Massachusetts Institute of Technology



Dr. Ali Javan, MIT professor of physics and one of the world's leading laser physicists, has been named as the Francis Wright Davis Professor of Physics at MIT. The appointment of Dr. Javan,

who is director of MIT's Optical and Infrared Laser Laboratory and who, in 1960, conceived and developed the first continuously operating gas laser, was an-nounced by Dr. Walter A. Rosenblith, MIT Provost.

The chair has been endowed by Dr. Francis W. Davis, the inventor of power steering for automobiles, for the support of a distinguished senior faculty member, with special emphasis on seeking practical applications of the results of research in science and engineering. Professor Javan is the first holder of the chair.

As an inventor, Dr. Davis's contributions had a major impact on automotive development. He invented the first power-assisted steering device in 1924 and during the course of his career as an engineer-innovator he received more than 40 US and foreign patents.

In commenting on the appoint-ment, Dr. Rosenblith said: "The transition from science and engineering to use continues to require extensive exploration of a wide range of fundamental topics leading to the analysis of practical problems. The appointment of Dr. Javan, who has made numerous basic contributions in his field, is significant in maintaining MIT's preeminence in this broad area."

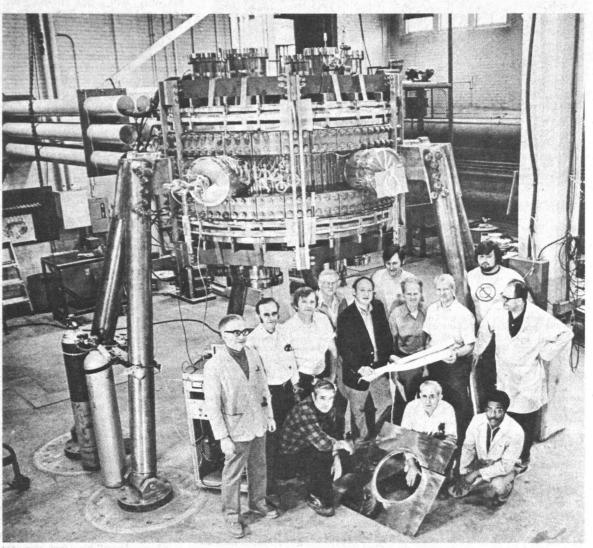
Dr. Robert A. Alberty, dean of the MIT School of Science, said the award of the chair to Dr. Javan was "in recognition of his achievements as a scientist and inventor in the general field of laser physics and its application to fundamental problems.

Dr. Herman Feshbach, head of the MIT Department of Physics, noted also that "among the most important scientific consequences of Professor Javan's work in the field of lasers are the new insights we have been able to gain into atomic and molecular processes.'

As director of the MIT laboratory, Dr. Javan has developed a variety of lasers and has been engaged in experiments to make ex-



April 5, 1978 Volume 22 Number 29



The basic assembly of ALCATOR C has been completed after seven months of hard work and MIT's newest experimental fusion machine will be dedicated formally in a program to be held Friday, April 7. With the machine in MIT's Francis Bitter National Magnet Laboratory are some members of the ALCA-TOR physics and engineering group and the MIT Plasma Fusion Center who did the work. Kneeling, left to right, are Melvin R. Vestal, Jerry Gerolamo, and Ralph A. Griffith. Standing, left to right are

Harold S. Shriber, Alexander D. Rabasco, James E. Maher, Sheldon R. Rich, Dr. D. Bruce Montgomery, George H. Chihoski, Norton T. Pierce, Joseph M. Davin, Robert A. Childs, and Tamas Z. Bakucz. Dr. Montgomery, associate director of the Magnet Laboratory for development of high-field magnets, has overall magnetic design and engineering responsibility for the ALCATOR project.

-Photo by Calvin Campbell

# to be Dedicated

One of the newest and most powerful experimental machines in the US program to harness fusion energy for generating electricity will be formally dedicated in a program to be held April 7 at MIT.

The machine is ALCATOR C, which has been constructed in MIT's Francis Bitter National Magnet Laboratory, with the support of the US Department of Energy (DOE), as a joint effort of the ALCATOR physics and engineering group and the MIT Plasma Fusion Center.

about seven months of intense work, and some preliminary tests have been made.

Representatives of DOE and physicists, engineers and officials of MIT will participate in the dedication, of which Dr. Albert G. Hill, director of the MIT Plasma Fusion Center, will be chairman. Members of national fusion laboratories, contributing industrial groups, and the Massachusetts Congressional delegation have also been invited to attend.

The dedication program will The basic assembly of the begin at 3:30pm in Room 10-250 on machine is now complete, after the MIT campus with welcoming Eizenstat to be Speaker In JCUS Lecture Series

remarks by MIT president Dr. Jerome B. Wiesner.

Dr. John M. Deutch, director of energy research for DOE, will speak on "The National Energy Problem." In his federal post, Dr. Deutch is on leave from his academic position as head of the MIT Department of Chemistry.

Dr. Bruno Coppi, MIT professor of physics and one of the originators of the ALCATOR concept, will speak on "Compact High-Field Confinement Research."

"Development of High Magnetic Fields" will be the topic of Dr. D.

# S.A. Miller Appointed By FDA

The appointment of Dr. Sanford A. Miller, professor of nutritional biochemistry at MIT, as director of the Bureau of Foods of the federal Food and Drug Administration (FDA), has been announced by Donald Kennedy, FDA Commissioner

Dr. Miller, who will be on leave from MIT, will serve as principal advisor to the FDA commissioner in the development of FDA regulatory policy concerning foods and cosmetics and will administer a bureau responsible for regulating much of the nation's \$130 billion food industry. He will be responsible also for the application and enforcement of all laws and regulations that the FDA administers in these areas.

The Bureau of Foods is one of the two largest of the FDA's five bureaus and has a staff of 850 employees, including 350 scientists.

Dr. Kennedy said: "There is no greater challenge and no greater responsibility in the FDA during the years immediately ahead and the FDA is fortunate indeed that a person of Dr. Miller's scientific stature and exceptional qualifications has agreed to accept the appointment as director of the Bureau of Foods.'

Dr. Kennedy added: "I am personally grateful for his decision and look forward to working with Dr. Miller toward our goals of creating a comprehensive strategy to improve public safety through better food labeling; examining and seeking solutions to the clear legislative gaps in both foods and cosmetics regulation; and putting in place a continuing, periodic reevaluation of the scientific decisions upon which the FDA relies in assuring food safety; and in attracting additional scientific support for the bureau."

Dr. Miller was selected after a nationwide search that included contacts with more than 400 consumer, industry, professional, and public groups, the FDA said. He will assume his new job in July.

In commenting on the appoint-(Continued on page 3)

Women's League Talks to Begin

tremely refined measurements on the interaction of radiation with matter.

His efforts at MIT have prompted the establishment of

(Continued on page 8)

# **Fraud Scheme** Surfaces Again

A new wrinkle on the fraudulent invoice scheme has appeared at MIT according to Robert E. Durland, purchasing agent.

In this version, an invoice ar-rives together with a credit memo for goods returned to the warehouse. The credit memo, Mr. Durland says, seems to lend legitimacy to the invoice, making the receiving office eager to process payment.

The company, Trans World Sys-tems of Los Angeles, has been added to the computer tape that prevents checks from being issued to organizations known to send fraudulent invoices.

Stuart Eizenstat, assistant to President Carter for domestic affairs and policy, will be the second speaker in a forum series, "City Limits: Prospects for Urban America," sponsored by the MIT-Harvard Joint Center for Urban Studies.

Eizenstat, a major architect of President Carter's recently announced urban program, will speak on Monday, April 10, at 5pm in Rm. 100, Longfellow Hall, at the Harvard Graduate School of Education, Appian Way, Cambridge.

His topic will be, "A View from the White House." The talk will be followed by a question and answer period.

The first speaker in the series was Housing and Urban Development Secretary Patricia Roberts Harris. Other speakers will be Joseph

Califano, Secretary of Health, Education and Welfare, who will talk on "The Urban Poor and Welfare Reform"; Vernon Jordan, executive director of the National Urban League. "Jobs and the Urban Economy" and Coleman Young, mayor of Detroit, "Crime in the Cities."

The dates will be announced.

WCVB-TV (Channel 5), as part of its public service programming, is co-producing a television series coinciding with the forums. Dr. Arthur P. Solomon, director of the Joint Center, and WCVB-TV anchorperson Natalie Jacobson will interview each of the guests.

The interview with Mr. Eizenstat will be broadcast on Monday, April 17, at 7:30pm, and with Secretary Harris on Thursday, April 27, at 7:30pm.

Bruce Montgomery, who is one of the world's leading authorities on (Continued on page 3)

# Phi Beta Kappa **Invites Others**

All members of Phi Beta Kappa in the MIT community-wherever initiated-were invited this week by Professor Charles E. Holt, III, chapter president, to affiliate with the MIT chapter for its spring activities.

These include a chapter meeting April 11 (3:30pm in Rm. 10-280) and the annual initiation for new members April 28 at 5pm, followed by the annual dinner at the Faculty Club.

Further information on membership is available from Jay K. Lucker, treasurer of the chapter, Rm. 14N-216, x3-5651.

A series of talks on "What Every Woman Needs/Wants to Know" concerning benefit programs and personal financial planning, will open today (Wednesday, April 5) at 11:30am in the Little Theatre.

First speakers in the program sponsored by the MIT Women's League will be Nancy Woodman-Urguhart and Donna J. Taylor of the Benefits Office who will discuss financial and social benefits available to MIT personnel and their families. Margaret F. Mann, 1978 chairwoman of the seminars, will be moderator.

On April 12, Dr. Melvin Rodman, director of the MIT Medical Department, will discuss options available in the health plans, with Jacqueline Ward as seminar coordinator. William Goodman III, vice president and trust officer of New England Merchants National Bank, will discuss individual financial planning at the final seminar on April 26, with Betty Johnson as moderator.

The seminars are open to all members of the MIT community.

# Student AIAA to Sponsor **Energy Technology Forum**

Increased use of coal and fossil fuels, fusion power, more nuclear reactors, earth-based solar energy, space-based solar power, and the future energy employment outlook are among the topics for discussion at a special conference, "Energy Technology: Meeting Tomorrow's Needs?" to be held at MIT Friday, April 14.

Sponsored by the student program division of the American Institute of Aeronautics and Astronautics (AIAA) and the Forum for the Advancement of Students in Science and Technology (FASST), the all-day conference is designed to be a forum for discussion of technical options in energy for the future. Speakers, discussion groups, and panel presentations will cover such topics as: Future Energy Supply and Demands: What are the Options?; Review of Present Alternatives; Fossil Fuels; Nuclear Power; Solar Energy; Geothermal Energy; Wind Energy; a special session on Space-based Solar Power Systems; and Future Energy Alternatives-Where Do We Head?

Speakers for the symposium include: Dr. Peter E. Glaser, vice president, Arthur D. Little, Inc., and originator of the concept of space-based solar power stations; Lionel S. Johns, program manager, Energy Programs, Office of Technology Assessment, US Congress; Lawrence Levy, direc-tor, Northeast Solar Energy Center, Northern Energy Corporation; Alan McGowan, director, Scientists' Institute for Public Information; Dr. John P. Longwell, professor of chemical engineering at MIT; Dr. David Rose, professor of nuclear engineering at MIT; Richard L. Rudman, director, Planning Staff, Electric Power Research Institute; Alan Skopp, Research and Engineering, EXX-ON; and Gordon R. Woodcock, Research and Engineering, Boeing Aerospace Company.

Directed primarily toward college and university students, the symposium also welcomes participation by interested professionals and faculty members.

Registration fee for the conference is \$10.00 preregistered, \$12.00 at the door. (Seating is limited, however, so preregistra-

# **Museum Seeks Energy Questions**

QUESTION: How can one determine if a person's perception of the energy situation is accurate? ANSWER: Ask the right ques-

tions.

The MIT Energy Laboratory is asking the MIT community to help it develop an "energy quiz" that will become part of a major energy exhibit being planned by the Museum of Science.

Question framers should keep in mind that many of those who take the energy quiz on the museum's computer will be children, "so some of the questions should be very primitive," said the Energy Laboratory's John C. Houghton, a mineral economist who is working on the museum's project. David O. Wood, associate director of the Energy Laboratory, is coordinating the lab's efforts to aid the museum.

tion is the safest bet.) This fee includes symposium materials, lunch, and an evening banquet.

For further information, contact: AIAA, MIT Student Branch, x3-2278 or x3-4926. Registration forms can be obtained from the AIAA in Rm 33-222 or from Barbara Marks, Rm 33-119.



#### Announcements

Weekend Pottery Workshop-\$5/day. April 8, 10am-4pm, Rm 429, Student Center. Cora Pucci, a participatory experience, interrelationship of clay drawing, design, Potluck lunch. 7pm-9pm, slides, free, open to the public. April 9, 10am-12:30pm and/or 1:30pm-4pm, throwing workshop with individual attention, one person per wheel.

Dept. of Electrical Engineering and Computer Science\*\*-Freshman Orientation will be held on Thurs., Apr. 6, 7:30pm, Rm 9-150. Meet faculty and students, hear description Course IV and its activities. Refreshments.

UROP Symposium\*-Come and hear 4 Wellesley students describe their research experiences in UROP. Thurs, Apr 6, 4-6pm, Rm 264, Science Center, Wellesley College. Refresh-

MITAA\*\*\*-elections for president, secretary and two members-at-large will be held Wednesday, April 12, at 7:30pm, Varsity Club Lounge, duPont. Students interested in one of these positions should obtain nomination forms at the athletic department (W32-109) and return them with 100 signatures no later than Monday, April 10.

U.A. Elections\*\*-Undergraduates Associa-tion, balloting for UAP, UAUP, and class officers will be held on Apr 12. Info available from UA Office, 8:45am-5:15pm, Rm W20-403, Lobby 10

Scene Painters Needed-Musical Theatre Guild, for MTG's "Guys and Dolls" during week of April 1-7 in Kresge. Call 253-6294.

Meet the Candidates\*\*-Undergraduate Association. Hear the UAP/UAVP candidates. Ask questions of the candidates. Thurs, Apr 6, 4-6pm, Rm 10-250.

Conversation Exchange\*-The MIT Wives' Group has compiled a list of international women interested in exchanging foreign lan-guage conversation for English conversation. Contact: Karen Devine, x3-2916.

Faculty members who are interested in serving as freshman advisors in '78-'79 should contact the Office of Freshman Advising, Rm 7-103, x3-6771.

Help Wanted-WTBS is looking for self-starting people: who will be here this summer to do a 7am-9:30am music program; to be controller, treasurer; to join the technical department in repair and construction of broadcast electronics. Call x3-4000, or leave message with Jay, 271-2232, 9am-5pm, Rm 50-030

Toys are needed for the Wives Group babysitting service. At present there are fewer toys available than before. If you have toys that your child or children no longer play with or if you are leaving MIT and would like to donate some toys to the collection, call Karen Devine, 253-2916, or bring them to the babysitting room 494, Student Center, at any meeting of the Wives Group on Wednesday afternoon from 3-5pm

4-339. Department faculty and students will be on hand to chat with students and to answer questions about course requirements and options for physics majors. Refreshments.

Senior Class Meeting\*\*\*-April 5, 8-10pm, Rm 400, Student Center, to discuss senior week activities, commencement speaker, fund raising activities. Questions? Call Fern, d1 8533.

Freshmen-be sure to send Course Selection card to the Registrar's Office by April 24.

MIT Community Players need 14 men for Heinar Kipphardt's "In the Matter of J Robt Oppenheimer." Director, Joel Hersh. Per-formances, May 18, 19, 20. Auditions-Apr. 5, 39-500, 7-10pm. Call Dave, 891-3969.

MIT Sea Grant Program<sup>®</sup>-Project Progress Review, Marlar Lounge (Rm 37-252), Wed, Apr 6, 8am-5:30pm; Thurs, Apr 7, 8:30am-12:30pm.

#### New UROP Listings

For more detailed information on UROP opportunities listed, MIT undergraduates should call or visit the Undergraduate Re-search Opportunities Program Office, Room 20B-141, Ext. 3-5049 or 3-4849 unless otherwise specified in the listing. Undergraduates are also urged to check with the UROP bulletin board in the main corridor of the Institute.

Summer UROP - Call for Proposals Proposals for summer UROP support are now being accepted. Eligibility for overhead waiver, materials and services expenses, and wage support is limited to undergraduates continuing ongoing projects. Proposals should be submitted to the UROP coordinator in your faculty research supervisor's department Proposals of merit will be considered on a first come, first served basis until the money runs out. Tangible evidence of faculty enthusiasm for the proposed research is convincing. If you apply for UROP funds for all or part of your summer wages, payment will be limited to a maximum of \$1,500 at \$3.00/hour. If only overhead waiver is requested, there is no maximum total or maximum hourly rate. Please read the "How to Participate" section of the UROP Directory, pages l-ll.

Boston Zoological Society Stoneham Zoo The BZS is planning to start a token economy with three orang-utans. The project is in need of someone to design and build an apparatus for the orangs to manipulate for tokens; and a 'vending machine" in which the orangs may deposit the tokens for food. Both the apparatus and the vending machine must be durable (orangs have incredible strength), safe, and have all moving parts well hidden (orangs have a remarkable ability to unscrew and unbolt even the tiniest screws and bolts). Interested persons are encouraged, but not required, to continue involvement beyond the design and construction stage, to aid in the initiation of the economy.

**Children's Hospital** 

Student to participate in a project involving the testing and evaluation of data concerned with strain gauge performances on animal bone. Orthopedic lab has been concerned with describing the dynamics of human motion, especially gait studies, and the development of devices to measure prosthetic equipment. Sophomore or junior with an interest in biomedical engineering preferred. Knowledge of FORTRAN and PDP computer necessary. High Voltage Research Laboratory

The movement of charged solid particles by electric fields is useful in particle precipitators, ink jet writing and other devices. Such movement is also a major hindrance to reliable electrical insulation. An experimental study of solid particle charging and motion in electric fields is proposed. Contact Chathan Cooke, N-10, x3-2591.

Acoustics: Combustion Engine Noise Project Opportunity for student to become involved in identification of methods to control and reduce internal combustion engine noise and vibration. The project involves identifying vibration sources, transmission paths and



noise radiation of several different internal combustion engines by experimental pro-cedures as well as dynamic modeling of the engine and using digital signal processing techniques and suggesting modifications of the engine to reduce the noise. Contact Prof. Richard H. Lyon, 3-366, x3-2214.

Mechanical Engineering Opportunity for a junior or senior to participate in project on fiber-reinforced com-posites. This will involve fabrication and testing of mechanical strength. Contact Prof. Nak-Ho Sung, 35-014, x3-6049.

#### Placement

The following companies will be interview ing during the time period covered by the current Institute Calendar. Those interested may sign up in the Career Planning and Placemen Office, Mon-Fri, 9am-3pm, Rm 12-170, x3-4733.

Wednesday, April 5-GCA Technology Div; Lewis and Saunders, Inc; The Boston Co. Investment Research and Technology

Thursday, April 6-Alrich Precision Manufacturing; BayBanks Data Services, Inc; Codex Corp; Computer Interactive Services; ITT Telecommunications Technology Center; Malden Mills; MOS Technology, Inc; National Broadcasting Company; Production Services Corp; Westinghouse Electric Corp; Worthing-ton Compressors, Inc.

Friday, April 7-Advent Corp; Boeing Marine Systems; E-Systems, Inc; Systems Control, Inc; Teradyne, Inc.

Tuesday, April 11-Louis Dreyfus Corp. Wednesday, April 12-Barry Control, Inc/Div of Barry Wright Corp; Ford Motor Co; Varian Associates/MA.

#### **Club Notes**

ACM Student Chapter Meeting\*\*-Wed., Apr. 5, 4pm, Rm 8-314.

Association for Women Students\*\*-Weekly meetings, Saturdays, 4pm, Rm 3-310. MIT community welcome.

MIT Bridge Club\*-ACBL duplicate open pairs game Thursdays, 7pm, Rm W20-473. Info: 494-8593. Admission .25.

MIT/DL Bridge Club\*\*-ACBL duplicate bridge Tuesdays, 6pm, Rm W20-473.

MIT Chess Club\*-Meetings, Saturdays, 1-6pm, Rm W20-407. Speed che ss, analysis and tournaments. Info: Brad, x5-8156.

MIT Folk Dance Club\*\*-International: Sundays, 7:30-11pm, Sala de Puerto. Balkan: Tuesdays, 7:30-11pm, Student Center, Rm 491. Informal: Fridays, noon-2pm, Kresge. Israeli: Wednesdays 7:30-11pm, Lobby 13.

MIT Go Club\*\*-Regular meetings, Wednes-days, W20-473, Thursdays, Rm 4-145, 8pm. Players of all ranks, play games, sometimes informal talks on strategy & tactics. Instruction available for beginners.

Hobby Shop\*\*-Mon-Fri, 10am-6pm, Rm W30-031. Fees: \$10/term for students, \$15/term for community. Info: x3-4343.

Kundalini Yoga\*-A rediscovered technology of consciousness; come join the MIT Kundalini Yoga Group with Gurucharan Singh Khalsa to exercise, meditate, and get high. Thurs, 5:30pm, Rm 4-145, Info: Dan Buchholz, 776-9045

MIT Motorcycle Club\*\*-Regular meetings first Tuesday each month beginning March 7, 7:30pm, Muddy Charles Pub (50-110). All old members and any interested newcomers welcome. Info: x3-6924

T'ai Chi at MIT\*-Meetings Thursdays, 4:15-6:15pm, Rm W20-407. Prof. E. Liu, director. All welcome.

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	Film and videotape from everyday
	and not-so-everyday life.
April 7	
18;	
2noon	RHETORIC & JOURNALISM (See
	4/5, 11am, for details)
5pm	<b>VIDEO CLUB PRESENTS "Tamil</b>

MIT Electronics Research Society\*\*-monthly (sort of) meeting will be held Mon, Apr 10, 8pm, 20C-104. Election of officers. New acquisi-tions will be discussed. PDP-11 freaks, don't miss this one! Clubroom: 20B-119, x3-2060.

Gays at MIT\*-Discussion group on role play. ing, meeting/coffeehouse. Apr 9, 5pm, Rm 50-306.

## **Religious Activities**

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

Passover Preparation Workshops\*-"How to Feel at Home at Your Seder," Apr. 10, 5pm, 312 Memorial Dr. "Kashrut for Passover, What Is and How to Kosher for Passover," Wed, Apr 12, 7pm, 312 Memorial Dr. Rabbi Daniel Shevitz, Jewish chaplain at MIT, will speak.

MIT Baha'i Association-Prayers, every Friday, 7:30pm, MIT Chapel. Info: Mahmoud 492-2889

Christian Service\*-Sundays, 10:45am, Chapel. Singing, preaching, sometim monies, prayer following. All invited.

MIT Hillel Services\*-Daily Minyan: 8am, Rm 1-136. The Downstairs Minyan (Conservative Egalitarian): Saturdays, 10am, 312 Memorial Dr. Reform: Fridays, 6:30pm, Chapel. Orthodox: Fridays, Sundown, Kosher Kitchen (50-005); Saturdays, 9am, Bush Rm (10-105).

Interdenominational-Worship and holy com munion, Wednesdays, 5:05pm, Chapel, spon-sored by Lutheran-Episcopal Ministry. Get acquainted supper following. Info: Randy Clark, x3-6921.

MIT Islamic Society\*-Friday Prayers held in Kresge, Rehearsal Rm B, 1pm.

Prayer Time\*\*-Bible class, Fridays, 1-2pm Rm 20E-207, guest speakers, music, refresh-ments. Miriam R. Eccles, founder-director, Alpha and Omega Missionary Society.

MIT Vedanta Society\*-Meditation and dis-courses on the Gita by Swami Sarvagata-nanda, of the Ramakrishna Vedanta Society of Boston. Fridays, 5:15pm, Chapel.

# **Echoes**

#### March 19 - 25

## 50 Years Ago

Tech Show 1928 will give radio listeners around Boston a chance to hear a few selections from this year's production "Half a Man," when it broadcasts an hour's program through radio station WBZ.

# 40 Years Ago

The largest Dean's List in history was released with 785 undergraduates represented. Of the four classes the seniors, Class of '38, have the best average.

#### 25 Years Ago

Dan McNally, '54, happened to know a press agent for Debbie Reynolds, singing star of MGM pictures. When McNally heard that Miss Reynolds was coming to Boston, he invited her to have dinner at his fraternity, the Institute chapter of Theta Delta Chi. After dinner, Miss Reynolds was presented with a bouquet of red carnations, the official house flower.

Institute debaters captured five honors at the Grand National Strawberry Leaf Festival at Mary Washington University in Fredericksburg, Virginia. Representing the Institute were Eldon Reiley, '55, Oliver Johns, '56, Joseph R. Schaffer, '56 and Kevin Forsberg, '56

2-3pm 3-4pm 4-5pm 7-8pm 8-8:30pr Friday, hanne 11am-12

12-12:45pm

1-2:30pn

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Channel 8: 10:30am

12noon 12-12:45pm

3:30-4:30pm

4:30pm

"Part of our mission," he said, "is to communicate in nonstandard ways about energy. Working with the Museum of Science on this project affords such an opportunity."

People taking the energy quiz at the museum will type into a computer their name, age and years of schooling. An appropriate set of questions will be produced by the computer, answered by the quiz taker, then graded by the computer.

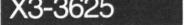
Question writers should send their contributions before April 19 to John C. Houghton, MIT Energy Laboratory, Rm. E38-406.

Blackwork-one-day workshop, Monday, April 10, 10am-3pm, led by Priscilla Gray. Blackwork is a delicate style of embroidery using one color thread on linen. Limited enrollment, registration required. Contact: Lillian Alberty, 491-3689, or Nancy Hollomon, 734-4763.

I. Austin Kelly III Competition\*\*-Deadline for submissions, Fri., Apr. 28, 5pm. Two prizes, with an award of \$250 each, will go to the best scholarly/critical papers in Anthropology, Archaeology, History, Literary Studies and Musicology. Minimum length, 4,000 words. Further information from the Course XXI office, 14N-305, x4446.

Department of Humanities\*\*-Open House for all undergraduates interested in majoring or concentrating in Foreign Languages and Literatures, History, Literature, Music, American Studies, Ancient & Medieval Studies, Anthropology-Archaeology, Drama, Russian Studies, Western Tradition (formerly Crossroads), Writing, Thurs, Apr 6, 3-5pm, Courtvard, Bldg 14-adjoining hall in case of rain. Refreshments. Information on specific subjects for next year.

Physics Department\*\*-Open House for freshmen and sophomores interested in learning more about opportunities in physics for a major and/or career on Wed, Apr 12, 3-5pm in the Undergraduate Physics Common Room,



April 5 - 11, 1978

2-2:45pm

3-4:30pm

7-8pm

8-9pm

9-10pm

12-2pm

Wednesday, April 5 3-5pm Channel 8: 11am-12noon RHETORIC & JOURNALISM (21.940) with Ed Diamond. Guests: Victor Cohn, Washington Post, and Rae Goodell. MIT Writing Pro-gram. Recorded 3/10/78. THE APPLICATIONS REVOLU-10-10:45am 12noon-1:30pm TION PROMISED BY COMMUNI CATIONS SATELLITE by B.O. Evans, VP Engineering Program-ming and Technology. Inter-national Business Machines Corpo-11am-12noon ration. Recorded 3/9/78. VIDEO CLUB PRESENTS "Tamil 12-2pm VIDEO CLUB PRESENTS 'Tamii Nadu Drama'' A documentary of an actors' troop based in Madurai. India. The troop performs semi-traditional dramas as part of temple festivals. Taped by Bill Crawford while studying at Madurai University in 1977. VIDEO CLUB PRESENTS "Log-6.013 Problems in Electroquasistatics (Professor Haus) 6.013 Problems in Electroquasistatics (Professor Haus) 6.013 Problems in Electroquasistatics (Professor Haus) 1-2:30pm Thursday, April 6 Channel 8 VIDEO CLUB PRESENTS "Log-10:30-12noon VIDEO CLUB PRESENTS "The Middle East: Prospects for Peace" A discussion of the issues concerning the Middle East situa-

Nadu Drama" (See 4/5, 2pm, for details) THE APPLICATIONS REVOLU-TION PROMISED BY COMMUNI-CATIONS SATELLITE (See 4/5, 12noon, for details)-VIDEO CLUB PRESENTS "The Middle East: Prospects for Peace" (See 4/6, 12noon, for details)

Monday, April 10 Channel 8

VIDEO CLUB PRESENTS "Tamil Nadu Drama" (See 4/5, 2pm, for details) RHETORIC & JOURNALISM (21.940) with Ed Diamond. Guest: William Henry, Boston Globe. Re-corded 3/17/78. VIDEO CLUB PRESENTS "The Middle East: Prospects for Peace" (See 4/6, 12noon, for details THE APPLICATIONS REVOLU-TION PROMISED BY COMMUNI-CATIONS SATELLITE (See 4/5, 12noon, for details) Tuesday, April 11 VIDEO CLUB PRESENTS "Log-VIDEO CLUB PRESENTS "Tamil Nadu Drama" (See 4/5, 2pm, for details) VIDEO CLUB PRESENTS "Anthropological Funnies" A grab bag of scenes shot in Madurai, India. of scenes shot in Madurai, India. by Bill Crawford in 1977. BASEMENT VIDEO PRESENTS LIVE FROM THE FILM SEC TION "Feeding the Cable" Film and videotape from everyday and not-so-everyday life.

Prepared by Marcia Conroy, MIT Historical Collections, x4444.

> TECH TALK Volume 22, Number 29 April 5, 1978

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Page 2, Tech Talk, April 5, 1978

# S.A. Miller Appointed

(Continued from page 1) ment, MIT Provost Dr. Walter A. Rosenblith said: "We are extremely proud that a member of our faculty has been selected for a national post of such importance, particularly at a time when our country's food policies and the public attitudes toward them are undergoing profound changes. I am sure that Professor Miller, with his exceptional breadth of knowledge in his field, will make outstanding contributions to his

position in Washington. Dr. Marcus Karel, associate head of the MIT Department of Nutrition and Food Science, said, "The department recognizes the tremendous importance of the assignment Dr. Miller is undertaking in Washington and is confident that he will make us all very proud by his performance there. At the same time, during his absence, the department will feel the effect of a great loss, especially in undergraduate teaching and in expertise in those areas of nutritional biochemistry for which Dr. Miller is justly recognized."

In addition to his teaching and research at MIT, Professor Miller has served since 1970 as director of MIT's Training Program in Oral Science. Since 1963, he has also been visiting lecturer in nutrition at the Tufts University School of Dental Medicine, Boston Univer-sity School of Medicine and the Harvard University of School of Medicine. In 1975 he was selected as outstanding teacher of the year by students in the MIT Department of Nutrition and Food Science.

Dr. Miller was one of the principal consulting nutritionists on food safety at the White House Conference on Food and Nutrition in 1969. He has been a member since 1972 of the Expert Committee on GRAS (Generally Recognized as Safe) Food Substances of the Federation of American Societies for Experimental Biology (FASEB), an advisory group that conducts studies and provides recommendations for the FDA on food safety.



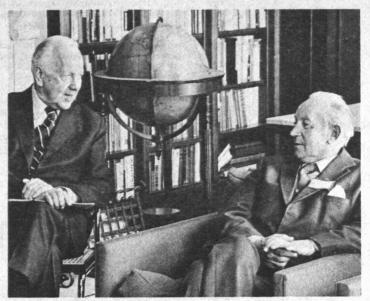
**Professor Miller** 

Dr. Miller was chairman of the committee on biochemical nutrition of the American Institute of Nutrition and has held important positions, including that of national councillor, with the Institute of Food Technologists. He was chairman of the 1973 Gordon Research **Conference on Food and Nutrition** and member of the program committee of the Western Hemisphere Nutrition Conference in 1977.

Advisory groups of which he has been a member include the Advisory Committee on Nutrition, Animal Care Panel, 1963-1969; Division of Space Medicine, National Aeronautics and Space Administration (NASA) Manned Space Flight Center, 1969; Committee on Growth and Development, National Institute of Child Health and Human Development (NICHD), 1972-73; chairman of the Ad Hoc Committee of the National Institute for Neurological Disease and Stroke (NINDS), 1972 to date; Committee on Contraceptive Steroids of the NICHD, 1973 to date; and the Advisory Committee on Nutrition of the National Institute for Dental Research (NIDR) 1973 to date. His professional memberships include the American Chemical Society, the New York Academy of Sciences, the American Institute of Nutrition, the Society for Teratology, the Perinatal Research Society, the American Institute of Dental Research, and the Society for Pediatric Research.

has had specific interests in other fields, including perinatal development of the infant with reference to dietary effects; development of oral tissues; relationships among diet, metabolic energy and structure of dietary energy sources; synthetic dietary energy sources and other sources of nutrients, such as single cell protein; food additive toxicology; diet and development of the central nervous system; and adolescent nutrition. He is the author or coauthor of more than 100 scientific articles, reviews and book chapters.

Dr. Miller received the BS degree in chemistry and biology from City College of New York in 1952, and MS and PhD degrees, in 1956 and 1957, from Rutgers University, where he taught before coming to MIT in 1957 as a research associate. He was appointed assistant professor of nutritional biochemistry in the MIT Department of Nutrition and Food Science in 1959, associate professor in 1965, and was promoted to the rank of professor in 1970.



**MIT PRESIDENT EMERITUS Julius A. Stratton, left, and others** from MIT met last week with Dr. Patrick Henchy, right, of the Chester Beatty Library in Dublin and a group of distinguished Irish visitors. A major topic of conversation was controversial writings of Patrick Rogers, father of MIT founder William Barton Rogers. in the late 18th century which forced him to flee Ireland and come to the United States. Dr. Stratton is researching a book on the intellectual foundations of MIT and is eager to discover what influence Patrick Rogers' philosophy may have had on his four sons who all became noted 19th century scientists.

# ALCATOR C to be Dedicated

(Continued from page 1)

magnet design and who has had overall magnetic design and engineering responsibility for the ALCATOR project. Dr. Montgomery is associate director of the Magnet Laboratory for development of high-field magnets.

Dr. Ronald R. Parker, who has been in charge of the ALCATOR fusion experiments since 1973, will speak on "ALCATOR C: Objectives." Dr. Parker is associate director of the Magnet Laboratory for fusion and professor of electrical engineering and computer science. He assists in coordinating the efforts of the laboratory and the Plasma Fusion Center. When the Fusion Center was established in 1976, ALCATOR personnel became joint members of the Magnet Laboratory and the Center.

Final speaker for the program will be Edwin E. Kintner, acting director of the Office of Fusion Energy of DOE. His topic will be The Promise of Fusion."

Following the addresses, a tour of the new ALCATOR machine will be led by representatives of the ALCATOR and Fusion Center group. The machine is in the **Trances Bitter National Magnet** Laboratory at 170 Albany St., Cambridge.

ALCATOR C is a follow-on machine from the highly successful ALCATOR A machine, in operation in the Magnet Laboratory since 1972. ALCATOR A holds a very important world record in fusion experimentsnamely, the product of density and confinement time of 3 x 1013 seconds per cubic centimeter at a temperature of 10 million degrees Celsius.

Fusion is the process-which powers the sun-in which nuclei of light atoms, stripped of their electrons and subjected to extreme conditions of density and temperature, are caused to fuse together. The resulting mass is less than was present in the separate nuclei, and the "missing" mass is converted into energy. Unique to the MIT ALCATOR project is the concept of using very high magnetic fields to contain the fusion plasma, or ionized gas, in relatively small chambers. Fusion research machines such as the ALCATORs employ doughnut-shaped confinement chambers known as "tokamaks"-a Russian acronym for toroidal magnetic chamber. The ALCATOR program was initiated in 1969, following Soviet successes with their tokamak program, by Professor Coppi and Professor Benjamin Lax, director of the Magnet Laboratory In the ALCATOR tokamaks, the circular inner chamber is filled with hydrogen, from which the electrons have been stripped. This interests have been in regulation plasma of nuclei and an equal number of free electrons is thus

electrically neutral but will conduct electricity.

Powerful electromagnets arranged around the chamber exert magnetic fields on the plasma and, for a fraction of a second, compress the plasma into a narrow stream of dense gas at the center of the doughnut-shaped chamber. At the same time, more energy from the power source is sent through the stream to heat the gas in a process known as ohmic heating.

The overall objective is to maximize the combination of particle density, confinement time and temperature.

With ALCATOR C the scientists and engineers expect to achieve a density-confinement time of 1014 seconds per cubic centimeter at a temperature of about 20 million degrees. If the plasma can be further heated to 60 million degrees, this would result in meeting the "breakeven" criterion at which the energy produced by the fusion process equals the energy put into

Engineering for the ALCATOR C began more than two years ago and, while based on the earlier and smaller ALCATOR A machine, incorporates many innovative concepts. (ALCATOR B was designed but was replaced by the more ambitious ALCATOR C before it was produced.)

Five Magnet Laboratory engineers, most of whom were involved in the earlier machine, designed the new machine. They and their areas of specialty are George H. Chihoski, vacuum and quality control and diagnostics; Joseph M. Davin, assembly tooling and machine supports; Wayne S. Hamburger, computer program development; Norton T. Pierce, chief mechanical design, and Carl F. Weggel, chief magnetic design.

The first parts of the new

Design draftsmen for the project were Pellegrino R. Maruzzi and Alexander D. Rabasco.

Much of the electrical systems work for the machine is being carried out by MIT students. Stephen A. Fairfax, Marcel Gaudreau (now a member of the ALCATOR group staff), Mark M. Pickrell and Michael Sansone-all graduate students-have had major system responsibilities.

While ALCATOR A operated at 90 kilogauss (the earth's magnetic field is 0.5 gauss) from the Magnet Laboratory's 30-megawatt power supply, the new machine will ultimately require 150 megawatts for operation with fields up to 150 kilogauss.

This increase in power will be provided by a huge alternator donated by Consolidated Edison Co. of New York and recently installed adjacent to the Magnet Laboratory. The alternator is expected to go into operation late in 1978.

The new power supply project is managed by James W. Meyer, assistant to the director of the Plasma Fusion Center, with engineering operations the responsibility of James C. Rose, Jr. The 328-ton alternator, which was moved by barge and rail from New York City, is being installed by the General Electric Co. A 140-megawatt rectifier is being supplied by Robicon Corp. of Pittsburgh.

Major suppliers for the ALCATOR C tokamak have been Edel-Brown Co. of Everett, Mass., which made the toroidal field Bitter plates; Nashua Industrial Machine Co. of Nashua, N.H., which manufactured the magnet flanges; Fitchburg Engineering, Fitchburg, Mass., which provided the assembly tooling and machine supports; Magnetic Corporation of America, of Waltham, Mass., which made the equilibrium and ohmic heating coils; the Transrex division of Galton Industries of Carson, Calif., which supplied the three 15-megawatt equilibrium and ohmic power supplies; Revere Brass and Copper Co., which manufactured the cryogenic-grade oxygen-free copper plates for both the toroidal and ohmic heating magnets; Metal Bellows Corpora-tion of Sharon, Mass. and Chatsworth, Calif., which made the toroidal portion of the vacuum, and M.L. Riley Vacuum Specialties which made the external diagnostic flanges.

# Høeg to Present **Civil Engineering** Mathis Lecture

Dr. Kaare Høeg, director of the Norwegian Geotechnical Institute (NGI), will be the speaker April 19 at the fourth annual Mathis Memorial Lecture sponsored jointly by the Boston Society of Civil Engineers and MIT. The lecture will be in MIT's Green Building in Rm. 54-100 at 4pm.

The lecture series was established in the MIT Department of Civil Engineering to honor the late Sam J. Mathis of Standard Oil Co. of New Jersey, who was a widely known civil engineer and construction authority.

Professor T. William Lambe of MIT heads the arrangements committee

Dr. Hoeg will discuss "Foundation Engineering for Offshore Gravity Platforms." During the last few years large concrete gravity platforms have been used as alternatives to the more conventional piled steel structures at several locations in the North Sea.

Dr. Hoeg will focus in his lecture on the NGI's evaluation of present practice and available engineering analyses, based on a comparison of before-the-event predictions to actual field measurements.

Before becoming director of NGI in 1974, Dr. Høeg was a professor of civil engineering at Stanford from 1968-74. During 1965-67 he was an assistant professor of civil engineering at MIT.

A native of Norway, he received the BS in 1961, the SM in 1962 and the Doctor of Science in 1965, all from MIT. A widely known geotechnical engineer, Dr. Hoeg interests include soil-structure interaction, constitutive relationships, offshore foundation engineering, earthquake engineering and the application of probabilistic approaches.

# Billard Award Nominations Due

Nominations are being invited from members of the MIT community for the Gordon Y. Billard Award

The Billard Award is made annually to "a member of the faculty or to its non-faculty employees or one not affiliated with the Institute, for special service of outstanding merit performed for the Institute.

It is expected that two such awards will be made this year. Previous recipients include Mrs. Helen P. Padelford, Dr. Mary P. Rowe, Professors Harold Edgerton, William C. Greene, and Bernard S. Gould, and Messrs. William Speer, John A. Little, William H. Carlisle, Jr., Philip A. Stoddard, Walter L. Milne and George Dummer.

The Fund from which the Billard Awards are made was established by Mr. Gordon Y. Billard, a member of the class of 1924.

The name or names of individuals to be recognized by the Billard Award are recommended to President Wiesner by the Academic Council, and the award is presented by him annually on Technology Day. Nominations should be addressed to the Committee for the Gordon Y. Billard Award, Room 7-103, MIT, and should include a brief statement of the nature of the service meriting this special recognition.

Dr. Miller's general research and control of metabolism, but he machine were delivered in August, 1977, and assembly began on Sept. l, 1977. Since then, the assembly crew has worked regular 101/2 hour work days, including Saturdays.

The principal assembly personnel have been Jerry Gerolamo, Ralph A. Griffith, David F. Johnson, James E. Maher, Daniel J. Sliski and Sheldon R. Rich for the electrical and mechanical machine assembly.

Assembly of the vacuum system was done by Tamas Z. Bakucz, Robert A. Childs and Harold S. Shriber. Heliarc welding of the vacuum chamber was done by Melvin R. Vestal.

Support work has been supplied by shops of the Nuclear Reactor. the Magnet Laboratory and the Research Laboratory of Electronics and major support work was provided by the Magnet Laboratory maintenance and engineering group under the leadership of Arthur M. Packard.

Estimated cost of the ALCATOR C project is \$6.7 million, of which about \$3.3 million is for moving, installing and housing the new alternator and rectifier. The donation of the alternator saved MIT and DOE an estimated \$2.3 million.

### Harris to Speak **To British Group**

Professor Wesley L. Harris of the MIT Department of Aeronautics and Astronautics and of the Department of Ocean Engineering will deliver a paper on Wednesday, April 5, at the spring conference of the Institute of Acoustics at Cambridge University in England.

The subject of the paper is "Effects of Free Stream Turbulence on Low Frequency Broadband Noise from a Model Rotor.'

The conference is the main annual British meeting on acoustics.



April 5 through April 16

# **Events of Special Interest**

**Poetry Reading and Discussion of His Poems\*** — James Baker Hall, novelist, poet, photographer, Director of Creative Writing, University of Kentucky. Sponsored by I Austin Kelly III Fund. Poetry reading, Thurs, Apr 6, 5pm, Rm 4-156. Refreshments served.

City Limits: Prospects for Urban America\* — Stewart Eizenstat, Assistant to the President for Domestic Affairs and Policy. Speaks at fourm sponsored by the MIT-Harvard Joint Center for Urban Studies. His topic: "A View from the White House". Mon, Apr 10, 5pm, 100 Longfellow Hall, Harvard Graduate School of Education, Appian Way, Camb.

**Tech Wives Spring Bake Sale\*\*** — Thurs, Apr 13, 9am to sell out, Lobby 10. Baked goods and sandwiches will be sold.

# Seminars and Lectures

#### Wednesday, April 5

**Density Driven Flow Over a Slope\*** — **Dr. Gabriel Csanady**, physics oceanography, W.H.O.I. Oceanography Sack Lunch Seminar, Noon, Rm 54-915. Bring your lunch, coffee served.

Buckling of Cylindrical Shells Stiffened by Circular Ribs\* - Prof V.A. Postnov, Leningrad Shipbuilding Institute. Ocean Engineering Seminar, 1pm, Rm 5-314.

Forced Modelocking of a GaAlAs Laser\* - P.T. Ho; Prof H.A. Haus, electrical engineering. EECS Optics Seminar, 2-3pm, Rm 36-428.

Engineering, Policy and Society\* — Courtland D. Perkings, President, National Academy of Engineering. Sponsored by Aeronautics and Astronautics. Special Series Seminar, 3pm, Rm 37-212. Coffee served preceding, Rm 33-222.

A Nodal Method of Flux Mapping\* — J. Koclas, Nuclear Engineering Seminar, 3-4pm, Rm NW12-222.

**UROP Symposium\*** — **Brad Schaefer**, Quasars and Eclipsing Binaries, 3:30pm. **Abel Weinrib**, Spin Aligned Atomic Hydrogen-A Low Temperature Bose Gas, 3:50pm. **Paul Boisseau**, Building A Proton Microprobe, 4:05pm. **John Molitoris**, Using the Energy Mass Spectrograph to Investigate Heavy-Ion Fusion, 4:25pm. **Jeff Hunt**, A New Approach to a Nitrogen-Pumped Dye Laser, 4:45pm, Rm 4-339, Refreshments.

M.H.D. Power Generation To The Rescue?!\* - William C. Unkel, assistant professor, mechanical engineering. Thermodynamics Seminar, 4pm, Rm 1-114. Coffee served 3:45pm.

#### Thursday, April 6

**Coherent Optical Spectroscopy of Molecules\*** – Ahmed Zewail, California Institute of Technology. Modern Optics and Spectroscopy Seminar, 11am-Noon, Rm 66-110. Coffee served at 10:30am.

Confining Tokamak Plasma with RF Driven Currents\* – Dr. Nathan J. Fisch, research laboratory of electronic. Plasma Theory Seminar, 3pm, Rm 36-261.

How Much for Defense?\* - Prof William W. Kaufmann, political science. Center for International Studies Seminar, 4pm-5pm, Rm E53-482.

Efficient Addressing in Concentrators\* — Dr. Pierre Humblet, Electrical Systems Laboratory. Systems Communication and Control Seminar, 4pm, Rm 39-500.

Management Issues in Construction Banking, and Real Estate Development\* — Prof Rodolfo J. Aguilar, consulting professor, Louisiana State University. Civil Engineering Seminar, 4pm, Rm 1-350.

Modeling and Analysis for Traffic Safety\* — Prof Saul I. Gass, chairman manager, Science and Statistics, College of Business and Management, University of Maryland. Paul S. Levy, Chief Information System and Modeling Branch, National Highway Traffic Safety Administration, Department of Transportation, Washington, DC. Operations Research Center Joint Seminar, 4pm, Rm 24-121. Coffee and donuts served.

**Thermal Modeling of Biological Tissues Subject to Microwave-induced Hyperthermia\*** — **Dr. Robert Hannemann**, assistant professor. Mechanical Engineering Department. Heat Transfer Seminar, 4pm, Rm 3-133. Power System Protective Relaying-Science of the Occult\* – Dr. Stanley Horowitz, American Electric Power Company, Electric Power Systems Engineering Laboratory Seminar, 3pm, Rm 4-149.

System Theory of Environment<sup>\*</sup> — Bernard C. Patten, Professor of Zoology, University of Georiga, Athens, Georgia. Mechanical Engineering Seminar, 3pm, Rm 3-133. Coffee at 4pm, Rm 1-114.

Electron Spectroscopy of Surfaces: Defects on Transition Metal Oxides\* — Dr. Victor E. Henrich, Lincoln Laboratory. Center for Materials Science and Engineering Colloquium, 4pm, Rm 9-150. Refreshments at 3:30pm.

The UN Program on Energy LDC's\*\* — Dr. Shem Arungu-Olende, Center for Natural Resources, Energy Developing Countries, Energy Transportation, UN, New York, 4-5:30pm, Rm 24-117.

The Soviet Navy: Implications of Deployments and Maneuvers\* – Joseph Arminio, PhD candidate, political science. Defense and Arms Control Students Seminar, 4pm, Rm E53-482.

Comparison Processes in Visual Memory\* – Dr. Lynn A. Cooper, psychology, Cornell University. Psychology Colloquium, 4:30pm, Rm E10-013. Coffee at 4:15pm.

#### Monday, April 10

A Mechanical-Reflex Oscillator Hypothesis for Human Tremors\* – Prof Robert N. Stiles, University of Tennessee, Center for the Health Sciences. Harvard-MIT Rehabilitation Engineering Center Seminar, 4pm, Rm 37-252. Coffee served.

Stability of Stratified Flow: Le Cas Singulier De La Mode Neutre Et Son Voisin Instable<sup>\*</sup> — Prof Louis N. Howard, mathematics. Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served 3:30pm, Rm 2-349.

Strategies for the Small Tropical Farmer<sup>\*</sup> – Dr. Hugh Popenoe, University of Florida. Joint MIT/INP and Harvard School of Public Health Graduate Seminar Series, 4-5:30pm, Rm 66-168.

Treatment of Sludge and Waste Water with Energized Electrons\* – Dr. John Trump, professor of Electrical Engineering, emeritus, Director High Voltage Laboratory. Water Resources and Environmental Engineering Seminar, 4-5pm, Rm 48-316.

US Arms Trade Policy\* — Jessica Tuchman, National Security Council. Technology and International Security Seminar, 4-6pm, Rm E53-482.

Intelligence Out of the Shadows\* — William Colby, the former director of the CIA. Sponsored by the Lecture Series Committee, 8pm, Kresge. Tickets \$1 at the door, Lobby 10 and the LSC Office W20-469.

#### Tuesday, April 11

Image Enhancement/Transmission System\* — Gerry Hoover, CIPG Seminar, 1-2pm, Rm 38-466.

Comparative Problems of Urban and Environmental Crisis Planning in India\* — Dr. Rashmi Mayur, director, Urban Development Institute, India. Center for International Studies and Sloan School of Management Seminar, 3-5pm, Rm E53-482.

Ballooning Mods in High-Beta Tokamaks\* — Antonio Ferreria, graduate student, Nuclear Engineering Seminar, 3:30pm, Rm 38-136.

Non-local Continuum Mechanics (and some of its applications)\* — Dr. Cemel Eringen, professor, engineering and applied science, Princeton University. Applied Mechanics Seminar Series, 3-4pm,Rm 3-133. Coffee 4-5pm, Rm 1-114.

Solid State Polymerization of Diacetylenes\* — Dr. Ronald R. Chance, Material Research Center, Allied Chemical. Seminar in Physical Chemistry, 4pm, Rm 4-370. Coffee 3:45pm, Rm 6-321.

Some Simple Collapsible Tube Flows: Experimental and Theoretical Aspects\* — Mike McClurken, research assistant. Fluid Mechanics Seminar, 4pm, Rm 5-234.

Statistical Problems Arising in Legal Cases\* — Prof Joseph Gastwirth, George Washinton University. Statistics within the Math Department Seminar, 4pm, Rm 2-338. Refreshments: 3:30pm, Rm 2-349.

Gene Mapping, Constructing A Library and Related Topics\* — Dr. Norman Davidson, divisions of chemistry and chemical engineering, The Chemical Laboratories, California Institute of Technology, Pasadena, California. Biology Colloquium, 4:30pm, Rm 6-120. Coffee served 4pm, 5th floor Vestibule, Bldg 56.

A Journey to Cairo and Damascus: A Journalist Reflects on Israel, The Arabs, and Peace<sup>\*</sup> — Prof Leonard Fein, Brandeis University, editor of Moment Magazine. Lecture sponsored by MIT Hillel, 7:30pm, West Lounge, Student Center.

#### Wednesday, April 12

**Engineers in Society\*** — **Joseph Yamron**, vice president and general manager, Precision Products Division, Northrop Corporation, 2pm, Rm 37-252.

Interfacial Effects in Fast Reactors\* — M. Saidi, Nuclear Engineering Seminar, 3-4pm, Rm NW12-222.

Topics from Tadem Mirror Physics\* - Dr. David Baldwin, Plasma

#### Friday, April 14

 $\label{eq:problems} \begin{array}{l} \textbf{Problems of US Policy in Africa^{*}-Richard Moose, Assistant S_{ecret} \\ of State for Africa. African Luncheon Seminar, 1-2:30pm, Rm E52.461 \\ \end{array}$ 

Polymer Coffee Hour\* — Prof Chen Chung of RPI will discuss polyn processing techniques, 2-4pm, Rm 8-314.

Effects of Unit Size on Design and Performance of Machinery -Fayette Taylor, professor emeritus, mechanical engineering. Mechan Engineering Seminar, 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

Recent Progress in Laser Fusion Research\* — Prof Leonard Goldm Rochester University. Plasma Dynamics Seminar, 3:30pm, Rm 36.3 Refreshments 3:15pm, Rm 36-261.

Chemical Engineering Seminars\* — Herbert M. Wood, Rec Temperature Programmed Desorption Experiments, 2pm. Jo Congalidis, 2:50pm. Daniel Dershowitz, 3:25pm, Rm 66-110. Titles to announced.

# **Community Meetings**

Wives' Group\*\* — Wed, Apr 5: Bring Your Crafts! Practice English a meet other women, 9:15am-Noon, meet outside Eastgate Roof Loun babysitting provided. Gail Stein of Newton North High School will sp on: "A Housemaster & History Teacher Looks at a Suburban High School 3-5pm, West Lounge, Student Center, Babysitting provided.

Star Party\*\*\* — MIT Astronomical Society. Sat, Apr 8/Raindate Sun, 9, Dark-Midnight, Whitin Observatory, Wellesley. Info: Mike x5.9 Dorm.

Love: Theme & Variations\* — Presented by Ilona Ricardo with pian composer Richard Busch. Sponsored by Humanities Department, program of American and English poetry. Sun, Apr 9, 8pm, Kresge Lit Theatre. Free.

Wive's Group\*\* — Carmen Medina, Member of the Wives' Group will sh a film and speak on: "The Canary Islands: The Fortunate Islands," W Apr 12, 3-5pm, Rm 407, Student Center, Babysitting provided.

Against the Grain of Contemporary Fashion\* — Creative Photograp Lecture Series given by Jerome Liebling. Wed, Apr 12, 4:30pm, Creat Photography Laboratory, 120 Mass Ave, Camb, MA. Coffee served, Free, mission.

Tech Wives International Cooking\*\* — A tea-tasting party. Wed, Apr 8pm, Rm 10-340. Info: Taslim Sabur 494-0296 or Pattie Dobson 646-40

Tech Wives Weekly Excercise Class\*\* — Technology Wives Organi tion. An hour of exercise led by professional Marilyn de Kleer. Every M day through May 1, 8pm, Exercise Room, 2nd floor, Dupont Gym. Info: C Linda Morecroft 494-8434.

**Eating in Response to Stress\*\*** — Don't let pressure control your eating You control it. Nutrition and Food Science discussion, Every Thursday, 1 37-272.

# Lobby 7

Chess Match vs. Stone & Webster<sup>\*\*</sup> — MIT Chess Club. A 30-board che match against Stone & Webster Engineering. Sat, Apr 8, 1pm. Info: B x5-8156.

# Social Events

MIT Semi-Formal Ball\* — MIT-Wellesley Ballroom Dance Club. This your chance to practice all you've learned. An elegant evening of dance t live band with the MIT-Wellesley Ballroom Dance Club. No partner net sary, Sat, Apr 8, 8pm, Sala de Puerto Rico. Admission: \$2.50. Info: St Brundage x5-8347.

Strat's Rat\* — Sponsored by SCC. Dancing and drinking; live DJ; beera wine: 35¢/glass, 3/\$1; wine available by bottle. Fri, Apr 7, 8:30pm-1am.8 de Puerto Rico, 2nd floor, Student Center. Free admission, College ID quired.

Spring Fever Dance\* — Sponsored by the Gays at MIT, Disco dance goodtime party. Sat, Apr 15, 9pm-1am, Sala de Puetro Rico, Stud Center. Admission \$2, free w/MIT or Wellesley ID. Beer and soda serv

# Movie

Four Musketeers\*\* — LSC movie. Fri, Apr 7, 7 & 9:30pm, Rm <sup>26-1</sup> Admission 75¢ w/MIT or Wellesley ID.

Three German Films\* — Fri, Apr 7: The Murders are Among Us. Morder sind unter uns), 1946. Sat, Apr 8: Kirmes, 1960. Sat, Apr 15: Subject, (Der Untertan), 1951. Sponsored by Gethe of Boston and Humanities Department. All black & white with English subtitles, by W Gang Staudte, Spm, Rm 54-100. Free.

Public Interest Science: Probing the Dark Side of Technology\* — Prof Henry Kendall, Physics Colloquium, 4:15pm, Rm 26-100. Tea served 3:45, Rm 26-110.

Seminar on Indo-Us Relations\* — N. Palkhivala, India's Ambassador to US, Washington. Sponsored by Sangam Indian Students Association, 5pm, West Lounge, Student Center.

#### Friday, April 7

Antimicrobial Therapy in Periodontal Disease\* – Dr. Harald Loe, Dean, University of Connecticut Dental Medical School, Farmington, Connecticut. Oral Science Seminars, Department of Nutrition and Food Science, 11-Noon, Rm 66-144.

Studies on Lipoprotein Lipase\* – Dr. Andre Bensadoun, professor, Division of Nutritional Sciences, Cornell University, Ithaca, New York. Arteriosclerosis Center Seminar, 12:30-2pm, Arteriosclerosis Center Conference Room.

Particle Beam Inertial Confinement Fusion\* — Dr. Milton Clauser, Sandia Laboratories. Plasma Dynamics Seminar, 2pm, Rm 36-261. Refreshments 1:45pm.

**Chemical Engineering Seminar\*** — **James D. Bittner**, graduate student, Chemical Engineering, 2pm. **Peter Harriott**, Cornell University, The Effect of Mass Transfer on Selectivity in Catalytic Hydrogenation, 3pm, Rm 66-110.

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Dynamics Seminar, 4pm, Rm 36-261. Refreshments 3:45pm.

**Project Cost Management During Conceptual Engineering\*** – J. **Michael Scholz**, P.E., manager of estimating, Petroleum and Chemical Engineering Division, Brown & Root, Inc., Houston, Texas. Civil Engineering Seminar, 4pm, Rm 1-150.

#### Thursday, April 13

Recent Results in CO<sub>2</sub> Laser Fusion\* — Charles Fenstermacher, Los Alamos Scientific Laboratory. Modern Optics and Spectroscopy Seminar, 11-Noon, Rm 66-110, Coffee served 10:30am.

Information Theory and Search Theory; A New Look at Their Relationship<sup>\*</sup> – Dr. John G. Pierce, director, Exploratory Research Division, Center for Naval Analysis, Arlington, Virginia. Operations Research Center and Center for Advanced Research Study Joint Seminar, 4pm, Rm 24-121.

New Technologies of Communication and the First Amendment\* – Speakers: Stuart Sucherman, WNET; Abraham Chyes, Harvard Law School; Steven Rivkin, Washington Attorney; John Eger, Washington Attorney, Former Director, Office of Telecommunications Policy, 4-6pm, Rm 37-252.

The Surface of TiO<sub>2</sub>\* — Dr. Howard S. Jarrett, DuPont de Nemours & compnay. Physics Colloquium, 4:15pm, Rm 26-100. Tea served at 3:45, Rm 26-110.

Electron in Clusters: Dynamical Probes of Picosecond Relaxation in Fluids\* – Dr. G.A. Kenney-Wallace, chemistry, University of Toronto. Harvard-MIT Physical Chemistry Colloquium, 8pm, Rm 66-110. Great Expectations\*\* — Director David Lean, sponsored by the Depter ment of Humanities. Fri, Apr 7, 9:30pm, Rm 66-110.

Wuthering Heights<sup>\*\*</sup> — With Sir Laurence Olivier, sponsored by Department of Humanities. Fri, Apr 7, 7:30pm, Rm 66-110.

Nasty Habits\*\* — LSC movie. Sat, Apr 8, 7 & 9:30pm, Rm 26-100. Administration 75c w/MIT or Wellesley ID.

Midnight Movie: The Mouse That Roared\*\* — Sponsored by SCC. Apr 8, Midnight, Lobdell, Student Center. Bring your own blankets and on the floor. Free.

Animal Crackers<sup>\*\*</sup> — LSC movie. Sun, Apr 9, 6:30 & 9pm, Rm 26-100 mission 75c w/MIT or Wellesley ID.

French Film Classic\*\* — La Grande Illusion (Renoir). Sponsored Humanities Department Foreign Languages and Literatures Section \* the French Library, Boston. 4:30pm and 7pm, Rm 66-110. Mon, Apr Free.

Flesh Gordon\* — X-rated satire. LSC movie, Fri, Apr 14, 7 & 9:30pm 26-100. Admission 75c w/MIT or Wellesley ID.

Papillon\* - LSC movie. Sat, Apr 15, 7 & 10pm, Rm 26-100. Admissio w/MIT or Wellesley ID.

Bridge on the River Kwai\* — LSC movie. Sun, Apr 16, 6:30 & 10pm 26-100. Admission 75c w/MIT or Wellesley ID.

# **AFFIRMATIVE ACTION PLAN**

# of the

# MASSACHUSETTS INSTITUTE

# OF TECHNOLOGY

# April 5, 1978

This Institute-wide Affirmative Action Plan has been prepared as an expression of M.I.T.'s commitment to the principle of equal opportunity in employment and in education and is in accordance with all Federal government regulations affecting equal opportunities in higher educational facilities as of February 28, 1978.

This Plan, the commitment it affirms, and the policies it proclaims have my full personal agreement and support.

rechen Jerome B. Wiesner, President

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VI. Affirmative Action in Construction, Vending, and Procurement

# Appendices

- A. Departments, Offices, Centers, and Laboratories having Affirmative Action Plans
- B. Administrative Organization of the Massachusetts Institute of Technology
- C. Role of the Academic Council and the Equal Opportunity Committee in the Implementation of the Plan
- D. Affirmative Action Serious Search Policy and Other Institute Policies with Affirmative Action Implications
- E. Dissemination of Affirmative Action Plan
- F. Summary of Responsibility for Affirmative Action Plan Implementation
- G. Statistical Summary of M.I.T. Representation of minorities and women as of July, 1977 and goals projected for July, 1978 and for July, 1979

# I. INTRODUCTION

As a major educational institution, a large-scale employer, and an influence on our society through its students, its alumni, and its employees, the Institute stands committed to the principle of equality of opportunity in employment and in education.

In its most elementary and comprehensive form, our adherence to the concept of equality of opportunity requires that we strive toward a condition in which considerations of race, sex, national origin, and religion are irrelevant as determinants of the access an individual has to opportunities for education, for employment, for achievement, and for personal fulfillment. Rather, the controlling factors in all such matters must be individual ability, interest, and merit.

The Institute's posture with respect to principle of equality of opportunity in this community was expressed in the *Report of the President and the Chancellor* for the academic year 1971-1972 and reemphasized in the 1974-1975 *Report:* 

M.I.T., together with other institutions in this society, must rethink and recast the structure of opportunity which we afford those who spend time with us — opportunity for individual satisfaction and selffulfillment, opportunity for participation in affairs which affect them, opportunity for employment and subsequent advancement. All who study here and work here stand to benefit from greater attention to these basic human needs. Persons employed at the Institute require ready access to opportunities for advancement, as well as greater attention to their needs for personal and career development. Those who study here deserve an education which enriches the essential lifelong process of growth and educational self-renewal and places a premium on self-sufficiency and intellectual independence.

While these goals pertain to all members of the M.I.T. community, at this moment in time we have a special responsibility to expand opportunities for members of minority of the M.I.T. community, at this moment in time we have a special responsibility to expand opportunities for members of minority groups and women at all levels of the Institute. We must not stand aside from the society as it struggles to consolidate the opportunities for a decent life that now exist. Indeed, we should be innovative and creative in our handling of these difficult problems with the hope that, in so doing, we will point the way for others, as well as enriching our own environment for all members of this community. We must put special emphasis on placing in significant positions at all levels competent women and members of minority groups with whom young people may identify profes-sionally and personally. Our record of achievement in the past year has been significant but falls short of the standard that we have set for ourselves. We are taking steps to improve our means for meeting our pledge to the Federal government and, even more importantly, to ourselves.<sup>1</sup>

At the time this Plan was last revised, women and members of some minority<sup>2</sup> groups continued to be underrepresented in many categories of employment and in most student categories. This underrepresentation which has resulted from the history of American society, was reflected in past Institute practices which, until very recently, have been at best neutral with respect to this underrepresentation and, at worst, discriminatory with respect to minorities and women.

The President and the Chancellor of the Institute, in their annual report, commented on our progress and prospects for success in Affirmative Action: We look to the past with a sense of both satisfaction at the effort expended and frustration at our inability to reach all of our objectives. We look to the future with a blend of optimism and uncertainty. It is clear that the need for affirmative action programs in the form of "crisis measures" will diminish, as educational institutions move toward a new mode of operation in which minorities and women are better represented and in which inequitable barriers are eliminated. It is equally clear, however, that some of the vexing problems and challenges will be with us at least through this decade and perhaps beyond. Affirmative action steps will and must continue to be taken at M.I.T. and in all other American institutions until equality of opportunity is not only an accepted concept but an intrinsic part of the fabric of organizations.<sup>3</sup>

The Institute's present and future course in these matters, which goes beyond non-discrimination, i.e., the elimination of all policies and practices that work to the disadvantage of individuals on the basis of race, sex, national origin, or religion, is based on the concept which has come to be known as Affirmative Action.

The principle of Affirmative Action requires the Institute to determine if it has met its responsibilities to recruit, admit, employ, promote, and reward women and minorities to a degree consistent with their availability and merit, whether or not any failure to do so can be traced to specific discriminatory policies or actions. Where women and minorities are underrepresented at M.I.T. in the student and employment ranks, the Institute will continue to recruit and employ them in accordance with their increasing availability. The premise of this commitment is that the corrosive effects of systematic exclusion, inattention, and overt discrimination in the past cannot be remedied in appropriate ways and in a reasonable time by a posture of neutrality with respect to race and sex. Affirmative action is necessary to avoid the perpetuation of the inequities that are our heritage from these exclusionary and discriminatory practices of the past.

While the Institute is obliged, as a major Federal contractor, to develop and sustain a program of Affirmative Action, our commitment to these matters transcends legal or contractual requirements. We undertake these actions and adopt these policies not because we are required to, but because it is right and proper that we do so.

## IA. Communication of the Plan

The substance of this Plan will be disseminated to the M.I.T. community through publication in *Tech Talk*, the official Institute newspaper. Subsequent Institute policies and procedures developed either to meet goals outlined in this Plan or to address later provisions and amendments of Federal government regulations, will be disseminated to the Institute community through *Tech Talk*, and will be added to this Plan biennially.

A reference copy of this Plan will be on file in each department, office, and laboratory and in the Institute Information Center, Room 7-111. Copies of the total Plan, including each department's specific Affirmative Action Plan will be on file in the appropriate Personnel Offices, in the Office of the Special Assistant for Women and Work, in the Office of the Special Assistant for Minority Affairs, and in the Office of the President and Chancellor. Additional information on the dissemination of the Plan internally to the Institute community and externally to the community and public at large can be found in Appendix E.

## I.B. Persons Directly Responsible for Overseeing M.I.T.'s Affirmative Action Plan

The President and Chancellor have delegated to the following persons the responsibility for monitoring the progress of M.I.T.'s affirmative action programs. All inquiries in reference to this Plan should be directed to the appropriate person listed below.

#### **M.I.T.** Campus

John M. Wynne Ext. 3-4942, 3-4943

Vice President, Administration and Personnel and the Institute's Equal Employment Opportunity Officer overall equal opportunity coordinator and official liaison with all appropriate Federal and state agencies.

Patricia A. Garrison Ext. 3-4516

Assistant Equal Employment Opportunity Officer.

#### **Lincoln Laboratory**

John T. Dargin Ext. 181-7407

Personnel Officer and Equal Employment Opportunity Coordinator for Lincoln Laboratory — reports directly to Laboratory Director.

#### Additional Assistance May Be Obtained From the Following Persons:

#### Mary P. Rowe Ext. 3-5921

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Special Assistant to the President and Chancellor for Women and Work — coordinator of equal opportunity in employment and education for women.

#### Clarence G. Williams Ext. 3-5446

Special Assistant to the President and Chancellor for Minority Affairs — coordinator of equal opportunity in employment and education for minorities.

Appendix F outlines the responsibility for implementation of the Affirmative Action Plan in more detail and clarifies the decision-making process in the employment area.

# **II. M.I.T. AFFIRMATIVE ACTION POLICY**

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The Institute's Affirmative Action program is intended to expand our efforts to guarantee equality of opportunity in employment and in education and to reduce underrepresentation and underutilization of minorities and women at M.I.T. For all Institute categories of employment, our objectives are to achieve a representation of women and minorities that is at least in proportion to their current availability and to provide new opportunities for career development which both stimulate and respond to their changing interests and aspirations. Similarly, for all of the 'Institute's educational programs, our objectives are both to achieve representation of minorities and women in the student body which reflect their current availability and interests and to encourage larger proportions of these groups to seek careers for which the Institute's educational resources are designed to prepare them.

It is important to note that many unreasonable limitations and inequitable situations in employment are rooted in occupational segregation and in the stereotyping of roles in our society. Thus, equality of opportunity requires that we make equally accessible to all persons job categories that have been preponderantly occupied by women and/or minorities.

- 2. All employees will be encouraged to make the fullest use of their skills and talents by participating in
- Selections among candidates for employment and among student applicants must reflect both continuing attention to individual merit and quality and a recognition that narrow interpretation of qualifications or credentials has worked to the disadvantage of women and minorities. In other words, the Institute's employment practices and its admission policies must emphasize individual merit, performance, and potential in ways that reflect the fact that limited prior opportunity social discrimination and

In accordance with these overall objectives, numerical goals and time-tables for employment at the Institute have been set.<sup>4</sup>

Achievement of these goals and attainment of the longer-range objectives require adoption of the following principles:

1. All categories of employment at the Institute having fewer minorities and women than would reasonably be expected on the basis of their availability in the work force must be identified. These imbalances must be reduced by vigorous and systematic recruitment efforts. Where appropriate and feasible, job training and professional development efforts will be undertaken. These requirements apply to academic departments (including faculty and academic staff categories), laboratories, and all administrative and support activities.

Page 2, MIT Affirmative Action Plan, April 5, 1978

educational and career development opportunities and by taking advantage of opportunities for promotion and transfer consistent with both the needs of the Institute and the individual's ability and aspirations. Special efforts will be made to ensure that women and minorities are aware both of this principle and of specific opportunities that may be of interest.

Equal compensation, benefits, and support will continue to be provided without regard to race, sex, national origin, or religion to all staff and employees of equal merit in positions of equivalent responsibility.

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

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

Procurement and purchasing practices must ensure maximum opportunity for the participation of minority and female vendors in the provision of services and materials and for the employment of minority contractors and construction workers in the construction or renovation of Institute facilities, either on or off campus. In this regard, each contractor who seeks M.I.T. business is expected to have and to follow an affirmative action program that is in accord with Federal and state regulations.

1 Report of the President and the Chancellor for the academic year 1971-1972.

- 2 The term "minority" used in this Plan refers to Black Americans, Native Americans, Oriental Americans, and Spanish-surnamed Americans.
- 3 Report of the President and the Chancellor for the academic year 1974-1975, p. 20.

4 The specific employment objectives are detailed in the individual Plans of the Institute's organizational units which are listed in Appendix A. These goals have been projected for July, 1978 and July, 1979 and the aggregation of the individual department goals is shown in Appendix G. The primary responsibility for adherence to these prinles, and for the establishment of an atmosphere in which evolving concept of Affirmative Action is accepted and ported, rests with supervisors at all levels and with every son having administrative responsibility within the Intute. Further efforts must be made to ensure that the rspectives of minorities and women are considered in the evolution of Institute policy and practice, particularly in those situations in which they do not currently participate directly.

Overall monitoring, auditing, and staff coordination of the Institute Affirmative Action program has been assigned to the Vice President, Administration and Personnel who was designated the Institute's Equal Employment Oppor-

# . AFFIRMATIVE ACTION FOR ACADEMIC STAFF

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#### I.A. Aims and Plan of Action

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Although significant progress has been made since this was revised, women and minorities are underresented in many academic positions within the Inute, particularly in faculty positions, both tenured and tenured. Our commitment to a policy of affirmative acrequires that we make every effort - and that we show tantial progress over time - in the following direcs. First, we must increase the number of minorities and men on our faculty and academic staff. This increase st be consistent with departmental needs for teaching research talent and consistent with the needs for elopment of existing and/or new professional fields and grams. Second, M.I.T. must seek to broaden the pool of lable candidates for each position on the faculty and demic staff by recruiting and educating minority and nen students (see Section V), as well as by developing ter-range programs of career orientation and profesal development. In particular, our efforts must be deed to encourage and to facilitate the movement of mising women and minority candidates into the fields of nce and engineering and the applications of science and mology to human and social problems. The academic ds related to science and technology are of particular cern to us because M.I.T. is committed to leadership in se fields, in which the present imbalance in representaof minorities and women is large.

In addition to our efforts to increase the numbers of alified women and minorities, we are committed to supting those who are now on our faculty and academic iff by providing for them the opportunities for promotion d professional growth that will in turn increase their presentation in the senior ranks of the academic profesns. As expressed in the *Report of the President and the ancellor:* 

While the needs of professional growth and development represent a significant challenge to essentially all young members of university faculties, the task is doubly difficult for most of our female and minority colleagues. These individuals are the objects of a set of pressures that are a direct consequence of their minority and/or female status. We have an obligation to be understanding of these pressures and to provide a supportive and sympathetic environment. Several departments address these concerns by insuring that every junior faculty colleague has a senior mentor, who can provide advice and counsel; the central administration has tried to provide a sympathetic ear and to build sufficient support structures for women and minorities.<sup>5</sup>

short, our program for the faculty and academic staff is maximum, result-oriented effort to increase the number women and minorities and to create an atmosphere of poort, encouragement, and collegiality in which all faculand academic staff may thrive professionally and pernally.

The following course of action is intended to achieve the stitute's goals and meet existing problems in this area:

Each academic department will identify the extent to which women and minorities are underutilized in each professional rank, by means of a utilization analysis of the department's faculty and academic staff. In academic areas where there is underutilization<sup>4</sup> of women and minorities, vigorous and systematic efforts will be undertaken to identify and to recruit women and minority candidates.

- 2. Each department will establish biennally numerical goals and timetables as guidelines for its progress in recruiting and hiring women and minorities for academic positions for the subsequent two-year period. Appendix G includes statistical summary sheets showing the representation of minorities and women at the Institute as of July, 1977 and goals for July, 1978 and July, 1979 aggregated from the individual goals of each department, laboratory and center.
  - Each department will seek to increase the pool of potential candidates in their areas by vigorous and systematic recruitment of women and minority graduate students.

To implement this program, departments will follow the specific set of procedures outlined below.

#### III.B. Affirmative Action Procedures for Academic Staff

Each academic department, center, or laboratory has developed its own Affirmative Action Plan for academic positions, consistent with the Institute goals and the procedures outlined below:

- Each department will continue to set goals and timetables for the appointment of minorities and women in academic positions. These goals will be based on an analysis of the present and projected pool of candidates and on departmental needs and be set every two years.
- 2. Each department head will periodically inform all faculty and staff in the development of the policies, procedures, goals, and progress of the department's Affirmative Action Plan.
- 3. Annually, between June and August, each department will review and evaluate its plan in depth to determine the progress made toward achieving its goals. Problem areas will be identified, and the plan will be updated in terms of specific correctional action.
  - In seeking to fill academic positions, every effort will be made to recruit in a way that women and minorities will have adequate opportunity to be considered. Also, each academic department, with its School, will compile and continuously update a list of women and minorities who are potential candidates, including candidates from among M.I.T. alumni, students, and current employees, as well as candidates identified through communication with professional societies, graduate schools, and predominantly black and women's institutions, and other appropriate sources. This search should include the use of professional journals and other media, as well as educational search organizations and professional organizations that reach minorities and women in academic fields appropriate to the programs available at the Institute. The use of exchange programs and summer institutes will be explored in an effort to widen the search beyond traditional channels.

Department heads are encouraged to announce in *Tech Talk* a search to fill faculty positions whenever it appears likely that qualified candidates may be found by that means, either by direct application or referral.

- The Institute employment policies and practices shall not prohibit the simultaneous employment of two members of the same family.<sup>7</sup>
- 6. There will be full opportunity for staff appointments, including tenured appointments on the faculty, for persons who may be able to devote only part of their

tunity Officer in July, 1973 and who has the responsibilities outlined in the Federal Contract Compliance regulations.

In the long run, our objective as an institution is to change in ways that will achieve true equality of opportunity in employment and in education and which, thereby, will obviate the need for specific programs of affirmative action.

and monitoring of all affirmative action programs. They will assist department heads in the preparation and implementation of specific plans to ensure the effectiveness and continuity of the Institute Plan within each department unit.

To assure good communication and visibility, each department head (or director of a research center or laboratory) will act as departmental E.E.O. Representative. If a department head chooses to delegate some of the responsibility in this area, he or she may appoint a member of the department as E.E.O. Representative. This person will assist the department head by working with members of the department, the appropriate dean or senior officer, the E.E.O. Officer and the Special Assistants for Women and Work and for Minority Affairs to implement and monitor both the academic and non-academic policies and procedures that are contained in the Institute's Affirmative Action Plan, as well as the department's Affirmative Action Plan.

E.E.O. departmental representatives are listed in departmental plans and with the E.E.O. Officers and the Special Assistants for Women and Work and for Minority Affairs.

The specific responsibilities of the departmental E.E.O. Representative (whether or not he or she is the department head) will be as follows:

- to establish specific methods for identifying the underutilization of skills and talents of women and minority staff and employees within the department and to encourage both their participation in educational and career development programs and their taking advantage of opportunities for promotion and transfer, consistent with their individual abilities and aspirations and with the needs of the Institute;
- to seek the help of everyone in the department, particularly women and minorities, in identifying problem areas related to the goals of affirmative action (including possible problems with attutudes, aumosphere, etc.) and in referring qualified minority and women candidates for both academic and nonacademic positions;
- to develop a serious search<sup>10</sup> strategy, including an up-to-date list of contacts, for identifying women and minority applicants in career fields appropriate to the department's needs;
- 4. to maintain a file on minority and women applicants and potential candidates for academic positions within the department;
- 5. to undertake a careful review of departmental employment criteria relating to merit<sup>11</sup> and to make certain that all job requirements are specifically necessary for the category under consideration (e.g., whether certain degrees are necessary, whether "requisite" skills are actually utilized, and whether onthe-job training could be substituted for certain requirements);
- 6. to review the criteria for departmental hiring, retention, promotion, and tenure as actually implemented to ensure that procedures are in compliance with the Higher Education Act of 1972 and H.E.W. Guidelines;<sup>12</sup>
- to disseminate the latest Institute policies and procedures on equal employment opportunity to all members of the department, both professional and non-professional;
- to develop strategies for increasing the available pool of candidates for academic positions, such as actively recruiting women and minorities for graduate programs and postdoctoral training;
- 9. to conduct quarterly reviews of progress, and, if necessary, to take steps for or recommend re-

5 Report of the President and the Chancellor for the academic year 1974-1975, p. 26.

<sup>6</sup> According to the Federal guidelines for affirmative action programs, "underutilization is defined as having fewer minorities and women in a particular job classification than would reasonably be expected by their availability." The utilization analysis, which is a required part of the Plan, is intended to show representation of women and minorities in comparision with relevant recruitment "pools" for faculty and academic staff positions. The utilization analysis should estimate the proportions of women and minorities available at the appropriate skill levels both within and without the Institute. It is the purpose of this analysis to show clearly those areas where women and/or minorities are underrepresented, together with the reasons for underrepresentation.

7 See Appendix D.7.

8 See Appendix C.

9 See Appendix D.1.

10 See Appendix D.1.

11 See item 6 in Section II.

12 See Higher Education Guidelines, Executive Order 11246, as amended.

13 See Appendix D.2.

time to their academic or staff duties during their child-rearing years.

# III.C. Responsibility for Implementation

Responsibility for meeting departmental goals and timetables rests with each department head. It will be expected, however, that all members of the academic staff will cooperate and support these efforts, in terms of both their supervisory roles and their participation on various Institute committees.

Responsibility for the assurance of good faith efforts belongs to the academic Deans and the Academic Appointments Subgroup<sup>4</sup> of the Academic Council which considers serious search efforts<sup>4</sup> with regard to women and minority candidates in weekly reviews of proposed academic appointments.

The Institute's Equal Employment Opportunity (E.E.O.) Officer and Assistant E.E.O. Officer and the Special Assistants for Women and Work and for Minority Affairs will play leading roles in the development, coordination, evaluation and corrective action; and

 to develop within the department specific procedures for reviewing alleged complaints of discrimination consistent with the Institute's grievance procedure.<sup>13</sup>

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# **IV. AFFIRMATIVE ACTION FOR NON-ACADEMIC EMPLOYMENT**

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## IV.A. Aims and Plan of Action

Women and minorities are underrepresented in many non-academic positions at the Institute. Furthermore, the Institute recognizes that many inequitable situations in employment are rooted in occupational segregation and in stereotyping of roles in our society. These persistent problems have resulted in widely held perceptions by many minority and women employees (and prospective employees) that job responsibilities and opportunities for advancement are seriously limited, and that individual skills and talents will be inadequately recognized and rewarded. Accordingly, given the Institute's commitment to equal opportunity in all employment areas, the Affirmative Action Plan for non-academic employment has a double responsibility: first, to correct the present underrepresentation and underutilization of women and minorities; and, second, to reverse prevalent feelings of frustration and low expectations for change on the part of many valuable and talented employees.

The functions of the Office of Personnel Services are intended to help alleviate these problems. Personnel Officers are assigned to each department, office, and laboratory with full responsibility for all personnel matters including assistance in affirmative action at all levels of non-academic employment.

In view of both the problems and aims described above, the following course of action has been established:

- 1. Within each non-academic area (administrative unit, office, department) of M.I.T., the imbalance in representation of minorities and women vis-a-vis other (white male) employees will be identified and documented.
- 2. Each department will establish biennially specific numerical goals and timetables for the subsequent two-year period in an effort to correct imbalances, and specific methods will be developed to facilitate achievements of the goals.

Appendix G includes statistical summary sheets showing the representation of minorities and women at the Institute as of July, 1977 and goals for July, 1978 and July, 1979 aggregated from the individual goals of each department, laboratory and center.

- Vigorous and systematic recruitment of minorities and women, both inside and outside the Institute, will continue.
- 4. Professional and organization development programs are offered by the Office of Personnel Development and on-the-job training is available in some departments. Career counseling will continue to be offered through the Office of Personnel Services.
- 5. All employees will be informed of the policies, goals, and procedures with respect to non-discrimination outlined in the Institute's Affirmative Action Plan. Special efforts will be made to ensure that women and minorities are aware of specific opportunities for promotion, transfer, and training that may be of interest to them.
- Steps will be taken to sensitize supervisors to both subtle and overt forms of discrimination and to inform them in detail about the affirmative action program, both in terms of legal requirements and of M.I.T.'s particular commitments.
- The Institute will make efforts in the direction of improving access by all persons to job categories which have traditionally been preponderantly occupied by women and/or minorities.

Specific affirmative action policies for non-academic employment are detailed in Section IV.B. In addition, procedural instructions to implement the policy considerations in the plan have been developed by the Office of Personnel Services and are available for review.

## IV.B. Affirmative Action Procedures for Non-Academic Employment

- In seeking to fill positions, vigorous and systematic efforts will be made to ensure that women and minorities have adequate opportunity to be considered, based on the following recruitment and hiring procedures:
  - a. Records will be maintained in the Personnel Office of the receipt and disposition of all applications, and a summary will be forwarded to the EEO Officers and the Special Assistants for Women and Work and for Minority Affairs on a quarterly basis.
  - b. At all major locations where interviews are conducted, notices shall be displayed that M.I.T. is an "Equal Opportunity Employer," as prescribed by law.
  - c. Employment advertisements have been and will continue to be run regularly in publications with wide circulation to minorities and women. An ongoing evaluation of the effectiveness of these ads will be made by the Office of Personnel Services. It will be a standard procedure to use the phrase "An Equal Opportunity Employer" in all advertisements and job postings. Whenever advertisements are placed in non-minority publications, the phrase "We are an Equal Opportunity/Affirmative Action Employer" shall be used in the text or the ad.
  - d. In those areas where there is underrepresentation of minorities and women because of a history or pattern of exclusion and/or discrimination, preference in the applicant referral and selection process will be given to minority or women applicants if two candidates are equally qualified according to the concept of merit expressed in Section II, item 6.<sup>14</sup>
  - e. Procedures have been instituted, and will be periodically reviewed, to ensure that minorities and women (as well as other employees) are considered for promotion or upgrading before a position is filled from the outside.<sup>14</sup>
  - f. A minorities and women applicants' file has been established and will be maintained in the Office of Personnel Services. A similar career development file of those women and minorities seeking transfers or career advancement will be established. (This file will be available only to the employment interviewers in the Office of Personnel Services.) A search of this file will be required as the first step in identifying candidates for all new appointments and other vacancies, temporary or otherwise.<sup>14</sup>
  - g. Vacancies for all non-academic positions will ordinarily be posted,<sup>15</sup> and no offers or commitments may be made before the end of an application period which allows for a reasonable response to the posting by interested applicants; however, reasonable exceptions, such as, for example, in cases of internal reorganization, will be permitted. Such positions will be announced initially to the M.I.T. community by the Office of Personnel Services through publicizing all vacancies in *Tech Talk* and through posting them in the Office of Personnal Services reception area. Vacancies will also be posted in other areas, when appropriate. All such positions and openings will also be announced to agencies and other sources in the community where minority and women applicants are registered.
  - h. Supervisors will be apprised that positions are to be made equally accessible to all qualified candidates for job categories that have traditionally been preponderantly occupied by women and/or minorities.
  - i. The supervisor will make the final hiring decision and will contact the personnel interviewer to begin final hiring arrangements. Reasons for not hiring minorities and women deemed qualified or qualifiable by the personnel interviewer will be explained by the supervisor on the referral forms.

The personnel interviewer shall determine whether the requirements of the law and the policies of the Institute have been met, with respect to both external appointments and internal transfers. If so, the Office of Personnel Services will process the appointment document

- b. When an employee applies for another position in the same department or elsewhere at M.I.T. for which he or she is currently qualified, no covert or overt barriers will be placed in the way of his or her application for the position.
- c. Possible career ladders for non-academic positions will be defined and disseminated as appropriate.

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The Institute, through the Office of Personnel Development, will initiate and continuously review programs to provide opportunities for employee and organization development. The following programs are now offered:

a. Tuition Assistance

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- b. Administrative Development Program
- c. Introduction to Administrative Procedures Program
- d. Communications Workshops
- e. Affirmative Action/Equal Employment Opport ion J tunity-Management Training Program (Lincoln plar Laboratory)
- f. New Employee Orientation
- g. Technical Typing

The Office is currently presenting a management training program at Lincoln Laboratory emphasizing supervisory responsibilities in implementing the Laboratory's Affirmative Action Plan. Over 1,000 supervisors and technical staff are required to attend the program.

## IV.C. Responsibility for Implementation

Responsibility for meeting these objectives in the Pla rests with the department head or the director of eac office, center, or laboratory. For certain staff positions, th responsibility of good faith efforts is vested in the Provos or in the Vice President responsible for the specific organi zational unit, and in the Staff Appointments Subgroup" of the Academic Council which considers the serious search effort<sup>17</sup> in weekly reviews of non-academic staff appoint ments.

For the recruitment, referral, and hiring of candidate in non-academic categories, there is a sharing of responsi bility between the departmental leadership and the Offic of Personnel Services. Specifically, in order to enable each department to meet its equal opportunity goals, Personne Services is responsible for providing minority and wome applicants according to their availability. It is the responsi bility of individual departments to supply Personnel Services with basic, essential job requirements for each avail able position in sufficient time to allow for a serious search to produce "qualified"<sup>10</sup> minority and women candidate either from within the Institute or from external recruit ment sources.

An annual review and analysis of all employment cate gories will be undertaken by the E.E.O. Officers and th Special Assistants for Women and Work and for Minority Affairs to monitor progress toward full representation of minority and women employees at M.I.T. Minority and women referrals and transfer requests from each depart ment will be included in this analysis. These data will be supplied by Personnel Services in cooperation with each of the departments, laboratories, offices and centers.

The E.E.O. Officers and the Special Assistants for We relate men and Work and for Minority Affairs will play the same uppor roles in developing, coordinating, and monitoring depart facen mental affirmative action programs as described in Section Section III.C.

The head of each administrative unit (office or department), or his or her designee, will be appointed as Equa Employment Opportunity (E.E.O.) Representative and will have specific responsibilities as outlined for academic E.E.O. Representatives in Section III.C.

Each organizational unit at the Institute has developed its own Affirmative Action Plan, which is consistent with the following policies and procedures:

- 1. Each organizational unit will continue to set goals and timetables for the employment of minorities and women in each non-academic job classification. These goals will be based on an analysis of the present and projected number of qualified and qualifiable minorities and women in M.I.T.'s potential recruitment area, as well as on M.I.T.'s projected employment needs and be set every two years.
- 2. Each department will review its plan in depth and will evaluate the progress made toward reaching its goals on a yearly basis (between June and August, as described in Section III B, item 3).

process the appointment document.

No employment commitment can be made until these procedures have been followed.

- j. If the personnel interviewer suspects non-compliance with the Affirmative Action Plan, the matter will be reviewed with the Director of Personnel Services who will resolve the matter with the department head before final personnel action is taken.
- k. All supervisors will be apprised that compliance with the policies of the Institute's Affirmative Action Plan is a responsibility for which they will be held accountable.
- Promotion policies and practices will be administered in such a way as not to discriminate against minorities and women. In many cases, special efforts may be required to ensure that minorities and women are not at a disadvantage:

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a. In some instances, a minority or woman applicant may not be fully qualified, but is judged to be highly qualifiable. Whenever possible, opportunity for "on-the-job" training will be provided. 14 To be monitored by the Office of Personnel Services on the campus and by the Personnel Office at Lincoln Laboratory.

15 Posting and bidding requirements for unionized employee will be as specified in union contracts.

16 See Appendix C.

17 See Appendix D.1.

18 Defined in terms of merit as described in Section II, item

This section describes M.I.T.'s commitment to creasing the numbers of women and minority group embers in our undergraduate and graduate student body rough a vigorous and systematic program of recruitent. The plans and procedures set forth in this section ave also been written to conform with Title VI of the Civil ights Act of 1964, the Equal Educational Opportunity Act 1972, and Title IX of the Education Amendments of 1972.

# A. Aims and Plan of Action

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Since the Plan was last revised, there has been coniderable growth in the number of women undergraduates. owever, women and members of some minority groups re underrepresented in many student categories at M.I.T. Provision policy to reduce these imbalances by increasing the interests in, preparation for, and availability of women and minorities for careers in science and technology. While ultinate success will result in substantial changes in admison patterns, our immediate efforts must concentrate on nlarging the pool of qualified women and minority appliants from which we admit students. As expressed in the report of the President and the Chancellor:

Future increases in the number of minority students who pursue careers in engineering and in the physical sciences are contingent on the degree to which young people can be informed about opportunities in these fields much earlier — probably in junior high school — and encouraged to study the necessary mathematics and science. Such information and encouragement have, in the larger society, traditionally come from parents and friends, and it is just this influence which is largely absent for minority students as a consequence of the virtual exclusion of minorities from these fields in the past. While it is not clear what role the Institute can play in addressing this problem, we need to be more imaginative in our efforts than just recruiting from the available pool at the high school level.<sup>19</sup>

It is also our objective to remove educational, social, nd financial barriers which have discouraged many omen and minority students from taking advantage of ducational opportunities offered by the Institute.

On another level, the Institute and each of its academic epartments are aware that most professional opportunies for women and minorities in science and engineering equire graduate degrees, and, hence, the number of miorities and women with advanced degrees must be greatly creased to help increase their representation at M.I.T., at ther universities, and in business and industry.

In view of these objectives, the Institute has established a following plan of action:

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

Minorities and women often feel isolated academically and socially at M.I.T. both because of their small numbers and because of cultural and/or sex role stereotypes. To address this problem, the Institute will continue to provide special support both formally, through the Office of the Dean for Student Affairs and the Office of the Dean of the Graduate School, and informally, by encouraging minority and women faculty, staff, and students to serve as advisors on academic and social matters.

The Institute will continue to provide special academic support services, where appropriate, to ensure that the needs of students with special problems are met.

Implementation policies and procedures in studentlated areas — admissions, financial assistance, student upport services, student activities and housing, student accement, and graduate student support — are detailed in ection V.B.

## V.B. Student-Related Affirmative Action Procedures

#### 1. Admissions

In 1968 special efforts to recruit minorities, particularly Blacks, were begun at M.I.T. These efforts are continuing and, in addition, special efforts have been made to recruit women students.<sup>20</sup>

- All persons involved in the process of reviewing applications will be kept aware of M.I.T.'s equal opportunity policies regarding admissions.
- b. Admissions information and other official publications sent to prospective students, high school counselors, and others will continue to reflect and emphasize the Institute's equal opportunity policy.
- c. Special admissions pamphlets and brochures will continue to be produced and distributed to assist in the recruitment of minority and women students.
- d. Admissions criteria will be reviewed periodically to help ensure that no minority applicant who has the potential for academic success at M.I.T. is refused admission.
- e. The selection teams reviewing applications will continue to include minority and women faculty and staff.
- f. The Admissions Office, the Educational Council, and other groups and offices engaged in recruiting students will continue to make special efforts to locate and recruit minority and women students; continuing efforts will be made to increase the number of women and minority Educational Counselors.
- g. Minority and women prospective students will be counseled on the full range of opportunities at M.I.T., particularly in those fields in which they have been conspicuously underrepresented.
- h. The Institute will continue, when feasible, to invite prospective minority and women students from high schools near M.I.T. to the campus for first-hand familiarization.
- i. Minority and women students at M.I.T. will continue to aid the Institute in recruiting women and minority prospective students through personal contacts and, where appropriate, through visits to their hometown high schools.
- j. M.I.T. will continue to support a Talent Search Program in Cambridge and to maintain an Upward Bound Program in cooperation with Wellesley College.
- k. M.I.T.'s recruitment efforts with respect to minority students will include an intensive search for prospective students who meet M.I.T.'s admissions criteria, as well as those who have potential but who need additional academic preparation (such as that provided by Project Interphase).
- 1. The undergraduate Admissions Office has prepared a booklet describing life at M.I.T. for women which will be used to aid in recruiting prospective women students. A similar booklet has been prepared for minority students and will be utilized as an aid in recruiting as well.

#### 2. Financial Assistance

- a. All services provided by the Financial Aid Office are available to every student without regard to race or sex. M.I.T. will continue to ensure that there are on the staff persons, including minorities and women, sensitive to the special needs and circumstances of minority and women students.
- b. Financial assistance to all students, undergraduate and graduate, will continue to be provided in such a manner as not to discriminate against applicants on the basis of race or sex. All eligible minority and women students are encouraged to participate in scholarship, loan, and work-study programs.

#### 3. Student Support Services

a.

e. In September, 1975 the Office of Minority Education was established as a means for identifying and assessing factors important in the learning process of minority students at M.I.T. This office will serve as additional support in structuring and implementing a program to improve academic performance of minority students and will be concerned with the general teaching and learning process in the undergraduate academic program.

#### 4. Student Activities and Housing

- a. Rooms or apartments in Institute-supported housing are made available to all students in a non-discriminatory manner. There is no restriction on admission of women based on available campus housing.
- b. Landlords participating in the Institute's off-campus housing program must submit a non-discriminatory pledge issued by the Massachusetts Commission Against Discrimination before their offerings may be listed with the Community Housing Service. Any realtor who refuses to sign the pledge or who has a just cause complaint issued against him or her will be ineligible to have his or her rentals listed in the office files. Complaints presented to the Housing Office will be turned over to the Massachusetts Commission Against Discrimination for appropriate action.
- c. Though the Institute encourages all of its students to participate in the wide range of social, cultural, research or other education programs and activities sponsored by the Institute, special efforts will continue to be made to help ensure full participation in Institute life by minorities and women.
- d. All social clubs and fraternities supported by the Institute will be required to submit a written non-discrimination pledge to the Office of the Dean for Student Affairs.
- e. The Institute will encourage women students to participate fully in athletic activities and classes of their choice.
- f. The Athletic Department has appointed a Director of Women's Athletics to address the growing needs of women students at the Institute and has also published a booklet entitled "Athletics for Women at M.I.T.".
- g. As the number of women students increases at M.I.T., attention will be given to increase the number of full-time women faculty and staff where they are especially important in assisting in the implementation of programs and activities.
- h. The use of M.I.T. athletic facilities, i.e., locker rooms, etc., will be made comparable and equally accessible for all members of the M.I.T. community, regardless of race or sex.
- i. The Institute will continue its policy of not recruiting any student because of his or her athletic capabilities.

#### **5. Student Placement**

It is the policy of the Office of Career Planning and Placement to ensure not only the equitable treatment of graduating minority and women students in finding employment, but also to help ensure that employers using the services of the Office of Career Planning and Placement recruit graduating students for all positions in their companies without regard to race or sex.

- a. Each employer seeking to hire M.I.T. graduates is requested to:
  - i. provide proof that the organization is an equal opportunity employer as defined by Executive Order 11246 as amended;
  - whenever possible, send minority and/or women recruiters who are familiar with the employer's priorities and commitments with respect to equal opportunity; and
  - iii. hire undergraduate minority and women students for summer internship programs when possible.
- Each company or business representative inquiring about M.I.T. graduates will continue to be apprised of M.I.T.'s equal opportunity placement procedures.

- 19 Report of the President and the Chancellor for the academic year 1974-1975, p. 25.
- 20 M.I.T. has been coeducational as early as 1872 and has enrolled minorities including Black Americans since 1897.

- The Institute will continue to encourage minority and women faculty, staff, and upperclass students to help provide supportive services for minority and women students by serving as freshmen advisors, tutors, and informal resource personnel.
- b. All services in the Office of the Dean for Student Affairs are available without regard to race or sex, and the office will continue to ensure that there are on the staff, persons including minorities and women, sensitive to the special needs and circumstances of minority and women students.
- c. An Assistant Dean for Student Affairs will continue to serve, in part, as an advocate for the needs of undergraduate women and minority students.
- d. The Institute will continue its intensive efforts, through such programs as Project Interphase, to make educational opportunities available to those minority group members (and others) whose academic preparation differs somewhat from M.I.T.'s usual admission criteria. Such programs will be reviewed on an annual basis to help ensure that they are meeting the students' expressed needs. Project Interphase includes: 1) search and selection procedures directed toward bringing such people to M.I.T.; 2) special introductory academic programs, including counseling, during the summer preceding the freshman year; and 3) special arrangements for financial assistance, as required.
- Companies are encouraged to distribute literature that expresses their commitment to equal opportunity for minorities and women in all of their job categories.
- d. The Office of Career Planning and Placement will continue to work with the Office of the Graduate School, the E.E.O. Officers, the Special Assistants for Women and Work and for Minority Affairs and the Office of Personnel Services of the Institute to keep minority and women graduates informed of career opportunities at M.I.T. and at Lincoln Laboratory.
- e. The monthly schedule of visiting company recruiters will be circulated to academic and administrative offices and be posted on bulletin boards in areas frequented by minority and women students.

MIT Affirmative Action Plan, April 5, 1978, Page 5

#### 6. Graduate Student Support

In cooperation with the Office of the Graduate School and the Committee on Graduate School Policy:

- a. All academic departments offering advanced degrees will be encouraged to recruit minority group members and women to the faculty from their graduate programs and will be expected to monitor continuously their progress. Departments should appoint such students to positions as research assistants and teaching assistants and should make their policy known to all of their faculty members.
- b. Present admissions and financial aid policies will continue to be reviewed and modified, where appropriate, to assure that they do not discriminate against women applicants with children.
- c. All policies which concern a student's actual or potential parental, family or marital status will be reviewed and modified where appropriate to ensure that students are not being treated differently on the basis of sex.
- All information on grants, loans, scholarships and fellowships will be posted in a manner to which all inquiring students have access.
- e. Health and insurance benefits and services will be provided in a manner which does not discriminate against women students.

## V.C. Responsibilities for Implementation

Responsibility for implementation of the affirmative action programs and procedures in the student-related areas rest with each office director or Dean and the standing review committees in the areas mentioned above.

Each administrative unit with responsibility for various aspects of the educational and student affairs areas defined above will review its particular policies and procedures according to the Affirmative Action Plan and will develop an implementation plan incorporating specific goals which will be reviewed and approved by the appropriate policy committee at M.I.T.

On a biennial basis, each office will review its plan and will prepare a report which will outline and analyze both efforts and progress made toward meeting Institute goals and Federal regulations. This biennial report, including any proposed changes in policies or procedures, will be submitted to the Office of the Equal Employment Opportunity Officer and will be reviewed by the E.E.O. Officers and the Special Assistants for Women and Work and for Minority Affairs.

# VI. AFFIRMATIVE ACTION IN CONSTRUCTION, VENDING AND PROCUREMENT

## VI.A. Aims and Plan of Action

Over the years, M.I.T. has strived for a position in promoting minority business participation in Institute-related construction and vending enterprises. As a demonstration of our commitment in this area and to comply with Executive Orders 11246, 11458, and other Federal and state regulations governing construction and vending, the Institute will continue the following course of action:

- An equal employment opportunity clause has been written into all renovation and new construction contracts.
- 2. The Institute, through the department involved, will require contractors negotiating or bidding on work to be in compliance with Executive Order 11246 and 11375 before contracts are awarded.
- 3. A description of the plan for minority contractor utilization, including subcontractors, will be required as a component of the bid procedure for major contracts.
- 4. During actual construction, each prime contractor will submit a monthly statement to the appropriate resident engineering outlining the work force composition and the use of minorities by his or her organization both directly and through subcontracting.
- A representative of the Department of Physical Plant will visit construction sites biweekly to review and report on affirmative action compliance.

With regard to vending contracts the following provisions will apply:

- The phrase "M.I.T. is an Equal Opportunity Employer" will continue to appear on all purchase orders.
- 2. A listing of suppliers, purchasing agents, and purchasing associations having affirmative action programs has been compiled and will be updated on a regular basis.
- 3. A listing of minority and women suppliers, purchasing agents, and purchasing associations has been compiled and will be updated on a regular basis.
- 4. The above lists will be used by Institute buyers in the Purchasing Department to maximize opportunities for minority and women vendors and to see that all vendors are aware of M.I.T.'s affirmative action re-

## VI.B. Affirmative Action Procedures for Construction and Vending

- Existing procedures will continue to be employed, and new procedures will be developed to secure maximum participation of minority vendors in Institute purchasing and minority contractors and construction workers in new construction or renovation, both on and off campus.
- 2. An effort will continue to be made to develop appropriate means to address the growing problem of discrimination against women in these areas.
- 3. It is the Institute policy to give its full support to local agencies such as the State Office of Minority Business Assistance (SOMBA) and other organizations working to improve the utilization of minority contractors.
- Minority firms identified through various methods will be apprised of potential construction projects on the campus and encouraged to submit bid documentations.
- 5. Meetings will be held with newly established minority firms that respond to the Institute's bidding invitations to inform them of campus bidding procedures and to discuss potential construction projects.
- 6. If minority businesses are unsuccessful bidders, attempts will be made to identify problem areas and assistance will be given where appropriate.
- As construction bids are received, the Executive Assistant to the Director of Physical Plant will continue to review documentations to determine minority business utilization.
- 8. The Department of Physical Plant will continue to review progress annually in the utilization of minority businesses. Records will be maintained on the utilization of minorities on construction projects, unsuccessful minority bidders, and contracts awarded to minority businesses compared to overall awards.

# VI.C. Responsibility for Implementation

- quirements in order to improve their opportunities to bid for Institute contracts.
- 5. At the time of bid presentation, vendors will continue to be required to provide certification of compliance with Federal and state guidelines.
- 6. M.I.T.'s Purchasing Council will continue to review progress annually in the utilization of minority and women suppliers and, subsequently, will continue to make appropriate changes in procedures.

With respect to construction contracts, the Director of Physical Plant will be responsible for making sure that the provisions stated above are carried out during all phases of the planning and actual construction of each project on campus. Reports of each project will be forwarded to the E.E.O. Officers and the Special Assistants for Women and Work and for Minority Affairs. The Equal Employment Opportunity Officers will be responsible for auditing the construction program efforts and for recommending changes whenever necessary.

With respect to vending contracts, it is the responsibility of the Purchasing Office to identify minority and women businesses among potential suppliers and to require the compliance of all suppliers with Executive Orders 11246 and 11375.

# Appendix A: Departments, Offices, Centers and Laboratories having **Affirmative Action Plans**

office of the President, Chancellor and Vice President including Special Assistants, Analytical Studies and Planning Group) Athletic Department Dean for Student Affairs Information Processing Services Institute Information Services (including News Office and **Campus Information Services**) M.I.T. Press

#### Lincoln Laboratory

office of the Provost (including Lowell Institute School, Institute Professors, ROTC Programs) Arteriosclerosis Center Artificial Intelligence Laboratory Cell Culture Center Center for Advanced Visual Studies Center for Cancer Research Center for International Studies Committee on the Visual Arts Division for Study and Research in Education Harvard-M.I.T. Division of Health Sciences and Technology Haystack Observatory libraries Neurosciences Research Program aboratory for Computer Science Sea Grant Program Summer Session

office of the Vice President for Research center for Materials Science and Engineering Center for Space Research Energy Laboratory Francis Bitter National Magnet Laboratory aboratory for Nuclear Science Nuclear Reactor **Research Laboratory of Electronics** 

Office of the Vice President, Administration and Personnel including Academic Staff Records Office, Child Care Office) Admissions Career Planning and Placement **Office of Facilities Management Systems** Personnel Development Personnel Relations Personnel Services

Student Financial Aid Office

Office of the Vice President, Financial Operations **Audit Division Comptroller's Accounting Office** Lincoln Fiscal Office Office of Director of Finance (including Budget Office) **Office of Sponsored Programs** Office of the Vice President, Operations (including Plan-

ning Office and Endicott House) **Campus Patrol** Graphic Arts and Audio-Visual Services **Housing and Food Services Physical Plant Purchasing Office Safety Office** 

Office of the Vice President and Dean of the Graduate School Medical Department (including Environmental Medical Services, Radioactivity Center, Division of Laboratory **Animal Medicine**) Office of the Graduate School Office of the Registrar

Office of the Vice President, Resource Development Industrial Liaison Office **M.I.T.** Associates **Resource Development Resource Operations Resource Planning** Volunteer Leadership Appeal

**Office of the Treasurer** 

Secretary of the Institute

Office of the Dean of Architecture and Planning (including Laboratory of Architecture and Planning) Architecture **Urban Studies and Planning** 

Office of the Dean of Engineering **Aeronautics and Astronautics Chemical Engineering Civil Engineering Electrical Engineering and Computer Science Materials Science and Engineering Mechanical Engineering Nuclear Engineering Ocean Engineering** Center for Advanced Engineering Study **Center for Policy Alternatives** 

Office of the Dean of Humanities and Social Science **Economics Humanities** Linguistics and Philosophy **Political Science** Psychology

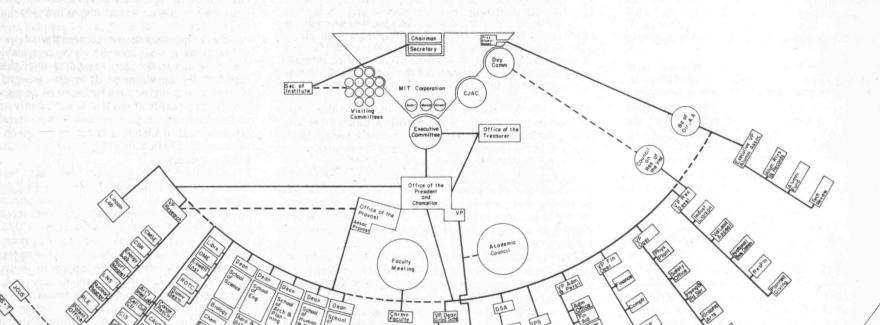
Office of the Dean of the Sloan School of Management Management **Operations Research Center** 

Office of the Dean of Science Biology Chemistry **Clinical Research Center** Earth and Planetary Sciences **Mathematics** Meteorology **Nutrition and Food Science Physics** 

**Alumni Association** 

**Faculty Club** 

# Appendix B: Administrative Organization of the Massachusetts Institute of Technology\*



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APPOINTED COMMITTEES OF THE INSTITUTE

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ASPG

MIT Press

Assoc Chm Grad Sec'y

This appendix is the most recent organizational chart of the Massachusetts Institute of Technology and is included in copies of the Institute Plan on file in the locations listed in section I.A. of the Introduction.

## C.1. Academic Council

The Academic Council is the senior policy-making group of the Institute within the administration, composed of the President, Chancellor and Provost, Associate Provost, the Deans and Vice Presidents, Director of Libraries and Chairman of the Faculty. The Academic Council reviews major policy issues, budgetary levels and priorities, significant organization changes, major appointments and plans and programs involving issues of the nature and direction of the Institute. The status and progress of the affirmative action program and proposals for significant changes in policy or procedure to increase its effectiveness, from whatever source, will be subject to the review and final approval of the Academic Council.

For purposes of considering appointments, the Academic Council contains two (overlapping) subgroups, the Academic Appointments Subgroup and the Staff Appointment Subgroup. The affirmative action responsibility of these groups is to receive requests for authorization to make offers of appointment to faculty and other academic positions in the case of the Academic Appointments Subgroup and to administrative and research staff positions in the case of the Staff Appointments Subgroups review search proposals and examine the evidence provided by the department head regarding the serious search for qualified minority and women candidates which have been conducted by the department, how the appointment relates to the Affirmative Action Plan of the department and either authorize or withhold authority from the department head to make the offer of appointment. The members of the Academic Council, including the Academic Appointments and Staff Appointments Subgroups, are so designated because of the particular position they hold within the Institute. The Vice President, Administration and Personnel who holds the additional responsibility of the Institute's Equal Employment Opportunity Officer, is a member of the Academic Council and of the two appointment subgroups. As such, he has the opportunity and responsibility to keep the Council informed on the progress of the affirmative action program, and to bring to the Council recommendations for policy or procedural improvements which are of the level or scope to require the Council's approval.

## C.2. Equal Opportunity Committee

The Equal Opportunity Committee, a broadly representative Committee of the Institute concerned especially with equal opportunity in employment and education, is appointed by the President of the Institute. In his choice of persons to be appointed to the membership, the President seeks to assure the equitable representation of protected class members on the Committee. The Special Assistant for Women and Work, the Special Assistant for Minority Affairs, and the Equal Employment Opportunity Officer and the Assistant E.E.O. Officer are members of the Committee, ex-officio. The E.E.O. Officer has a special relationship with the Committee, given his responsibilities as Vice President, Administration and Personnel. He will bring to the Committee reports of progress in affirmative action efforts, problems arising in the implementation of the Affirmative Action Plan and will review with the Committee proposals for changes in policy or procedure relating to affirmative action including comment on proposals originating within the Committee itself.

The authority and scope of the Committee is comparable to that of other Presidentially-appointed Institute committees in that it assists the President in maintaining cognizance over the program assigned to it, with authority to obtain such information as necesary to keep itself informed as to the effectiveness of the program. In assessing effectiveness, the Committee has the responsibility for initiating improvements, including making recommendations to the President and the Academic Council or to the faculty for changes in policy or procedure to make the program more effective. The Committee may request such information from appropriate Institute sources as necessary for it to judge the need for changes in policies or procedures or the merits of proposed changes.

The Committee will consist of 24 members drawn from the faculty, the research and administrative staff, other employees, and the student body. The President will designate the Chairperson, and the Committee will meet at the Chairperson's call. The names of the Chairperson and members of the Equal Opportunity Committee are published in the Tech Talk supplement which annually lists Presidentially-appointed committees, or are available from the E.E.O. Officers or the Special Assistants for Women and Work and for Minority Affairs.

# Appendix D: Affirmative Action Serious Search Policy and Other Institute Policies with Affirmative Action Implications

The following are statements of policies bearing on affirmative action which are included in *Policies and Procedures*, the Institute guide for faculty and staff members.

## D.1. Affirmative Action Serious Search Policy

In furtherance of M.I.T.'s commitment to affirmative action in the employment of women and members of minority groups, Institute policy requires a thorough search of the relevant employment market for qualified candidates, including women and minority candidates, whenever underrepresentation is found to exist.<sup>21</sup> For particular groups of positions, outlined below, approval of the appropriate Appointments Subgroup of the Academic Council must be obtained prior to making an offer of appointment. These positions include (1) salaried appointments for an academic year or longer to the three faculty ranks (including visiting faculty) and instructors, and (2) salaried full-time sponsored research staff,<sup>22</sup> administrative staff, library staff, or medical staff appointments with a term of one year or more.

At the time a search is begun for a person to fill one of the above positions, the department head or laboratory director will forward to the cognizant Academic Council member a brief statement of the qualifications being sought and the plan for the search. If satisfied that the qualifications are not unnecessarily restrictive and the search plan is appropriate to the position and the relevant employment market, the Council member will review the proposal with the Council. The search need not await Academic Council approval but may be modified following the Council review.

When the search is completed and the best qualified candidate is determined, after full consideration of the various candidates' potential for growth and development (M.I.T. Affirmative Action Policy, Section II, Item 6), the cognizant Academic Council member should bring to the Council a recommendation for an offer of appointment, reporting that the approved search plan was followed with detail as to the candidates generated and considered, method of evaluation, and reasons for the preferred choice. This procedure should be followed regardless of the race or sex of the proposed candidate.

- . The Institute strongly encourages individuals to discuss their work situations and problems with their immediate supervisors. Supervisors are expected to provide a supportive environment which fosters open communication related to work life at the Institute and are encouraged to resolve work problems and grievances at the departmental level.
- If the problem is not resolved with their immediate supervisor individuals should feel free to discuss the problem with the next higher supervisor in the department, laboratory, or school including the department head. In the cases of other than academic staff, this may include the departmental administrative officer and/or Personnel Officer in the Office of Personnel Services on campus or their Personnel Representative at Lincoln Laboratory. Individuals who are not satisfied with these discussions might consider talking with the Director of Personnel Services on campus or the Personnel Officer at Lincoln Laboratory.
- 3. Individuals who feel that the matter has not been resolved may then take the problem to one of the Special Assistants to the President and Chancellor. Either of them will discuss the apparent alternatives with the individual. The individual may then choose to request a formal inquiry into the facts of the case. The Special Assistants will attempt to resolve the matter to the satisfaction of all concerned, recommending a final decision to the Chancellor.

In most instances it is expected that individuals will take concerns, inquiries and complaints through the process specified above. There may be unusual circumstances which warrant direct inquiries with any of the above persons regarding advice about a work situation.

Individuals should feel free to obtain the support and assistance of a co-worker or any other M.I.T. associate in presenting their concern. Throughout the entire process, the individual should be assured that the information provided will be kept confidential insofar as the individual wishes it or until such time as the individual agrees that a third party or parties must be informed to facilitate action. of the Office of the Dean for Student Affairs or the Office of the Dean of the Graduate School as appropriate before bringing it to the attention of one of the Special Assistants to the President and Chancellor.

## D.3. Appointment and Tenure Policy for the Faculty

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The ideal attributes of any departmental staff, taken as a group, are creativity, professional competence and leadership, ability and desire to teach, and willingness to cooperate with other departments in promoting the work and welfare of the Institute as a whole. Thus, within each department, there are recognized opportunities for different types of individual contribution to these several ends. It is the duty of the administration to ensure, within any department, not only a proper balance among these activities but also the maintenance of each at the highest level, together with suitable recognition of individual achievement and service.

Each appointment or reappointment to the faculty should be based unequivocally on the reasonable belief that the appointee is the best candidate available under the terms of the appointment. It is also essential that each promotion to a higher rank be based on an appraisal of the individual's qualifications that is sufficiently broad and objective to ensure the preservation of those standards of professional and academic attainment by which the rank is characterized both within M.I.T. and at other institutions of the first quality.

A professorial appointment, including a tenure appointment, normally obligates a faculty member to render fulltime service to the Institute. In those special instances where full-time service is not in the best interests of both parties, an appointment may be made within a specified part-time obligation. The specified obligation of the individual faculty member is inherent in the appointment, and any change thereto must be approved through the academic appointment process. Appointments to the Faculty are made without prejudice with respect to current or potential child-rearing responsibilities which might require periods of part-time service or leaves of absence.

# D.2. Procedure for Complaints of Discrimination

All persons employed<sup>23</sup> at M.I.T. who believe that they have been treated unjustly for any reason, or that the Institute's stated policy of non-discrimination has been violated should have access to a clear means of seeking redress. The following steps should be taken when individuals have a concern, grievance, or inquiry about their employment. It is the Institute's policy that individuals will not be reprimanded nor discriminated against in any way for initiating an inquiry or complaint.

Once an inquiry or complaint is presented, a sincere attempt should be made at each step to either resolve the problem or refer it to the next step within one week. If this time schedule cannot be met, the status of the investigation should be communicated to the parties involved on a weekly basis. In cases where either presentation or resolution is delayed more than two weeks, the individual may, after informing his or her supervisor, elect to proceed to the next level indicated in the above procedure.

The above procedure serves as the grievance procedure for employees as required by Title IX of the Federal Education Amendments of 1972 with regard to grievances arising out of alleged discrimination on the basis of sex. This procedure is available similarly to students for the purpose of resolving complaints alleging actions prohibited by Title IX. The procedure is also available to handicapped students and employees alleging failure to comply with Section 503 and 504 of the Rehabilitation Act of 1973. It is expected that students will attempt to resolve issues directly with a work supervisor, academic advisor or instructor. When a problem cannot be resolved at that level, the student should avail himself or herself of the assistance

21 This revised policy will be published in Policies and Procedures, section 2.15.2, p. 35. Off

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22 Certain sponsored research staff appointments that are immediate postdoctoral appointments requiring highly specialized knowledge and limited to two years or less are reviewed on an individual basis by the appropriate dean or vice president, prior to offer of appointment and by the appropriate Subgroup quarterly. These positions are subject to *Tech Talk* posting requirements. (See Section IV.B, item 3(g).)

23 This procedure does not apply to employees who are represented by a labor union. Collective bargaining agreements applying to these employees include grievance and arbitration procedures and equal opportunity provisions.

## 0.4. Maternity and Parental Leave Policy

The Institute's policy is to treat pregnancy and childbirth as any other temporary disability under its leave and benefits program. It is our policy also to afford opportunity or parental leave without pay both to male and female employees. These two policies described below apply regardess of marital status.

#### A. Maternity Leave

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Disability arising from pregnancy and childbirth, miscarriage, or abortion will be treated, for an individual who has had one or more years of continuous service, as a emporary disability under M.I.T. sick leave policy. However,

A person who chooses not to work after the period of disability surrounding the birth of a child will have authorized leave without pay for the time remaining in the total period granted under the policy of Parental Leave, Section 3.24.2 of Policies and Procedures.

Sick leave salary payments for disabilities arising from childbirth are conditional on return to work. The Institute will take measures to collect the amount should the individual choose not to return to work.

#### **B. Parental Leave Without Pay**

Regular full-time or part-time (50% or more of normal work week) persons (male or female) who have completed heir probationary periods of employment are eligible for eaves of absence at the time of the birth of each of their children, subject to the conditions below:

Regular Leave: A leave without pay of up to eight weeks will be granted provided the individual gives reasonable notice (normally four weeks) and indicates intention to return to work. The individual's job, or a job of equivalent classification and pay, will be restored by the department or laboratory at the completion of the leave unless the position has been eliminated by a reduction in the work force or an operational change under circumstances applying equally to other similar jobs in the department. If the former position has been so affected, efforts will be made to find other suitable employment, first in the department concerned and, secondly, within the Institute as a whole.

All benefits may be kept in force, at the option of the individual, provided arrangement is made in advance for the normal benefit deductions. Health insurance benefits *must* be kept in force during this period or specifically waived in writing.

## D.5. Child Care Policy

The M.I.T. Child Care Office serves as the focus for issues related to child care. Its services are available to all members of the M.I.T. community, especially those who need assistance in locating suitable care for their children.

The Child Care Office coordinates and supports the development of all on-campus child care programs. Currently, two programs are operating on campus which serve children from four weeks to five years old. Care for infants and toddlers, full or part-time, is arranged in family day care homes licensed by the State Office for Children; for pre-school aged children, two years and nine months to five years old, both full day and part day programs are available under the auspices of Technology Children's Center, Inc. Plans are underway for an extended-day kindergarten program. Special problems such as child care during emergency school closings and care during special events may be brought to the Child Care Office where every attempt will be made to effect a reasonable solution.

The Child Care Office maintains information about private and public programs available in other parts of Cambridge and surrounding communities. The Office also has a library of publications on children and their development All materials are made available to parents upon request.

## D.6. Benefits

In order to increase the opportunities for part-time employment at the Institute, especially to accommodate persons who must combine employment with child-rearing responsibilities, the Institute offers its benefit programs on a prorated basis to those persons who work at least 50% time for more than three months duration.

## D.7. Policy on Employment of Members of the Same Family

M.I.T. encourages its employees to recommend to the Office of Personnel Services employment applications of relatives or friends who are interested in working at the Institute. In considering any applicants for employment, the Institute's policy is to base appointments, or offers of employment, and promotions on qualifications and performance. In keeping with this policy, members of the same family, including husband and wife, are eligible for employment in positions within any job category. Where members of the same family work for the same supervisor, the arrangement shall be approved in advance by the Chancellor. However, a supervisor-employee relationship between family members shall not prevail at the time of employment or thereafter, nor shall one member of the family relationship assume for the other role of advocate or judge with respect to conditions of employment, salary, or promotion.

It should be clear that the reasons underlying such restrictions on employment, defined as applying to members of the same family, should apply with equal validity to those whose living arrangements approximate family relationships. These principles similarly apply if a family or living relationship exists between a faculty or academic staff member and a student where there exists the role of advocate or judge.

While general responsibility for assuring adherence to these policies must rest with those responsible for appointments and assignments and principally academic and administrative department heads, laboratory and center directors, a particular responsibility for sensitivity to the potential conflicts falls on those whose family or personal relationships may give rise to them.

# D.8. Termination of Employees for Lack of Work or Funds

The following are applicable portions of the layoff policy<sup>24</sup> relevant to affirmative action (for the full policy statement, see *Policies and Procedures*, section 3.25, p.94). They set forth the decision criteria which apply whenever it becomes necessary to terminate one or more employees because of reduced funding, changes in the nature and scope of the work or for other operational reasons.

# Appendix E: Dissemination of Affirmative Action Plan

The preface to the Institute Affirmative Action Plan outlines the major dissemination of the Plan through publication in *Tech Talk*. Additionally, a reference copy of the Plan is available in each Institute office. Offices with speThe Manager of Labor Relations in the Office of Personnel Relations and the Assistant E.E.O. Officer will continue to meet with union officials to inform them of Institute policies with regard to affirmative action. The collective This policy covers those factors which influence the determination of employees to be laid off, as well as the content of the letter of notification, the length of the notice period, method of funding the notice period to a longservice employee and the persons who should be consulted in the process.

#### A. Decision Criteria

In making the decision on a layoff, where the choice is not clearly dictated by the work to be eliminated and range of skills of those engaged in it, department heads should carefully consider three important factors: individual performance, the length of employee service, and the status and goals of affirmative action in the department. No one of these considerations automatically outweighs the other. They must each be judged and balanced in such a way as to be as fair as possible to the individuals concerned while serving as well the Institute's need for an effective staff.

While seniority is not an overriding factor in personnel administration at M.I.T., length of service at the Institute must be an important consideration in determining individuals to be laid off. Long service testifies to loyalty and commitment and implies a record of responsible performance. At the same time, outstanding work also must be recognized in layoff decisions. Superior performance on the part of an individual with less service may lead, on balance, to a decision to retain the more junior person. Similarly, our commitment to the employment and advancement of women and members of minority groups must play a part in the layoff decision. Underrepresentation of minorities and women within the department should be an influential factor in the decision.

The final choice in each instance will derive from the interplay of these criteria and each should be considered and weighed. It is important to remember that layoff notices carry the presumption that the individuals receiving them are valuable contributing members of the community who must be released only because insufficient work and/or funds exist to continue their employment. As valuable employees, they will be given preference in placement and re-employment. It should be clear that layoff is not a method of terminating employees who have not performed in an acceptable manner. The regular Institute policy for warning and discharge for cause should be followed in such cases.

#### **B.** Consultation with Personnel Officers

In all these actions, department heads are urged to consult with their personnel officer for assistance in assuring that all Institute policies and procedures pertaining to layoff are fully understood and applied.

In the case where a department head proposes to issue a layoff notice to a minority employee, to a woman with exempt or staff status, or to an individual with ten or more years of continuous service, the department head should forward to the personnel officer a statement describing the situation and giving the basis for the decision to lay off this particular person. After reviewing the case, the personnel officer may urge the department head to discuss the action with the appropriate dean or vice president or the Provost before making a final decision.

> positions, as well as the clerical and support positions ordinarily listed. Similar listings will be sent to you weekly. We ask that you share them with your colleagues and branch offices.

cial responsibilities regarding the Plan (i.e., Vice President, Administration and Personnel, Office of Women and Work, Office of Minority Affairs, Information Office) will have copies available for general distribution upon request.

Each department at the Institute has listed in its own departmental plan the method of dissemination to be used in informing persons in the department about the plan. Each department, center and laboratory plan at the Institute is reviewed by members of the Institute administration, including the procedures for disseminating the Plan to all employees. These major review meetings are followed by periodic reviews through the efforts of the E.E.O. Officers and the Special Assistants for Women and Work and for Minority Affairs.

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

24 The layoff provisions of collective bargaining agreement will take precedence whenever they are in conflict with these guidelines. bargaining agreements with the major unions representing employees at M.I.T. expire biennially on July 1. Negotiations for new agreements commence every spring and the issue of a non-discrimination clause in the agreement and review for any possible discriminatory aspects will be raised at that time.

All documents relating to Institute policy and procedure will include, where appropriate, a statement of affirmative action policy taken from the Institute's Plan. This statement of policy has already been incorporated in the Guide to Administrative Offices, the Institute Policies and Proecedures Manual and will be included in the Supervisors Manual when revised.

All recruitment sources receive a *Positions Available* listing which includes all non-academic openings at the Institute. The introduction to this list is reproduced below and indicates the Institute's commitment to affirmative action. The majority of the recruitment sources specialize in the placement of women and minority candidates. (The total list of recruitment sources is available for review at the Office of Personnel Services.) These sources are continually reviewed for commitment and degree of success in our affirmative action efforts.

Enclosed is the new, complete listing of all non-academic employment opportunities currently available on the M.I.T. campus. You will note an inclusion of many high level administrative and research staff This list has been circulated throughout the M.I.T. community for at least a week before it reaches you. This is in keeping with our Institute policy for making all career development opportunities available first to our own employees. Consequently, when you have interested candidates to refer to positions listed, please call the Office of Personnel Services at 253-4251 to verify the vacancies and to arrange appointments for your applicants.

Concurrent with our responsibilities to our present employees is our deep and serious commitment to affirmative action in the employment of minorities and women. We look to the support of you and your services to help us achieve our goals.

Section VI of the Affirmative Action Plan describes the policy for construction contracts, vending and procurement. In addition, a letter has been sent to our entire list of active suppliers (approximately 5000) advising them of our affirmative action program and stating the action required of them as M.I.T. suppliers. The Purchasing Office will keep on file, and have available for review, a list of current suppliers and their statement of understanding of our commitment to affirmative action.

MIT Affirmative Action Plan, April 5, 1978, Page 9

The President and the Chancellor have delegated the responsibility for monitoring the progress of M.I.T.'s affirmative action program to the persons listed in the preface of the Plan. Additionally, it is the common responsibility of all members of the Institute community to implement the affirmative action program, particularly in the employment area. The following narrative elaborates on the levels of authority at the Institute, shown in the organization chart in Appendix B, as they relate to employment decisions.

# F.1. Non-Academic Employment

#### **General Authority**

- a. Academic or Administrative Department Heads, Laboratory or Center Directors Hiring authority for non-academic positions rests with the heads of the 80 some academic and administrative departments, laboratories and centers. This authority includes the hiring of administrative, exempt, sponsored research, secretarial/clerical, hourly and union employees.
- b. Office of Personnel Services The Office of Personnel Services has authority for initial interviewing, screening and referral of candidates to Institute supervisors for all categories of employment mentioned above. Personnel Officers refer applicants for positions available and will process documentation on employment *only* if requirements of law and policies of the Institute have been met.
- c. Dean or Vice President in Charge of Area The concurrence of the Dean or Vice President having the responsibility for the specific unit doing the hiring is required for all "additional" appointments. This concurrence is not required for routine replacement resulting from turnover.

#### **Special Authority**

- a. Staff Appointment Subgroup of the Academic Council Approval for the administrative and sponsored research staff categories of non-academic employment rests with this subgroup if a full-time appointment of a year or more is to be made. Such approval is based upon a review of the department's documentation of serious search for women and minority candidates to fill the position. (See Appendix D-1.)
- b. Executive Committee of the Corporation The Executive Committee of the M.I.T. Corporation has certain responsibilities regarding appointments of sponsored research staff and administrative staff appointments. This group has final approval on all staff employment of persons whose salaries exceed stipulated salary levels.

## F.2. Faculty Employment Authority

#### **General Authority**

Academic Department Heads

The effective authority for appointing faculty members (professors, associate or assistant professors) rests with the department head in each department, often in consultation with other members of the faculty in the department, and with the concurrence of the Dean of the School. Since the procedures differ by department, the details are left to the individual departmental Affirmative Action Plan. The appointment of Professors and Associate Professors further requires the approval of the Academic Appointments Subgroup of the Academic Council.

#### **Special Authority**

- a. Academic Appointments Subgroup of the Academic Council
- As a special procedure, concurrence of this group is required regarding the adequacy of the search for minority or women candidates prior to an offer of a full-time salaried appointment of one academic year or more to any of the three ranks of Professor (including Visiting) or to Instructor. (See Appendix D-1.)
- b. Executive Committee of the Corporation The Executive Committee of the Corporation has certain responsibilities regarding appointments of faculty. This group has final approval on the appointment of all ranks of faculty whose salaries exceed a stipulated amount.

# F.3. Academic Appointments (other than faculty)

#### **General Authority**

Academic Department Heads, Laboratory and Center Directors

Appointment authority for academic appointments such as Research Associate, Postdoctoral Fellow, Technical Assistant, etc., rests with the head of the academic department, laboratory or center in which the appointment is being made. Because of procedural differences in the appointment process, the details must be left to individual departmental plans. These appointments require the concurrence, as appropriate, of the Provost, the Vice President for Research or the Academic Dean of the School.

#### **Special Authority**

Staff Appointments Subgroup of the Academic Council

Approval for certain categories of Academic appointments (other than faculty) rests with this group in terms of affirmative action objectives. The "serious search" process outlined in Appendix D-1 includes such academic staff categories as Administrative Officer, Administrative Assistant, Librarian and Medical Staff member.

b. President/Provost and/or Vice President for Research

The appointment of Senior Research Associates and Senior Research Scientists requires the concurrence of the President. In the case of appointments of other academic staff in the various research laboratories and centers, the concurrence of the appropriate senior officer, either the Provost or the Vice President for Research, is required.

## F.4. Accountability for Affirmative Action Policy Implementation in Employment

A process of review for possible violations of the Institute policy of non-discrimination is described in Appendix D.2. Additionally, Section IV.B. specifies a procedure to be used for any failure to adhere to equal employment opportunity policies and procedures in non-academic hiring, specifically, "if the personnel interviewer suspects non-compliance with the Affirmative Action Plan, the matter will be reviewed with the Director of Personnel Services who will resolve the matter with the department head before final action is taken."

M.I.T. has no formalized "disciplinary procedures" for failure to adhere to any Institute policy or procedure. Supervisors are expected to adhere to all policies, however, and when violated, appropriate action is taken through normal channels of supervision. Input on problems of supervision come from many sources: employees, colleagues, Office of Personnel Services, and others. Action on improper supervision or failure to adhere to equal employment opportunity policies rests with the department head and/or the responsible senior officer.

Appendix G: Statistical summary of M.I.T. representation of minorities and women as of July, 1977 and goals projected for July, 1978 and for July, 1979.

Summary for the Institute

#### INSTITUTE EMPLOYMENT ACTUALS FOR JULY 1977

						B	Black	Am.			Nat	ive /	Am.		Drier	nt Am.		5	Span.	Am.		Г	ot. M	linorit	у	Г	Cot. Of	ther	
	Tot	F	%	M	%	F	M	Tot	%	F	M	Tot	%	F	<u>M</u>	Tot	%	F	M	Tot	%	F	_ <u>M</u> _	Tot	%	F	<u>M</u>	Tot	%
Faculty	926	73	8	853	92	1	13	14	2	-	-	-	-	3	35	38	4	1	5	6	1	5	53	58	6	68	800	868	94
Professor	521	11	2	510	98	1	3	4	1	-	-	-		-	22	22	4		3	3	1	1	28	29	1	10	482	492	94
Assoc. Professor	220	30	14	190	86		5	5	2	-	-	-	-	1	7	8	4	· · · · · ·	1.14	-	-	1	12	13	6	29	178	207	94
Asst. Professor	185	32	17	153	83	-	5	5	3	-	-	-	-	2	6	8	4	1	2	3	2	3.	13	16	9	29	140	169	91
Visiting Faculty	35	6	17	29	83	-	-	-	-		1	1	2	-	1	1	2	16-	-	-	-	-	2	2	6	6	27	33	94
Visiting Professor	19	-	-	19	100	-	-	-	-	-	1	1	5		÷.,		-	-	-		-	-	1	1	5	-	18	18	95
Visiting Assoc. Prof.	14	6	43	8	57	-	-	-	-	-	-	-		-	-	-		-		-	$\mathcal{L}_{\mathcal{L}} = \mathcal{L}_{\mathcal{L}}$	-	-	- 1 - <del>2</del> -	-	6	8	14	100
Visiting Asst. Prof.	2	-	-	2	100	-	-	·	-	-	-	-	-	-	1	1	50	-	-	-	-	-	1	1	50	-	1	1	50
Other Acad. Staff	720	188	26	532	74	4	3	7	1	-	-	-	-	10	28	38	5	3	4	7	1	17	35	52	7	171	497	668	93
Acad/Non-Acad. Admin Staff	540	176	33	364	67	6	15	21	5	-	-	-	12.1	5	2	7	1	1	4	5	1	12	21	33	6	164	343	507	94
Sponsored Research Staff	1187	148	12	1039	88	4	14	18	2	-	-	-	-	14	37	51	4	4	7	11	1	22	63	85	7	126	976	1102	93
Exempt	625	167	27	458	73	5	16	21	3		-	. • •	-	3	4	7	1	10-	6	6	1	8	21	29	5	159	437	596	95
Office/Clerical	1593	1360	85	233	15	94	22	116	7	1	-	1	-	21	1	22	1	10	4	14	1	126	27	153	10	1234	206	1440	90
Hourly	1518	149	10	1369	90	32	141	173	11	-	1	1	-	3	8	11	1	6	47	53	3	41	197	238	16	108	1172	1280	84
INSTITUTE TOTAL	7144	2267	32	4877	68	146	224	370	5	1	3	4	-	59	116	175	2	25	77	102	1	231	419	650	9	2036	4458	6494	91

#### INSTITUTE EMPLOYMENT GOALS FOR JULY 1978

						BI	ack	Am.			Nat	ive .	Am.	c	rien	t Am.			Span.	Am.		Т	ot. M	inorit	у	1	Cot. C	ther	
	Tot	F	%	<u>M</u>	%	F	Μ	Tot	%	F	M	Tot	%	F	<u>M</u>	Tot	_%	F	M	Tot	%	F	<u>M</u>	Tot	%	F	_ <u>M</u>	Tot	%
Faculty	966	85	9	881	91	1	20	21	2	1	-	-	-	3	35	38	4	1	* 9	10	1	5	64	69	7	80	817	897	93
Professor	533	13	2	520	98	1	3	4	. 1	-	-	-	-	-	23	23	4	-	3	3	1	1	29	30	6	12	491	503	94
Assoc. Professor	222	33	15	189	85		4	4	2	-	-	-	-	1	6	7	3	1	1	2	1	2	11	13	6	31	178	209	94
Asst. Professor	211	39	18	172	82	414	.13	13	6	-		-		2	6	8	4	-	5	5	4	. 2	24	26	12	37	148	185	88
Visiting Faculty	28	4	14	24	86	-	3	3	11	-	1	1	4	-	1	1	4	-		0.1944	-	6	5	5	18	4	19	23	82
Visiting Professor	17	104	-	17	100	-	3	3	18	-	1	1	6	- 1	- 199	-		-		12	-		4	4	24		13	13	76
Visiting Assoc. Prof.	7	4	47	3	43	-	-	S. 4	-	-	14	-	-	1.	1994		-	1.4	- 11	· - )	-	-	-	-	-	4	3	7	100
Visiting Asst. Prof.	4	-	-	4	100	-	-	-	122	-	-	-	-	4	1	1	25	-	-	1.4	-		1	1	25	10.14	3	3	75
Other Acad. Staff	794	207	26	587	74	7	12	19	2	-	-	-	-	12	34	46	6	4	7	11	2	23	53	76	10	184	534	718	90
Acad/Non-Acad Admin Staff	565	196	35	369	65	9	22	31	5	-	-	-	-	5	2	7	1	1	4	5	. 1	15	28	43	8	181	341	522	92
Sponsored Research Staff	1218	142	12	1076	88	6	27	33	3	-	1	1	-	6	40	46	4	2	18	20	2	14	86	100	8	128	990	1118	92
Exempt	622	170	27	452	73	8	21	29	5	1	-	-1	-	3	5	8	1	13-	3	3	-	13	29	42	7	157	423	580	93
Office/Clerical	1618	1394	86	224	14	138	21	159	10	-	-	-		25		25	2	20	4	24	1	183	25	208	13	1211	199	1410	87
Hourly	1509	145	10	1364	.90	33	161	194	13	12	1	1		3	8	11	1	8	46	54	4	44	216	260	17	101	1148	1249	83
INSTITUTE TOTAL	7320	2343	32	4977	68	202	287	489	7	1	4	5	-	. 57	125	182	2	36	91	127	2	297	506	803	11	2046	4471	6517	89

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aculty	966	98	10	891	90	2	23	25	3	1	_	-	1/2/	3	35	38	4	1	7	8	1	6	65	71	7	92	826	918	93
rofessor	541	14	. 3	527	97	1	4	5	1	-	-	-	-	1	24	24	4	-	2	2	-	1	30	31	6	13	497	510	94
ssoc. Professor	225	37	16	188	84	-	4	4	2	-	-	-	-	1	7	8	4	1	1121	1	-	2	11	13	6	35	177	212	90
sst. Professor	223	47	21	176	79	1	15	16	7	-	-	-	-	2	4	6	3	121	5	5	2	3	24	27	12	44	152	196	8
isiting Faculty	26	6	23	20	77	-	3	3	12	+	1	1	3	-	-	- 40	-	-	9 - <u>C</u>		12	-	4	4	15	6	16	22	8
isiting Professor	17	3	18	14	82	-	. 3	3	18	-	1	1	6		-	-	-	-	-		-	-	4	4	24	3	10	13	7
isiting Assoc. Prof.	7	3	43	4	57	-	-	-	-	-	-	-	-	114	100	1.4	-	-			-	-	-		-	3	4	7	100
isiting Asst. Prof.	2	-	-	2	100	-			-	-	-	-	-			-	-	-	-	-	12		-	-		-	2	2	100
ther Acad. Staff	869	242	28	627	72	9	18	27	3	-	-	-	-	13	37	50	6	5	7	12	1	27	62	89	10	215	565	780	90
cad/Non-Acad Admin Staff	573	203	35	370	65	9	23	32	6	-		-	-	6	8	14	2	1	5	6	1	16	36	52	9	187	334	521	9
oonsored Research Staff	1254	153	12	1101	88	7	35	42	3	-	3	3		6	41	47	4	2	19	21	2	15	98	113	. 9	138	1003	1141	9
cempt	623	* 173	28	450	72	. 9	21	30	5	1	-	1	-	4	5	9	1	1	4	5	1	15	30	45	7	158	420	578	9
ffice/Clerical	1631	1406	86	225	14	155	21	176	11	1	-	1	-	25		25	2	23	4	27	2	204	25	229	14	1202	200	1402	- 86
purly	1555	150	10	1405	90	33	163	196	13		1	1	-	3	9	12	1	9	47	56	4	45	220	265	17	105	1185	1290	83
NSTITUTE TOTAL	7520	2431	32	5089	68	224	307	531	7	2	6	8	-	60	135	195	3	42	93	135	2	328	540	868	12	2103	4549	6652	8

# Summary for the Campus

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						1	Black	Am.			Nat	ive /	m.	C	rien	t Am.		Sp	an.	Am.		То	t. Min	nority		Тс	ot. Ot	her	
	Tot	F	%	<u>M</u>	%	F	_ <u>M</u>	Tot	%	F	М	Tot	%	F	M	Tot	%	F	М	Tot	%	F	_M	Tot	%	F	M	Tot	%
Faculty	926	73	8	853	92	1	13	14	2	-	-	-	-	3	35	38	4	1	5	6	1	5	53	58	6	68	800	868	94
Professor	521	11	2	510	98	1	3	4	1	-	-	-	-		22	22	4	-	3	3	1	1	28	29	1	10	482	492	94
Assoc. Professor	220	30	14	190	86	-	5	5	2		-	-	-	1	7	8	4		-		-	1	12	13	6	29	178	207	94
ssist. Professor	185	32	17	153	83	-	5	5	3	-	-	-	-	2	6	8	4	1	2	3	2	3	13	16	9	29	140	169	91
isiting Faculty	35	6	17	29	83	-		200	-	-	1	1	2	-	1	1	2	-	-	-	-	· . –	2	2	6	6	27	33	94
visiting Professor	19	-	-	19	100	-			-	-	1	1	5	-	-	-	-	-	-		-	-	1	1	5	-	18	18	95
isiting Assoc. Prof.	14	6	43	8	57	-	1.00	÷	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	6	8	14	100
isiting Asst. Prof.	2	-	-	2	100	-	-	· -	-	-	-		-	-	1	1	50	-		-	-	-	1	1	50	-	1	1	50
ther Acad. Staff	720	188	26	532	74	4	3	7	1	-	-	-		10	28	38	5	3	4	7	1	17	35	52	7	171	497	668	93
Acad/Non Acad Admin Staff	490	166	34	324	66	5	14	19	4	-		-	- 1	3	2	5	1	1	4	- 5	1	9	20	29	6	157	304	461	94
ponsored Research Staff	508	113	22	395	78	4	9	13	3	- 2	-	-		12	12	24	5	4	7	11	2	20	28	48	9	93	367	460	91
Exempt	283	115	41	168	59	- 4	8	12	4		.÷.,		<u> </u>	1	2	3	1	1	1	1	-	5	11	. 16	6	110	157	267	94
Office/Clerical	1322	1147	87	175	13	83	16	99	7	1		1	4	20	1	21	6	8	4	12	1	112	21	133	10	1035	154	1189	90
lourly	960	129	13	831	87	27	111	138	14	-	1	1	-	3	3	6	1	6	35	41	4	36	150	186	19	93	681	774	81
TOTAL	5244	1937	37	3307	63 1	.28	174	302	6	1	2	3	-	52	84	136	3	23	60	83	2	204	320	524	10	1733	2987	4720	90

CAMPUS EMPLOYMENT GOALS FOR JULY 1978

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# Summary for Lincoln Laboratory

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# Music

est Concert\* - Seth Carlin, piano, will play the complete Preludes, of Debussy and the four Ballades of Chopin. Wed, Apr 5, Noon ic Library. Free.

usick for the Generall Peace\* - Featuring David Hart, flauto traverso. rs, Apr 6, Chapel, Noon, Free.

ecture-The Music Hater\* - E.T.A. Hoffmann as music critic; Michael inberg, director of publications, Boston Symphony Orchestra, formerly ic critic of the Boston Globe. Mon, Apr 10, 3:15pm, Rm 10-250. Free.

nphony Orchestra Tour\* - Mon, Apr 10, conductor David Epstein s his orchestra on tour to Wellesley College, Tues, Apr 11, Smith Col-Wed, Apr 12, Avery Fisher Hall, Lincoln Center, New York City. The ram is Stravinsky, Scherzo a la Russe; Kurt Weill, suite from the opera Silbersee; and Berlioz, Harold in Italy, Marcus Thompson viola soloist. 253-2906.

cture-The Role of the Music Critic in Society\* - Richard Dyer, music ic of the Boston Globe. Wed, Apr 12, 5pm, Rm 14E-304. Free.

rt\* - Carol Epple and Nancy Roth, baroque flute; Laura Jeppesen. a da gamba; Gisela Krause, Harpsichord. Works of C.P.E. and J.S. ch. Thurs, Apr 13, Chapel, Noon. Free.

gam, Club for India Affairs\* - Presents Parween Sultana, popular g indian artist, will sing in accampaniment with her husband Ustad ammed Dilshac Khan, accomplished vocalist and classical composer. Apr 16, 3pm, Kresge Auditorium.

# Exhibitions

In Search of Photography\* - Lecture Series by Charles Harbutt, President of Magnum. Historical analysis of major figures and trends in photography since the turn of the century. The Thirties: Herni Cartier-Bresson, Walker Evans, Manuel Alvarez Bravo. Thurs, Apr 6, 7:30pm, Creative Photography Laboratory Gallery, 120 Mass Ave, Camb. Free.

Richard Smith, Recent work '72-'77\* - Organized and sponsored by the MIT Committee on the Visual Arts with grants from the British Council and Prudential. Informal gallery talk by the artist, 7-8pm, A BBC filmed interview daily, 12:45 & 2pm. Open through Apr 19, Hayden Gallery, 160 Memorial Drive, Camb, MA. Gallery hours: Sun-Fri, 10am-4pm.

Edgerton's Stroboscopic Projects\* - Photographs and demonstrations by Harold Edgerton selected from forty years of investigations of natural phenomena. Sponsored by the Compton Gallery Committee with the assistance of the Committee of Visual Arts. Through Wed, April 12, Mon-Fri, 9am-5pm. Margaret Hutchinson Compton Gallery, Maclaurin Building 10.

Famous Conductors\* - Music Library, Rm 14E-109. Photographs with biographical notes on famous conductors from Lully to Stoko

MIT Historical Collections\* - Permanent exhibition Mon-Fri, 9am-5pm, Bldg N52, 2nd floor. Katharine Dexter McCormick, '04; Vannevar Bush, 16; and 1876 Exhibit, Bldg 4 corridor. The New Technology Exhibit 2nd floor balcony of Lobby 7. Energy Exhibit Bldg E40, 1st floor. Radiation Laboratory Exhibit main corridor, Bldg 8. Center for Space Research, Astrophysics Exhibit main corridor, Bldg 4. Bldg 6 Dedication Exhibit. Blacks at MIT, Lobby 7.

Hart Nautical Museum\* - Permanent exhibit of rigged merchant and naval ship models, half models of yachts and engine models. Open daily in Bldg 5, 1st floor.

Strobe Alley\* - High speed photographs by Harold E. Edgerton, Institute Professor and Professor of Electrical Measurement, Emeritus. Bldg 4, 4th fl.

# **Athletics**

Varsity Soccer to Play Bermuda All-Stars\* - Special Tour Game. Apr 5, 4pm, Brigg's Field

Home Schedule\* — Fri, Apr 7: JV Lacrosse, Proctor, 2pm; MV Tennis, Colby, 3pm. Sat, Apr 8: V Baseball, Bowdoin, 2pm; M V Sailing, Dinghy Invitational, 11:30am. M V Tennis, Wesleyan, 2pm. M JV Tennis, Wesleyan, 2pm; V Track, UNH & Bates, 12:30pm. Mon, Apr 10: V Golf, Suffolk, BU & Clark, 12:30pm. Tues, Apr 11: V Baseball, Harvard, 3pm. Wed, Apr 12: JV & V Lacrosse, Bowdoin, 3pm; W Softball, Fitchburg, 3:30pm; M V Tennis, Bowdoin, 3pm; M JV Tennis, Governor Dummer, 3pm. Thurs, Apr 13: M V Tennis, U Mass 3pm; W Tennis, U of Conn, 11am. V Baseball, BU, 3pm; Sat, Apr 15: V Baseball, Lowell, 2 games, 1pm. LTWT Crew, Yale, 11:15am V; 10:15am 2nd V; 9:15am Fr. W Crew, Brown & MT Holyoke, 11:45am. Sat & Sun, Apr 15 & 16: W Sailing, Emily Wick Trophy, 11:30am.

Graduate Soccer Home Schedule\* - Sat, Apr 8, 2pm, Soccer Field A, North Terminal.

## Dance

MIT Dance Workshop\* - Classes taught by Beth Soll. Modern Wil-1225. Improvisation/Composition, Mon. 7pm-8:30pm, Rm W31-225. Independent Student Work, Wed, 7:30pm-8:30pm, Rm W31-125. Info: 266-1202 or x3-5286.

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.

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

Send notices for Apr 12 through Apr 23 to Calendar Editor, Rm 7-102,

x3-3270, before noon, Friday Apr 7.

# 146 Join Quarter Century Club

It was standing room only-at least for the cocktail hour-last week when the MIT Quarter Century Club inducted 146 new members at its annual banquet.

The social hour took place in the basement, first floor and second floor lobbies of Walker Memorial because every inch of Morss Hall was needed to seat the nearly 600 members and guests who attended.

More than half of those being inducted this year come from Lincoln Laboratory while nearly 20 came from Draper. James W. Coleman, director of Graphic Arts, was selected by the board of directors to honorary membership in gratitude for his helpfulness to the Quarter Century Club over the years.

John E. Newcomb, Jr., executive

director of the club, was master of ceremonies. Jeri Whitman, club president, greeted the gathering and read the roster of the new members. As they were introduced, the new members came forward to receive membership pins and a welcome from Robert J. Radocchia, chairman of the Quarter Century Club board of directors.

New members and their affiliations are:

Paul S. Ambeau of Canterbury, N.H., Lincoln Group 42.

Roy H. Anderson of Arlington, Lincoln Group

Roy C. Archibald of Burlington, Lincoln Group

Ali S. Argon of Belmont, professor of mechanical engineering. Joseph Baldrate of Burlington, Lincoln Group

Richard H. Battin of Lexington, Draper

Joseph F. Baxter, Jr. of Melrose, Draper Henry W. Belding of Medford, Lincoln Group 15.

Robert L. Bernier of Bedford, Lincoln Group 24. Francis L. Bowes of Burlington, Office of

Sponsored Programs. William F. Breen of Norwood, Draper. Arthur E. Buckley, Jr. of Fall River, Lincoln

Group 95.

John W. Burke of East Boston, Lincoln Group

William R. Burns of Reading, Lincoln Group

Ralph L. Butt of Waltham, Lincoln Group 28. Kenneth J. Button of Belmont, Francis Bitter National Magnet Laboratory.

Hilda G. Carpenter of Dorchester, Lincoln Group 23. Franklin R. Carr of Stow, Lincoln Group 14.

Edward J. Casazza of Tewksbury, Lincoln Group 55.

George W. Catuna of Belmont, Haystack. Thorwald Christensen of Norwood, Aero-

nautics and Astronautics. Charles J. Ciacera of Medford, Lincoln Group

72. Donald L. Clark of Acton, Lincoln Group 31.

George S. Cole of West Somerville, Lincoln Group 16.

John T. Connolly of Dorchester, Electrical Engineering and Computer Science. Anthony J. Cotoia of Lincoln, Lincoln Group 72.

Eugene E. Covert of Belmont, professor of aeronautics and astronautics. Robert P. Curran of Wakefield, Lincoln Group

15 Hugh B. Dawkins of Somerville, Office of Sponsored Programs

Richard E. Dean of Dorchester, Lincoln Group 33.

Edward I. Deibert of Tyngsboro, Lincoln Group 12.

John V. Delsie of Brockton, Lincoln Group 43. Charles T. Derry of Hyde Park, Lincoln Group 72.

William A. DeRusso of Revere, Draper Marion S. Disciullo of Brighton, Physical Plant.

Lawrence K. Dobkin of Hull, Draper Nora M. Donahue of West Somerville, Lincoln

Group 15. Jin H. Dong of Tewksbury, Lincoln Group 66. John C. Dunbar of Waltham, Draper.

Richard S. Eckaus of Cambridge, professor of economics.

Frederic J. Eppling of Lincoln, Laboratory for Nuclear Science.

Axel V. Erikson of South Acton, Physics Carlos V. Fernandez of Medford, Electrical Engineering and Computer Science.

Richard Filipowski of Lexington, associate professor of architecture. Henry W. Fitzpatrick of Winchester, assistant

director of Lincoln Laboratory. John J. Foley of Winchester, Physical Plant

Thomas A. Fraher of Winthrop, Lincoln Group 13.



**OBSERVING THE SCENE** were three new members from the Laboratory for Nuclear Science, from left: Albert Libertini, Frederic Eppling and Matti Salomaa.

Group 36.

Theresa Imbornone of Medford, Draper Barbara H. Jeffrey of Arlington, Lincoln Group 15.

Robert C. Johnston of Billerica, Draper Joseph W. Kalil of Lawrence, Lincoln Group 43.

- Vahe A. Kasparian of Acton, Lincoln Group 43.
- Edward J. Kelly, Jr. of Carlisle, Lincoln Group 42.
- Robert Keyes of Waltham, Lincoln Group 53. Robert H. Kingston of Lexington, Lincoln Division 8.
- Dominic J. Kishkis of Cambridge, Lincoln. Perry G. Knowles of Marblehead, Lincoln Group 71
- William Z. Lemnios of Lexington, Lincoln Division 3
- Rachel P. Levin of Newton Centre, Mechanical Engineering.
- Albert J. Libertini of North Reading, Bates Linear Accelerator. Anthony P. Luongo of Lexington, Laboratory
- for Nuclear Science. Grace M. Lynch of Quincy, Francis Bitter
- National Magnet Laboratory. Alan J. MacDonald of Revere, Lincoln Group
- 42 Robert E. MacMaster of Hingham, professor
- of humanities. Margie L. Malva-Gomes of Arlington, Lincoln Director's Office.

Peter M. Marinelli of Brockton, Draper. Loretta W. Marobella of Cambridge, Faculty

Club Robert T. Martin of South Lincoln, Civil

- Engineering. Robert M. Martinson of Chelmsford, Lincoln
- Group 94 John R. Martuccelli of Concord, School of
- Engineering. John G. Mavroides of Lexington, Lincoln

Nuclear Science. Richard J. Scanlan of Newton Centre, Lincoln Group 95. Albert J. Schmider of Burlington, Lincoln Group 54.

Herbert H. Richardson of Southboro, head of

Angelo M. Ruggelo, Jr. of Waltham, Lincoln

Matti K. Salomaa of Wollaston, Laboratory for

the Department of Mechanical Engineering.

- Erwin Schowengerdt of Newburyport, Draper Christie E. Sciarappa of North Weymouth,
- Bates Linear Accelerator. Anthony J. Scoppettuolo of Revere, Lincoln
- Group 72. David J. Shearman of West Concord, Lincoln Group 33.
- Rasma A. Skalberg of Cambridge, Comptroller's Payroll Office. Magnus I. Smedal of Mirror Lake, N.H., Elec-
- trical Engineering and Computer Science Augustine J. Souza, Jr. of Revere, Lincoln
- Group 15. Richard L. Stanton of Saugus, Materials Sci-

ence and Engineering. Michael L. Storm of Revere, Draper

Nuclear Science.

24.

66.

- John H. Stowe of West Roxbury, Physical Plant. Peter E. Tannewald of Cambridge, Lincoln
- Division 8. Albert L. Taylor of Hanover, Earth and
- Planetary Sciences. David M. Towle of Acton, Lincoln Group 37. William J. Tremblay of Peabody, Lincoln
- Group 76. Ralph J. Tricomi of Medford, Laboratory for

Frank M. Vecchia of Revere, Lincoln Group

Nicholas C. Vlahakis of Dracut, Lincoln Group

Oscar E. Wallin of Mattapan, Aeronautics and



MAKING IT UNANIMOUS in the property section of the Office of Spon-

sored Programs were (left to right) Hugh Dawkins and Francis Bowes,

welcomed to Quarter Century membership by their colleague Wendell

Derry, who has been at MIT for 30 years.

**REPRESENTING LINCOLN Laboratory**, which had the largest contingent of new members in the Quarter Century Club this year, were (left to right): Gerald O'Malley, John Delsie, Nora Donahue and William F. McBride.

Jerome Freedman of Weston, assistant direc- tor of Lincoln Laboratory.	1
Anthony J. Frisiello of Everett, Lincoln Group 13.	•
James J. Gardner of Methuen, Physical Plant,	1
Lawrence A. George of Raynham, Electronic Systems Laboratory.	,
William J. Gianci of Burlington, Lincoln Group 72.	-
Robert W. Gray of Nashua, N.H., Lincoln Group 71.	1
William R. Green of Lowell, Lincoln Group 53.	1
Edward W. Griffith of Saugus, Bates Linear Accelerator.	1
Peter Griffith of Belmont, professor of mechanical engineering.	1
Eldon C. Hall of Westwood, Draper.	1
Louis F. Hallowell of Ipswich, Lincoln Group 43.	
R. Joyce Harmon of Lake Havusu City, Ariz., Lincoln.	
Robert L. Harrington of Stoneham, Draper. William P. Harris of Lexington, Lincoln Group 27.	
Charles E. Hawks of North Weymouth, Aero- physics Laboratory.	-
Louis H. Hirshberg of Wakefield, Lincoln Group 53.	1
Edward T. Holleran of Arlington, Lincoln Group 12.	١,
Harry O. Holmes, Jr. of Whitman, Lincoln Group 68.	1
Harold H. Hoover, Jr. of Westwood, Lincoln Group 68.	1
Robert W. Hudson of Littleton, Lincoln Group 15.	ł

Astronautics. Group 83. William F. McBride of Lexington, Lincoln W. Ward coln Group 68. Group 85 James H. McNally of Groton, Lincoln Group 15 Norman Menyuk of Brookline, Lincoln Group Group 76. William B. Morrison of Melrose, Faculty Club. Grace M. Munroe of Watertown, Lincoln Group 28 Group 83. Raymond E. Neff of Largo, Fla., Lincoln. Carmelina O'Malley of Lynn, Faculty Club. Gerald V. O'Malley of Bedford, Lincoln Group 53 Edwin J. Palmer of Reading, Lincoln Group 72 Helen Panis of Somerville, Lincoln Group 13. Mary-Lou Perkins of Lexington, Lincoln Division 3. Charles F. Perry of Billerica, Haystack Joseph E. Phillips of East Weymouth, Physical Plant John A. Pitingolo of Arlington, Lincoln Group 13. Andrew T. Platais of West Roxbury, Draper. 5. Hardy Prince of Beverly, Lincoln Group 76. 5pm Alexander L. Pugh, III, of Lincoln, Sloan School of Management Albert J. Pukt, Jr. of Dorchester, Materials Science and Engineering. Vincent J. Pybus of North Andover, Lincoln Group 72. Ralph R. Ragan of Lincoln, Draper Edward D. Ralowicz of Chelmsford, Lincoln Group 76. Richard J. Reyenger of Westwood, Lincoln Group 12.

Leonard S. Wilk of Winchester, Draper Earle C. Wilkins of Haverhill, Lincoln Group Stephen E. Woodbury of Beverly, Lincoln William E. Zamagni of Stoneham, Draper Herbert J. Zeiger of Chestnut Hill, Lincoln Henry E. Zieman of Lexington, Lincoln Group

## **Compton Gallery** Open on Weekend

Because of the popularity of an exhibition of photographs by Dr. Harold Edgerton in MIT's Margaret Compton Gallery, the gallery will be open this Saturday and Sunday, April 8 and 9, from noon to

The Compton Gallery is located in the Maclaurin Building (Bldg. 10) adjacent to the Alumni Center. The Edgerton exhibition may also be seen Monday through Friday from 9am to 5pm until April 14.

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Ads are limited to one per person per issue and may not be repeated in suc ssive issu All ads may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Persons who have no extensions or who wish to list only home telephones may submit ads by coming in person to the *Tech* Talk office, Rm 7-102, and presenting Institute identification. Ads be telephoned to x3-3270 or mailed to Rm 7may 102. Deadline is noon Friday before publication.

#### For Sale, Etc.

Refrig, 15 cf, lg frost free frzr, GE, no problms, \$150 or best. Call 391-5447.

Bike goodies: Suntour V-Luxe, \$5; simplex r/deruilleur, \$2; Shimano 34+ freewhl, \$3; Lyotard pedals, \$3; GB stem \$3; other odds & ends, all gd cond. Gerald x3-4726.

Raleigh Colt 18" frame, grt bike for B, hand & ft brks, 3 spd, kickstnd, \$65; Columbia Cricket, G frame. 16" whl, usd vry little, exc bike in top cond. \$45. Larry x3-7810.

78 Fielding guide to Europe, org \$11.95, now \$8. Call 494-8314 aft 6.

Norelco Brewmiser coffee makr, 6-10 cup nr usd, list \$50, sellng for \$30. Pat x3-1743.

Heathkit SB400 ham radio transmttr, gd cond, best. Call Roger x3-2843 or 494-8677.

Fleetwing 20" G bike, C attchbl, train wheels, \$25. Jime x144 Lincl.

Wulitzer spinet piano, exc cond, \$500. Call 868-

Rosignol skis, ROC 500, 195cm, nvr usd, \$50. Call x3-4493.

Display case or Curio cabinet corner or wall. Karen x3-4481.

Computer peripherals, 4 DEC mod TU55 DECtape drives, modified w/controller, working. 2 Flex-owriters w/lg stock of spare parts, as is. 1 CED mod 30 point-plot CRT graphics disply unit, working. All \$ nego, and low. Call Jordin x5-6267 or Jeff x5-0620 Dext 9632 Dorm.

Volvo parts, gd Sear battery, \$10; Veloce GT 165, SR15, radial tire's, \$40/pr, tailer hitch \$12. Dick x7654 Lincl.

Minolta flash 28 nw, prc \$30. Call x5-9551 Dorm eve, Mike

'68-'76 Toyota serv & repr handbook 12 prc; in ground garb container, \$7. Call x3632 Draper.

2 Maple twn sz beds, \$30 ea or best; Wool rug & mat, 8x11, blue geo design, gd cond, \$60 or best; 3-way fl lamp, \$20. Call 625-4574.

GAF Synchronized sound camera SS605, Chinon reflex zoom lns f1.7 8-48 mm, 2 yrs old, \$250. Call Bill Cox 536-0460. Office.

Turnabout (N-10 class sail boat) flly equip for racing w/gd racing record, all stanls steel fittings, 3 main sails, spinnaker, wl maintnd, \$400 or best. Call x3-1830.

Organ, Yamaha BK-4, 2 yrs old, lk nw, \$800. C Baker x7143 Lincl.

2 brand nw 165-14 SR radial tires, mtd & dynamic balanced on nw Audi 100LS rims, cost \$75 ea, sacrfc for \$40. Jim x3-6481 or 731-9200.

Hang glider Icaris II kit fixed bi wing partially nplt, \$400. Call x7811 Lincl.

Removing snows? save changing over 15" rims for GM cars, \$8/ea. Dave 7689 Lincl.

Tektronix R 4501 storage tube scan convertr, cond as nw, \$600. Call Peter x8-1341 Draper. Twn sz bed, \$35. Call x3-4620 or 354-2602.

Garrard Zero 100 trntble w/brand nw shure and stroboscope, mint cond, \$140 or best. Call x5-9595 Dorm or 494-9042.

IBM Selectric mod 72 10" elite, \$350 or best. Contact Lee or Len x3-1541.

Superb spkrs Technics 5000 linear phase, list \$320. 4 mo 5 yrs wrrnty, sales receipt, ask \$200 or Audition call 494-0254.

Sears best sewing machine w/walnut cabnt, \$110. also Searns prtbl sewing machine, \$50. Call John x8-2002 Draper.

20 volume encyclopedia on Animal Kingdom, \$15; 14 volume Young Peoples Story of Our Heritage, \$10; 10 vol Pictorial Encycl of American History, \$10; 1 Magnetic Mount CB antena, \$10. Call Da x5893 Lincl.

2 M bikes, Grant's 10 spd, Ross Eurtour 5 spd, gd cond, nego. See at 39-651, 9-5pm

Twn sz bed, sng bed, arm chair, lamp, chests of drwrs, hse utensils, set swings (3), desk, shelves, baby horse, toaster, refrig. Call x3-3105.

Break a ski? sng 205 and 210 cm, Toppen-Turlett mohair X-country skis, prc nego. Call 628-6488. Raleigh Sprite 3 spd bicycle, 27", racing whls, top qual, lk nw, \$95. Ernie x3-6923.

Kelvinator refrig, no frost. \$100. Call Eve x3-6069. Raleigh 5 spd M bike, mint cond, \$90; Columbia W 5 spd, exc cond, \$70; Erica elec broom, \$15: India tabla, 2 drums, \$100. Mike x3-3347.

1 Hammond B3 organ, gd cond. Call x3-3623:

Fish tank 30 gl w/filter and stand, \$65 or best. George x8-3531.

#### Vehicles

'67 Camaro workng but nds work, \$300. Call x3-8788 days, Steve Glines

'67 Yamaha Yli-100cc, 2 carb, 55 mph cruising spd, under 4.0K, nds wrk, has been sttng outsde, for immed sale w/helmet & chain lock, \$175. Call x3-6328 days or 492-7343 aft 9pm.

'68 Cutlass, gd cond, hi mlg, reb. trans, 4 nw tires, etc. \$450 or best. Call Wang 868-1819 eve.

'69 Ford Fairlane 500, auto. 85K. gd shape, nw direction, rebit startr & carb, radio \$550 or best. Call x3-3105 or 926-1530.

'70 Ford Maverick, air cond, reblt eng, 20K, nds some bdy wrk, \$300. Call x3-1857.

'70 MBG, 50K, wire whls, AM radio, nw Mich ZX stl bltd radial, rocker panels, alter, fuel pmp, org owner, no rust, clean inter, mint cond, \$1,750. Charlie x3-1938 or 646-0411 eve.

'70 Volks wg bug, gd cond, nw brks, tune up, gd mech cond, \$1,000. Call x3-3438.

'71 Capri, 69K, stl bltd radial, nw exhaust. vry gd ask \$1,100. Roger x3-2007

'71 Olds Delta 88 Royale, conv grn, PS/PB auto, nw tires, hi mlg, hwy drvng vry gd cond, ask \$1,050. Carol x3-6286.

'71 Pinto, 59 K, nw batt & brks, gd tires w/snows, fine rn cond, \$650 or best. Mark x3-2007. '71 Ply Duster, slant 6 auto trans, PS, AM radio,

80K, gd cond, \$1,000. Call Bill x3-3508. '72 Plymouth Satellite wg, auto, PS & PB, vry gd cond, FM stero. Call x3-4989.

'72 Porsche 914 Metallic gold, gd cond, hi mlg, but runs vry wl w/many nw parts, AM/FM, Konis 1 ownr, \$2,495 or best. Call x3-1587 or (1) 365-3258.

'72 Vega GT, 62K, std, no rust, nw brks, clutch 2nd shocks, runs wl, \$750. Call x5-9595 or 494-9042.

'73 Ply Wagon V-8, 62K, auto, all pwr, AC, roof rack, AM/FM stereo, exc cond, \$1,700 or best. Call x304 or x5822 Lincl.

'74 Honda MT 250 motorcycle, lw mlg, exc cond, \$500, firm, John x3-5146. '74 Pontac Ventor, 1 ownr, exc cond. for detals. x3-

2792 Motorcyc '74 Triumph, trident, 750 cc, 2.OK, mint cond, \$1,650 firm. Donna x354 Lincl.

'74 Vega, auto, snows, \$1,050. Call Herbert x5-

<sup>'76</sup> Chevy Vega wg, svlr, auto trans, AM, roof rack, side moldng, 15K, 3<sup>34</sup> yr on eng wrrty, \$1,999 or best. Bob 776-7130.

'76 Scamper tent trailr, slps 8, stove, sink, ice bx, tble, extrs, exc cond, \$1,995. George x7708 Lincl. 77 Audi Fox, exc cond, 12K. Call 354-6661 or x3-

'77 Mercury Monarch, 4 dr, auto, whit w/whit vin-ly, tan inter, 6 cyl, PS & PB, 16K, exc cond. Call x3-2772

<sup>177</sup> Tovota Corolla, lift back, SR5, air cond, rust proof, montd rad snows, if bought nw \$5,800, 6.0K, 39 mpg hgwy, 30 city, best. Call x3-2593.

Housing

cond,

Acton: sep entrance home, <sup>3</sup> arc landscap settng, 3 BR, LV w/fireplc, DR, famly rm, util rm, enclsd porch, 2 car grg, sale by owner, mid 60. Call Sushanta x5878 Linc or 263-8190.

Beautf hillsd barn on granite foundation, exc cond for covers to home, on 2 plus acres w/excpt views, exclusv Amherst, NH resd area, 1 hr to Bos, state septic apprvl obtain, preliminary renovation plns avail, \$38,000. Call x3-5831.

Back Bay, 2 BR furn apt, see to believe, avail June for summer sublet or more. Call Mark or Warren 536-5661.

Belmt, 1 Br in 3 BR hse, to shar w/2 M grads, cls to T, clean, quiet, \$127/mo + util. Call 661-1840 days or 484-6923 eve.

Brkln, shr lg mansion (replica of Christopher Wren hse), own rm. shr lg LR, DR, study, foyer, K, B, 3 fireplc, park, & more, \$200/mo incl util, '+ hr walk to MIT, nr green, avail Apr untl Sept, poss longer. Call x3-6576, or x3-3368 days, or 739-1370 eve.

Camb, Somvl line, 2 BR apt, nr Harv & MIT, air

cond, w/w dish wash, garb disp, combin LR/DR, sm balcony, \$295 incl heat & hot water, sublet w/opt to rent, park. Patty x3-4141. Mass Ave, Camb, sublet, avail Apr 1 to Aug 31, lg studio apt, furn, mod bldg, rent v

Beaut 5th fl, 1 BR apt Ware Hall bay windows, fireplc, hrdwd fl, 5 min walk to Harv Sq, avail now \$237 incl ht & hw. Call Debbie x3-8258. 661-1203

Virginia Bishop Richard Cerrato

- Paulette Chiles)

Admin. Staff, Asst. Director, for the MIT As-sociates Program to plan and perform activities in-volved in serving a number of companies who par-ticipate in the Program: arrange company

representatives visits; meet with faculty and staff; solicit new member companies; sponsor and coor-dinate on-campus meetings. An engineering or science degree, two years technical experience (preferably in engineering) required. A manage-ment and marketing background and/or an MBA preferred. A78-14 (4/5).

Academic Staff, Technical Instructor, in the Chemistry Department to maintain facilities and inventory for undergraduate laboratory; order sup-

plies; prepare solutions; maintain spectrophotometric chromatographic and analytical instrumentation. A basic knowledge of chemical methods is required as well as the ability to organize tasks and to assign responsibility to others. C78-10 (4/5).

Admin. Staff, Editor/Writer, in the Information

Admin. Staff. Editor/Writer, in the Information Processing Services Office to be responsible for preparation and publication of computer use documentation; edit; write; collect information and document approval; communicate with printer. May also teach and consult on word processing. Bachelor's degree or equivalent, at least 1 year's editing/writing experience required.

least 1 year's eating, writing experience required. Must be able to work with minimal supervision, organize time and work and handle many projects simultaneously. Experience with computers and data analysis (especially econometrics) and familiarity with computer-based word processing desirable, A78-12 (4/5).

Admin. Staff, Staff Accountant, in the Comptrol-lers Benefit Accounting Office will define and implement changes in computer systems; write programs with user-oriented report generator

Ianguage; prepare financial reports for auditors and actuaries; assist in preparing employee benefits budget, in estimating pensions and in reconciling control accounts. Will train and super-vise support personnel. Position requires ac-counting degree or formal education/experience combination a familiarity refit complexity and the super-

combination, a familiarity with computerized payroll/bussiness systems, and communications skill. Familiarity with pension and insurance plans as well as accounting experience desirable. A78-13

Academic Staff, Asst. Science Libraian, in the Chemistry and Chemical Engineering Dept. to select material for acquisition, retention and withdrawal; consult with faculty on research and instructional development; advise on materials budget; develop and maintain written collection

policy statements; participate in evaluation ac-tivities. Will also serve at the Reference Desk; manage chemistry reading room; perform other duties as necessary. Master's degree from ac-credited library school, chemistry background, organizational skills required. At least 2 years ex-pariance methers by in a large surger also re-

perience, preferably in a large system also re-quired. C78-9 (4/5).

Academic Staff, Facilities Officer, in the Electrical Engineering and Computer Science Dept. to manage the Dept.'s space, telecommunications, special purchasing, lease and service agreements. Coordinate space changes, renovations, repair and maintenance of facilities and environment; oversee space usage and property records; supervise mov-ing operations; authorize voice and data com-munications services: monitor expenditures and

munications services; monitor expenditures and

munications services; monitor expenditures and usage of telecommunication system; supervise copy and computer facilities; order special equip-ment. An Associate's degree, or the equivalent combination of education and experience required. Familiarity with MIT helpful. C78-7 (3/22).

Academic Staff, Research Associate, part-time, in the Division for Study and Research in Education to investigate the intellectual foundations and social purpose of current assessment practices in education, write reports and proposals; research

policy; organize research conferences. Experience in more than one of the following is required

In more than one of the following is required; methodology of the social sciences, sociology of education, education and the law, educational ad-ministration, policy research. Ph.D. also required. Background in the natural sciences and/or mathematics is desirable. Position is currently funded for one year. C78-8 (3/22)

Admin. Staff, Industrial Liaison Officer, in a Program providing interface among MIT faculty, staff and representatives of member companies of Program. Will also solicit new member companies.

Program. Will also solicit new memoer companies. Position involves extensive travel. Must have a Bachelor's degree and, preferably, a Master's degree, with one degree in chemical engineering. A management perspective, at least 3 years in-dustrial experience, and ability to communicate

with technical staff and corporate executives also

Academic Staff, Asst. Engineering Librarian part

responsible for collection development; provide

locary daets with reference service, promote effective collection development. M.L.S. from an ac-credited library school and minimum of 1 year of collections/reference experience in science or engineering library required. Undergraduate

degree in science or engineering desirable. One position is part time, 20 hrs./wk. C78-5, C78-6 (3/22).

ponsored Research Staff, Research Metallurgist Material Scientist, in the National Magnet Lab

to formulate and produce superconducting alloys

process alloys into high current, high critical field wires and ribbons; measure and optimize the superconducting and mechanical properties of superconducting wires. Ph.D. or equivalent in

library users with reference service: promote effect

time, full time in the Engineering Library to

necessary. A77-62 (3/22).

(4/5).

Ken Hewitt

Sally Hansen Lewis Redding

Kathleen Rick

(Secretary - Jenni Leibman)

Wolfeboro, NH, resort time-sharng lease, 1 wk/yr, start 7/22/78, br nv Yacht Club wtfrt apt, docks, tennis, encl pool, childr, progr etc, Motorship Mt Wash docks 200 yrd away, also can exchg for wks at other world resorts, info call Bob x3-2748 or eve 272-4267.

#### Animals

Puppies. AKC collie, champ sired, tri-sable, 1st shoots. 8 wks, \$125 & up. Call x3-5896.

#### Lost and Found

Lost: sm plaid tam, nr Bldg 7, 10 & 56. Call x3-

Feb 22, Faculty Club @ lunch someone took black M 100° cashmere top coat identicle to own, from Filenes w/red eagle label, articles left in coat, MIT pen, peanuts & train schl to Burl. Pls contact for swap x3-6607.

Found: Silver key ring & keys, E52: Call x3-2675. Found: M wedding band, Sat, Mar 18th, men rm.

bld 36 5th fl, plain gold band, narrow. Call x3-7309 Found: gloves and scarf, bldg 5. Beverly x3-3291.

#### Wanted

House exchange: Univ family, Camb, England, betwn May & Sept for 3 Adlt & 3 C und 5 yrs old w/family lv in Camb/Bos. Eng: Spc 5 BR hse, mod K, w/extras, 2 B w/main BR, car exchng poss. Details write: Dr. Oliver Braddick, Dept of Experimental Psychology, Univ of Camb, Downing St, Camb, CB2, 3EB, England.

Volvo tires, 6.00-15. Pls call Joel day 732-1265 or eve or wkends 354-7039

Pet carrier for gd sz cat. Mel x5776 Lincl.

Nd tech typist to retype tech report at home or our office. Gwen x3-4330.

Upright piano in gd cond, we wl move it. Call Katy 492-0051 lv msg.

House sit want in Aug early Sept, neat couple, plant sit, pet sit. Call Sophie 547-0648 eve.

Coin Operated bttle dispensing soda machine, Len x3-1541

Responsbl prof M, 33, sks nice 1 BR apt, Camb June 1, exc reference avail. Call x5400 Lincl. Usd Martin six-string acoustic guitar, must be in

exc cond. Pete Besen x3-5401.

4 dr wagon or hatchbek w/auto trans, PS & PB, lw mlg. Call 237-1350.

Wl pay \$30 for working fridge, perfer 5 cu ft. Call x5-6564 Dorm, lv msg East Campus.

'71 Hammol plate, mint cond w/pay top \$, Call Bill x7708 Linc.

End of term, fl sz refrig, about \$25. Gail x3-1807.

#### Roommates

Look for quiet, lux, living at lowest cost? We are 2 prof W, renting a lg hse, join us. Marie x3-3807 or Amy x3-2890.

#### Carpools

4153

3807

Anyone willing to share ride & expns, car rent thru France, w/ 2 grads in June. Contact Kim x5-7677 eves, Jeanne x3-3951 days or eves 661-8613.

#### Miscellaneous

WI type, anythng, tech, etc, IBM Correct Select, reas rates. Virginia x3-6885 or x3-3229. Pro Type, all field, IBM Correct Select, 10 yrs exp. Marie x3-3807.

Wl type, theses, manu, tech, fast & accur, IBM Correct Select. Debbie x3-1848.

Writers! anyone in MIT cmmty interested in a writing group. Joan x3-2672.

Typing all subj (sci, eng. tech or hum) theses, let-ter, reports, IBM Correct Select. Ginny x3-3929.

Heating, air cond, ventalation, insulation work to be done. Arthur Dubois 891-7499 aft 4:30pm.

WI type, theses, reports, manu, fast & accur. Call x3-4528.

WI type, theses, manu, etc. IBM Select, Carol x3-

Drafting service, charts, graphs, etc. Marie x3-

3 spd bikes, 1 G, 1 B, \$5/ea; sofa bed, \$35; bed, \$10; cast iron bath rm sink, \$10; 4 drw chest, \$5. Call x5778 Lincl.

Ladder, stud alum, comb 714' step & 13' extension, \$40. Brian x3-6977

Bear cat 101 programmbl scanner, 16 chnl, no cryst nessc, 6 bands, \$175. Frank x3-4128

Head ski outfit (jacket & warmup pants) W sz 10 worm lx, best; blue ski pants, worn lx best. Call x5-8619 or lv msg x5-5961 for Virginia Chen.

Removing snows? Put reg tires on addit rims 14" rim for all non-disc, Chrysler Prod, '65-'73, \$2/ea. call Ralph x3-2321.

Sng bed, exc cond, \$75 or best. Rhonda x3-7102.

Canon 35mm, range finder camera, w/case, filter, 1.7 lns, exc cond, \$60. Call x5-7263 Dorm.

Prtble GE dishwasher, gd cond, \$60. Call 729-6117.

Open nite, The MET in Bos, Beverly Sills, Thais, Mon, Apr 24, 2 ticket, \$35 ea, Call Prof Widnall x3-2294

Dbl Bed, matt & bx sprn w/remove leg, \$50. Mike x7379 Lincl.

Stereo Sale: pr ADS 500 spkr, nw \$270; now 6 mo old \$179, fantast sound; PE trntbl b/dc/c, \$65. Mike 661-8857, lv msg.

HP-21 w/charge & case, \$35. Dave x3-5980.

55 gal aquarium comp w/fish, \$100. Charlie x7133

Sz 38 new M summer weight trousers, 2 pr for \$10. Call Avis x7120 Linc.

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garage \$310/mo or w/out park \$275/mo. Call x3-3236

Cape Cod lot, N. Falmouth, nr water, exclusv area, low \$20s. Call x250 Lincl.

Cape Cod, 3 BR, yr round hse on Dianna's Pond, prv beach & dock, outlet to bass Rvr, quiet loc, slp 6 +, avail June \$190 per wk, July & Aug \$290 per wk. Gery x8-1271.

Chalet, lakes Region by wk or wkend, slps 8, frplc, gar, low rates now thru 6/23 incl Apr vac. Call x8-1234 Draper.

5 rm condominium in mod bldg, exc loc, 5 mins, from Harv Sq. unit has 2 BR, 2 full Ct bathrm, comp applc K. LR, DR, nw win nall rms, AC, park avail, ask \$37,000. Pls call Lisa x3-7106 day or 492-5783 eve.

Marthas Vinyard, exc yr round home, custom blt '74 on protectd salt water pond, upper \$60's. Call Stan x3-7063.

Newton: Lovly Colonial, 3rd fl suite + 311 beds, 2 full, 212 baths, carpet basemt, panel deck, safety enclsd swim pool, 1vly lot, exc school district, wonderfl neighbhd, \$89,700. Call x3-6303. full 2 enclsd

West Somervl, unfurn, 6 rm, 3 BR, lv rm, DR, K, 2 bath, park, heat, gas, hot water incl, \$360, security deposit, reference, no pets, avail May 1, nr T, 868

Tang Hall rm avail now thru Aug w/opt for next of Bost and ca 12th fl viet 1133/mo reduced to \$95/mo incl util. Call 494-9118 aft 6pm

Rm avail now for rent or sublet. Tang Hall in 3 BR overlking campus \$135/mo. Call 494-8893 aft

Tang Hall rm avail now or sublet in 3 BR apt, overlk campus, \$135/mo incl util. Call 494-8893 aft 6pm

POSITIONS **AVAILABLE** 

This list includes 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 Assistant for Woi and Work (10-215) and Minority Affairs (10-2 and in the Personnel Office, (E19-239). s (10-211).

Personnel Interviewers will refer any qualified applications on all biweekly jobs as soon as possible after their receipt in Personnel.

ns who are NOT MIT employees should call the Personnel Office on extension 3-425.

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

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

Dick Higham	3-4278
Pat Williams	3-1594
Carolyn Scheer	3-1595
(Secretary - Tertia Perkins)	

metallurgy or materials science required. Experience in the preparation of superconducting materials: measurement of stress and strain, critical fields and critical currents at liquid helium temperatures also necessary. R78-59 (4/5).

Sponsored Research Staff in the National Magne Lab to do postdoctorol research on matter at high magnetic fields. Extensive experience with cryongenics, superconducting magnets and modern instrumentation in solid state physics required. Demonstrated innovative capabilities and background in experimental studies of magnetism and superconductivity also required. R78-58 (4/5)

Sponsored Research Staff, to do postdoctoral research, in the Research Laboratory of Electronics, related to the study of basic physica ocesses in hot Tokamak plasmas narticula processes in hot Tokama RF heating of such disch is required. R78-77 (4/5). of such discharges. A Ph.D. in physics

Sponsored Research Staff in Nutrition and Food Science to do research on metabolism and func-tions of vitamin A in the formation of glycophospholipids. Will work with vitamin A deficient rats, tissue cultures of rat cornea and biochemical enzymatic assays on culture medium A Bachelor's degree, or equivalent, in life sciences required. R78-74 (4/5).

Sponsored Research Staff, Computer Programmer needed for data base file management in the Energy Laboratory for data selection, acquisition, entry to a technical data base, quality maintenance, file updating/improvement, inter-face program development, application program development and technical reporting. Previous development and technical reporting. Previous programming experience plus a Master's or Bachelor's degree in Mechanical or Chemical Engineering or in Computer Science with an engineering background required. Familiarity with data base system, fluid dynamics, heat and mass transfer, chemical kinetics and combustion useful transfer, chemical kinetics and combustion useful R78-72 (4/5).

Sponsored Research Staff in Nutrition and Food Spinsored Research Stay in Nutrition and Pool Science to assist with research relating to health of-fects of gases and aerosols arising from fossil fuel combustion. Pulmonary function measurements in guinea pigs are used to assess irritant potency. Position requires experience in empathetic handling of small animals preferably including surgical experience, and familiarity with inhalation tox-icology. A B.S. or equivalent in life science re-quired. R78-66 (4/5).

Sponsored Research Staff, Computer Programmer in the Energy Laboratory to maintain and upgrade existing system computer program, and assist in development of mathematical models for fluidized bed combustors. Previous programming experience plus a Master's or Bachelor's degree in Mechanical or Chemical Engineering or in Computer Science with an engineering background required. Ex-perience in data analysis, model testing, and technical reporting also necessary. Familiarity with fluid dynamics, heat and mass transfer, chemical kinetics and combustion helpful. R78-73 (4/5).

Sponsored Research Staff in Nutrition and Food

Sponsorea Research Stay in Nutrition and Food Science to perform quantitative mutation assays; participate in development of automated assay procedures and experiments probing mechanisms of mutation in bacteria. A minimum of a Bachelor's degree in microbiology or related field as well as laboratory experience required. R78-75 (4/5)

Energy Lab to conduct and administer research in

conduct and administer research in economics and public policy of renewable resources (currently, in area of photovoltaics). A Master's degree in Economics and/or Management, or equivalent, a background in economic analysis of renewable energy technologies, and demonstrated ability in individual research and research ad-ministration required. R78-70 (4/5).

Sponsored Research Staff in the Clinical Research Center to be responsible for operation of specimen laboratory: process samples; maintain precise sample records; oversee maintenance of equipment and supplies; prepare associated reports. Work will

be under direction of research staff and other Center personnel. A Bachelor's degree in science, at least 3 years' laboratory administration ex-perience, including supervisory responsibility, re-quired. Knowledge of computer terminal data handling and storage preferred. R78-76 (4/5).

Sponsored Research Staff, Combustion Engineer, in the Energy Lab to participate in research on the formation of soot and polycyclic aromatic hydrocarbons in flames. Familiarity with the use of

figure probes and other experimental and combus-tion techniques used in combustion research re-quired. Ph.D. in chemical engineering, mechanical engineering, fuel technology, or the equivalent, and experience in particulate organic matter in flames research preferred. R78-60 (4/5).

Sponsored Research Staff, Staff Engineer, in the Research Lab of Electronics to supervise staff and student technicians; assist and advise students in-volved with hardware projects; maintain lab

volved with hardware projects; maintain lab facilities; supervise electronic parts and supplies stock, new equipment contruction, testing and in-stallation; maintain lab equipment documenta-tion. Experience in the maintenance of digital equipment and ability to supervise technical operations required. R78-61 (4/5).34g01Sponsored Research Staff, in the Center for Space Research to operations the control operator of the supervise technical control operator of the supervise technical control operators and the supervise technical control operators of the supervise technical supervise technical control operators of the supervise technical control operators operators

Research Start, in the Center for Space Research to do post doctoral research involving the planning and carrying out of observations of x-ray obser-vatory; perform related studies of the visible counterparts of x-ray sources. Ph.D. in astronomy or astrophysics and practical experience in optical astronomy required. R78-62 (4/5).

Sponsored Research Staff, Research Assistant, part-time, in the Psychology Dept. to prepare stimulus materials for language experiments; ad-minister test protocols; data reductions and

processing. Knowledge of descriptive and inferen-

processing. Knowledge of descriptive and inferen-tial statistics including analysis of variance; programming at introductory level in FORTRAN IV or equivalent required. Familiarity with ex-perimental psychology, especially human testing, audio recording and motion picture photographic material desired, as well as some knowledge of for-mal linguistics and elementary electronics. Half time appointment. R78-67 (4/5).

Sponsored Research Staff, Temporary Systems Programmer in the Energy Lab to design and code an executive system for a large interactive (FORTRAN) process simulation; debug and test programs; document programs and subsystems; implement programs for data management, file retrieval and processing problem-oriented languages; interface with the operating system of

languages; interface with the operating system of computer (IBM 370/168 with VS and CMS);

develop specialized assembly-larguage programs. B.S. degree in science or engineering and 1-3 years experience in computer programming required. Knowledge of data base management and com-puter operating systems as well as proficiency in FORTRAN and IBM operating systems necessary.

Temporary appointment of 8 months. R78-69 (4/5).

Sponsored Research Staff in the Research Lab of Electronics to do postdoctoral research in Radio Astronomy; will use interferometric methods, in-cluding VLBI and conventional interferometry.

Cluding VLBI and conventional interferometry. Ph.D. in physics or electrical engineering, or equivalent, with strong background in electronic systems and modern physics required. Interest in galactic structure, the interstellar medium and nonthermal radio sources, as well as familiarity with interferometry experimental techniques desired. R77-53 (4/5).

Sponsored Research Staff, Staff Engineer, in the

Sponsored Research Staff, Staff Engineer, in the Research Lab of Electronics to supervise staff and student technicians; assist and advise students in-volved with hardware projects; maintain lab facilities; supervise electronic parts and supplies stock, new equipment contruction, testing and in-stallation; maintain lab equipment documenta-tion. Experience in the maintenance of digital equipment and ability to supervise technical operations required. R78-61 (4/5).

Sponsored Research Staff, International Energy Economist, in the Energy Lab to analyze world of

Economist, in the Energy Lab to analyze world on markets; research international energy issues. Graduate level training in economics with con-centration in the areas of international economics, background in energy economics and policy and experience with international economics of energy supply, demand and trade required. Experience in international business and/or finance, as well as research experience on international energy issues

research experience on international energy issues and/or on problems of international trade, finance

and monetary phenomena also required. R78-68

Research Staff, Energy Analyst, in the

3-1591 3-4266

3-4267

3-4275

3-4269

(4/5).

Sponsored Research Staff, in the Earth and Sponsored research stail, in the Earth and Planetary Sciences Dept. to operate trace-element analytical lab; prepare samples; handle manually, and through computer, raw activation data; opera-tion of state-of-the-art equipment; train other per-sonnel in neutron activation. Bachelor's degree and experience in neutron activation necessary. Also quires some familiarity with trace-element geochemistry. Research requires so weekend work. R78-64 (4/5). night and

Sponsored Research Staff, Staff Scientist in the Sponsored Research Staff, Staff Scientist in the Arteriosclerosis Center to direct a busy lipid and lipoprotein research lab. The work will include many of the following techniques: gas liquid chromatography; qualitative and quantitative lipid separations; lipoprotein biochemistry and im-munology. A Ph.D. in Biochemistry required. Ex-perience with lipid chemistry and physiology and with lipoprotein studies also required. Supervisory experience preferable. R78-55 (3/22).

Sponsored Research Staff, Combustion Engineer, in the Energy Laboratory to participate in combus-tion research program with primary emphasis on the characterization of and control of pollutant emission. Ph.D. in chemical engineering or fuel technology, some experience in combustion research and familiarity with experimental and computational techniques used in combustion required. R78-56 (3/22).

Exempt, Chef, in the Endicott House to prepare Exempt, Chel, in the Endicott House to prepare dinners for 30 people, six nights a week; prepare hors d'oeuvres for large groups; plan menu; order food; supervise cook; prepare lunches when neces-sary. Ability to prepare gournet meals, present them attractively. Also required to wash own pots and pans and keep kitchen clean. Irregular schedule, 48 hrs./wk. E78-20 (4/5).

Exempt, Engineering Asst. in the Earth and Planetary Sciences Dept. to direct the construction and testing of, and to be responsible for, the opera-tion of seismic recording systems for the ocean bot-tom; supervise undergraduate lab asst.; coordinate field tests of the instruments on oceanographic cruises. Bachelor's degree and/or substantial course work in earth and planetary science and ex-perience with mechanical systems, particularly tape recorders desired. Digital and analog electronics experience is required. E78-19 (4/5). electronics experience is required. E78-19 (4/5).

Exempt, Supervisor in the Office of Laboratory Supplies to coordinate daily activities of stock room personnel: set up work schedules; maintain payroll; screen and interview candidates of stock clerk positions. Previous supervisory experience; knowledge of lab apparatus, chemicals, solvents and electronics and of safety measures relating to the proper handling of hazardous materials re-quired. Experience in stock controls and systems and ability to deal effectively with denartment adand ability to deal effectively with department adinistrators, faculty, students and outside vendors necessary. E78-18 (4/5).

Exempt. Editor, in the MIT Press to edit manuscripts and prepare them for publication. Bachelor's degree and 2-3 years experience as in-dependent manuscript editor of technical and engineering material required. E78-16 (4/5).

engineering material required. E78-16 (4/5). Exempt, Nurse Practitioner or Physician Asst. in the Medical Department to be responsible, under physician's supervision, for the care and treatment of orthopedic and surgical trauma patients: ap-plication and maintenance of casts; maintenance of orthopedic supplies; suturing of minor lacera-tions; general follow-up care and x-ray evaluation if qualified. Individual will work part-time in the Orthopedic Clinic and part-time in the Main Out-patient Clinic. Applicants must be Certified Physi-cian Assistants or graduates of an approved Adult Nurse Practioner program with completion of one year internship or preceptorship. A minimum of year internship or preceptorship. A minimum of one year previous work experience in the treatment rthopedic and surgical trauma preferred. 35 wk., Mon-Fri. with possibility of on call rota-on weekends and evenings. E78-12 (3/22). of ortho

Exempt, House Manager, for the Housing Office to be responsible for the overall functioning of a hous-ing unit: supervise employees; assist in es-tablishing and monitoring operational unit budgets and in planning long range housekeeping budgets and in planning long range housekeeping and building maintenance programs; plan work schedules; order supplies and services. High School graduation, or equivalent; three years experience supervising and evaluating employees and basic knowledge of accounting and clerical procedures required. Experience in housekeeping and maintenance of large buildings and ability to work cooperatively with unit residents also necessary. **F72** 11 (202) E78-11 (3/22).

Exempt, Technical Asst., in the Medical Dept.'s Environmental Medical Service to assist in the development and operation of a Service to assist in the evaluate potential personnel exposures to biological hazards. Will also assist in the implementation of recommendations for biohazard control. A Bachelor's degree in biology or inside memory and Demonslok held microbiology required. Proven lab skills, good com-munication skill also required. Experience as a Mecial Technologist and/or equivalent experience desirable. 37.5 hrs./wk. E78-13 (3/22).

Sr. Secretary VA in the Alumni Association to 50. Secretary vA in the Atlantia Association to coordinate meetings; prepare tavel itinerary; com-pose and type correspondence; prepare expense reports. Excellent typing, organizational and shorthand skills required, as well as a minimum of 5 years secretarial experience. B78-145 (4/5).

Admin. Asst. V in the Sloan School of Management to prepare reports, transmittal material and budget analysis and control; edit manuscripts and correspondence; coordinate workshops and con-ferences; screen calls; schedule appointments; transcribe reports, letters and papers from machine and/or oral dictation. Excellent typing skill, shorthand or speedwriting, good English grammar ability required. Ability to work with a variety of people and to set priorities also required. B78-130 (4/5).

Admin. Asst. V in the Sloan School of Manage ment to coordinate activities relating to sponsors of the System Dynamics Group: follow-up on and maintain files of Group's activities; originate cormaintain thes of order s activities, originate or-respondence as required; edit reports and papers and arrange publication details; assist in organiz-ing meeting; type reports. Excellent typing and organizational skills and editing ability required. A minimum of two years of applicable experience, particularly with coordinating activities of a large prune also necessary. Knowledge of minima and group also necessary. Knowledge of printing and publication processes helpful. Individual will be trained to use electronic word processing equip-ment. B78-118 (3/22).

Secretary V. in the Humanities Dept. to assist in administrative duties; matintain records; advise students; arrange meetings; organize office procedures daily. Good public relations, organizational and typing skills required. Ability to work efficiently with several people and some of-fice experience also required. Knowledge of German preferred. B78-148 (4/5).

Secretary V to Associate Director of Energy Lab to schedule appointments; screen telephone calls, visitors, mail; arrange meetings and conferences; compose correspondence from oral instruction, handle routine correspondence, as well as more complex manuscripts; maintain and reorganize filling system; arrange travel and follow-up vouchers At least 5 years secretarial experience required. Good typing skill including technical as well as statistical, editing skill also required. College or secretarial school training highly desirable as well as shorthand or speedwriting skill. Will be trained

pointments; arrange travel; distribute office mail compose some correspondence independently; file Will also cost recipes and menus; obtain prices from purveyors; maintain accounting information. Good typing skill, shorthand/speedwriting re-quired. 40hrs./wk. B78-136 (4/5).

Secretary IV to four faculty members in the Physics Dept. to type technical reports, manuscripts, proposals; maintain budget records; file; arrange travel. Excellent typing skill, in-cluding technical typing, required. College gradua-tion and familiarity with physics courses preferred. **B72** 120 (147). B78-139 (4/5).

Secretary IV, part-time, to 1 faculty member in the Secretary IV, part-time, to 1 faculty member in the Architecture Dept. to type manuscripts, cor-respondence, course material, journal articles; coordinate activities; schedule appointments; place books and material on reserve and renew books; organize slide collection; arrange travel; make arrangements for visitors and lectures. Ex-cellent typing and organizational skill, ability to work under pressure and flexibility required. 17.5 hrs./wk. B78-137 (4/5).

Secretary IV, to several faculty members in the Mechanical Engineering Dept. to type cor-respondence; schedule appointments; arrange travel. Excellent typing skill, including technical typing, shorthand/machine transcription ability and knowledge of basic bookkeeping required. High school graduation with formal secretarial training or equivalent education and experience re-quired. B78-135 (4/5).

Secretary  $\overline{IV}$ , for two faculty members and one research associate in the Research Lab of Electronics to type reports, technical material, cor-respondence and course material; plan meetings, seminars, arrange appointments. Good typin skill, machine transcription skill, goo organizational skill, ability to work well with a variety of people required. Two to three years secretarial experience or secretarial school graduation and one year's experience also required. B78-134 (4/5).

Secretary IV to two faculty members in Materials Science and Engineering to arrange travel and ap-pointments; schedule classes and seminars; prepare class work; maintain a variety of files; type prepare class work; maintain a variety of tiles; type and edit correspondence, papers, manuscripts, proposals and reports from handwritten drafts and machine dictation; independently respond to in-quiries, prepare reports; assist visitors and researchers with schedules, reports and procedures. Good typing skill, willingness to learn and ability to successfully interact with a variety of neonle required. Exparience in technical typing people required. Experience in technical typing preferred. B78-132 (4/5).

Secretary IV in the MIT Press to type correspondence; duplicate manuscripts, send them for review and order reviewers' fees; write letters for project proposals released and process them; maintain files; prepare for monthly Board meetings. Will also assist with publication of con-tracts; keep monthly accounts; assist in turnover of manuscripts; serve as liaison between acquisition manuscripts; serve as maison between acquisition editors and other Press personnel. Excellent typing and machine dictaphone skills required, as well as precision and attention to detail. Ability to set priorities, organize several activities and strong in-terest in publishing also required. B78-107.

Secretary IV to two faculty members in the Earth and Planetary Sciences Department to perform secretarial and administrative duties: type cor-respondence, scientific manuscripts, class material; maintain files; answer phones; schedule appointements; assist in preparing research appointements; assist in preparing research proposals; monitor research contracts; maintain student payroll; make travel arrangements. Good general secretarial skills and ability to set priorities required. A minimum of two years secretarial ex-perience preferred. B78-123 (3/22).

Secretary IV for the Technology Adaptation Program which is involved in transferring technology to developing countries. Will work un-der direction of senior secretary. Responsibility will include contact with Institute faculty, stuwill include contact with Institute faculty, stu-dents, staff, foreign visitors; manuscript typing; arranging overseas travel; distribution of publica-tions; preparation of payroll and other accounting materials. Some duties will support supervisor's responsibilities as Civil Engineering faculty member. Excellent general secretarial skills and experience required. Applicants will be trained to type technical material. Shorthand/speedwriting desirable B78.121 (2/2) desirable. B78-121 (3/22).

Secretary IV, part-time, to one faculty member in the Architecture Dept. to type class work, manuscripts and correspondence; perform some library research; arrange meetings; schedule ap-pointments; file; handle mail and telephone; arrange travel; order supplies. Fast and accurate typing skill and ability to work under pressure re-quired. Knowledge of Italian helpful. 26 hrs./wk. B78-115 (3/22).

Secretary IV, part-time, to two faculty members in the Nutrition and Food Science Dept. to perform the Nutrition and rood science bept, to perform general secretarial duties: type correspondence, class notes and statistical material; answer telephones; schedule appointments; arrange travel; file. Accurate typing skill and ability to work from rough drafts and hand written copies, as well as ability to operate dictaphone required. One to two years secretarial experience preferred. 20 hrs./wk. B78-114 (3/22).

Secretary IV to the Director of Patent Marketing Office of the Vice President, Research to perform Office of the vice resident, research to perform general secretarial duties: type correspondence; prepare editorial copy and maintain files; ar-range meetings; order supplies and services; monitor accounts and check statements. Excellent monitor accounts and check statements. Excellent command of English language, typing skill, shorthand and ability to operate dictaphone re-quired. At least 3 years experience preferred, as well as experience on word processing equipment. B78-113 (3/22).

Secretary III-IV in the Electrical Engineering and Computer Science Department's Graduate Office to maintain records in an on-line computer system; maintain list of students and coordinate thesis proposals with faculty thesis supervisors; maintain proposals with faculty thesis supervisors; maintain student grade records, college cards and record sheets; gather data for reports. Accurate typing skill and accurate record keeping skill is required. Willingness to learn the use of an interactive com-puter system necessary. B78-110 (3/22).

Library Asst. II, in the Circulation Section of the Dewey Library to assist in charging out, receiving and renewing materials; maintain records and and renewing materials; maintain records and statistics; prepare overdue notices, bills and records of unpaid fines; shelve periodicals; train and supervise temporary students. Ability to un-derstand and apply circulation regulations in deal-ing with library users required. Position is for academic year only (Sept.-May). 40 hrs./wk. B78-142 (4/5)

Account Representative V in the Information Processing Services Dept. to act as liaison between Processing Services Dept. to act as naison occurs client offices and the computer operations facility; prepare input and jobs for processing; review out-puts. Training in the operation of hardware compo-nents, data processing concepts, operating systems and OS job control language is necessary. At least 4 years of experience in data processing also necessary, B78-122 (3/22).

Technical Asst. V in the Medical Dept.'s R tivity Center to measure breath radon and thoron in the Lab and breath radon in the field, mainly in in the Lab and breath radon in the field, mainly in elderly subjects; complete subject's health questionnaire; assist in search for new subjects; measure body gamma activity and prepare lab samples; update subject's files; perform library research as needed. A B.S., or equivalent, in radiological health sciences or related field re-quired. The ability to relate and respond to elderly subjects very important. B78-111 (3/22).

Sr. Clerk IV in the Center for Space Research to on cerem IV in the Center for Space Research to maintain records; prepare and submit jobs for computer processing; produce plot of computer processing results from an automated plotting system; distribute and file computer processing results. A college degree, accuracy, dependability and willingness to learn required. Familiarity with digital computers a plus. B78-127 (4/5).

Clerk/Typist IV in the Resource Planning Office to Clerk/Typist Iv in the Resource Planning Office to operate a Mag Card II system for typing proposals, case statement and other specialized material. Previous Mag Card II experience, good typing and organizational skills, and ability to work under deadline pressures required. Attention to detail and ability to work independently with minimal supervision also necessary. B78-143 (4/5).

Sr. Clerk IV in the Civil Engineering Academic Programs Office will work with administrative assistant to maintain records; assist students with re sustant to maintain records; assist students with re-quests for information and statistics; type material for printer; compile and update lists. At least 2 years' clerical experience, or equivalent, good typ-ing skill required. Knowledge of keypunching is helpful. B78-149 (4/5).

Sr. Clerk IV in the Resource Planning Dept. to as-sist in maintenance an dupdate of Leadership Campaign reporting systems: input of information into computer via on-line terminal; research and this computer via on-line terminal, research and verify data; keypunch; support special projects as necessary; assist in maintenance of other data processing systems. Some familiarity with data processing system and basic accounting procedures required. Keen attention to details, accuracy, ability to work under occasional pressure and bility to work under occasional pressure and ability to set priorities also required. B78-108 (3/22).

Sr. Clerk/Receptionist III-IV in the Office of Per-sonnel Services to share responsibilities related to employment process with other receptionist: employment process with other receptions: provide information on available positions, ap-plication procedures, etc. to new applicants and others; refer general inquiries to other Institute of-fices as necessary; process resumes for review; han-dle a substantial amount of filing. May perform other defined duties as recently applied to the subthe a substantial amount of hing. May perform other clerical duties as necessary. Typing skill, previous working experience in an office setting, ability to exercise sensitivity and judgment re-quired. Working experience in some public-service capacity is strongly preferred. 37.5 hrs./wk. B78-147 (4/5).

Clerk III in the Physical Plant Dept. to review and process requisitions; type and dispatch purchase orders; batch requisitions/orders for keypunching; handle internal communications; maintain files. Good typing and general office skills required. Experience in a purchasing or related department also required. B78-138 (4/5).

Sr. Clerk III in the Comptroller's Accounting Of nce to prepare time sheets for computer entry; log file maintenance changes; post payroll audit of time sheets and input; research inquiries in reference to pay discrepancies, payroll procedures and general information; compute pay adjust-ments, file changes and special checks; handle paycheck mailing; complete reports; file Ability to work well with others and to communciate effec-tively required. B78-146 (4/5).

Communications Console Operator III, full-time and part-time, in the Physical Plant Ad-ministrative Services section to operate the Facilities Management Systems computer console which monitors various aspects of the physical en-vironment; communicate with control center and with various shops using phones, pages, radio transceivers; expedite all incoming calls as necessary: perform various clerical functions as neces-sary: perform various clerical functions as re-quired. High school graduation, or equivalent, English language skill and ability to react ap-propriately to emergency conditions required. Comparable experience and familiarity with com-unications control emitter terminology. equipment desirable. Full time positions require the ability to work irregular shifts including some weekend and holiday hours: (B78-91, B78-92). Part time position is for Midnight to 7:30AM shift on Saturday and Sunday (B78-93), 3/22.

Sr. Clerk III, in the Sloan School of Management S. Clerk II, in the Sloan School of Management to be responsible for subscription fulfillment of the Sloan Management Review, updating subscriber accounts; processing renewals, invoice payments, address changes, cancellations and new subscrip-tions; filling back issue and reprint requests; handling correspondence regarding subscription problems; sorting mail; answering phones; typing; processing checks for deposit. Good typing skill re-quired. B78-119 (3/22).

Hourly, Watier/Waitress, part-time, in the Faculty Club to take members orders; pick up food and serve using banquet trays; clear and reset tables; perform other duties related to dining room service as necessary. Must be able to speak and read English. Experience helpful, but not necessary. Position will be for 8-12 hours per week, 5PM-9PM, M-F. Occasional weekend work may be involved. H78-40, H78-41 (4/5).

A77-86, Systems Prog., Info. Proc. Serv. (1/11) A77-87, Systems Prog., Info. Proc. Serv. (1/11) A78-37, Asst. Dir., Office of Minority Ed. (2/1) A78-5, Staff Writer, Resource Devel. (2/22)

A78-8, Admin. Staff, Dean for Student Affairs (3/ A78-9, Gallery Mngr., Committee for the Visial Arts (3/8

A78-10, Asst. Director, Council for the Arts (3/2-2)

- BIWEEKLY: B77-518, Sec. III-IV, Mech. Eng. (10/5) B77-611, Sec. IV, Elec. Systems Lab. (11/2) B77-647, Sec. IV, Treasurer's Office (3/1) B77-655, Sec. IV, Chemical Eng. (11/16) B77-671, Admin. Asst. V, National Magnet Lab. (12/2)

(27)
 B77-679, Sec. V, Nuclear Sci. (12/7)
 B77-696, Sec. IV, Personnel Office (12/7)
 B77-743, Sec. IV, Earth & Planetary Sci. (1/11)
 B77-755, Sec. IV, Tech. Adaptation Prog. (1/11)
 B77-755, Sec. IV, Earth & Planetary Sci. (1/11)
 B78-2, Clk./Sec. III-IV, Ctr. for Cancer Res. (25)

 B78-4, Sec. IV, Civil Eng. (1/18)
 B78-4, Sec. IV, Admissions (1/18)
 B78-13, Acctg. Asst. V, Comptroller's Benefit Off. (1/25) B78-16, Sr. Clk. III, Div. of Lab. Animal

edicine (1/25) B78-25, Sec. III-IV, Urban Studies & Planning Medici (1/25)

J225)
J225)
J226, J225)
J227, Admin. Asst. V, Civil Eng. (1/25)
J238-27, Admin. Asst. V, Civil Eng. (1/25)
J238-28, Sec. IV, Lab. for Nuclear Sci. (2/1)
J238-26, Sr. Clk. III, Sloan School (2/22)
J238-62, Admin. Asst. V, Civil Eng. (2/22)
J238-64, Admin. Asst. V, Civil Eng. (2/22)
J238-26, Sec. III, Clinical Res. Ctr. (3/1)
J238-74, Sec. IIV, Dean for Student Affairs (3/1)
J238-74, Sec. IV, Dean for Student Affairs (3/1)
J238-80, Sec. V, Mech. Eng. (3/8)
J238-80, Sec. III. IV, Resource Planning (3/8)
J238-84, Sec. IV, Medical Dept. (3/15)
J238-84, Sec. IV, Medical Dept. (3/8)
J238-86, Sec. IV, School of Humanities & Social
ci. (3/8)

Sci. (3/8) B78-87, Computer Oper. IV, Admin. Comp.

Serv (3/8) B78-97, Sr. Keypunch Oper. III, Alumni Assoc. (3/

B78-98, Sr. Keypunch Oper. III, Alumni Assoc. (3/22) B78-100, Sec. IV, National Magnet Lab. (3/22)

B78-102, Lib. Asst./Sec. IV, Dewey Library (3/22)

8-104, Sec. IV, Neurosciences Res. Prog. (3/22)

#### ACADEMIC STAFF:

C77-36, Social Worker, Medical (10/5) C78-1, Tech. Inst., Mech. Eng. (1/18) C78-4, Tech. Asst., Biology (3/22)

EXEMPT:

E77-47, Engineering Asst., Aero/Astro. (10/12) E77-54, Eng. Asst., Ctr. for Mat. Sci. (12/14) E77-56, Estimator/Scheduler, Physical Plant

(11/9)

E78-1, Unit Coordinator, Medical (1/25) E78-2, Audiologist, Medical (1/25) E78-8, Machine Shop Super., Lab. for Nuclear

Sci. (3/8 E78-9, Admin. Asst., Ctr. for Policy Alternatives (3/15)

HOURLY

- HOURLY: H77-89, HVAC Designer/Draftperson, Physical Plant (10/5) H77-137, Tech. A, National Magnet Lab. (9/14) H77-170, Waiter/Waitress, Endicott House,

H77-170, Waiter/Waitress, Endicott House, Dedham (2/15)
H77-206, Elec. Tech. A, Energy Lab. (3/1)
H78-23, Mach. A, Nutrition & Food Sci. (3/8)
H78-26, Waiter/Waitress, Faculty Club (3/15)
H78-27, Second Class Firer, Physical Plant (3/2-2)

- SPONS. RES. STAFF: R77-51, Sr. Research Engineer, Energy Lab. (3/22) R77-73, Plasma Physicist, National Magnet
- Lab. (4/27) R77-74, Plasma Physicist, National Magnet

Lab. (4/27)

- R77.79, postdoc. res., Physics, Lab. for Nuclear Sci. (5/4) R77-80, postdoc. res., Physics, Lab. for Nuclear Sci. 5/4)
- R77-91, Sr. Accelerator Physicist, Lab. for Nuclear Sci. (5/18)
- R77-93, Design Engineer, National Magnet Lab. (11/9) R77-95, Biophysicist, National Magnet Lab.
- (5/25)
- (5/25) R77-97, Chemical Eng., Energy Lab. (6/1) R77-105, Managing Dir., Energy Lab. (6/22) R77-112, Magnetic field coil design, National Magnet Lab. (6/22) R77-102 Exercise and Description Patternic Content P272-102 Exercis R77-137, Experimental Physicist, Bates Linear
- Acclelrator (8/31)
- R77-161, Elec. Engineer, Mech. Eng. (9/7) R77-192, Computer Language Devel., Lab. for Computer Sci. (10/26) R77-201, Prog./Data Analyst, Earth & Planetary Sci. (11/9)
- Sci. (11/9) R77-209, Res. Scientist, Energy Lab. (11/30) R77-211, Computer Syst. Design, Lab. for Com-puter Sci. (12/7) R77-212, Prog. Language Design, Lab. for Com-puter Sci. (12/7)
- R77-213, Computer Software Design, Lab. for Computer Sci. (12/7)
- R77-221, Neurochemist Res., Nutrition & Food Sci. (12/14) R77-228, Plasma Physicist, Res. Lab. of Elec.
- R77-230, Computer Syst. Designer, Lab. for
- Comp. Sci. (1/11) R78-1, Cell Culture Chemist/Biologist, Cell Culture Ctr. (1/18) R78-2, Chief Oper., Lab. for Nuclear Sci. (1/18) R78-4, Medical Tech., Medical Dept. (3/8) R78-4, Medical Tech., Sloan School (2/1)
  - Mr. Knight, who was 93, was a

## Soccer Exhibition

The MIT varsity soccer team will open its spring season on Wednesday, April 5, with a match against a touring Bermuda All-Star team. The game will be at 4:00pm at **Boston University because of** wet field conditions at Tech. The MIT spring squad will play 11 college teams throughout the spring including rivals **Babson and Brandeis.** 

# Sangam Plans Indian Concert

Parween Sultana, one of India's

most popular singers, will perform

a concert of North Indian classical

and semi-classical vocal music accompanied by her husband, Ustad

Mohammed Dilshad Khan, at

MIT's Kresge Auditorium Sunday,

Indian Affairs at MIT, are \$10,\$5,

and \$4 (\$1 discount with student

ID) and they are available from

Sanjoy Mazumdar, 509 Westgate,

Cambridge, Mass., 02139 (617)

Ms. Sultana, who has performed

all over the world, is the youngest

artist ever to receive the Pad-

mashree award, given by the gov-

ernment of India for excellence in

music. She performs regularly on

Indian radio and television, and her recordings of Indian classical music sold more copies than any

others in 1977. Mr. Khan, a widely-

known singer as well as a com-

poser, has written more than two

dozen new ragas. In the MIT con-

cert, Ms. Sultana and Mr. Khan

will be accompanied by two musi-

cians on tamboura and tabla.

R.H. Blanchard,

Alumni Leader

Memorial services were held

Tuesday, April 4, at the First United Methodist Church in Melrose for

Raymond H. Blanchard ('17), re-

tired president of the Hood Rubber Company, and a former president of

the MIT Alumni Association, who

died Saturday in a Melrose nursing

Mr. Blanchard was born in Dover,

N.H., but lived in Melrose for 53

years. He was also former president

of the Associated Industries of

Massachusetts, and former chair-

man of the board of the First Nation-

al Bank of Malden, and had served

on the investment committee of the

Melrose Savings Bank. He was a

trustee of the First United Methodist

He leaves his wife, Evelyn

(Tracy), a daughter, Beverly B.

Steer, and a son, Donald R. Blanch-

ard, all of Melrose; a sister, Lois

Blanchard of Malden; six grand-

children and two great-grandchil-

Word has been received of the

death of William Knight, of Orlan-

do, Fla., on March 14, following a

William Knight

home. He was 82.

Church of Melrose.

dren.

B78-9

B78-1

brief illness.

Tickets for the performance, sponsored by the Sangam Club for

April 16, 1978, at 3pm.

494-8713.

use of word processing equipment. B78-112 (3/22).

Secretary IV, part-time, for 2 faculty members in the Earth and Planetary Sciences Dept. to handle the Earth and Planetary Sciences Dept. to handle secretarial/administrative duties: type cor-respondence, class materials, manuscripts; file; schedule appointments; answer phones; manage research accounts; act as liaison between head-quarters and faculty. Excellent typing skill, in-cluding ability to type technical material, organizational skill and ability to set priorities re-suired. At least 2 wears secretarial enterience also quired. At least 2 years secretarial experience also required. 20 hrs./wk. B78-124 (4/5).

Secretary IV in Housing to aid Community members to find housing; record listings; maintain records and files; order supplies; type cor-respondence and lists; answer and place telephone calls. Accurate typing skill and good organizational skills required. Two years' coolege or business school training and one-two years' work experience preferred. Non-smoking office. B78-126 (4/5).

Secretary IV, part-time, in Nutrition and Food Science to type mansucripts, proposals; order reprints and supplies; transcribe machine and shorthand dictation; perform all other general secretarial duties. Excellent skills, including shorthand required. Some knowledge of biological and/or chemical terminology desirable. B78-144 (4/5).

Secretary IV, part-time, in the Biology Dept. to type manuscripts, applications, reports, cor-respondence; file; arrange travel; assist in meeting arrangements; monitor accounts; handle petty cash. Good typing skill and good command of English required. Shorthand and knowledge of MIT helpful, Prefer 3-5 years experience including some bookkeeping experience. 20 hrs./wk. B78-129 (4/5).

Secretary IV in the Food Service to screen calls and visitors; type correspondence, menus, reservations, rates, budgets; arrange meetings; schedule ap-

Secretary III-IV to faculty/staff research group in Chemical Engineering to perform duties to support teaching and research activities: type course materials, technical reports; arrange travel and meetings; maintain files; assist students and other office visitors. Machine transcription skill, ability to work with a variety of people and organization skills necessary. B78-120 (3/22).

Secretary III in the National Magnet Lab to type technical manuscripts, reports, correspondence; maintain files and records; schedule meeting rooms; arrange travel. Excellent typing skill re-quired. High school training with at least 1 year secretarial experience or secretarial school/college graduation also required. Technical typing ex-perience or willingness and ability to learn neces-sary. B78-133 (4/5).

Editorial Secretary IV for MIT News Office to type draft press releases for review, type final releases for printing, mail out releases, maintain files of manuscripts and mailing lists, type new mailing lists, replenish preprinted envelope supplies, maintain back issues of newspapers and magazines, answer telephones, take ads, and receive, sort and dispatch clippings. Strong, accurate typing re-quired. Flair for organization useful. Familiarity with MIT helpful. B78-125 (3/22).

Sr. Circulation Asst. IV in the Engineering Library to send overdue notices and bills; check materials in and out of library; deliver mail; shelve; search for materials; act as liaison between Library and Physical Plant. Typing skill, ability to interact successfully with a variety of people, flexibility and initiative required. College background and cir-culation experience desirable. B78-116 (3/22). Hourly, Machinist B, in the Dept. of Aeronautics and Astronautics Aerophysics Laboratory to set up and operate machine tools working from blue prints, specifications, verbal instruction or sketches, Will use lathe, milling machine and surface grinder. At least 3 years applicable experience is required. 40 hrs./wk. H78-37 (4/5).

Hourly, Technician A, to assist in design, fabrication, operation and maintenance of large, combus-tion, operation and maintenance of large, combus-tion driven MHD experimental facility in the Energy Lab. Will select, modify install, check and operate electrical equipment, hydraulic and pneumatic systems; collect data; do occasional machining, welding and silver soldering and other fabrication processor Application much be 2 mars machining, weiding and silver soldering and other fabrication processes. Applicants must be 2 year day technical school graduates and have at least 2 years applicable experience in research and development lab. The ability to understand technical aspects of equipment and components, and considerable skill to maintain equipment and make small are of a generative M29 26 (200). make repairs are also necessary. H78-35 (3/22).

The following positions were still available at Tech Talk deadline. The date following each position is the date of the most recent Tech Talk issue in which the position was described:

#### ADMINISTRATIVE STAFF:

A77-3, Systems Programmer, Info. Processing Serv. (2/16) A77-73, Programming Analyst, Off. of Facilities

Mngm't Syst. (3/15) A77-80, Manager, Info. Proc. Serv. (12/14) A77-82, Associate Director, Sloan School (12/14) A77-83, Dir. of Personnel Relations, Personnel

R78-18, Theoretical Physicist, Lab. for Nuclear

Sci. (2/22) R78-19, Theoretical Physicist, Lab. for Nuclear Sci. (2/22)

R78-20, Theoretical Physicist, Lab. for Nuclear Sci (2/22) **R78** 

-21, Theoretical Physicist, Lab. for Nuclear Sci. B77.7 ci. (2/22) R78-22, Theoretical Physicist, Lab. for Nuclear H78-Sci. (2/22) E78-6 R78-28, Theoretical Physicist, Lab. for Nuclear R77-1 R78-30, Program Counsel, MIT/Wellesley Upward Bound Prog. (2/22) R78-36, Programmer, Lab. for Computer Sci. C77-8 B78-7 B78-4 B78-1 B78-1 (3/1)R78-37, Tech. Asst., Ctr. for Cancer Research (3/1) R78-42, Computer Analyst, Sloan School (3/1) R78-43, Energy Analyst, Energy Lab. (3/8) R78-44, Engineer, Earth & Planetary Sci. (3/8) R78-45, Tech. Officer, Tech. Adaptation Prog. B78-7 B77-6 B78-8 H78-2 R78-9

R78-46, Computer Systems Eng., Meteorology Dept. (3/15)

The following positi the last issue of TE	ions have been FILLED since
R77-216	Spons, Res. Staff
C77-45	Tech. Asst.
R78-37	Spons. Res. Staff
H78-25	Waiter/Waitress
R77-94	Spons. Res. Staff
B78-67	Ed. Asst. IV
A77-91	Admin. Staff
R77-139	Spons. Res. Staff
B78-107	Sec. IV
B77-747	Sec. IV
B78-95	Clk. II
B78-103	Sec. IV
B78-49	Sec. IV

dormitory supervisor from 1938 until his retirement in 1950. He is survived by a son, William J. Knight, also of Orlando.

129	Sec. IV
29	Lab. Aide
3	Tech. Asst.
170	Spons. Res. Staff
57	Admin. Staff
79	Sec. V
42	Sec. IV
31	Sec. IV
90	Sec. IV
'8	Sec. IV
72	Sec. IV
5	Dental Asst. IV
26	Waitress
9 09	Spons. Res. Staff Sec. III Tech. Asst. IV

The following positions are on HOLD pending final

decision:	
B78-78	Sec. IV
A77-92	Admin. Staff
H78-16	Hourly
B77-117	Sec. IV
B78-81	Sec. IV
B78-101	Sec. V
B78-105	Sr. Lib. Asst. IV
E78-7	Nurse
R78-29	Spons. Res. Staff
B78-91	Sr. Clk. III

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# Symphony to Play in New York

The MIT Symphony Orchestra, conducted by Professor David Epstein, will perform at Lincoln Center's Avery Fisher Hall in New York City Wednesday, April 12, at 8:30pm.

The concert will mark the third appearance of the Orchestra in New York City since 1969. Two previous performances were in Carnegie Hall.

The concert will include the New York premiere of Kurt Weill's "Suite from the Opera Der Silbersee," Berlioz's Harold in Italy, with Marcus Thompson as viola soloist, and Stravinsky's "Scherzo à la Russe" will also be on the program.

The Orchestra's appearance at Lincoln Center is jointly sponsored by the MIT Alumni Center and the Council for the Arts at MIT. The noted architect I.M. Pei, an MIT alumnus of the Class of 1940, and a member of the Council for the Arts at MIT, is chairman of the concert committee.

The MIT Symphony Orchestra, some 95 members strong, is a

avan to Hold Chair

dynamic part of the music program at MIT. Founded in 1884, its members are drawn from the MIT and Wellesley College communities. MIT musicians represent all fields of engineering, biology, chemistry, management, physics, economics and psychology as well as humanities.

The Orchestra presents a full season of concerts, including a series at MIT's Kresge Auditorium and a spring tour each year. In a nationwide tour in 1973, the Symphony played to capacity audiences in major halls in Philadelphia, Chicago, Dallas, San Francisco and Los Angeles. The Symphony has also played at the Kennedy Center in Washington, D.C., in addition to the two previous concerts at Carnegie Hall in New York, about one of which a New York Times critic wrote:

'Shades of Leonardo! There is new Renaissance in the making .... It was a concert that would have been a credit to a professional orchestra."

The MIT Symphony Orchestra

Professor Javan is a fellow of the

National Academy of Sciences, the

American Academy of Arts and

Sciences, the American Physical

Society, and the Optical Society of

America. He was a Guggenheim

Fellow in 1967 and is a member of

has recently begun a series of recordings on the Vox/Turnabout label. Three records, which have been received with critical praise, have been issued so far.

Conductor David Epstein, pro-fessor of music at MIT, is a composer and critic as well as teacher and conductor. He received the AB degree from Antioch College and the MFA and PhD degrees from Princeton University, where he studied composition with Roger Sessions and theory with Milton Babbit. He studied conducting with Max Rudolf and Izler Solomon and worked as a conducting fellow under George Szell of the Cleveland Orchestra. Dr. Epstein has directed the MIT Symphony Orchestra for the last 13 years; he has also been guest conductor with several major orchestras in the US and abroad

Marcus Thompson, associate professor of music at MIT, studied viola with Walter Trampler at the Juilliard School of Music, where he received a doctorate in music. He made his New York solo debut in Carnegie Hall in 1968 and has since appeared with the National Symphony Orchestra, the Symphony of the New World, the St. Louis Symphony and the Boston Pops. has performed with the He Juilliard and Amadeus String Quartets and with a number of chamber groups in the Boston area

Stravinsky's "Scherzo à la Russe" was composed in the early 1940s at the request of Paul Whiteman. Stravinsky chose to base the piece on music of Russian country fairs and festivals, as he had his earlier ballet, Petroushka. Later he reorchestrated the work for large orchestra, exhibiting the brilliance, wit, and clear, precise control of sound that marks all of his work.

Weill wrote Der Silbersee shortly after writing the Threepenny Opera and The Rise and Fall of the State of Mahagonny, but it never achieved their popularity. Apart from a small number of performances in Europe, it has remained largely unrecognized, despite the fact that its music has much of the same acerbic quality. Weill adapted the opera into an orchestral suite in 1947 with the assistance of his friend and colleague Karel Salomon. The MIT Symphony Orchestra presented the American premiere of the "Suite from Der Silbersee" at its winter concert last December at MIT.

In Harold in Italy, a four-movement symphonic poem inspired by Byron's Childe Harold, Berlioz recollects some of his own early experiences during the time he resided in Rome as a winner of the French Prix de Rome. The character of Harold is represented in this work by the viola solo. An early work of Berlioz, the piece exhibits his dramatic flair, unusual sense of compositional organization and brilliant capacity for orchestration.

# Steinberg to Give Music Lecture



From left: John Thayer, Ron Lyons, Curtis Fennel (top), Mike Davis and Richard Newirth rehearse "The Oldest Established Permanent Floating Crap Game in New York" for the Musical Theatre Guild's production of Guys and Dolls.

# Musical Theatre Guild To Present Guys and Dolls

Guys and Dolls, Frank Loesser's musical mixture of New York City's gamblers and missionaries, will be presented by the Musical Theatre Guild at Kresge Auditorium beginning Friday, April 7, at 8pm.

Performances will also be held Saturday, April 8, and Thursday-Saturday, April 13-15, with a matinee at 4pm on Sunday, April 9. Tickets at \$2.50 (\$2.00 Sunday and Thursday) are on sale in Lobby 10. For information or reservations, call 3-6294 or dl5-9155.

The plot revolves around two romances. One is that of Nathan Detroit, the properitor of "the oldest established permanent floating crap game in New York," and his fiancee of 14 years, the dancer Miss Adelaide, whose despair of ever marrying Nathan has led to severe bronchial complications immortalized in the plaintive song, "A Person Can Develop a Cold." The second, a new involvement between Sky Masterson, big time gambler, and Sarah Brown, missionary at the Save-A-Soul Mission in Times Square, results from Nathan betting Sky that he can't get Sarah to accompany him to (pre-Fidel) Havana. Sky persuades the straight-laced Sarah to go with him by promising to deliver 12 bona-fide sinners for her failing mission.

Songs from Guys and Dolls include "Fugue for Tinhorns" ("I've got the horse right here"), "Luck Be a Lady Tonight," "Sit Down, You're Rockin' the Boat," and "I've Never Been in Love Before."

Guys and Dolls is produced by John Q. Peers ('72) and directed by Claude A. Boyd, choreographer of the Musical Theatre Guild's production of Brigadoon. Music Director is Howard Boles ('78).

The cast is: Sky Masterson, David Cohen, Emerson College; Sarah Brown, Rosalie Grant; Nathan Detroit, Curtis H. Fennel, a senior in earth and planetary sciences; Miss Adelaide, Deirdre Alexander; Nicely-Nicely John-son, Jonathan Mark Goldblith; Arvide Abernathy, Mitchell Weitz, a senior in chemistry; Male dance captain, Ron Lyons, a junior in mechanical engineering; Female dance captain, Joan Solomon, a sophomore in civil engineering.

# **Community Invited to View** Proposed Bldg. 10 Art Work

The Committee on the Visual Arts has proposed that a major environmental "kitework" by British artist Richard Smith, whose recent work is on view in Hayden Gallery through April 19, be commissioned for the lobby of Building 10 in honor of the new Alumni Association of-

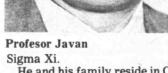
Smith was asked to present his design to the Committee. Members of the administration and representatives of the Alumni Association also considered the model. The work would be acquired for the MIT Permanent Collection with funds allocated through the Insti-

(Continued from page 1) structor until 1958, when he joined several active international fields the technical staff of Bell Teleof research. These include high phone Laboratories. It was at the resolution nonlinear laser spec-Bell Laboratories that he develtroscopy, laser studies of molecuoped the first gaseous laser. Dr. lar dynamics and relaxation, and Javan came to MIT in 1961 as the extension of microwave detecassociate professor of physics and tion and frequency measurement was appointed professor in 1964. technology into the infrared and

optical regions. Dr. Javan has made major contributions to the field of highenergy lasers and other areas of industrial laser applications. He holds numerous basic patents and is the author of hundreds of papers. Dr. Javan has been associated with government and industry in developing a variety of technological innovations in the laser field.

For his work on gaseous lasers, Professor Javan was awarded the Stuart Ballantine Medal of the Franklin Institute in 1962, and in 1966 he received the Fanny and John Hertz Foundation Award. He received the Frederic Ives Medal of the Optical Society of America in 1975 and was the recipient in 1977 of the Outstanding Patent Award of the Research and Development Council of New Jersey.

As a student, Ali Javan spent a year at the university in Teheran, where he was born, then came to the United States where he entered Columbia University as a special student in 1949. He received his PhD in physics in 1954 and remained at Columbia as an in-



He and his family reside in Cambridge, Mass.

# Love: Theme and Variations Dramatic Reading Planned

A program of modern poetry and music entitled "Love: Theme and Variations" will be presented at 3pm on Sunday, April 9, in the Little Theatre at Kresge. The public is invited, free of charge.

The program, originally sched-

tion, and the love of old age will all be treated. Mr. Busch will play music by

Beethoven, Brahms, Ravel, Bartok, Satie and a sonatine he wrote himself.

Dr. Ricardo has acted and given poetry readings since she was a child in Holland. She acquired considerable acting experience in England where she read stage plays and poetry for the BBC. In the US she has presented onewoman shows of her own work in New York City and Provincetown, Mass. She narrated And Now Miguel, a movie produced by the United States Information Agency, and has given poetry readings in collaboration with such artists as Spanish guitarist Julio Prol and modern dancer Lucas Hoving.

uled as a celebration for Valentine's Day, was postponed because of the February blizzard.

Dr. Ilona Ricardo, lecturer in French in the MIT Department of Humanities, who has extensive acting experience, will recite a selection of primarily modern English and American poetry by men and women poets, many of whom are still writing today. Pianist Richard Busch will play music in anticipation of or conclusion to a section of poetry. The music was selected to complement and amplify the emotions expressed in the poems. Dr. Ricardo and Mr. Busch presented a similar program last July at the **Provincetown Art Association with** such success that it was presented again in August.

"The poetry goes through a whole lifetime of love," Dr. Ricardo said, "and covers all the harmonies and disharmonies of love." The infatuation of first love, love's irony, fantasy and destruc-

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Composer and pianist Richard Busch, a year-round resident of Cape Cod, received a 1977 grant from the National Endowment for the Arts to complete a major choral work. He has given recitals in New York City and on Cape Cod. and the Indianapolis Symphony Orchestra has performed his compositions.

The entire program, including music and intermission, is expected to last for one-and-a-half hours.

Michael Steinberg, Director of Publications for the Boston Symphony Orchestra, will give a lecture entitled "The Music Hater: E.T.A. Hoffmann as Music Critic" on Monday, April 10, at 3:15 in Room 10-250. Presented through the I. Austin Kelly fund by the MIT Music Section, the lecture will be free and open to all. Refreshments will be served.

E.T.A. Hoffmann (1776-1822) is best known as a writer of fiction (Tales of Hoffmann), but he was also a composer and therefore his writings on music are of special interest.

Michael Steinberg, born in Germany, educated there, in England, and in the United States, was trained as a musicologist at Princeton. A teacher and writer, he has been on the faculty of many universities and music schools, locally at Wellesley College and the New England Conservatory of Music, where he was awarded an honorary doctorate in 1969.

fices located in an adjacent space.

A one-quarter inch scale model of the piece will be displayed in Hayden Gallery for the duration of the exhibition. Gallery hours are 10-4 Sunday through Friday. On April 6,7,10 and 11 from 12 to 1pm. Committee on the Visual Arts members will be available in Lobby 10 to answer questions and elicit comments.

The idea for the proposed commission was generated when Smith visited MIT last spring. His ceiling pieces, festive in spirit and formally dramatic and colorful, seemed appropriate for the heavilytrafficked thoroughfare. As the model suggests, Smith sought to enliven and unify the lobby and corridor areas by orienting the piece toward Killian court rather than underlining the east-west axis of the site. This placement encourages theviewer to shift from his visual path in order to fully encounter the piece. The configuration of the work also echoes the Roman numeral X, a fitting and conspicuous emblem for Lobby 10.

tute's art purchase policy as it applies to the recently completed Alumni Association office complex. Under this stipulation, one per cent of funds raised for new or renovated facilities at MIT is set aside for the purchase of artwork.

Smith is already represented in the MIT Permanent Collection with a shaped canvas Revolval I (1966) now sited in the Bush Building Lobby and three graphic works located in the Norris Room of the Dreyfus Building. The retrospective survey of Smith's manipulations and alterations of conventional canvas stretchers, his so-called "kite" paintings, currently on view in Hayden Gallery, provides the community with a unique opportunity to become familiar with the phase of his work that relates to the proposed commission.

Comments may be directed to the Committee on the Visual Arts office, Room 7-145; phone: 253-4400.