 or 494-0047.

'75 Toyota Corolla wgn, 4 spd, 73K, 1 owner, vy reliable, some rust, nds exhat syst, reg gas, \$750/best. Dan, x7273 Lincoln.

'75 Olds Starfire, absolutely no rust, p/s, p/b, a/c, AM/FM stereo cassette, V-6 new, 4 radial tires, transmission, clutch, brakes, muffler, battery, 80K, cond, \$2,200/best. Steve, 536-3931.

'75 VW Dasher station wgn, for parts or can be fixed, front end damage in accident, eng, tires, man transm, and most body parts in gd cond, runs well, driveable. Ken, x3-3198 or 964-4715.

'76 Honda Civic, 2 dr, H/B, 4 spd, runs well, new muffler, radials, luggage rack, 81K, 1 owner, \$1,500. Hal, 494-8279.

'77 Honda Accord, semi-automatic, gd cond & mi, reg gas, 70K, gold w/tan inter, AM/FM, well maintained, new parts, receipts, \$3,300. Cynthia, x3-7924.

'77 Ford Pinto, wht w/red trim, 1 owner, low mi, gd on gas, \$1,600. Call 846-3478 after 6pm.

'78 Toyota, 4 dr, deluxe incl all options, standard, only 12K, must see, always garaged, \$5,000. Call 494-8932.

'79 Porsche, 924/5 SRD, red/blk inter, sunfr, a/c, stereo, elec mirrors, fog lights, 28K, exc cond, asking, \$10,900. Nick, 422-8071.

'80 Chevy Monza, 4-spd, navy blue, exc cond, new clutch, AM/FM converter, \$5,000/best. Linda, x7645 Lincoln.

'81 Toyota Celica, GT, liftback, exc cond, 25K, p/s, 5 spd, AM/FM stereo, 1 owner, snow tires, \$6,790/best. Hector, 253-4226 or 926-5121 eves.

'81 Subaru eng, 13K, in rusted '76 Subaru, exc radial tires, radio, everything but body, goes to best over \$650. Gloria, x3-5358 or 595-8596 eves.

'82 Chevette, 4 dr sedan, mtlc silver w/blue grey side striping, drk blue inter,

rf rack, twin sport mirrors, rr defrat, rustprf, 4 spd manual transm, 13K, must sell, \$4,500. Charles, x3-6555 or 878-6552 after 6pm.

'82 VW Rabbit, LS edition, 4 spd, metallic silver, ltherite inter, AM/FM cassette stereo, Rusty Jones rust prf, 9K, exc cond, asking, \$6,150. Call 862-1264 after 5pm.

Housing

Bedford, new split entry hse for rent, quiet new street, 3/4 acre lot adjoining woods, 3 BR, 1 car garage, balcony, 1 1/2 B, avail July-Aug for 2-3 yrs, \$950/mo + util. Call x3242 Lincoln or 275-8717.

Cambridge, condo for sale, lg 1 BR in mod brick bldg, nr City Hall, has dah/dryer, eat-in K, a/c, w/w over parquet, deeded pking, Indry, elev, gas ht & cooking, \$51,000. Call 926-5400.

Charlestown, 6 rm for rent, 2nd flr, nr transp, 15 min to MIT, quiet, dead end st, possible sale, \$80,000 by installment.

Jerusalem, Israel, a hse avail for American visiting professor for the next academic yr. Call 253-8081 or 232-2599.

Newton Highlands, 3 BR Cape, 1 B, big yard, vy priv, sun porch, 1 car garage, nr T, shops & school, early summer occupancy, asking hi 90's. Call x3-7447 or 965-9807.

Maine, vacation cottage in southern Maine, swimming, fishing, 6 acres of forest, \$250/wk. Call 926-4552 eves.

Martha's Vineyard, local representative for on-island builder. Energy-efficient contemporary & traditional homes from \$45,000. The time is right, interest rates down & prices still at '81 levels. Call 862-3262 eves.

Somerville, 1 BR, lg rms mod bldg, close T, walk to MIT, a/c, disposal, dah/whr, avail April 1, \$375/mo, incl ht, pking & laundry facil. Gerald, x3-4170 or 776-7648.

Somerville, hse, large, sunny 3 BR, 1 1/2 B duplex in 2 fam, Davis Sq, nr T, pking, yard, financing avail, \$68,000. Patty, x3-3649.

Waltham, effc condo for sale, 3 separate rms, low maintenance fee, pool, tennis crt, close to 128, \$46,000. Debbie, 893-4175 eves.

Animals

Easter puppies for sale, 6 fat, healthy, adorable puppies, great Easter gifts, can be gift-wrapped and delivered, reasonably priced. Call 603-267-8490.

Wanted

Wanted, sofa bed. Ward, x3-6403.

Roman couple coming to Boston on sabbatical lv. Aug-June, would like to exchange use of their spacious, quiet apt & car in Rome for home nr Harvard Sq. Call 628-4098.

Young married couple seek 1 or 2 BR apt in 93/495 area, no pets, no children, nd by 4/1 or 5/1. Call x3-7743.

Two rm apt or small cottage wanted for vacation in 1 & 2 week of May, should be within 2-3 hrs driving from Boston, pref on the coast. Christof, x3-8597.

Wanted 14 ft Alumacraft or equivalent for salt water use. Call x3-2502.

MIT staffer member desires 2 BR apt within walking dist of MIT or Red Line, May 1 or later, must rent \$450/mo incl ht. Jim, x3-3751 or 494-4941.

Owner of TRS-80 Model I for use to test level II, 3 ROM set. Dick, x3-8660.

Roommates

Rmte wanted for charming 2 BR apt in Beverly Farms nr beach & train, \$200/mo + util. Barbara 1-927-4121.

Share LR, B & K facil of 2 BR apt w/female rmte, who has primary residence out of town, female pref, April-Sept, \$200/inclusive.

Female, 26, seeks same to look for 1 BR apt in Back Bay. Call 253-1784 or 266-8340 eves.

Carpools

Ride desperately needed to & from Baltimore for Spring break, live just off I-95, anything going South will do. Ron, 267-1801.

Ride wanted to and/or from New Orleans, or nrby, lv around March 21, return, March 26, share expenses & some driving. Sahba, x5-7173 Dorm, or lv message at x3-3161.

Would like to ride or join a carpool from Newburyport/Danvers area to MIT and return, Mon-Fri. I can adjust my hours if necessary. Dick, x3-8671 or x3-8676.

Miscellaneous

Would like to make copies from a service manual for a Hazeltine model 1400 video terminal. Call x3-5823.

Exper Chinese lady would baby sit either full/part time, pref at my home but negot. Henrianna, x3-7237 or 395-6942 eves.

Licensed Day Care, 2 women will take maximum of 6 children in a convenient South End location w/fenced yard, structured activity, loving personal care, nutritious food. Joyce, 266-4639 or Ellen, 267-2282.

Typing, technical and non-technical, thesis, report, resume, etc. Scottie, x3-4657.

Word Processing, will type theses, reports, book manuscripts, proposals, fast & accurate at low rates. Beverly, x3-3132.

Surplus Property

OFMS has excess MIT equipment for transfer within MIT. Unless noted, items are at the Equipment Exchange, 224 Albany St. open Mon, Wed, & Fri, 10am-1pm. After 30 days, items are sold to individuals. Where noted, bids and offers go to Earl C. Fuller E19-451, x2779, with envelope so marked. Always include reference number.

Case 1020: Labline Explosion-Proof Refrigerator, 3559, nds new evaporator. Case 1021: Misc side chairs, cond fair, IBM card fld, cond gd.

Case 1022: Trend Data computer terminal, T1000, cond gd.

Case T120: \$200 offer req'd, IBM Selectric Typewriter.

POSITIONS AVAILABLE

It is Institute policy not to discriminate against individuals on the basis of race, color, sex, sexual orientation, religion, handicap, age, or national or ethnic origin in the administration of its programs and activities.

Information on openings at Lincoln Laboratory (Lexington, MA) is available in the Personnel Office.

Persons who are NOT MIT employees should call the Personnel Office on extension 3-4251.

Employees at the Institute should continue to contact their Personnel Officers to apply for positions for which they feel they qualify.

Pat Williams 3-1594
Ann Perkins 3-6511
Dick Higham 3-4278
Appointments:
Deborah Reate 3-4270

Virginia Bishop 3-1591
Susan Gaskell 3-4266
Ken Hewitt 3-4267
Appointments:
Lauren Stevens 3-4268

Sally Hansen 3-4275
Vera Ballard 3-4277
Kenneth W. Chin 3-4269
Appointments:
Kate Young Caley 3-4274

Faculty

Director of Industrial Liaison: Member of the tenured M.I.T. faculty to direct the activities of the Industrial Liaison Program (ILP). Reports to the Vice President for Resource Development. The Director is responsible for overseeing the program's services, staff, and budget, including the program's computer facility. Also responsible for solicitation of new members. Candidate should be a recognized authority in an academic field; have a broad knowledge of research and education at M.I.T.; and be interested in promoting M.I.T.'s interactions with the corporate community, both in the U.S. and abroad. Candidate must be skilled in interpersonal relations and management; be able to communicate effectively in speaking and writing; and be willing to travel extensively.

The list below includes all non-academic jobs currently available on the MIT campus. Duplicate lists are posted on the Women's Kiosk in Building 7, outside the offices of the Special Assistants (10-215, 10-211) and in the Personnel Office (E19-239).

Administrative and Academic Staff

Applications Programmer I, Information Processing Services, to translate external program specifications into computer programs for Physical Plant, Libraries, Telecommunications, Planning and MIT Press. Will translate external specifications into internal program specifications for new or modified programs; prepare program logic diagrams and data flow; program, test and debug programs; document new programs or changes in existing programs according to standards; assist users; attend related classes, seminars, etc. to maintain programming skills. Position supervised by programming coordinator. Requires associate's degree in relevant field or an equivalent combination of education and experience. Programming experience as well as background in business setting and knowledge of PL/I essential. A269

Program Manager in Laboratory for Health Care Studies, Whitaker College of Health Sciences, Technology & Management, who will take responsibility for all administrative functions, including administrative support for organization, development, implementation, and management of a research program as well as new doctoral program. In addition, will handle fiscal affairs, and development of program and course literature. Position reports to laboratory director. Candidates must have bachelor's degree along with 2 to 3 years directly related experience. Strong background in founding, administration and management of educational and research programs essential. Relevant experience in health care field, including background in dealing with academic organizations, health care providers, regulatory agencies, and/or health care research institutions preferred. A268

Sponsored Research Staff

Technical Assistant, Laboratory for Computer Science, to develop software for computer systems, consisting of DEC system-20 running TOPS-20, some twenty-five or more VAX computers

running UNIX or VMS, Apollo computers, LISP Machines, a number of personal computers, including IBM and Apple, and variety of peripherals: laser printers, high resolution bit-map display systems, file servers, etc. Entails development of software to render existing computer environment better for both software development and running of applications programs. Candidates must have Bachelor's or Master's in Computer Science or the equivalent, along with 1 to 2 years experience in operating systems (UNIX, TOPS-20, VMS, etc.), as well as in computer networking and hardware development. R1002; R1003; R1004

Research Associate, Materials Science & Engineering, to participate in research involving physical metallurgy. Research is directed toward rapidly solidified high-strength steels, and includes mechanical property measurements together with microstructural analysis. Candidates must have PhD in Physical Metallurgy or Materials Science and Engineering, plus minimum of 2 years directly related experience. Strong background in ferrous metallurgy, exposure to variety of mechanical property measurement techniques, including that for fracture toughness also crucial. Demonstrated research productivity, ability to set priorities independently and well developed interpersonal skills for consistent interaction with graduate students regarding theses important. R983

Bioengineer/EEG Technologist, National Magnet Laboratory, who will record EEG signals from human subjects. This biologist or biophysicist will prepare subject by applying electrodes to the head, handle subsequent computer controlled measurements, and process resulting data. Will make similar magnetic measurements of brain waves. Experiments often require evening and weekend work. Candidates must have BS in one of biological or physical sciences plus some background in computer programming and physics. Ability to deal effectively with large amounts of data essential. Background in performing EEG or similar measurements preferred. R981

Secretary/Staff Assistant

Sr. Secretary, who will provide office support for 2 faculty members in the Department of Civil Engineering. Will perform considerable general and technical typing; answer phones; order supplies; photocopy; take dictation in shorthand; coordinate seminars; handle correspondence relating to quarterly journals; as well as work independently on assigned projects. Requires high school graduation or the equivalent, along with 2.5 years direct/related experience, or an equivalent combination of education and experience. Technical typing skills essential; knowledge of word processing preferred. Well developed organizational and interpersonal abilities important. B2190

Sr. Secretary (17.5 hrs/wk), Foreign Languages & Literatures Section of Humanities, for a shared office support position. Will assist in organizing and publicizing lectures and special events; and provide secretarial service, including typing, supply and book ordering, filing, etc. Candidates must have 2 to 3 years related experience, or an equivalent combination of education and general office skills as well as capacity to manage workloads with minimal supervision essential. Good interpersonal ability plus knowledge of or willingness to be trained in word processing also vital. Reading knowledge of German and familiarity with graphic design helpful. B2188

Sr. Secretary, to provide secretarial support for Department Head and Administrative Officer of Aeronautics & Astronautics. Will type; answer phones; schedule appointments; photocopy; file; assist in researching and compiling statistics for administrative purposes; and use word processor to enter data. Also involves serving as departmental floater, covering duties for other office support staff members as needed. Applicants must have completed high school or the equivalent, and have 2.5 years applicable experience, or an equivalent combination of education and experience. Excellent typing and interpersonal skills required, along with absolute reliability in handling confidential material. Knowledge of data entry or willingness to learn important. NON-SMOKING OFFICE B2187

Sr. Staff Assistant, Sloan School of Management, who will provide office support for 3 faculty members, and occasionally other section members. Will participate in departmental projects; photocopy; perform library research; arrange appointments and use of rooms; answer phones; greet visitors; type and edit reports, manuscripts, correspondence and other matter; maintain files; arrange travel; coordinate work of research and teaching assistants; as well as operate and manage other use of word processor. Requires 2 to 3 years applicable experience, or an equivalent combination of education and experience. Good typing and interpersonal skills needed, along with command of English usage. Shorthand/speedwriting plus dictaphone skills important.

Personnel to offer more classes

A two-session workshop on Running More Effective Meetings and a four-session series on Assertive Communications, sponsored by the Personnel Office for all employees, are scheduled for April. Both will be led by Dr. Susan Warshauer, staff development specialist in Personnel.

The Meetings workshop is for those having responsibility for planning or chairing meetings. It will address issues in planning, conducting and evaluating meetings, using itself as one example of a meeting. Small and large group discussions and structured exercises will be used. Sessions will be held Fridays, April 1 and 8, 9am-12:30pm in Rm E25-119.

direct/related experience or an equivalent combination of education and experience. Good typing and proofreading ability plus experience in or willingness to be trained in word processing necessary. Familiarity with biological and chemical terminology important. Strong interpersonal skills also essential for functioning in this busy setting. NON-SMOKING OFFICE. B2144

Sr. Secretary for the Department of Biology, to perform varied secretarial tasks for 1 faculty member and his research group. Duties include preparation of grant proposals; monitoring of grant accounts; processing of purchase orders for office and laboratory supplies; editing and typing of scientific manuscripts; composition of letters; preparation of teaching materials; handling of class rolls and grade sheets; processing of mail; as well as answering phones and arranging travel. Other office support projects will be assigned as needed. Applicants should have 2 to 3 years applicable experience or an equivalent combination of education and experience. Strong typing and general office skills, including facility in use of dictaphone, essential. This individual will be expected to manage workloads independently and to deal with a variety of persons on a regular basis. Position involves use of word processor. Knowledge of bookkeeping and biological terminology helpful. B2132

Secretary/Receptionist, Biomedical Engineering Center, to perform routine office tasks. Will type from dictaphone and handwritten drafts; perform typing involving technical and medical terminology, tables, charts, etc.; verify references; check materials for proper format, punctuation, spelling etc.; answer phones; provide reception; process mail; maintain files; and perform other related duties as assigned. Calls for high school graduation or the equivalent, along with a minimum of a year's direct/related experience, or an equivalent combination of education and experience. Strong typing, organizational skills plus command of English usage vital. Good communication and interpersonal skills important also, as this individual will be expected to learn departmental and Institute procedures quickly. Word processing and dictaphone background preferred. B2189

Technical Support Staff

Dental Assistant (through 9-9-83), Medical, who will assist in MIT Dental Service. Position reports to Head Dental Assistant. Will assist dentists and dental hygienists with dental procedures; prepare required solutions; sterilize instruments; maintain examining rooms; and assist with record keeping. Requires high school graduation as well as completion of an approved dental assistant program. Two to three years as a dental assistant or an equivalent combination of education and experience essential. Strong interpersonal abilities as well as capacity to function as team member important. NON-SMOKING AREA B2170

Office Assistant

Administrative Assistant, Alumni Association, who will assist the Associate Director of the Alumni Fund. Will participate in screening meetings with members of reunion gift committee; maintain minutes and handle follow up for same; implement publicity programs, including preparation, production and mailing of all related materials; prepare and coordinate publicity as well as arrangements for planned giving luncheons throughout U.S.; coordinate major on-campus donor dinners; assist with solicitor/prospect assignments for each reunion gift class; maintain solicitation records; arrange mailings of status reports to solicitors; interact weekly with reunion gift chairmen and solicitors to respond to inquiries; handle word processing; supervise student assistants; type; file; arrange travel; and monitor departmental budgets. Candidates should have 4.5 years relevant experience, or an equivalent combination of education and experience. Excellent typing and organizational skills and strong command of English usage necessary. Capacity to establish priorities and manage workloads independently, plus willingness to work under occasional time constraints toward meeting deadlines, vital. Well developed interpersonal skills also essential. Involves overtime. B2183

Sr. Office Assistant: Computer Laboratory Assistant (25 hrs/wk), Office of the President, for the Umana Harbor School of Science & Technology, MIT's partner high school under system of college/university pairings. Will assist computer manager in maintaining entire PDP-11, Apple II plus system for instructional and administrative purposes; monitor computer laboratory during instructional periods; assist manager, students and teachers in protective equipment maintenance; keep laboratory prepared for use; assist teachers in use of computer resources;

Applications must be received in Rm E19-242 by Wednesday, March 23.

The four-week Assertive Communications program focuses on the components and goals of assertive behavior in the work setting. It will explore differences between assertive, aggressive and passive behavior and problems with assertiveness. Discussions and role plays will be used. It will meet Tuesdays, April 12-May 3 in two separate sessions. One will meet noon-1:30pm in Rm E19-438; the other, 5:30-7pm in the Emma Rogers Room (10-340). The application deadline is Monday, March 28, in Rm E19-242.

Application forms are available in administrative offices or by calling x3-4077.

operate computer and maintain programs for administrative purposes; write programs; prepare data for entry; update school records; cooperate with MIT students and staff in developing computer curricula and resources; as well as assist students and teachers in logging onto system. Requires 2 to 3 years directly related experience or an equivalent combination of education and experience. Familiarity with BASIC essential. B2184

Office Assistant, Plasma Fusion Center, who will perform various accounting duties for high volume of research expenditures in center's fiscal office. Will record, update and code information; check purchase orders; process invoices; type standard forms (requisitions, vouchers, etc.); maintain accounting files and records; collect data for budget preparation and contract preparation; process office mail; answer phones; provide information regarding reports and office procedures; assist with supply inventory and office equipment maintenance; photocopy; and handle routine interaction with the public by phone and in person. Requires high school graduation or the equivalent, plus a minimum of a year's direct/related experience, or an equivalent combination of education and experience. Basic typing and office skills as well as capacity to handle detail needed. Good interpersonal skills important. B2185

Office Assistant, Center for Materials Science & Engineering, who will perform various clerical and accounting functions under supervision of Administrative Officer and Fiscal Officer. Will process purchase orders, including statements, packing slips, invoices, etc.; handle payrolls as well as processing and maintenance of related records; provide reception in fiscal office; perform some typing; assist in report preparation, including typing, photocopying and mailing; handle mailing relating to notices for colloquia, memoranda to staff, etc.; and maintain office supplies. Applicants must have completed high school or the equivalent and have a minimum of a year's applicable experience, or an equivalent combination of education and experience. Good general office and organizational skills needed, including some typing. B2174

Service Staff

Technician B (Electro-Mechanical), Plasma Fusion Center, who will assist in laboratory work and operate experimental equipment under supervision of scientific personnel or technicians of higher grade. Will work with expanding group of technicians to carry out TARA Tandem Mirror assembly, testing and operation. Work will include high power circuit assembly and testing, mechanical assembly, vacuum system preparation and testing, light machine shop work, and magnet coil assembly and testing. Requires graduation from 2 year day technical school or its equivalent in applicable experience. Basic electronic skills for testing, calibration, and troubleshooting of electronic equipment such as power supplies, vacuum gauges, and control circuits necessary. This individual must be able to work for extended periods of time without supervision. Basic machine shop skills, ultra high vacuum experience including cleaning, assembly, maintenance, leak testing and vacuum instrumentation preferred. H793

The following positions were still available at Tech Talk deadline. Complete descriptions of all available positions are posted in the Personnel Office (E19-239), and at locations listed at the beginning of Positions Available section.

ADMINISTRATIVE AND ACADEMIC STAFF:

A268, Program Manager, Laboratory for Health Care Studies
A267, Child Care Administrator for Operations of Child Care Office (part-time)
A266, Applications Programmer, Information Processing Services
A265, Technical Writer, Information Processing Services
A264, Applications Programmer, Information Processing Services
C081, Librarian I: Assistant Science Librarian for Processing, Libraries
C080, Librarian I: Department of Transportation Liaison Librarian (part-time), Libraries
A263, Managing Editor of Technology Review, Alumni Association
A262, Texts & Exhibits Manager for the MIT Press
A258, Director of Course Programs for the Alumni Association
C078, Postdoctoral Associate, Nutrition & Food Science
A252, Area Manager for the Application Services Section of Information Processing Svcs.
C076, Postdoctoral Associate, Nutrition & Food Sciences
A250, Assistant to the Manager of the Production Services Section of AIS/IPS
A247, Systems Analyst, Administrative Information Systems
A240, Sr. Systems Analyst, Information Processing Services

SPONSORED RESEARCH STAFF:

R1005, Research Specialist, Earth & Planetary Sciences
R1001, Sponsored Research Staff, Haystack
R988, Experimental Physicist, Center for Space Research
R987, Postdoctoral, Center for Space Research
R986, Postdoctoral, Center for Space Research
R984, Research Associate, Chemistry
R983, Research Associate, Materials Science & Engineering
R975, R976, Jr. Electrical Engineer, Center for Space Research
R966, Research Scientist, Plasma Fusion Center
R731, Research Associate, Technology Adaptation Program
R959, Research Scientist, Nutrition & Food Science
R957, Digital Logic Programmer, Laboratory for Computer Science
R955, Organic Chemist, National Magnet Laboratory
R943, Postdoctoral, Center for Space Research
R942, Postdoctoral Fellowship, Research Laboratory of Electronics
R940, Research Associate, Research Laboratory of Electronics
R936, Research Scientist, Haystack Observatory
R934, Accelerator Controls Engineer/Physicist, Laboratory for Nuclear Science
R927, Research Staff, Laboratory for Computer Science
R926, Research Staff, Laboratory for Computer Science
R925, Magnet Design Engineer, National Magnet Laboratory
R923, Research Scientist—Experimental, Plasma Fusion Center
R922, Research Scientist—Experimental, Plasma Fusion Center
R917, Research Scientist—Experimental/Theoretical, Plasma Fusion Center
R916, Mechanical Engineer (part-time), National Magnet Laboratory
R913, Research Specialist, Artificial Intelligence Laboratory
R896, NMR Imaging Scientist, National Magnet Laboratory
R886, Solid State Physicist (postdoctoral), National Magnet Laboratory
R825, R826, Sponsored Research Staff (postdoctoral), Laboratory for Nuclear Science
R873, Sponsored Research Staff (Engineer/Applied Physicist), National Magnet Laboratory
R857, Research Specialist, Artificial Intelligence Laboratory
R856, Research Scientist, Artificial Intelligence Laboratory
R855, Research Scientist, Artificial Intelligence Laboratory
R718, Research Associate, Civil Engineering
R835, Research Associate, (beginning 12-1-82), Physics
R808, Research Associate, Physics
R730, Sponsored Research Staff, Laboratory for Computer Science
R434, Systems Programmer, Laboratory for Computer Science
R397, Biomedical Engineer, Department of Mechanical Engineering

SECRETARY/STAFF ASSISTANT

B2164, Administrative Secretary, Center for Information Systems Research
B2159, Administrative Secretary to the Director of MIT Press
B2169, Sr. Secretary, Sea Grant College Program
B2168, Sr. Secretary—Technical (part-time)
B2167, Sr. Staff Assistant, Office of the Chairman of the Corporation
B2157, Sr. Secretary (30 hrs/wk), Aeronautics & Astronautics
B2144, Sr. Secretary, Center for Cancer Research
B2151, Administrative Secretary—Technical to the Director of the Plasma Fusion Center
B2109, Sr. Secretary, Center for Advanced Engineering Study
B2131, Sr. Secretary, Center for Theoretical Physics
B2122, Sr. Secretary, Biology
B2111, Sr. Secretary, Medical
OFFICE ASSISTANT
B2163, Sr. Office Assistant, Journals Section of MIT Press
B2162, Sr. Office Assistant: Data Technician, Center for Space Research
B2156, Administrative Assistant, Sloan School of Management
B2140, Sr. Office Assistant for the Benefits Section of Personnel
B2153, Office Assistant, Faculty & Staff Records Office

SERVICE STAFF

H785, Sr. Technician (Electro-Mechanical), Haystack
H771, Sr. Electronic Technician, Research Laboratory of Electronics
H779, Technician A (Electro-Mechanical), Center for Space Research
H765, Instrument Systems Worker, Physical Plant
H768, Sr. Electro-Mechanical Technician, Aeronautics & Astronautics
H776, Sr. Technician (Electronic), Plasma Fusion Center
H767, Machinist A, Nuclear Reactor Laboratory
H708, Machinist A, Mechanical Engineering
H637, Engineer 2nd Class, Physical Plant

SMR publishes winter issue

Two university researchers introduce a technique for understanding and improving organizational decision-making in the Winter issue of the Sloan Management Review. The Review is the professional journal of the Sloan School of Management.

In their article, "Diagnosing Organizational Decision-Making Through Responsibility Charting," Joseph E. McCann of the University of Florida and Thomas N. Gilmore of the University of Pennsylvania contend that increasingly complex organizational structures make it difficult for many managers to consistently produce and implement high-quality decisions.

Their "responsibility charting" technique presents a method of enhancing the quality of communication within an organization and of clarifying the unnecessarily ambiguous managerial roles that often result from complex organizational designs.

By focusing attention on the patterns of managerial roles, they say, "responsibility charting" clarifies the organization's decision-making processes.

David B. Hertz of McKinsey & Company, Inc., management consultant, and Howard Thomas of the University of Illinois, are co-authors of another article that examines linkage between risk analysis and strategy by discussing the application of decision and risk analysis to a new product and planning problem. The article, "Decision and Risk Analysis in a New Product and Facilities Planning Problem," suggests that risk analysis can help strategic thinking "by encouraging constructive dialogue and debate about policy options." The authors also examine the role of risk analysis in relation to potential investment opportunities.

In "Strategic Selection: Matching Executives to Business Conditions," authors Marc Gerstein and Heather Reisman contend that

executive selection should be linked more closely to corporate strategy. They present a framework for determining the managerial characteristics required by various strategic business situations. The authors are senior partners of Gerstein, Reisman & Associates of Toronto, Canada.

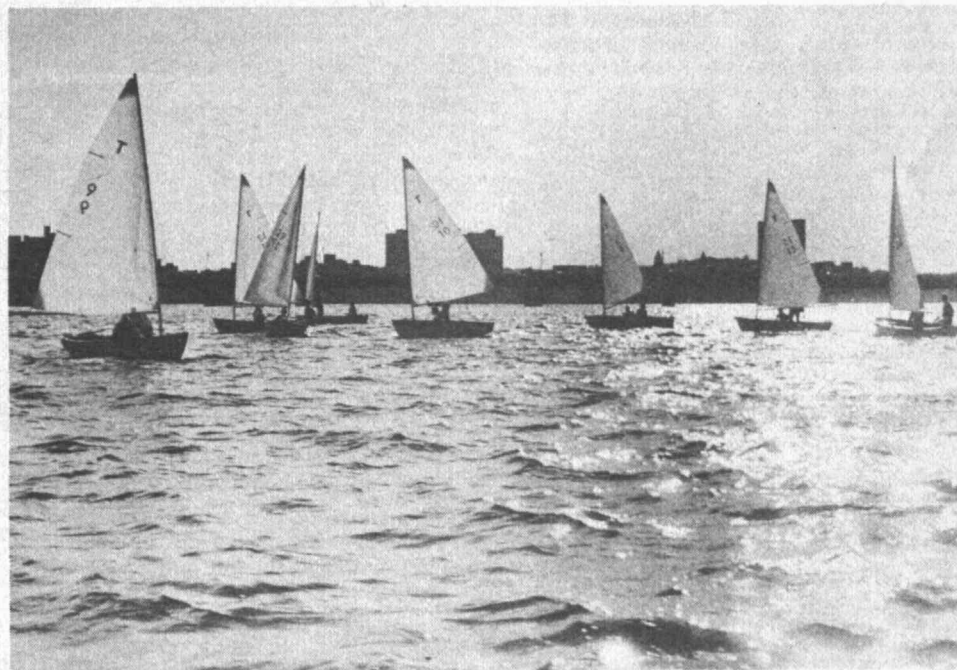
N.D. Meyer's "The Office Automation Cookbook: Management Strategies for Getting Office Automation Moving" presents a study of office automation programs in 35 US and Canadian firms. The study focuses on implementation problems and provides a summary of the experiences of office automation users. Mr. Meyer is a management consultant whose firm is N. Dean Meyer and Associates, Inc., of Ridgefield, Conn.

"The UAW-Ford Agreement—Joint Problem Solving," by Donald F. Ephlin of the International Union, United Auto Workers, presents the union's perspective of the environment in which the recent "historic" agreement was reached.

Other short articles in the Review's SMR Forum include "Business, Society and the Reagan Revolution" by James E. Post of Boston University, and "Communication—On Target" by Dr. JoAnne Yates, assistant professor of business communication in the Writing Program at MIT and director of the Sloan Communication Program at the Sloan School.

In a response to an earlier Forum article, Professor Yates contends that communications programs at business schools view communication as a complex process, involving far more than grammar and style. These programs, she writes, emphasize that communication strategy is the necessary forerunner to communication style, and is critical to effective communication.

Published quarterly, the Review presents articles on analytical approaches to managerial problems. It also contains book reviews and a list of recent management publications.



Sailing season opens March 28

A sure sign of spring will greet the community soon when the Sailing Pavilion—the oldest college sailing facility in the country—opens for its 47th season Monday, March 28.

The sailing program is open to all members of the community seven days a week, 9am-sunset, through the season which ends in November. All persons using the boats must pass a swim test at Alumni Pool, swimming 100 yards and treading water for 10 minutes. Also necessary is a sailing membership card

(\$10 for students; \$30 for faculty and staff, and \$40 for alumni).

For those who don't know how to sail, basic sailing classes are offered on Mondays and Thursdays at 5:15 through June and on Wednesdays during the summer months. No registration is necessary, just show up at the appointed time.

The fleet has expanded to more than 80 sailing craft, ranging from nine boards for windsurfing to two large ocean-going boats, the 36-foot *Hinckley* and the 24-foot *San Juan*. These boats were donated to the fleet by MIT alumni and are supported through alumni endowments. The *San Juan* is scheduled to participate in handicap racing in Boston Harbor this summer and the *Hinckley* will take a four-week cruise along the Maine coast in July and August.

A new offering this year will be instruction in board sailing (windsurfing), a sport recently added to Olympic competition. Instruction will begin in May when the water in the Charles will have warmed up. The addition of the windsurfing boards was also made possible by alumni contributions.

For further information on the programs, call Sailing Master Hatch Brown, x3-4884.

Joseph named MVP

MIT senior basketball co-captain Robert Joseph of Pensacola, Fla. has received two major post-season awards.

The 6-foot, 165-lb. forward/guard was named to the 1983 College Division Academic all-America team selected by the College Sports Information Directors of America. Joseph and nine other players received an honorable mention. They join 15 players named to the first three squads.

On March 6, Joseph was named MIT's most valuable player at the team's break-up banquet.

Joseph, who is working on both his bachelor and master's degrees in electrical engineering and computer science, was second in four categories this season: points per game (12.7), rebounds per game (6.0), steals (56), and assists (55). He scored in double figures in 15 or 22 games played with a career high of 24 against Tufts University.

"Robert has been one of the best all-around players in MIT history," said coach Fran O'Brien. "Although only six-feet tall, his exceptional quickness and jumping ability have made him an outstanding player."

MIT athletic director Royce N. Flippin, Jr. added, "Robert's dedication to academics and athletics, and his success in both, have meant a great deal to us. He is one of our finest student-athletes and he will be greatly missed."

Joseph is president of the Black Society of Electrical Engineers at MIT and a member of the Black Graduate Student Association.

Two visit Sri Lanka

Professor Nabeel Hamdi and Reinhard Goethert of the Laboratory of Architecture and Planning's Professional Practice Program recently returned from Sri Lanka where they were the guests of the National Housing Development Authority.

In their two-week visit they reviewed Sri Lanka's housing programs and reached agreement on a housing research project that will be carried out at MIT focussing on low-income housing for Sri Lanka.

Mr. Hamdi is an assistant professor of housing design and Mr. Goethert a research associate in the Department of Architecture.

Sore throat study needs participants

Got a sore throat? The MIT Medical Department would like you to be part of a study it is carrying out to discover more about the causes and treatment of sore throat, also known as pharyngitis.

And you'll be paid \$20 to participate.

Sore throat is one of the commonest complaints of adult patients seeking medical attention, yet streptococcal infections are responsible for less than 10 per cent of all sore throats, according to Drs. John Moses and Elaine Shiang, who are the principal investigators in the MIT phase of the study, which is also being carried out in two other medical centers in Boston.

"Identifying and treating strep throat is a simple process," Dr. Shiang said, "but there are many other causes for sore throat that are difficult and very expensive to identify. This study will enable us to do the testing necessary to determine more precisely what proportion of sore throats is caused by other, non-viral organisms."

At the same time, Dr. Shiang said, a double blind study will also show which kinds of sore throats yield to treatment by erythromycin. A double blind study, she explained, is one in which neither the patient nor the medical practitioner knows if the tablets prescribed are medication or placebos.

To be eligible for the study you must:

- be between 18 and 50 years old.
- have been sick for seven days or less.
- be neither pregnant or nursing.
- never have had rheumatic fever.
- have no chronic serious illness.
- not have asthma.
- not be allergic to erythromycin.
- not have been treated with antibiotics in the past 10 days.
- have a telephone at which you may be reached.

Patients will be asked to keep a diary during the 10-day course of treatment and to return to the Medical Department for a five-minute follow up visit about two weeks after completing treatment.



Pianist Paul Orgel

Pianist plans recital

MIT Affiliated Artist Paul Orgel will present a piano recital at 8pm in Kresge Auditorium on Wednesday, March 16. Admission is free and open to the public.

He will play Aaron Copland's Piano Variations (1930), Mozart's Sonata in F Major, K. 533, K. 494, Debussy's *L'Isle Joyeuse*, and Mussorgski's *Pictures at an Exhibition*.

Originally from New York City, Mr. Orgel attended the Oberlin and New England Conservatories of Music and has studied under the guidance of Russel Sherman and Anthony di Bonaventura. A frequent performer of solo and chamber music, Mr. Orgel teaches at MIT, Boston University and the Music School at Rivers, Weston, Mass.

Copy prices rise

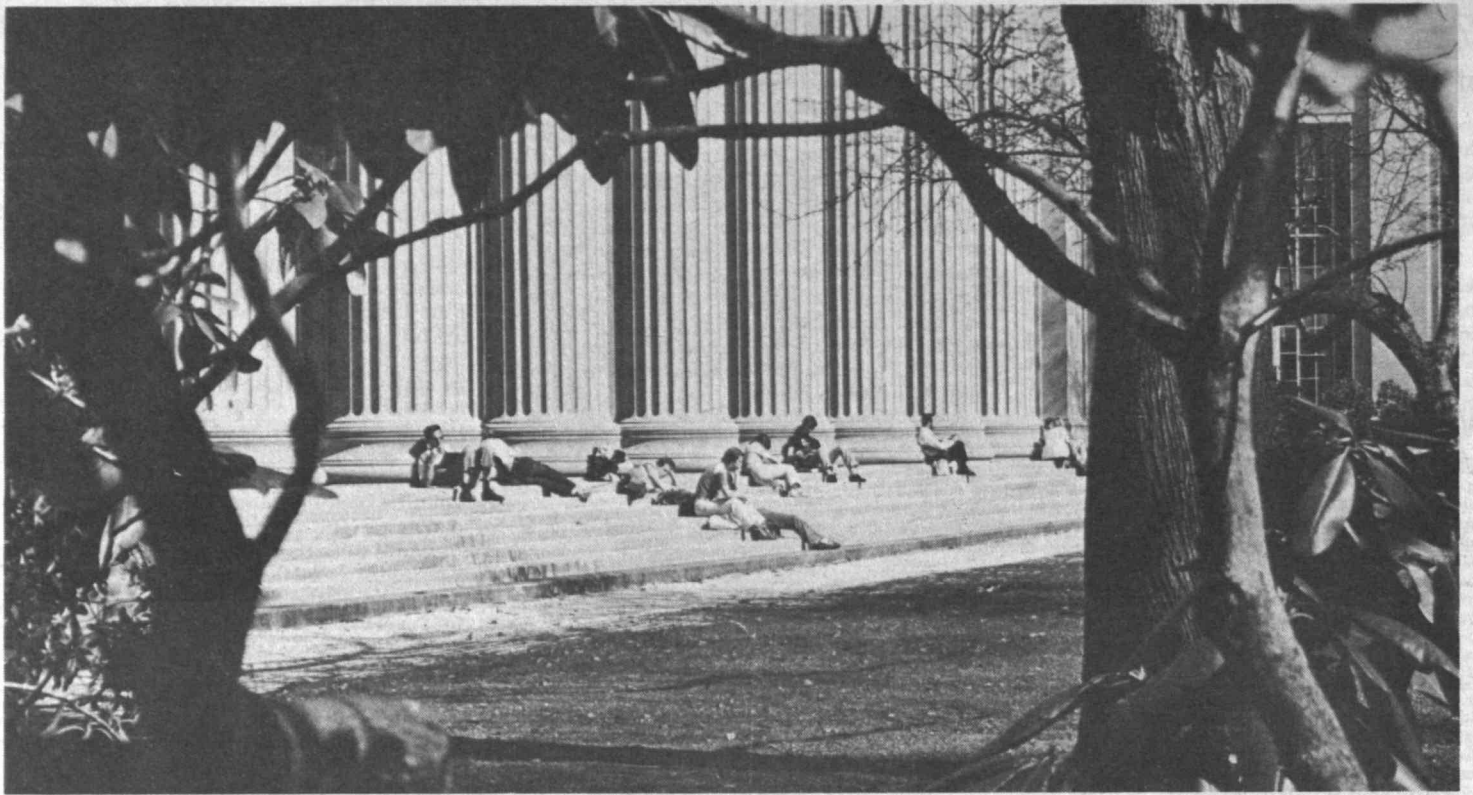
The price for operator-produced photocopies at the Graphic Arts Quick Copy Centers has been increased from three to four cents each for the first five copies, James W. Coleman, director of Graphic Arts, has announced.

The increase—the first since the Quick Copy Centers were opened more than 20 years ago—was necessitated, he said, because of the rising costs in keeping up with advancing technologies. Even with the increase, Mr. Coleman noted, Quick Copy prices will be competitive with, and in most cases lower than, non-Institute copy services.

The price of the sixth through tenth copies will be three cents each and the 11th through the 125th, two cents each; thereafter each copy will cost a penny.

Quick Copy Centers are located in Rms 3-003, 2-217 and E52-045.

Prices for self-service copies will remain unchanged, Mr. Coleman said.



Pleasant temperatures and the return of the long-lost sun drew spring seekers to the steps of Killian Court Monday.

Forums to address funding issues

(continued from page 1)

ical Engineering, and Graham C. Walker, associate professor of biology.

The remaining three sessions, all at 4pm in Rm. 9-150, will be on Monday, April 4; Monday, April 11, and Monday, April 25. Informal suppers and discussions will follow each meeting.

These will be the topics and participants:

April 4—"Academic-Industrial Connection: Pesticides, Microelectronics and Energy Research"; Chairman, Carl Kaysen, David W. Skinner Professor of Political Economy and director of the Program in Science, Technology, and Society; speakers, Richard B. Adler, professor of electrical engineering and associate head of the Department of Electri-

cal Engineering and Computer Science; Henry D. Jacoby, professor of management and associate director of the Energy Laboratory, and Professor Donald Dahlsten of the University of California at Berkeley, an expert on pesticides.

April 11—"Impact of Funding Sources on MIT: Education, Research and Public Service"; Chairman, Walter A. Rosenblith, Institute Professor and Provost Emeritus; panelists, J. Herbert Hollomon, Japan Steel Industry Professor of Engineering and former director of the Center for Policy Alternatives; Charles P. Kindleberger, Ford International Professor of Economics, Emeritus; Jonathan A. King, professor of biology; David F. Noble, associate professor of the history of technol-

ogy, and Thomas B. Sheridan, professor of engineering and applied psychology.

April 25—"Institutional Policy: What Should We Do?"; Chairman, Louis Menand, special assistant to the Provost and senior lecturer in political science; panelists, Mildred S. Dresselhaus, Abby Rockefeller Mauze Professor of Electrical Engineering and Physics and director of the Center for Materials Science and Engineering; James R. Killian, Jr., former President and former Chairman of the Corporation; Harvey M. Sapolsky, professor of public policy and organization and associate chairman of the faculty, and Charles Weiner, professor of the history of science and technology.

3258 sign 'freeze' letter to Congress

(continued from page 1)

political science in 1967 from MIT and is now serving his third term in Congress. Mr. Stark, now in his sixth term, received the SB in engineering in 1953.

Following that, the delegation presented a second copy—with all 3,258 signatures appended after the fashion of a scroll—to Senator Paul Tsongas of Massachusetts, in a public ceremony on the steps of the Capitol Building for transmission to the Senate.

Presentations of the open letter were made on both occasions by Institute Professor Emeritus Victor F. Weisskopf. Other members of the delegation present were Dr. David Baltimore, American Cancer Society Professor of Microbiology and 1975 co-recipient of the Nobel Prize in Medicine and Physiology; Dr. James R. Melcher, Julius A. Stratton Professor of Electrical Engineering and Physics and director of MIT's High Voltage Research Laboratory; Dr. Lee Grodzins, professor of physics; Dr. Aron M. Bernstein, professor of physics and faculty chairman of the MIT Disarmament Study Group; Dr. Kosta Tsipis, principal research scientist in the Depart-

ment of Physics and co-director of MIT's Program on Science and Technology for International Security; Jerry S. Frost, a freshman from Hudson, O., who is student coordinator for the Disarmament Study Group; and Josephine A. Stein, a graduate student in mechanical engineering from Boston and a student member of the Group. Also present was Murray Biggs, a former assistant professor of literature at MIT who has served as a coordinator for the congressional letter project.

Members of the MIT delegation also met with aides of Sens. Nancy Kassebaum of Kansas, Howard Baker of Tennessee, and Charles Percy of Illinois and with aides of Reps. Lawrence Caughlin of Pa., Mike Andrews of Texas, John Spratt of South Carolina, Nancy Johnson of Connecticut, and Donald Ritter of Pennsylvania, who are considered to be swing votes on the freeze.

The letter urges Congressmen to "move toward reducing the risk of nuclear war" by implementing a series of proposals including negotiations toward a verifiable bilateral moratorium on weapons testing, production and deployment, followed by substantial

weapons reductions. The letter asked that Congress in the interim refrain from appropriating nuclear weapons funds and work toward having the US and the Soviet Union declare no-first-use policies on nuclear weapons. The letter concludes by urging that the US and others resume nuclear test ban treaty negotiations and join with the Soviet Union in preventing the spread of nuclear weapons to countries that do not now have them.

In a press release, the MIT Disarmament Study Group said MIT signatories to the letter included the Provost, the Chairman of the Faculty, three former Presidents, four Academic Deans, 15 Institute Professors, four Nobel Prize winners, 34 holders of endowed professorships, and all 11 scientists and engineers now at MIT who are known to have worked on the first atomic bomb in World War II.

The MIT delegates told congressmen they believed the letter is especially important "in light of MIT's place in the world of science and technology." The letter campaign, they said, has been adopted by the United Campuses to Prevent Nuclear War and signatures presently are being sought at 550 other colleges and universities in the US.

Major energy program is underway

(continued from page 1)

—To help train students who will contribute to work in this area.

Dr. Glicksman said the program will employ several innovative features.

1. Architects, engineers and others will work together on projects, from conceptualization to completion.

"Work in this area is usually not done in this way and is therefore highly fragmented and not complementary," Dr. Glicksman explained. "Architects and engineers, for example, normally ask very different questions, use incompatible methods and are largely unaware of one another's efforts."

2. The program will pay special attention to ways of disseminating and using the results of research, and to insuring that the research deals with issues considered significant by architects and engineers.

"At present, researchers frequently proceed in isolation," Dr. Glicksman said, "without a clear notion of the practical concerns and constraints that influence them. Researchers also make little effort sometimes to disseminate their findings to those who might be able to both apply them and provide constructive feedback. We'll use seminars, workshops, publications and conferences to get the word out, and we'll be looking at new techniques for disseminating and using research."

3. The program will for the first time make major use of scale models to study energy efficiency in buildings and building components.

"The physical size of buildings is a major barrier to current research into energy use in

buildings," Dr. Glicksman commented. "Most elements—slabs, walls, foundations—are inaccessible. Local weather may not coincide with desired climatological conditions for the experiment. Scale models, on the other hand, can be subjected to rigidly monitored tests under controlled conditions."

In keeping with its interdisciplinary focus, the program leadership is divided between the School of Engineering and the School of Architecture and Planning. Serving as associate director is Michael Jeroff, director of the Laboratory of Architecture and Planning, which will join with the MIT Energy Laboratory in providing administrative support for the program.

The faculty committee, chaired by Dean John de Monchaux of the School of Architecture and Planning, will govern the program. Other members of the committee are: Dean Gerald L. Wilson of the School of Engineering; Professor David N. Wormley, head of the Department of Mechanical Engineering; Professor John R. Myer, head of the Department of Architecture; and Professor David C. White, director of the Energy Laboratory.

The program also has an advisory committee made up of persons affiliated with building materials manufacturers, construction firms, developers, architectural and engineering firms and other organizations concerned with energy use in buildings. The committee will suggest research activities, provide guidance on fund-raising and recommend ways to communicate research findings effectively.

Ten faculty members in the Schools of

Architecture and Engineering and 30 graduate students affiliated with the program already are engaged in research on energy and buildings funded by industry and by government agencies.

An example of the research projects, according to Mr. Jeroff, the associate director, is a study just beginning of the energy impact of microcomputers on offices. "They use an enormous amount of energy," he said, "and they also generate a tremendous amount of heat, which requires cooling."

Other projects underway include:

—A study of aging and insulating performance of closed cell foam insulation.

—Development of scale modeling techniques.

—Physical testing of heat transfer to earth-contact structures.

—Development of educational programs for graduate and undergraduate students and professionals.

Dr. Glicksman noted that the program builds upon a long history of energy and building-related research at MIT.

"In 1939," he said, "MIT researchers designed and built one of the first houses in America to be heated by the sun's energy. It was the first of several houses that have reduced conventional energy requirements by use of passive, active, photovoltaic and earth-sheltering systems. MIT researchers have also long been concerned with materials research related to energy use in buildings. In addition, work on insulation and heat transfer dates from the 1940s at MIT."