

April 5, 1978
Volume 22
Number 29

## Ali Javan To Hold New Chair

physics and one of the world's lead- ing 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 operanced 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 for the support of a distinguished
senior faculty member, with special emphasis on seeking practical cial emphasis on seeking practica applications of the results of re search in science and engineering. Professor Javan is the first holder
of the chair. of the chair.
As an inventor, Dr. Davis's contributions had a major impact on automotive development. He in vented the first power-assisted steering device in 1924 and during the course of his career as an en-gineer-innovator he received mor 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' preeminence in this broad area.
Dr. Robert A. Alberty, dean of the MrT School of Science, said the was "in recognition of his achievements as a scientist and inventor in the general field of laser physics and its application to fundamental and its app,
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 labora tory, Dr. Javan has developed a variety of lasers and has been engaged in experiments to make extremely refined measurements on the interaction of radiation with matter.
His efforts at MIT have prompted the establishment of

## Fraud Scheme Surfaces Again

A new wrinkle on the fraudulen invoice scheme has appeared at MIT according to Robert Durland, purchasing agent.
In this version, an invoice arrives 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.


The basic assembly of ALCATOR $\mathbf{C}$ 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, Apri 7. With the machine in MIT's Francis Bitter Nationa 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

Harold S. Shriber, Alexander D. Rabasco, James E. 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 Labo ratory for development of high-field magnets, has overall magnetic design and engineering responsibility for the ALCATOR project

Photo by Calvin Campbel

## ALCATOR C to be Dedicated

powe of the newest and most powerful experimental machines in the US program to harness fusion energy for generating elec tricity will be formally dedicated in a program to be held April 7 at MIT.
The machine is ALCATOR C, which has been constructed in Mris Francis Bitter National Magnet Laboratory, with the support of the US Department of the ALCATOR physics end the ALCATOR physics and engiFusion Center.
The basic assembly of the The basic assembly of the begin at $3: 30 \mathrm{pm}$ in Room 10-250 on

##  the MIT campus with welcoming

## Eizenstat to be Speaker In JCUS Lecture Series

Presid Eizenstat, assistant to President Carter for domestic affairs and policy, will be the second speaker in a forum series, "City Limits: Prospects for Urban AmeriJoint Center for Urban Studies. Eizenstat, a major architect of President Carter's recently an President Carter's recently an
nounced urban program, will speak nounced urban program, will spea on Monday, April 10, at 5 pm in Rm 100, Longfellow Hall, at the Harvar Appian Way, Cambridge.
Appian Way, Cambridge.
His topic will be, "A View from the His topic will be, "A View from the White House." The talk will be fol lowed by a question and answer
period. period.

The first speaker in the series wa Housing and Urban Developmen Secretary Patricia Roberts Harris Other speakers will be Joseph
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 dedi cation, of which Dr. Albert G. Hill, director of the MIT Plasma Fusion Center, will be chairman Members of national fusion laboratories, contributing in dustrial groups, Massachusetts Congressional delegation have also been inita delegation have also been invited 0 attend
The dedication program will

Califano, Secrelary of Heaith, 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 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. of the guests.
The interview with Mr. Eizenstat will be broadcast on Monday, Apri 17, at $7: 30 \mathrm{pm}$, and with Secretary
Harris on Thursday, April 27, at 7:30pm.

Jerome B. Wiesner
Dr. John M. Deutch, director 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 profes of physics Coppi, MIT professor of physics and one of the originators of the ALCATOR con cept, will speak on "Compac High-Field
search."
"Development of High Magnetic Fields" will be the topic of Dr. D. Bruce Montgomery, who is one of the world's leading authorities on

## Phi Beta Kappa

 Invites OthersAll members of Phi Beta Kappa in the MIT commun-ity-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 $\mathrm{Rm} .10-280$ ) 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. $14 \mathrm{~N}-216$, x 3 -5651.

## 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 federa Food and Drug Administratio (FDA), has been announced by Donald Kennedy, FDA Commis sioner.
Dr.
Dr. Miller, who will be on leave from MIT, will serve as principal advisor to the FDA commissioner in the development of FDA regu latory policy concerning foods and cosmetics and will administer bureau responsible for regulating much of the nation's $\$ 130$ billion food industry. He will be responsible also for the application and en forcement of all laws and regula tions 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 scien tists.

Dr. Kennedy said: "There is no greater challenge and no greater responsibility in the FDA during the years immediately ahead and person of Dr Miller's person of Dr. Miller's scientific stature and exceptional qualifica tions has agreed to accept the ap pointment as director of the Dr. Dr. Kennedy added: "I am per sonally grateful for his decision and look forward to working with Dr. Miller toward our goals o creating a comprehensive strategy to improve public safety through better food labeling; examining and seeking solutions to the clea legislative gaps in both foods and cosmetics regulation; and putting in place a continuing, periodic re evaluation of the scientific deci sions upon which the FDA relies in assuring food safety; and in at tracting additional scientific support for the bureau.
Dr. Miller was selected after nationwide search that included contacts with more than 400 con sumer, industry, professional, and public groups, the FDA said. He will assume his new job in July
In commenting on the appoin

## Women's League Talks to Begin

A series of talks on "What Every Woman Needs/Wants to Know" con cerning benefit programs and per sonal financial planning, will ope today (Wednesday, April
11:30am in the Little Theatre
First speakers in the program sponsored by the MIT Women's League will be Nancy WoodmanUrquhart and Donna J. Taylor of the Benefits Office who will discuss financial and social benefits available to MIT personnel and their families 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 Depart director of the MIT Medical Department, will discuss options avainable
in the health plans, with Jacqueline in the health plans, with Jacqueline Ward as seminar coordinator. Wil
liam Goodman III, vice presiden liam Goodman III, vice president
and trust officer of New England and trust officer of New England
Merchants National Bank, will Merchants National Bank, wing
discuss individual financial planning discuss individual financial planning
at the final seminar on April 26, with at the final seminar on April
Betty Johnson as moderator.
Betty Johnson as moderator
The seminars are open to al
The seminars are open to all mem

## 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 pro gram division of the American In stitute of Aeronautics and Astro nautics (AIAA) and the Forum for the Advancement of Students in cience and Technology (FASST) the all-day conference is designe to be a forum for discussion of technical options in energy for the future. Speakers, discussion will cover such topics as: Futur 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 Systems; and Future Energ Alternatives-Where Do We Head? Speakers for the symposium in clude: Dr. Peter E. Glaser, vic president, Arthur D. Little, Inc and originator of the concept of space-based solar power stations; Lionel S. Johns, program manager, Energy Programs, Of-
fice of Technology Assessment, US Congress; Lawrence Levy, director, Northeast Solar Energy Center, Northern Energy Corpora Center, Northern Energy Corpora Scientists' Institute for Public In Scientists Institute for Public In professor of chemical engineering professor of chemical engineering
at MIT; Dr. David Rose, professor at MIT; Dr. David Rose, professor
of nuclear engineering at MIT; of nuclear engineering at MIT; Planning Staff, Electric Power Planning Staff, Electric Power Research Institute, Alan and Engineering, EXX Research and Engineering, EXX Research and Engineering, Boeing Aerospace Company
Directed primarily toward college and university students, the symposium also welcomes par ticipation by interested profes sionals and faculty members.
Registration fee for the con ference is $\$ 10.00$ preregistered $\$ 12.00$ at the door. (Seating is
limited, however, so preregistra-
Museum Seeks
Energy Questions
QUESTION: How can one deter mine if a person's perception of the energy situation is accurate?
ANSWER: Ask the right que tions.

The MIT Energy Laboratory is asking the MIT community to help it develop an "energy quiz" that will become part of a major energ seum of Science

Question framers should keep in mind that many of those who tak 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 n the museum's project
David 0. Wood, associate direc tor of the Energy Laboratory, is coordinating the lab's efforts to aid the museum
"Part of our mission," he said is to communicate in non standard ways about energy.
Working with the Museum of Science on this project affords such an opportunity
People taking the energy quiz a the museum will type into a com puter 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
tion is the safest bet.) This fee in cludes symposium materials lunch, and an evening banquet. For further information, con tact: AIAA, MIT Student Branch x3-2278 or x3-4926. Registration forms can be obtained from the AIAA in Rm 33-222 or from Bar bara Marks, Rm 33-119.

## 

Announcements
Weekend Pottery Workshop-\$5/day. April 8,
$10 \mathrm{am}-4 \mathrm{pm}, \mathrm{Rm}$ 429, Student Center. Cora Pucci, a participatory experience, interrela
tionship of clay drawing, design, Potluck tionship of clay drawing, design, Potluck
lunch. $7 \mathrm{pm}-9 \mathrm{pm}$, slides, free, open to the publunch. $7 \mathrm{pm}-9 \mathrm{pm}$, slides, free, open to the pub
lic. Aprill, $10 \mathrm{am}-12: 30 \mathrm{pm}$ and $/$ or $1: 30 \mathrm{pm}-4 \mathrm{pm}$, throwing workshop w
one person per wheel
Dept. of Electrical Engineering and Computer
Science ${ }^{* *}$-Freshman Orientation will be on Thurs., Apr. 6, 7:30pm, Rm 9150. Mee faculty and students, hear description Course IV and its activities. Refreshments.
UROP Symposium*-Come and hear 4 Welles ley students describe their research experi-
ences in UROP. Thurs, Apr $6,46 \mathrm{pm}, \mathrm{Rm} 264$, Science Center, Wellesley College. Refresh
ments.

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 form at the athletic department (W32-109) an
return them with 100 signatures no later than Monday, April 10.
U.A. Elections**-Undergraduates Associa
tion, balloting for UAP, UAUP, and class from Office, 8:45am-5:15pm, Rm W20-403, Lobby 10.

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

Meet the Candidates*-Undergraduate Asso ciation. Hear the UAP/UAVP candidates. Ask questions of the
$4.6 \mathrm{pm}, \mathrm{Rm} 10-250$.

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

Faculty members who are interested in ser-
ving as freshman advisors in $78-79$ should ${ }_{7-103}$ contact the of71.

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 con troller, treasurer; to join the technical depart ment in repair all $\times 34000$, or leave messag with Jay, 271-2232, 9am-5pm, Rm 50-030.
Toys are needed for the Wives Group babysit
ting service. At present there are fewer toy ting service. At present there are fewer toy
available than before. If you have toys that your child or children no longer play with or i 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 494, Student Center, at any meeting of the Wives Group on Wednesday afternoon from

Blackwork-one-day workshop, Monday, April
$10,10 a \mathrm{~m}-\mathrm{3pm}$, led by Priscilla Gray. Black10, 10am-3pm, led by Priscila Gray. Black-
work is a delicate style of embroidery using
one color thread on linen. Limited enrollment, registration required. Contact: Lillian Albe
I. Austin Kelly III Competition**-Deadline for submissions, Fri., Apr. $28,5 \mathrm{pm}$. Two
prizes, with an award of $\$ 250$ each, will go to 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, and Musicology. Minimum length, 4,000 words
Further information from the Course XXI of Further information
fice, $14 \mathrm{~N}-305, \mathrm{x} 4446$.

Department of Humanities ${ }^{\text {s* }}$-Open House for all undergraduates interested in majoring or
concentrating in Foreign Languages and Liter atures, History, Literature, Music, America Studies, Ancient \& Medieval Studies, Anthro pology-Archaeology, Drama, Russian Studies,
Western Tradition (formerly Crossroads), Writing. Thurs, Apr $6,3-5 \mathrm{pm}$, Courtyard, Bldg
14-adjoining hall in case of rain. Refreshments. Inf
next year.
Physics Department**-Open House for fresh
men and sophomores interested in learning
more about opportunities in physics for more about opportunites in phy si, 3.5pm in
major and/or career on Wed Apr
the Undergraduate Physics Common Room.
4339. Department facuity and students will ber
on hand to chat with students and to answe questions about course requirements an
options for physics majors. Refreshments.

Senior Class Meetingooe-April 5, $8-10 \mathrm{pm}$, Rm
400, Student Center, to discuss senior week 400. Student Center, to discuss senior week
activities, commencement speaker, fund rais
ing 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 ,

MIT Sea Grant Program*-Project Progres
Review, Marlar Lounge ( (mm 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 Reshourch Opportunities Program Office, Room seal 20B-141, Ext. 3.5049 or 3 -4849 unless otherwise specified in the listing. Undergraduates are also urged to check with the UROP bulletin <br> 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 wage support is imited to undergraduate 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 come, farst 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 $\$ 300$ limited to a
maximum of $\$ 1,500$ at $\$ 3$ only overhead waiver is requested, there is no
maximum total or maximum hourly rate. maximum total or maximum hourly rate.
Please read the "How to Participate" section Please read the "How to Partic
of the UROP Directory, pages 1 -ll.
Boston Zoological Society Stoneham Zoo
The BZS is planning to start a token economy 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 and the vending machine must be durable 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 no
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 testrg and evaluation 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. bopmedical 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 othe
devices. Such movement is also a major hin devices. Such movement is also a major hin-
drance to reliable electrical insulation. An ex perimental study of solid particle charging and motion in electric fields is pr
Chathan Cooke, $\mathrm{N}-10, \mathrm{x} 3-2591$.
Acousties: Combustion Engine Noise Project
Opportunity for student to become involve Opportunity for student to become involve
in identification of methods to control an reduce internal combustion engine noise and
vibration. The project involves identifying vibration. The project involves identifying
vibration sources, transmission paths and

##  <br> CABLE TV SCHEDULE X3-3625



Friday. April
Chanel
Ham-12
Hanon

\section*{| 11amm.12xion |
| :--- |
| 12:12: 45 spm | <br> \section*{12-12: :45pm}}

## 



MIT Electronics Research Society**-monthly
(sort of) meeting will be held Mon, Apr 10 ,
$8 \mathrm{pm}, 20 \mathrm{C}-104$. Election of officers. New acquisi(sort of meeting will be held Mon, Apr 10 ,
8pm,, , 104 . Llection of officers. New acquisi.
tions will be discussed. PDP-11 freaks, don't Gays at MIT*-Discussion group on role play-
ing, meeting/coffeehouse. Apr $9,5 \mathrm{pm}, \mathrm{Rm}$ ing, mee
$50-306$.

## Religious Activities

The Chapel is open for private meditation 7 7am-
11pm daily.
Passover Preparation Workshops*-"How to
Feel at Home at Your Seder," Apr. $10,5 \mathrm{pm}, 312$ Feel at Home at Your Seder," Apr. 10, $5 \mathrm{pm},$,312
Memorial Dr. "Kashrut for Passover, What Is and How to Kosher for Passover," Wed, Apr
$12,7 \mathrm{pm}, 312$ Memorial Dr. Rabbi Daniel
Shevitz, Jewish chaplain at MIT, will speak.

MIT Baha'i Association-Prayers, every Fri-
day, $7: 30 \mathrm{pm}$, MIT Chapel. Info: Mahmoud, 492-28
Christian Service*-Sundays, 10:45am,
Chapel. Singing, preaching, sometimes testiChapel. Singing, preaching, sometim
monies, prayer following. All invited.

MIT Hillel Services*-Daily Minyan: 8am, Rm 1-136. The Downstairs Minyan (Conservative
Egalitarian): Saturdays, $10 a m, 312$ Memorial Egaitarian): Saturdays, 10am, 12 Memorial
Dr. Reform: Fridays, 6:30pm, Chapel. Or-
thodox: Fridays, Sundown, Kosher Kitchen thodox: Fridays, Sundown, Kosher Kitchen
(50-005); Saturdays, 9am, Bush Rm (10-105)

Interdenominational-Worship and holy com-
munion, Wednesdays, $5: 05 \mathrm{pm}$, Chapel, sponsored by Lutheran-Episcopal Ministry., Get ac-
quainted supper following. Info: Randy Clark, MIT Islamic Society*-Friday Prayers held in Kresge, Rehearsal Rm B, 1 pm

Prayer Time $*$-Bible class, Fridays, $1-2 \mathrm{pm}$
Rm $20 \mathrm{E}-207$, guest speakers, music, refresh $\mathrm{Rm} 20 \mathrm{E}-207$, guest speakers, music, refresh
ments. Miriam R. Eccles, founder-director, R. Eccles, founder

MIT Vedanta Society*-Meditation and discourses on the Gita by Swami Sarvagata-
nanda, of the Ramakrishna Vedanta Society of位 game Thursdays, 7pm,
$494-8593$. Admission 25 .

MIT/DL Bridge Club**-ACBL
bridge Tuesdays, 6 pm, Rm W20-473.
MIT Chess Club*-Meetings, Saturdays
$1-6 \mathrm{pm}$. Rm W20-407. Speed chess, analysis and tournaments. Info: Brad, x5-8156
MIT Folk Dance Club**-International: Sun days, $7: 30-11 \mathrm{pm}$, Sala de Puerto. Balkan
Tuesdays, $7: 30-11 \mathrm{pm}$, Student Center, Rm 491 Informal: Fridays, noon-2pm, Kre
Wednesdays 7 :30-11pm, Lobby 13 .
MIT Go Club**-Regular meetings, Wednes days, W20-473, Thursdays, $\mathrm{Rm} 4145,8 \mathrm{pm}$.
Players of all ranks, play games, sometimes informal talks on strategy \& tactics. Instruc-
tion available for beginners.

Hobby Shop**-Mon-Fri, 10am-6pm, Rm
W30-031. Fees: $\$ 10 /$ term for students, $\$ 15 /$ term for community. Info: x 3 34343.
Kundalini Yoga*-A rediscovered technology
of consciousness; come join the MIT Kundalini of consciousness; come join the MIT Kundalin
Yoga Group with Gurucharan Singh Khalsa to exercise, meditate, and get high. Thurs,
$5: 30 \mathrm{pm}, \mathrm{Rm} 4-145$, Info: Dan Buchholz,

MIT Motorcycle Club**-Regular meeting first Tuesday each month beginning March 7 7:30pm, Muddy Charles Pub ( $50-1110$ ). All old
members and any interested newcomers welmembers and any in
come. Info: $\mathbf{x} 3$-6924.

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

## MIT in light of recent events wit MIT students from Israel. Let anon. and Palestime 6.013 Problems in Electroqu tics (Proles  tice (Professor Haus) BASEMENT VIDEO PRESENTS LVE FRM THE FEL SEC TION. FEEDING THE CABLE Film and videotape from everyday Film and videotape from everyday

 ebaters captured five honors at the Grand Nationa Strawberry Leaf Festival at Mary Washington University in Freder icksburg, Virginia. Representing the Institute were Eldon Reiley '55, Oliver Johns, '56, Joseph RSchaffer, '56 and Kevin Forsberg '56.
Prepared by Marcia Conroy
MIT Historical Collections, $\times 4444$.


## Placement

Club Notes

## 5, 4pm, Rm 8-314.

Association for Women Students**-Weekly
meetings, Saturdays, $4 \mathrm{pm}, \mathrm{Rm} 3-310$. MIT meetings, Saturcays,

Boston. Fridays, 5:15pm, Chape

## Echoes

## 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 pro-
gram through radio station WBZ.

## 40 Years Ago

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

## 25 Years Ago

Dan McNally, '54, happened to Reynolds, singing star of MGM pictures. When McNally heard tha Miss Reynolds was coming to Bos ton, he invited her to have dinne chapter of Theta Delta Chi. Afte dinner, Miss Reynolds was pre sented with a bouquet of red carna sented with a bouquet of red carna ions, the official house flower five

\section*{TECH TALK

Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> TECH TALK
Volume 22, Number 29
April 5, 1978

Tech Talk is published 39 times a year
by the News Office, Massachusetts Insti-
tute of Technology. Director: Rebert M.
Byers; Assistant Directors: Charles H.
Ball, Robert t. Di Iorio, Joanne Miller,
William T. Struble and Calvin D. Camp-
bell, photojournalist; Reporters: Eliza
beth C. Van Horn (Institute Notices),
Marsha McMahon, (Institute Calendar,
Classified Ads).
Adress news and editorial comment
to MIT News Office, Room 7-102, MIT,
Cambridge, MA 02139. Telephone (617)
253-2700.
Mail subscriptions are s10 per year.
Checks should be made payable to MIT
and mailed to Business Manager, Room
7-102, MIT, Cambridge, MA o2139. <br> }

## S.A. Miller Appointed

 fields, inclu ment of the infant with reference to dietary effects; development of oral tissues; relationships among diet, metabolic energy and struc ture of dietary energy sources synthetic dietary energy source synthetic dietary energy sourcesand other sources of nutrients, such as single cell protein; food such as single cell protein; food
additive toxicology; diet and additive toxicology; diet and development of the central nutrition He is the author nutrition. He is the author or co author of more than 100 scientific chapters.
Dr. Miller received the BS degree in chemistry and biology degree in chemistry and biology
from City College of New York in from City College of New York in
1952, and MS and PhD degrees, in 1956 , and MS and PhD degrees, in 1956 and 1957, from Rutgers Uni versity, where he taught before coming to MIT in 1957 as a re search associate. He was appointed assistant professor of MIT Donal 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.

## ALCATOR C to be Dedicated

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 isitors. A major topic of conversation was controversial writing Patrick Rogers, father of MIT founder William Barton Rogers the late 18th century which forced him to flee Ireland and come the Unised states. Dr. Stratton is researching a book on the in
llectual foundations of Mir and is eager to din who all became noted 19th century scientists.
magnet design and who has had overall magnetic design and engineering responsibility for the ALCATOR project. Dr. Mont gomery is associate director of the Magnet Laboratory for develop ment of high-field magnets
Dr. Ronald R. Parker, who has been in charge of the ALCATOR fu sion experiments since 1973, wil speak on "ALCATOR C: Objec tives." Dr. Parker is associate director of the Magnet Laboratory for fusion and professor of elec trical engineering and compute science. He assists in coordinating the efforts of the laboratory and the Plasma Fusion Center. When the Fusion Center was established in 1976, ALCATOR personne became joint members of the Magnet Laboratory and the Center.
Final speaker for the program will be Eäwin 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 Frances 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 A holds a very important world A holds a very important world record in fusion experimentsnamely, the product of density and confinement time
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 elec trons 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 doughnut-shaped confinement chambers known as "toktoroidal magnetic chamber Th ALCATOR program was initiated in 1969, following Soviet successes with their tokamak program, by Pith 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 with hydrogen, from which the electrons have been stripped. This plasma of nuclei and an equal

## electrically neu <br> duct electricity

Powerful electromagnets ar ranged around the chamber exer magnetic fields on the plasma and for a fraction of a second, com press 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
The overall objective is to max imize the combination of particle density, confinement time and temperature
With ALCATOR C the scientists and engineers expect to achieve a density-confinement time of $10^{14}$ seconds per cubic centimeter at a temperature of about 20 million degrees. If the plasma can be fur
ther 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, in ates many innovative con cepts. (ALCATOR B was designed but was replaced by the more am bitious ALCATOR C before it was produced.)
Five Magnet Laboratory engineers, most of whom were in designed the earlier machine and their new machine. They George H. Chihoski, vacuum and quality control and diagnostics Joseph M. Davin, assembly tooling and machine supports; Wayne S. Hamburger, computer program development; Norton chief mechanical design, and Car F. Weggel, chief magnetic design. machine were delivered in August 1977, and assembly began on Sept 1977, and assembly began on Sept. crew has worked regular $101 / 2$ hour work days, including Saturdays

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

Assembly of the vacuum system was done by Tamas Z. Bakucz, Shriber. Heliarc welding of the vacuum chambe

Support work has been supplied by shops of the Nuclear Reactor, the Magnet Laboratory and the Research Laboratory of Elec tronics and major support wor was provided by the Magne engineering group under the leadership of group under the

Design draftsmen for the project
were Pellegrino R. Maruzzi and were Pellegrino R. Maruzzi and Alexander D. Rabasc
Much of the electrical systems work for the machine is being car ried 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 powe supply, the new machine wil 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 in stalled adjacent to the Magnet Laboratory. The alternator is ex pected 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 respon sibility of James C. Rose, Jr. The 328 -ton alternator, which wa moved by barge and rail from New
York City, is being installed by the 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 bee Edel-Brown Co. of Everett, Mass which made the toroidal field Bit ter plates; Nashua Industria Machine Co. of Nashua, N.H. which manufactured the magne 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 Transre division of Galton Industries o Carson, Calif., which supplied the three 15-megawatt equilibrium and ohmic power supplies; Revere manufactured the cryogenic-grad oxygen-free copper plates for both the toroidal and ohmic heating magnets; Metal Bellows Corpora tion of Sharon, Mass. and the toroidal portion of the vecuum and M.L. Riley Vacuum ties which made the external diagnostic flanges.

Estimated cost of the ALCATOR 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 n estimated $\$ 2.3$ million.

Hфeg to Present Civil Engineering Mathis Lecture
Dr. Kaare Hpeg, director of the
Norwegian Geotechnical Institute Norwegian Geotechnical Institute
(NGI), will be the speaker April 19 (NGI), will be the speaker April 19
at the fourth annual Mathis at the fourth annual Mathis Memorial Lecture sponsored joint-
ly by the Boston Society of Civil ly by the Boston Society of Civi
Engineers and MIT. The lecture will be in MIT's Green Building in Rm . 54-100 at 4 pm .
The lecture series was establish ed in the MIT Department of Civi Engineering to honor the late Sam J. Mathis of Standard Oil Co. of New Jersey, who was a widely
known civil engineer and construcknown civil engineer and construc tion authority.
Professor T. William Lambe of
MIT heads the arrangements mittee
Dr. Hpeg will discuss "Foundation Engineering for Offshore Gravity Platforms." During the gravity platforms have been used as alternatives to the more conven tional piled steel structures a several locations in the North Sea Dr. Hbeg will focus in his lecture on the NGI's evaluation of present practice and available engineering practice and available engineering
analyses, based on a comparison of
before-the-event predictions to ac-before-the-event predictio
tual field measurements.
tual field measurements.
Before becoming director of NG Before becoming director of NGI
in 1974, Dr. Hфeg was a professor of in 1974, Dr. Hфeg was a professor of 1968-74. During $1965-67$ he was an 1968-74. During $1965-67$ he was an
assistant professor of civil assistant profes
engineering at MIT
A native of Norway, he received the BS in 1961, the SM in 1962 and the Doctor of Science in 1965, al from MIT. A widely known geo technical engineer, Dr. Hoeg interests include soil-structure in teraction, constitutive relation ships, offshore foundation
engineering, earthquake engineering and the application of probabilistic approaches

## Billard Award

## Nominations Due

fom 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 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, Wil-
liam H. Carlisle, Jr., Philip A. liam 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
member of the class of 1924 .
The name or names of ind
The name or names of individuals to be recognized by the
Billard Award are recommended Billard Award are recommended
to President Wiesner by the Acato President Wiesner by the Aca-
demic Council, and the award is demic 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.

## Harris to Speak

## To British Group

Professor Wesley L. Harris of he MIT Department of Aeronautics and Astronautics and of the
Department of Ocean Engineering 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 "Ef-
ects of Free Stream Turbulence ects of Free Stream Turbulence on Low Frequency Bro,
Noise from a Model Rotor."
The conference is the main annual British meeting on acoustics.

## THE <br> INSTITUTE <br> CALENDAR <br> X3-3270

April 5
through
April 16
Events of Special Interest
Poetry Reading and Discussion of His Poems* - James Baker Hall, 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 spon-
sored by the MIT-Harvard Joint Center for Urban Studies. His topic: " 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 Baked goods and sandwiches will be sold

## Seminars and Lectures

## Wednesday, April 5

Density Driven Flow Over a Slope* - Dr. Gabriel Csanady, physics 915 . Bring your lunch, coffee served.

Buckling of Cylindrical Shells Stiffened by Circular Ribs* - Prof V.A. Postnov, Leningrad Shipbuilding Institute. Ocean Engineering Seminar, 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 Astronautics. Special
preceding, Rm 33-222.

A Nodal Method of Flux Mapping* - J. Koclas, Nuclear Engineering
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. Bose Gas, $3: 50 \mathrm{pm}$. Paul Boisseau, Building A Proton Microprobe, 4:05pm. 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, assis tant professor, mechanical engineering. Thermodynamics Seminar, 4pm

## 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, 4mm-5pm, Rm E53-482 Efficient Addressing in Concentrators* - Dr. Pierre Humblet Electrical Systems Laboratory. Systems Communication and Contro

Management Issues in Construction Banking, and Real Estate DevelopManagement Issues in Construction Banking, and Real Estate Develop
ment 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 Manage
ment, University of Maryland. Paul S. Levy, Chief Information System and ment, liversity of Maryland. Paul S. Levy, Chief Information System and 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, $4 \mathrm{pm}, \mathrm{Rm} 3-$

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 West Lounge, Student Center Sangam Indian Students Association, 5pm

## Friday, April 7

Antimicrobial Therapy in Periodontal Disease* - Dr. Harald Loe Dean, University of Connecticut Dental Medical School, Farmington, Con necticut. Oral Science Semi
Science, 11-Noon, Rm 66-144.
Studies on Lipoprotein Lipase* - Dr. Andre Bensadoun, professor, Divi sion 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. Refresh nents 1:45pm.

Chemical Engineering Seminar* - James D. Bittner, graduate student of Mass Transfer on Selectivity in Catalytic Hydrogenation, 3pm, Rm 66 of Mass Transter on Selectivity in Catalytic Hydrogenation, 3pm, Rm 66
110.

Power System Protective Relaying-Seience of the Occult* Stanley Horowitz, American Electric Power Company, Electric Power
Systems Engineering Laboratory Seminar, 3pm, Rm 4-149. System Theory of Environment* - Bernard C. Patten, Professor of Zoology, University of Georiga, Athens, Georgia. Mechanical Engineering Electron Spectroscopy of Surfaces: Defects on Transition Metal Oxides* - Dr. Vietor 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 Trans-
portation, 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, psy-
chology, Cornell University. Psychology Colloquium, 4:30pm, Rm E10-013. chology, Cornell Un
Coffee at $4: 15 \mathrm{pm}$.

## 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* - Prof Louis N. Howard, mathematics. Applied
Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served $3: 30 \mathrm{pm}$, Mathematics Colloquium, $4 \mathrm{pm}, \mathrm{Rm} 2-338$. Refreshments served $3: 30 \mathrm{pm}$,

Strategies for the Small Tropical Farmer* - Dr. Hugh Popenoe, niversity of Florida. Joint MIT/INP and Harvard School of Public Health

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 he CIA. Sponsored by the Lecture Series Committee, 8pm, Kresge. Tickets

## Tuesday, April 11

Image Enhancement/Transmission System* - Gerry Hoover, CIPG
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

Ballooning Mods in High-Beta Tokamaks** - Antonio Ferreria
graduate student, Nuclear Engineering Seminar, $3: 30 \mathrm{pm}, \mathrm{Rm} 38-136$.
Non-local Continuum Mechanics (and some of its applications)* - Dr.
Non-local Continuum Mechanics (and some of its applications)*- Dr.
Cemel Eringen, professor, engineering and applied science, Princeton University. Applied Mechanics Seminar Series, $3-4 \mathrm{pm}, \mathrm{Rm} 3-133$. Coffee 45pm, Rm 1-114.
Solid State Polymerization of Diacetylenes* - Dr. Ronald R. Chance, Material Research Center, Allied Chemical. Seminar in Physical Chemistry,

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 George Washinton University. Statistics within the Math
Seminar, $4 \mathrm{pm}, \mathrm{Rm} 2-338$. Refreshments: $3: 30 \mathrm{pm}, \mathrm{Rm} 2-349$.
Gene Mapping, Constructing A Library and Related Topics* - Dr. orman Davidson, divisions of chemistry and chemical engineering, The Chemical Laboratories, California Institute of Technology, Pasadena, California. Biology Colloquium, $4: 30 \mathrm{pm}, \mathrm{Rm} 6-120$. Coffee served 4pm, 5 th
floor Vestibule, Bldg 56 .

A Journey to Cairo and Damascus: A Journalist Reflects on Israel, The Arabs, and Peace* - Prof Leonard Fein, Brandeis University, editor of
Moment Magazine. Lecture sponsored by MIT Hillel, $7: 30 \mathrm{pm}$, West Moment Magazine. Lect

## Wednesday, April 12

Engineers in Society* - Joseph Yamron, vice president and general
manager, Precision Products Division, Northrop Corporation, $2 \mathrm{pm}, \mathrm{Rm} 37$ -
Interfacial Effects in Fast Reactors* - M. Saidi, Nuclear Engineering Seminar, 3-4pm, Rm NW12-222.

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

## Thursday, April 13

Recent Results in $\mathrm{CO}_{2}$ 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* - 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

New Technologies of Communication and the First Amendment* Speakers: Stuart Sucherman, WNET; Abraham Chyes, Harvard Law torney, Former Director, Office of Telecommunications Policy, 4-6pm, Rm
$37-252$.

The Surface of $\mathrm{TiO}_{2}{ }^{*}$ - Dr. Howard S. Jarrett, DuPont de Nemours \& compnay. Physics Colloquium, $4: 15 \mathrm{pm}, \mathrm{Rm} 26-100$. 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, $8 \mathrm{pm}, \mathrm{Rm} 66-110$.

## Friday, April 14

Problems of US Policy in Africa* - Richard Moose, Assistant S
of State for Africa. African Luncheon Seminar, 1-2:30pm, Rm E5 Polymer Coffee Hour* - Prof Chen Chung of RPI will discuss Polymer Coffee Hour** Prof Chen Ch
processing techniques, $2-4 \mathrm{pm}, \mathrm{Rm} 8-314$.

Effects of Unit Size on Design and Performance of Machinery Fayette Taylor, professor emeritus, mechanical engineering. M Engineering Seminar, 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.
Recent Progress in Laser Fusion Research* - Prof Leonard G Rochester University. Plasma Dy
Refreshments $3: 15$ pm, $\mathrm{Rm} 36-261$.
Chemical Engineering Seminars* - Herbert M. Wood, Temperature Programmed Desorption Experiments, 2 pm Congalidis,
announced.

## Community Meetings

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

Star Party*** - MIT Astronomical Society Sat, Apr 8/Raindate 9, Dark-Midnight, Whitin Observatory, Wellesley. Info: Mike Dorm.
Love: Theme \& Variations* - Presented by Ilona Ricardo with composer Richard Busch. Sponsored by Humanities Departm program of Am
Theatre. Free.

Wive's Group** - Carmen Medina, Member of the Wives' Group wil a film and speak on: "The Canary Islands: The Fortunate Island,
Apr 12, 3-5pm, Rm 407, Student Center, Babysitting provided. Against the Grain of Contemporary Fashion* - Creative Ph
Lecture Series given by Jerome Liebling. Wed, Apr 12, 4:30pm Photography Laboratory, 120 Mass Ave, Camb, MA. Coffee served, mission.
Tech Wives International Cooking** - A tea-tasting party. Wed
Tech Wives Weelly Excercise Class** Technology Wives Org
Tech Wives Weekly Excercise Class
tion. An hour of exercise led by professional Marilyn de Kleer. E day through May 1, 8pm, Exercise Room, 2nd floor, Dupont Gym. Inic Linda Morecroft 494-8434
Eating in Response to Stress** - Don't let pressure control your You con
$37-272$.

## Lobby 7

Chess Match vs. Stone \& Webster** - MIT Chess Club. A 30-boar match
$\times 5-8156$.

## Social Events

MIT Semi-Formal Ball* - MIT-Wellesley Ballroom Dance Club. your chance to practice all you've learned. An elegant evening of da live band with the MIT-Wellesley Ballroom Dance Club. No partne
sary, Sat, Apr 8, 8pm, Sala de Puerto Rico. Admission: \$2.50. Info sary, Sat, Apr 8, 8,
Brundage x5-8347.

Strat's Rat* - Sponsored by SCC. Dancing and drinking; live D wine: $35 \mathrm{c} / \mathrm{glass}, 3 / \$ 1$; wine available by bottle. Fri, Apr $7,8: 30 \mathrm{pm}$-1a de Puerto Rico, 2nd floor, Student Center. Free admission, College quired.
Spring Fever Dance* - Sponsored by the Gays at MIT, Disco d goodtime party. Sat, Apr 15, 9pm-1am, Sala de Puetro Rico,
Center. Admission $\$ 2$, free w/MIT or Wellesley ID. Beer and soda

## Movie

Four Musketeers** - LSC movie. Fri, Apr 7, $7 \& 9: 30 \mathrm{pm}$, Rm
Admission 75 c w/MIT or Wellesley ID. Three German Films* - Fri, Apr 7: The Murders are Among Morder sind unter uns), 1946. Sat, Apr 8: Kirmes, 1960. Sat, Apr ${ }^{5}$ Subject, (Der Untertan), 1951. Sponsored by Gethe of Boston Gang Staudte, 8pm, Rm 54-100. Free.

Great Expectations** - Director David Lean, sponsored by the ment of Humanities. Fri, Apr 7, 9:30pm, Rm 66-110.
Wuthering Heights** - With Sir Laurence Olivier, sponsored Department of Humanities. Fri, Apr 7, 7:30pm, Rm 66-110.

Nasty Habits** - LSC movie. Sat, Apr 8, $7 \& 9: 30 \mathrm{pm}, \mathrm{Rm} 26-100$.
sion 75 c w/MIT or Wellesley ID.
Midnight Movie: The Mouse That Roared** - Sponsored by SC Apr 8, Midnight, Lobdell, Student Center. Bring your own blankets

Animal Crackers** - LSC movie. Sun, Apr 9, 6:30 \& 9pm, Rm 26-10n mission 75 c w/MIT or Wellesley ID
French Film Classic** - La Grande Illusion (Renoir). Sponsor the French Library, Boston. $4: 30 \mathrm{pm}$ and $7 \mathrm{pm}, \mathrm{Rm} 66-110$. Mon, A
Free.

Flesh Gordon* - X-rated satire. LSC movie, Fri, Apr 14, 7 \& 9:30pm
-26-100 Admission 75 c w/MIT or Wellesley ID.
Papillon* - LSC movie. Sat, Apr 15, $7 \& 10 \mathrm{pm}$, Rm 26-100. Admissio
Bridge on the River Kwai* - LSC movie. Sun, Apr 16, 6:30 \& 10 pm
26-100. Admission $75 \mathrm{c} w /$ MIT or Wellesley ID.

# AFFIRMATIVE ACTION PLAN <br> of the <br> MASSACHUSETTS INSTITUTE <br> 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.


## CONTENTS

I. Introduction
II. M.I.T. Affirmative Action Policy
III. Affirmative Action for Academic Staff
IV. Affirmative Action for Non-Academic Employment
V. Affirmative Action for Educational Opportunity
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 selfulfilment, opportunity for participation in affairs which affect them, opportunity for employment and work here stand to benefit from greater 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 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
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 onsolidate the opportunities for a decent life that now exist. Indeed, we should be innovative and creathe hope that, in so doing, we will point the way for thers, 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 professionally 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. ${ }^{1}$
At the time this Plan was last revised, women and members of some minority ${ }^{2}$ 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 educationa 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 prob lems 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 in-
trinsic part of the fabric of organizations. trinsic part of the fabric of organizations. ${ }^{3}$
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 minori 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 whether or not any failure to do so can be traced to specific
discriminatory policies or actions. Where women and 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 Federal 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 community and public at large mix

## 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
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

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.

In accordance with these overall objectives, numerical goals and time-tables for employment at the Institute have been set. ${ }^{4}$

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 categories), laboratories, and all administrative and categories), labor
support activities.

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 ponderantly 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 educational and career development opportunities and by taking advantage of opportunities for promoInstitute and the individual's ability and aspirations Institute and the individual's ability and aspirations. and minorities are aware both of this principle and of specific opportunities that may be of interest.
3. Equal compensation, benefits, and support will continue to be provided without regard to race, sex, naequal merit in positions of equivalent responsibility.
4. 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.
5. 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 women and minority applicants from which we admit students.
6. 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 enforced segregation influence a person's record of achievement.
7. 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 construc tion or renovation of Institute facilities, either on or M I T business is exnected to have and to follow an M.firmative action prectam hat is in accord with affirmative action program that is in accord with
Federal and state regulations.

[^0] evolving concept of Affirmative Action is accepted and orted, rests with supervisors at all levels and with every son having administrative responsibility within the Inte. Further efforts must be made to ensure that the pectives of minorities and women are considered in the
evolution of Institute policy and practice, particularly in rectly.
Overall monitoring, auditing, and staff coordination of the Institute Affirmative Action program has been assigned the Vice President, Administration and Personnel who was designated the Institute's Equal Employment Oppor-
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 opportuni ty in employment and in education and which, thereby, will obviate the need for specific programs of affirmative action.

## I. AFFIRMATIVE ACTION FOR ACADEMIC STAFF

## A. Aims and Plan of Action

Although significant progress has been made since this was revised, women and minorities are under esented in many academic positions within the Inte, 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 en on our faculty and academic staff. This increase $t$ be consistent with departmental needs for teaching research talent and consistent with the needs for research talent of existing and/or new professional fields and rams. Second, M.I.T. must seek to broaden the pool of grams. Second, M.I.T. must seek to broaden the pool of
ilable candidates for each position on the faculty and demic staff by recruiting and educating minority and en 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 nology to human and social problems. The academic s related to science and technology are of particular ern to us because M.I.T. is committed to leadership in fields, in which the present imbalance in representa of minorities and women is large
In addition to our efforts to increase the numbers of ified women and minorities, we are committed to suping those who are now on our faculty and academic f by providing for them the opportunities for promotion professional growth that will in turn increase their resentation in the senior ranks of the academic profes As expressed in the Report of the President and the cellor:
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 to be understanding of these pressures and to provide to be understanding of these pressures and to provide departments address these concerns by insuring that every junior faculty colleague has a senior mentor, who can provide advice and counsel; the central ad ministration has tried to provide a sympathetic ear and to build sufficient support structures for women and minorities. ${ }^{5}$
hort, our program for the faculty and academic staff is aximum, result-oriented effort to increase the number omen and minorities and to create an atmosphere of ort, encouragement, and collegiality in which all facul nd academic staff may thrive professionally and perThe The following course of action is intended to achieve the tute'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 underutilizastaff. In academic areas whemen and minorities, vigorous and sys tematic efforts will be undertaken to identify and to recruit women and minority candidates.

Report of the Prid the Chancellor for the academic year 1974-1975, p. 26.

6 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 "poots" for faculty and academic staff positions. The utilization analysis should at the appropriate skill levels both within and without the Institute. It is the purpose of this analysis to show clearly hose areas where women and/or minorities are underrepre sented, 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.
1 See item 6 in Section II.
See Higher Education Guidelines, Executive Order 11246, as
amended. mended.
2. Each department will establish biennally numerical goals and timetables as guidelines for its progress in goals and timetables as guidelines for its progress in
recruiting and hiring women and minorities for acarecruiting and hiring women and minorities for academic positions for the subsequent two-year period.
Appendix $G$ includes statistical summary sheets Appendix $G$ includes statistical summary sheets
showing the representation of minorities and women showing the representation of minorities and women at the Institute as of July, 1977 and goals for July, 1978 of each department, laboratory and center.
3. 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:

1. Each department will continue to set goals and timetables for the appointment of minorities and timetables for the appointment These goals will be women in an analysis of the present and projected pool
based on
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.
4. 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 searnals and other media as well of professional journals and other media, as well as educational that reach minorities and women in academic fields that reachte to the programs available at the Instiappropriate to the programs available at the Insti-
tute. The use of exchange programs and summer intute. The use of exchange programs and summer insearch 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.
5. The Institute employment policies and practices shall not prohibit the simultaneous employment of two members of the same family. ${ }^{\text {? }}$
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 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 ${ }^{4}$ of the Academic Council which considers serious search efforts' 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,
and monitoring of all affirmative action programs. They will assist department heads in the preparation and implementa tion of specific plans to ensure the effectiveness and continu ity 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. Represen tative. 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 of the department, the appropriate dean or senior officer
the E.E.O. Officer and the Special Assistants for Women the E.E.O. Officer and the Special Assistants for Women
and Work and for Minority Affairs to implement and and Work and for Minority Affairs to implement and
monitor both the academic and non-academic policies and monitor both the academic and non-academic policies and
procedures that are contained in the Institute's Affirmative 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:

1. to establish specific methods for identifying the underutilization of skills and talents of women and minority staff and employees within the departmen and to encourage both their participation in educa tional and career development programs and thei taking advantage of opportunities for promotion and aspirations and with the needs of the Institute;
2. 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 aturuaes, ai (including possible problems with attiuuaes, at-
mosphere, etc.) and in referring qualified minority and women candidates for both academic and non academic positions;
3. to develop a serious search ${ }^{10}$ 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 departmenta employment criteria relating to merit ${ }^{11}$ and to make certain that all job requirements are specificall necessary for the category under consideration (e.g. whether certain degrees are necessary, whether "re quisite skils are actually utilized, and whether onrequirements);
6. to review the criteria for departmental hiring, reten tion, promotion, and tenure as actually implemented to ensure that procedures are in compliance with the Guidelines; ${ }^{12}$
7. to disseminate the latest Institute policies and pro cedures on equal employment opportunity to all cedures on equal employment opportunity to all non-professional;
8. to develop strategies for increasing the available poo 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 evaluation and corrective action; and
10. to develop within the department specific procedures for reviewing alleged complaints of discrimination
consistent with the Institute's grievance procedure. ${ }^{13}$

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 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.
3. 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 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.
6. 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 proMram, both in tierms of legal req
7. 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

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 re cruitment area, as well as on M.I.T.'s projected em ployment 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 will evaluate the progress made toward reaching its
goals on a yearly basis (between June and August, as goals on a yearly basis (between
described inSection III B, item 3).

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 probased on
cedures:
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 men 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 to the concept of merit expressed in Section II, to the co
item $6 .{ }^{14}$
e. Procedures have been instituted, and will be periodically reviewed, to ensure that minorities and women (as well as other employees) are con sidered for promotion or upgrading before a posi
tion is filled from the outside.
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 employmen 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. ${ }^{14}$
g. Vacancies for all non-academic positions will ordinarily be posted, ${ }^{15}$ 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 per mitted. Such positions will be announced initially to the M.I.T. community by the Office of Person nel 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 appropri ate. 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 quali fiable by the personnel interviewer will be ex plained 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 fers. If so, the Office of Personnel Services will fers. If so, the Office of Personnel
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.
4. 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:
a. In some instances, a minority or woman applicant In some instances, a minority or woman applicant y qualifiable. Whenever possible, opportunity for "on-the-job" training will be provided.
b. When an employee applies for another position the same department or elsewhere at M.I.T. which he or she is currently qualified, no covert
overt barriers will be placed in the way of his overt barriers will be placed in
her application for the position.
c. Possible career ladders for non-academic po tions will be defined and disseminated as appr priate.
5. The Institute, through the Office of Personnel Dev opment, will initiate and continuously review p ganization development.
The following programs are now offered:
a. Tuition Assistance
b. Administrative Development Program
c. Introduction to Administrative Procedures P gram
d. Communications Workshops
e. Affirmative Action/Equal Employment Oppo tunity-Management Training Program (Lincoli Laboratory)
f. New Employee Orientation

## g. Technical Typing

The Office is currently presenting a managem training program at Lincoln Laboratory emphasizi Labervisory responsibilities in implementing supervisors and technical staff are required to atte the program.

## IV.C. Responsibility for Implementation

Responsibility for meeting these objectives in the $P$ rests with the department head or the director of ea ffice, center, or laboratory. For certain staff positions, esponsibility of good faith efforts is vested in the Prov or in the Vice President responsible for the specific orga zational unit, and in the Staff Appointments Subgroup ${ }^{10}$ the Academic Council which considers the serious sear effort ${ }^{17}$ in weekly reviews of non-academic staff appoin ments.

For the recruitment, referral, and hiring of candida in non-academic categories, there is a sharing of respons bility between the departmental leadership and the Offic of Personnel Services. Specifically, in order to enable ea department to meet its equal opportunity goals, Personn Services is responsible for providing minority and wom applicants according to their availability. It is the respo bility of individual departments to supply Personnel S vices with basic, essential job requirements for each av able position in sufficient time to allow for a serious sear to produce "qualified" ${ }^{18}$ minority and women candidat either from within the Institute or from external recru ment sources.

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

The E.E.O. Officers and the Special Assistants for W men and Work and for Minority Affairs will play the sam roles in developing, coordinating, and monitoring depar mental affirmative action programs as described in Secti III.C.

The head of each administrative unit (office or depar ment), or his or her designee, will be appointed as Equ Employment Opportunity (E.E.O.) Representative a will have specific responsibilities as outlined for academ E.E.O. Representatives inSection III.C.

14 To be monitored by the Office of Personnel Services on the campus and by the Personnel Office at Lincoln Laborator

15 Posting and bidding requirements for unionized employe 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

## AFFIRMATIVE ACTION FOR EDUCATIONAL OPPORTUNITY

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

## A. Aims and Plan of Action

Since the Plan was last revised, there has been con derable growth in the number of women undergraduates wever, women and members of some minority groups underrepresented in many student categories at M.I.T. is our policy to reduce these imbalances by increasing the erests in, preparation for, and availability of women and norities for careers in science and technology. While ultite success will result in substantial changes in admis n patterns, our immediate efforts must concentrate on larging the pool of qualified women and minority applints from which we admit students. As expressed in the port 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 en couragement have, in the larger society, tradition ally 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 this problem, we need to be more imaginative in our efforts than just recruiting from the available pool the high school level. ${ }^{19}$
It is also our objective to remove educational, social financial barriers which have discouraged many men and minority students from taking advantage of ucational opportunities offered by the Institute.
On another level, the Institute and each of its academic partments are aware that most professional opportunifor women and minorities in science and engineering quire graduate degrees, and, hence, the number of mirities and women with advanced degrees must be greatly reased to help increase their representation at M.I.T., at er universities, and in business and industry.
In view of these objectives, the Institute has established following plan of action:
Access to educational programs, financial assis tance, 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
visors 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 studentted areas - admissions, financial assistance, student port services, student activities and housing, student cement, and graduate student support - are detailed in tion V.B.

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

## 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. ${ }^{30}$
a. All persons involved in the process of reviewing applications will be kept aware of M.I.T.'s equal op portunity policies regarding admissions.
b. Admissions information and other official publica tions sent to prospective students, high school coun selors, and others will continue to reflect and em phasize the Institute's equal opportunity policy.
c. Special admissions pamphlets and brochures wil 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 con tinue to include minority and women faculty and staff.
f. The Admissions Office, the Educational Council, and other groups and offices engaged in recruiting stuand 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 hometow high schools
j. M.I.T. will continue to support a Talent Search Pro gram 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 prospec tive students who meet M.I.T.'s admissions criteria as well as those who have potential but who need vided by Project Interphase).

1. The undergraduate Admissions Office has prepared 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, 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. The Institute will continue to encourage minority and women faculty, staff, and upperclass students to help provide supportive services for minority and women tudents 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 including counseling, during the summer preceding financial assistance, as required.
e. In September, 1975 the Office of Minority Education was established as a means for identifying and as sessing 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 undergeneral teaching and learning process in the undergraduate academic program.

## 4. Student Activities and Housing

Rooms or apartments in Institute-supported housing are made available to all students in a non-discrim inatory 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 wil 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 spons to be to tinue 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 par ticipate fully in athletic activities and classes of their choice.
f. The Athletic Department has appointed a Director o Women's Athletics to address the growing needs of women students at the Institute and has also pub lished a booklet entitled "Athletics for Women a 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 implementaespecially 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 ac cessible for all members of the M.I.T. community, re gardless 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 ser vices 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;
ii. whenever possible, send minority and/or women recruiters who are familiar with the employer's priorities and commitments with respect to equa opportunity; and
iii. hire undergraduate minority and women students for summer internship programs when possible.
b. Each company or business representative inquiring about M.I.T. graduates will continue to be apprised M.I.T.'s equal opportunity placement procedures.
c. Companies are encouraged to distribute literature tha 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 con tinue 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 opportuni ties at M.I.T. and at Lincoln Laboratory.
e. The monthly schedule of visiting company fecruiters will be circulated to academic and administrative offices and be posted on bulletin boards in areas fre quented by minority and women students.

## 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 facuity from their gradutinuously their progress. Departments should appoint tinuously their progress. Departments should appoint aching assistants and should make their policy known to all of their faculty members.

Present admissions and financial aid policies will continue to be reviewed and modified, where appropriate, o assure that they do not
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.
d. 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 fforts and progress made toward meeting Institute goals and Federal regulations. This biennial report, including any proposed changes in policies or procedures, will be sub mitted 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 pro moting 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:

1. 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 re 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 wil submit a monthly statement to the appropriate resiand the use of minorities by his or her organization both directly and through subcontracting.
5. 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 provi sions will apply:

1. 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 pro grams 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 fo minority and women vendors and to see that all vendors are aware of M.I.T.'s affirmative action re 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.

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

1. Existing procedures will continue to be employed, and new procedures will be developed to secure maximum new procedures will be developed to secure maximum participation of minority vendors in Institute purchasing and minority contractors and construction 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.
4. 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.
7. 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, unsuccessity businesses compared to overall awards.

## VI.C. Responsibility for Implementation

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 Planing Group)
thletic Department
pean for Student Affairs
fformation Processing Services
nstitute Information Services (including News Office and campus Information Services
I.I.T. Press
incoln Laboratory
office of the Provost (including Lowell Institute School, Initute Professors, ROTC Programs
rteriosclerosis Center
rtificial Intelligence Laboratory
ell Culture Center
enter for Advanced Visual Studies
enter for Cancer Research
Center for International Studies
committee on the Visual Arts
ivision for Study and Research in Education
arvard-M.I.T. Division of Health Sciences and
echnology
aystack Observatory
ibraries
eurosciences Research Program
aboratory for Computer Science
ea Grant Program
ummer Session
ffice of the Vice President for Research
enter for Materials Science and Engineering
enter for Space Research
Energy Laboratory
rancis Bitter National Magnet Laboratory
aboratory for Nuclear Science
uclear Reactor
esearch Laboratory of Electronics
ffice of the Vice President, Administration and Personnel including Academic Staff Records Office, Child Care ffice)
dmissions
areer Planning and Placement
ffice of Facilities Management Systems
ersonnel Development
ersonnel Relations
ersonnel Services
tudent 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 Planning 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*



## Appendix C: Role of the Academic Council and the Equal Opportunity Committee in the Implementation of the Plan

## 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 Pro vost, the Deans and Vice Presidents, Director of Libraries and Chairman of the Faculty. The Academic Council re views 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 af firmative 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 Aca demic Council contains two (overlapping) subgroups, the Academic Appointments Subgroup and the Staff Appoint Academic Appointments Subgroup and the Staff Appointment Subgroup. The affirmative action responsibility of
these groups is to receive requests for authorization to these groups is to receive requests for authorization to
make offers of appointment to faculty and other academic make offers of appointment to faculty and other academic
positions in the case of the Academic Appointments Subpositions in the case of the Academic Appointments Sub
group and to administrative and research staff positions in the case of the Staff Appointments Subgroup. The sub groups 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 appoint ment relates to the Affirmative Action Plan of the depart-
ment 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 designated because of the particular position they hold
within the Institute. The Vice President, Administration within the Institute. The Vice President, Administration
and Personnel who holds the additional responsibility of the 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 the Committee reports of progress in affirmative action efforts, problems arising in the implementation of the Af firmative Action Plan and will review with the Committe proposals for changes in policy or procedure relating affirmative action including comment on proposals ginating within the Committee itself.

The authority and scope of the Committee is com parable to that of other Presidentially-appointed Institut committees in that it assists the President in maintainin cognizance over the program assigned to it, with authorit to obtain such information as necesary to keep itself in formed as to the effectiveness of the program. In assessing effectiveness, the Committee has the responsibility fo initiating improvements, including making recommenda tions to the President and the Academic Council or to th faculty for changes in policy or procedure to make the program more effective. The Committee may request such in formation from appropriate Institute sources as necessary for it to judge the need for changes in

The Committee will consist of 24 members drawn from The committee will consist of 24 members drawn from employees, and the student body. The President will desig nate the Chairperson, and the Committee will meet at th Chairperson's call. The names of the Chairperson and members of the Equal Opportunity Committee are pub lished in the Tech Talk supplement which annually lists Presidentially-appointed committees, or are availabl 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 af irmative action which are included in Policies and Pro cedures, 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. ${ }^{21}$ For particular groups of positions, outlined below, approval of the appro priate Appointments Subgroup of the Academic Council must be obtained prior to making an offer of appointment.
These positions include (1) salaried appointments for an 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, ${ }^{23}$ 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 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 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.

## D.2. Procedure for Complaints of Discrimination

All persons employed ${ }^{23}$ 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.

The Institute strongly encourages individuals to dis-
cuss their work situations and problems with their cuss their work situations and problems with their immediate supervisors. Supervisors are expected to communication related to work life at the Institute and are encouraged to resolve work problems and grievances at the departmental level.
2. 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 dement 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 wishes it or until such time as the individual agrees that a
third party or parties must be informed to facilitate action. 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 resolu tion 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 tion 503 and 504 of the Rehabilitation Act of 1973. It is
expected that students will attempt to resolve issues diexpected that students will attempt to resolve issues di-
rectly with a work supervisor, academic advisor or inrectly with a work supervisor, academic advisor or in-
structor. When a problem cannot be resolved at that level, structor. When a problem cannot be resolved at that level,
the student should avail himself or herself of the assistance
of the Office of the Dean for Student Affairs or the Office the Dean of the Graduate School as appropriate befor 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

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

Each appointment or reappointment to the faculty should be based unequivocally on the reasonable belief tha 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 ob jective to ensure the preservation of those standards of pro fessional and academic attainment by which the rank characterized both within M.I.T. and at other institutions of the first quality.

A professorial appointment, including a tenure appoint ment, 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 aca demic appointment process. Appointments to the Faculty are made without prejudice with respect to current or po tential child-rearing responsibilities which might require periods of part-time service or leaves of absence.

## 21 This revised policy will be published in Policies and Pro- cedures, section 2.15 .2 , p. 35 .

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
$3(\mathrm{~g})$.)
-
3 This procedure does not apply to employees who are repesented by a labor union. Collective bargaining agreements applying to these employees include grievance and
tion procedures and equal opportunity provisions.

## 4. Maternity and Parental eave Policy

The Institute's policy is to treat pregnancy and childth as any other temporary disability under its leave and enefits program. It is our policy also to afford opportunity ro parental leave without pay both to male and female em oyees. These two policies described below apply regard-

## s of marital status

## Maternity Leave

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

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 amount should the individual choose not to return to
work.

## Parental Leave Without Pay

Regular full-time or part-time ( $50 \%$ or more of normal re 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 hildren, subject to the conditions below:

Regular Leave: A leave without pay of up to eight weeks will be granted provided the individual gives cates intention to return to work. The individual's job, or a job of equivalent classification and pay, will 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. period or specifically waived in writing.

## .5. Child Care Policy

The M.I.T. Child Care Office serves as the focus for sues related to child care. Its services are available to all nembers of the M.I.T. community, especially those who eed assistance in locating suitable care for their children. The Child Care Office coordinates and supports the evelopment of all on-campus child care programs. Curently, two programs are operating on campus which serve hildren from four weeks to five years old. Care for ffants and toddlers, full or part-time, is arranged in family or pre-school aged children, two years and nine months to or pre-school aged children, two years and nine months to
ive years old, both full day and part day programs are ive years old, both full day and part day programs are
vailable under the auspices of Technology Children's vailable under the auspices of Technology Children's
Center, Inc. Plans are underway for an extended-day kinlergarten 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 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 diministrative department heads, laboratory and center a rectors, a particular responsibility for sensitivity to the po-
tential conflicts falls on those whose family or personal tential conflicts falls on those who
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 ${ }^{24}$ 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.

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, 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 place ment and re-employment. It should be clear that layoff is not a method of terminating employees who have not per formed 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.

## Appendix E: Dissemination of Affirmative Action Plan

The preface to the Institute Affirmative Action Plan utlines the major dissemination of the Plan through publiation in Tech Talk. Additionally, a reference copy of the Plan is available in each Institute office. Offices with special responsibilities regarding the Plan (i.e., Vice Presient, Administration and Personnel, Office of Women and Work, Office of Minority Affairs, Information Office) will ve copies available for general distribution upon request. Each department at the Institute has listed in its own epartmental plan the method of dissemination to be used informing persons in the department about the plan. ach department, center and laboratory plan at the Instiite is reviewed by members of the Institute administraion, including the procedures for disseminating the Plan to 11 employees. These major review meetings are followed periodic reviews through the efforts of the E.E.O. fficers and the Special Assistants for Women and Work nd for Minority Affairs.
The intent and substance of the Plan have been disssed extensively with members of the Academic, Faculty nd Administrative Councils and they are periodic agenda ems for these groups.

[^1]The 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 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 many high level adm. You will note an inclusion of
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 col-
leagues and branch offices. leagues and branch offices.
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 procure ment. 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.

## Appendix F: Summary of Responsibility for Affirmative Action Plan Implementation

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 candiemployment 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 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.) 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 of sponsored research staff and administrative staff appointments. This group has final approval on all
staff employment of persons whose salaries exceed staff employment of per
stipulated salary levels.

## F.2. Faculty Employment Authority

## General Authority

a. 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 in the department, and with the concurrence faculty in the department, and with the concurrence
of the Dean of the School. Since the procedures difof the Dean of the School. Since the procedures differ by department, the details are left to the indiappointment 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 cluding Visiting) or to Instructor. (See Appendix cluding
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 ex-
ceed 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 cedural 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

## a. Staff Appointments Subgroup of the Academic Council

Approval for certain categories of Academic appoint ments (other than faculty) rests with this group in terms of affirmative action objectives. The "serious search process outlined in Appendix D-1 include such academic staf categories as Administrativ Medical Staff member Medical Staff member
b. President/Provost and/or Vice President for Re search
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 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, col leagues, Office of Personnel Services, and others. Action on mproper supervision or failure to adhere to equal employ ment 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

|  |  |  |  |  |  |  |  |  |  |  |  | v |  |  |  |  |  |  | pan |  |  |  |  | norit |  |  | t. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tot | F |  | M |  | F | M |  |  |  |  |  |  | F |  |  |  | F |  |  |  | F | M |  |  | F | M | To | $\underline{ }$ |
| Faculty | 926 | 73 | 8 | 853 | 92 | 1 | 13 | 14 | 2 |  |  |  |  | 3 | 35 | 38 | 4 | 1 |  | 6 | 1 | 5 | 53 | 58 | 6 | 68 | 80 | 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 |  |
| Assoc. Professo | 220 | 30 | 14 | 190 | 86 | - | 5 | 5 | 2 | - | - | - | - | 1 | 7 | 8 | 4 | - |  |  |  |  | 12 | 13 | 6 | 29 | 17 | 20 | 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 |  |
| Visiting Faculty | 35 | 6 | 17 | 29 | 83 | - | - | - | - | - | 1 | 1 | 2 | - | 1 | 1 | 2 |  |  |  |  |  | 2 | 2 | 6 | 6 | 27 | 33 |  |
| Visiting Professor | 19 | - |  | 19 | 100 | - | - |  | - | - | 1 | 1 | 5 | - | - | - |  |  |  |  |  |  | 1 |  | 5 |  | 18 | 18 | 95 |
| Visiting Assoc. Prof. | 14 | 6 | 43 |  | 57 | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |  |  | - |  |  | 6 |  | 14 |  |
| Visiting Asst. Prof. | 2 |  |  |  | 100 | - |  |  |  | - | - |  | - | - | 1 | 1 | 50 |  |  |  |  |  | 1 |  | 50 |  | 1 | 1 |  |
| 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 Staf | 540 | 176 | 33 | 364 | 67 | 6 | 15 | 21 | 5 | - | - |  | - |  |  |  | 1 | 1 | 4 |  |  | 12 | 21 | 33 | 7 | 164 | 343 | 507 |  |
| 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 |  |  |  |  |  | 4 | 7 | 1 |  | 4 | 1 | 1 | 8 | 21 | 29 |  | 159 | 437 | 596 |  |
| Office/Clerical | 1593 | 1360 | 85 | 233 | 15 | 94 |  |  | 7 | 1 | - | 1 | - |  | 1 | 22 | 1 | 10 | 4 | 14 | 1 | 126 | 27 | 153 | 10 | 1234 | 206 | 1440 |  |
| 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 | $84$ |




Summary for the Campus


CAMPUS EMPLOYMENT GOALS FOR JULY 1978

|  |  |  |  |  | Black Am. |  |  |  | Native Am. |  |  |  | Orient Am. |  |  |  | Span. Am. |  |  |  | Tot. Minority |  |  |  | Tot. Other |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tot | F | \% | M | \% | F | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% |
| 966 | 85 | 9 | 881 | 91 | 1 | 20 | 21 | 2 | - | - | - | - | 3 | 35 | 38 | 4 | 1 | 9 | 10 | 1 | 5 | 64 | 69 | 7 | 80 | 817 | 897 | 93 |
| 533 | 13 | 2 | 520 | 98 | 1 | 3 | 4 | 1 | - | - | - | - | - | 23 | 23 | 4 | - | 3 | 3 | 1 | 1 | 29 | 30 | 6 | 12 | 491 | 503 | 94 |
| 222 | 33 | 15 | 189 | 85 | - | 4 | 4 | 2 | - | - | - | - | 1 |  | 7 | 3 | 1 | 1 | 2 | 1 | 2 | 11 | 13 | 6 | 31 | 178 | 209 | 94 |
| 211 | 39 | 18 | 172 | 82 | - | 13 | 13 | 6 | - | - | - | - | 2 | 6 | 8 | 4 | - | 5 | 5 | 4 | 2 | 24 | 26 | 12 | 37 | 148 | 185 | 88 |
| 28 | 4 | 14 | 24 | 86 | - | 3 | 3 | 11 | - | 1 | 1 | 4 | - | 1 | 1 | 4 | - | - | - | - | - | 5 | 5 | 18 | 4 | 19 | 23 | 82 |
| 17 | - | - | 17 | 100 | - | 3 | 3 | 18 | - | 1 | 1 | 6 | - | - | - | - | - | - | - | - | - | 4 | 4 | 24 | - | 13 | 13 | 76 |
| 7 | 4 | 47 | 3 | 43 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 | 3 | 7 | 100 |
| 4 | - | - | 4 | 100 | - | - | - | - | - | - | - | - | - | 1 | 1 | 25 | - | - | - | - | - | 1 | 1 | 25 | - | 3 | 3 | 75 |
| 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 |
| 515 | 183 | 36 | 332 | 65 | 8 | 20 | 28 | 5 | - | - | - | - |  | 2 | 5 | 1 | 1 | 4 |  | 1 | 12 | 26 | 38 |  | 171 | 306 | 477 | 93 |
| 538 | 99 | 18 | 439 | 82 | 5 | 16 | 21 | 4 | - | - | - | - | 4 | 17 | 21 | 4 | 2 | 10 | 12 | 2 | 11 | 43 | 54 | 10 | 88 | 396 | 484 | 90 |
| 293 | 122 | 42 | 171 | 58 | 6 | 11 | 17 | 6 | 1 | - | 1 | - | 2 | 2 | 4 | 1 | - | 1 | 1 | - | 9 | 14 | 23 |  | 113 | 157 | 270 | 92 |
| 1364 | 1190 | 87 | 174 | 13 | 121 | 16 | 137 | 10 | - | - | - | - | 23 | - | 23 | 2 | 15 | 4 | 19 | 1 | 159 | 20 | 179 | 13 | 1031 | 154 | 1185 | 87 |
| 959 | 124 | 13 | 835 | 87 | 27 | 116 | 143 | 15 | - | 1 | 1 | - | 3 | 3 | 6 | 1 | 6 | 35 | 41 | 4 | 36 | 155 | 191 | 20 | 88 | 680 | 768 | 80 |
| 5457 | 2014 | 37 | 3443 | 63 | 175 | 214 | 389 | 7 | 1 | 2 | 3 | - | 50 | 94 | 144 | 3 | 29 | 70 | 99 | 2 | 255 | 380 | 635 | 12 | 1759 | 3063 | 4822 | 88 |



## Summary for Lincoln Laboratory

LINCOLN LABORATORY EMPLOYMENT ACTUALS FOR JULY 1977

Administrative Staff
Research Staff
Exempt
office/Clerical
Hourly
lincoln lab total

|  |  |  |  | Black Am. |  |  |  |  | ive Am. Orient Am. |  |  |  |  |  |  |  | Span. Am. |  |  |  | Tot. Minority |  |  |  | Tot. Other |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tot | F | \% | M | \% | F | M | Tot | \% | F | M |  |  | $\overline{\mathrm{F}}$ | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% |
| 50 | 10 | 20 | 40 | 80 | 1 | 1 | 2 | 4 | - | - | - | - | 2 | - | 2 | 4 | - | - | - | - | 3 | 1 | 4 | 8 | 7 | 39 | 46 | 92 |
| 679 | 35 | 5 | 644 | 95 |  | 5 | 5 | 1 | - | - | - | - | 2 | 25 | 27 | 4 | - | 5 | 5 | 1 | 2 | 35 | 37 | 5 | 33 | 609 | 642 | 95 |
| 342 | 52 | 15 | 290 | 85 | 1 | 8 | 9 | 3 | - | - | - | - | 2 | 2 | 4 | 1 | - | - | - | - | 3 | 10 | 13 | 4 | 49 | 280 | 329 | 96 |
| 271 | 213 | 79 | 58 | 21 | 11 | 6 | 17 | 6 | - | - | - | - | 1 | - | 1 | - | 2 | - | 2 | 1 | 14 | 6 | 20 | 7 | 199 | 52 | 251 | 93 |
| 558 | 20 | 4 | 538 | 96 | 5 | 30 | 35 | 6 | - | - | - | - | - | 5 | 5 | 1 | - | 12 | 12 | 2 | 5 | 47 | 52 | 9 | 15 | 491 | 506 | 91 |
| 1900 | 330 | 17 | 1570 | 83 | 18 | 50 | 68 | 4 | - | - | - | - | 7 | 32. | 39 | 2 | 2 | 17 | 19 | 1 | 27 | 99 | 126 | 7 | 303 | 1471 | 1774 | 93 |

LINCOLN LABORATORY EMPLOYMENT GOALS FOR JULY 1978

Administrative Staff Research Staff Exempt
office/Clerical Hourly LINCOLN LAB TOTAL


LINCOLN LABORATORY EMPLOYMENT GOALS FOR JULY 1979

| Tot | Black Am. |  |  |  |  |  |  |  | Native Am, |  |  |  | Orient Am. |  |  |  | Span. Am. |  |  |  | Tot. Minority |  |  |  | Tot. Other |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | F | \% | M | \% | $\overline{\mathrm{F}}$ | M | Tot | \% | F | M |  | \% | $\overline{\mathrm{F}}$ | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% | F | M | Tot | \% |
| 50 | 14 | 28 | 36 | 72 | 1 | 2 | 3 | 6 | - | - | - | - | 2 | - | 2 | 4 | - | - | - | - | 3 | 2 | 5 | 10 | 11 | 34 | 45 | 90 |
| 680 | 45 | 7 | 635 | 93 | 1 | 11 | 12 | 2 | - | 2 | 2 | - | 2 | 23 | 25 | 4 | - | 8 | 8 | 1 | 3 | 44 | 47 | 7 | 42 | 591 | 633 | 93 |
| 329 | 49 | 15 | 280 | 85 | 2 | 10 | 12 | 4 | - | - | - | - | 2 | 3 | 5 | 2 | 1 | 3 | 4 | 1 | 5 | 16 | 21 | 6 | 44 | 264 | 308 | 94 |
| 254 | 204 | 80 | 50 | 20 | 18 | 5 | 23 | 9 | - | - | - | - | 2 | - | 2 | 1 | 6 | - | 6 | 2 | 26 | 5 | 31 | 12 | 178 | 45 | 223 | 88 |
| 598 | 23 | 4 | 575 | 96 | 6 | 45 | 51 | 9 | - | - | - | - | - | 6 | 6 | 1 | 2 | 12 | 14 | 2 | 8 | 63 | 71 | 12. | 15 | 512 | 527 | 88 |
| 1911 | 335 | 18 | 1576 | 82 | 28 | 73 | 101 | 5 | - | 2 | 2 | - | 8 | 32 | 40 | 2 | 9 | 23 | 32 | 2 | 45 | 130 | 175 | 9 | 290 | 1446 | 1736 | 91 |

## Music

Concert* - Seth Carlin, piano, will play the complete Preludes, Library. Free.
for the Generall Peace* - Featuring David Hart, flauto traverso Apr 6, Chapel, Noon, Free.
ure-The Music Hater* - E.T.A. Hoffmann as music critic; Michael cerg, director of publications, Boston Symphony Orchestra, formerly
c critic of the Boston Globe. Mon, Apr 10, $3: 15 \mathrm{pm}, \mathrm{Rm} \mathrm{10-250}$. Free.
mphony Orchestra Tour* Mon, Apr 10, conductor David Epstein es his orchestra on tour to Wellesley College, Tues, Apr 11, Smith Col-
Wed, Apr 12, Avery Fisher Hall, Lincoln Center, New York City. The Wed, Apr 12, Avery Fisher Hall, Lincoln Center, New York City. Tera Silbersee; and Berlioz, Harold in Italy, Marcus Thompson viola soloist Silbersee; a.
253-2906.
re-The Role of the Music Critic in Society* - Richard Dyer, m
rt* - Carol Epple and Nancy Roth, baroque flute; Laura Jeppesen, da gamba; Gisela Krause, Harpsich
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 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 $6,7: 30 \mathrm{pm}$,
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, $7-8 \mathrm{pm}$, A BBC filmed inter-
view daily, $12: 45 \& 2 \mathrm{pm}$. Open through Apr 19, Hayden Gallery, 160 view daily, $12: 45 \& 2 \mathrm{pm}$. Open through Apr 19, Hayden Galle
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 Harold Edgerton selected from forty years of investigations of natural
phenomena. Sponsored by the Compton Gallery Committee with the asphenomena. Sponsored by the Compton Gallery Committee with the as-
sistance of the Committee of Visual Arts. Through Wed, April 12, Mon-Fri, sistance of the Committtee of Visual Arts. Through Wed, April 12, Mon-Fri,
9 am- 5 pm. Margaret Hutchinson Compton Gallery, Maclaurin Building 10 .
Famous Conductors* - Music Library, Rm 14E-109. Photographs with biographical notes on famous conductors from Lully to Stokowski
MIT Historical Collections* - Permanent exhibition Mon-Fri, 9am-5pm, 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,
Astrophysies Exhibit main corridor, Bldg 4. Bldg 6 Dedication Exhibit. Blacks at MIT, Lobby

Hart Nautical Museum* - Permanent exhibit of rigged merchant and naval ship models, half models of yachts and engine models. Open daily in

Strobe Alley* - High speed photographs by Harold E. Edgerton, Institute

## Athletics

Varsity Soccer to Play Bermuda All-Stars* - Special Tour Game. Apr 5,
tpm, Brigg's Field. pm, 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 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; $\mathbf{V}$ Track, UNH \& Bates, $12: 30 \mathrm{pm}$. 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, 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.

## Dance

 MIT Dance Workshop** Classes taught by Beth Soll, ModernTechnique, Wed, $6 \mathrm{pm}-7: 30 \mathrm{pm}$, Rm W31-125. Mon, 5:15pm-6:45pm, Rm
W31-225. Improvisation/Composition, Mon, $7 \mathrm{pm}-8: 30 \mathrm{pm}, \mathrm{Rm}$ W31-225. W31-225. Improvisation/Composition, Mon, 7pm-8:30pm, Rm W31-225.
Independent Student Work, Wed, $7: 30 \mathrm{pm}-8: 30 \mathrm{pm}, \mathrm{Rm}$ W31-125. Info: 266 . Independent Student Work, Wed, $7: 30 \mathrm{pm}-8: 30 \mathrm{pm}, \mathrm{Rm}$ W31-125. Info: 266 -
1202 or $\times 3-5286$.
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 one me
*Open to the public
*Open to the MIT
Open to members only
Send notices for Apr 12 through Apr 23 to Calendar Editor, Rm 7-102,

## 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 director of Graphic Arts, was selected by the board of directors to honorary membership in gratitude or his helpfulness to the Quarter or his heipfuiness to the Quarter John E Newcomb


MAKING IT UNANIMOUS in the property section of the Office of Sponsored 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 0'Malley, John Delsie, Nora Donahue and William F McBride.
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. And
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 ${ }_{\text {Richard }}^{98 .}$ H. Battin of Lexington, Draper.

Joseph F. Baxter, Jr. of Melrose, Draper.
Henry W. Belding of Medford, Lincoln Group Robert L. Bernier of Bedford, Lincoln Group
R. 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 Group 95.
John W. Burke of East Boston, Lincoln Group
82 . William R. Burns of Reading, Lincoln Group
23. ${ }_{\text {Ralph L. Butt of Waltham, Lincoln Group } 28 .}^{238}$ Kenneth J. Button of Belmont, Francis Bitter National Magnet Laboratory. Hilda G. C
Group 23 . Group 23.

## Franklin R. Carr of Stow, Lincle

 Edward J.Group 55. Casazza of Tewksbury, Lincol Thorwald Christensen Belmont, Haystack. 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, Lincol Group 16. Engineering and Computer Science. Engineering and Computer Science.
Anthony J. Cotoia of Lincoln, Lincoln Group 72.
Eugene E. Covert of Belmont, professor of Eugene E. Covert of Belmont,
aeronautics and astronautics.
aeronautics and astronautics.
Robert P. Curran of Wakefield, Lincoln Group
Hugh B. Dawkins of Somerville, Office of Sponsored Programs.
Richard E. Dean of Dorchester, Lincoln Group Edward 1. Deibert of Tyngsboro, Lincoln John V. Delsie of Brockton, Lincoln Group 43. Charles T. Derry of Hyde Park, Lincoln Group
William A. DeRusso of Revere, Draper
William A. DeRusso of Revere, Draper.
Marion S. Disciullo of Brighton, Physica Plant.
Lawrence K. Dobkin of Hull, Draper. Nora M. Donahue of West Somerville, Lincol Group 15
Jin H. Dong of Tewksbury, Lincoln Group 66. Richard S. Eckaus of Cambridge, economics.
Frederic J. Eppling of L Nuclear Science.
Nuclear Science.
Axel V. Erikson of South Acton, Physics.
Axel V. Erikson of South Acton, Physics.
Carlos V. Fernandez of Medford, Electrica Engineering and Computer Science. Richard Filipowski of Lexington, associate professor of architecture.
Henry W. Fitzpatrick of Wi
Henry W. Fitzpatrick of Winchester, assistant John J. Foley of Winchester Thomas A. Fraher of Winthrop, Lincoln Group
Dario H. Franchetti, Sr. of Brockton, Draper Dario H. Franchetti, Sr. of Brockton, Draper.
Jerome Freedman of Weston, assistant direcJerome Freedman of Weston, assistant direc-
tor of Lincoln Laboratory.
Anthony J. Frisiello of Everett, Lincoln Group
13. James J. Gardner of Methuen, Physical Plant.
Lawrence A. George of Raynham, Electronic Lawrence A. George of Raynham, Electroni William J. Gianci of Bu
72.
Robert $W$ Group 71.
shua, N.H., Lincoln
William R. Green of Lowell, Lincoln Group 53 Edward W. Griffith of Saugus, Bates Linear Accelerator-
Peter Griffith of Belmont, professor mechanical engineering.
Eldon C. Hall of Westwood,
Eldon C. Hall of Westwood, Draper.
Louis F. Hallowell of Ipswich, Lincoln Group R. Joyce Harmon of Lake Havusu City, Ariz., Lincoln.
Robert L. Harrington of Stoneham, Draper. 27. Charles E. Hawks of North Weymouth, Aero physics Laboratory.
Louis H. Hirshberg Louis H . Hirshberg of Wakefield, Lincol
Group 53 . Group 53.
Edward $T$. Group 12. Holleran of Arlington, Lincoln Harry $0 . \mathrm{H}$
Group 68. Group 68.
Harold H. Harold H .
Group 68.
Robert W.


OBSERVING THE SCENE were three new members from the Laboraory for Nuclear Science, from left: Albert Libertini, Frederic Eppling and Matti Salomaa
Theresa Imbornone of Medford, Draper Barbara H. Jeffrey of Arlington, Linco Robert C. Johnston of Billerica, Draper Joseph W. Kalil of Lawrence, Lincoln Grou
Vahe A. Kasparian of Acton, Lincoln Group Edward J. Kelly, Jr. of Carlisle, Lincoln Group Robert Keyes of Waltham, Lincoln Group 53. Robert H. Kingst Division 8

Dominic J. Kishkis of Cambridge, Lincoln. | Proup 71. |
| :--- |
| Gnowles of Marblehead, Lincoln | Wriliam Z. Lemnios of Lexington, Lincoln Division 3.

Rachel P.
fewton Centre, Mechanical
Engineering.
Albert J. Libertini of North Reading, Bates Linear Accelerator
Anthony P. Luongo
Anthony P. Luongo of Lexington, Laboratory
Grace M. Lynch of Quincy, Francis Bitter Grace M. Lynch of Quincy, Francis Bitter
National Magnet Laboratory. Alan J. MacDonald of Revere, Lincoln Group

## Robert E. MacMaster of Hingham, professo

 of humanities.Margie L. Malva-Gomes of Arlington, Lincoln Director's Office.
Peter M. Marinelli of
Loretta W. Maerif of Brockton, Draper Club. Marobella of Cambridge, Faculty Robert T. Martin of South Lincoln, Civi Engineering.
Robert M. Mar
Group. Martinson of Chelmsford, Lincoln John R. Martuccelli of Concord, School of Engineering.
John G. Mavr
Group. Mavroides of Lexington, Lincoln Williap $\mathbf{F}$. McBride of Lexington, Lincoln Group 85.
James H. M
James H. McNally of Groton, Lincoln Group
Norman Menyuk of Brookline, Lincoln Group
William B. Morrison of Melrose, Faculty Club Grace M. Munroe of Watertown, Lincoln Group 28.
Raymond E. Neff of Largo, Fla., Lincoln. Gerald V O'Malley of Bedford, Linciln
${ }_{\text {Edwin J. Palmer of Reading, Lincoln Group }}^{86}$
Helen Panis of Somerville, Lincoln Group 13
Mary-Lou Perkins of Lexington, Lincoln Divi
sion 3.
Charles F. Perry of Billerica, Haystack
Joseph E. Phillips of East Weymouth, Phys John A. Pitingolo of Arlington, Lincoln Group Andrew T. Platais of West Roxbury, Draper . Hardy Prince of Beverly, Lincoln Group 76. School of Mangement, of Lincoln, Sloan School of Management.
Science and Engineering
Science and Engineering.
Vincent J. Pybus of North Andover, Lincol
Group 72 .
Ralph R. Ragan of Lincoln, Draper.
Edward D. Ralowicz of Chelmsford, Lincoln
Group 76. Richard J.
Group 12.

Herbert H. Richardson of Southboro, head of the Department of Mechanical Engineering
Angelo M. Ruggelo, Jr. of Waltham, Lincoln Group 36 . Matti i. Salomaa

## Nuclear Science. Richard J Scanla

Richard J. Scanlan of Newton Cente, Licol Albert J. Schmider of Burlington, Lincol Albert J.
Erwin Schowengerdt of Newburyport, Draper Christie E. Sciarappa of North Weymouth inear Accelerator
Anthony J.
Group 7 .
David J. Sh.
David J.
David J. Sh
Group 33.

## Group 33. Rasma A.

Rasma A. Skalberg of Cambridge, Comptro
ler's Pays
Magnus I. Smedal of Mirror Lake, N.H., Elec trical Engineering and Computer Science. Augustine J. Souza, Jr. of Revere, Lincol Group 15.
Richard L. Stanton of Saugus, Materials
ence and
ence and Engineering.
Michael L. Storm of Revere, Draper
John H. Stowe of
John H. Stowe of West Roxbury, Physical
Plant.
Peter E. Tannewald of Cambridge, Lincol
Division 8 .
Albert . Taylor of Hanover, Earth and Planetary Sciences. David M. Towle of Acton, Lincoln Group 37.
William J. Tremblay of Peabody William J. Tremblay of Peabody, Lincol Group 76.
Ralph J. Tricomi of Medford, Laboratory for Frank M. Vecchia
Frank M. Vecchia of Revere, Lincoln Group
24.

## Nicholas C. Vlahakis of Dracut, Lincoln Group

Oscar E. Wallin of Mattapan, Aeronautics and
Os. Astronautics.
Willian W. War
William W. Ward of Newton Highlands, Lin coln Group 68.
Leonard S. Wilk of Winchester, Draper.
Earle C. Wilkins of Haverhill, Lincoln Grou
Stephen E. Woodbury of Beverly, Lincoln
William E. Zamagni of Stoneham, Draper Herbert J. Zeiger of Chestnut Hill, Lincoln Group
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 Mar garet Compton Gallery, the gallery will be open this Saturday and Sun day, April 8 and 9 , from noon to 5pm.
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.









For Sale，Etc



78 Fieding gride to Europe，ors 811.95 ，now 88 ．
Call $34+8814$ aff 6.
Nortco Bremmier coffe mak\％，6．10 cup nr uad，



 Disphay case or Curic cabinet comere or wall．Karen
x－3












 Twn sz bed， 835 ．Call $x 3-4220$ or $354-2002$.











 Sng bed．eec cond． 875 or bett．Rhonda $\times 3.7102$.



 HP． 21 w charge \＆casee，s35．Dave $\times 3.5880$ ．



1 Hemmond B3 organ，gd cond．Call．$x .3 .323$ ：


## Vehicles

67 Camaro workng but nds work，$\$ 3000$ Call $\times 3$－
8788 days，Steve Glines．
 ${ }^{688}$ Cutlass，gd cond，hi mls，reb．trans， 4 nw tires，


 70 Volks wg bug．gd cond，nw brks，tune up，gd
mech cond， 81,000 ．Call x 3 ． 3438 s ．

 71 Pinto， $59 \mathrm{~K}, \mathrm{nw}$ bat \＆drks，gd tires $w / s$
fine rn cond． 8650 or best Mark $\times 3-2007$ ．
 72 Plymouth Satelitite wR，auto，PS \＆PB，vry gd
cond． FM stero．Call $x 3-4899$ ．
．



 29 292．

 76 Scamper tent trail，slos8 8，stove，sink，ice bx，
tble，extrs，exc cond，si，995．Geoorge $\mathbf{x 7 7 0 8}$ Lincl．



Carpools


## Miscellaneous

## Housing





Back Bay， 2 ZRR furn apt，see to believe，vaiil June
for summer subbet or more．Call Mark or Warren

 Camb，Somvl line， 2 RR apt，nt Harr \＆MIT，air
cond，w／w dish wash，garb disp，combin LRRR，

 Cape Cod lot．N．Falmouth，ir water，exclusv area，
low 5200 ．Call $\times 250$ Lincl．


 Marthas Vinyard．exc y y round home，custom blt
74 on protectid salt water pond，upper $\$ 50 \%$ ．Call


 aft 6 pm．
Rmavail now for rent or subiet．Tank Hall in 3 BR
apt，overlking campus 81535 mo．Call 494.8893 aft apt，overlking campus 8135 mo．Call $494-8893$ aft
6pm． Tang Hall rm avail now or sublet in 3 BR apt．
overmk campus． $8135 / \mathrm{mo}$ incl util．Call $494-8893$ aft
6epm
 Found：Silver key ring \＆keys，E E22：Call x 3 －2675．


## Wanted


 St．Camb，CB2，3EB，England．
Volvo tirese．6．0．15．Pls call doel day $732-1265$ or
eve or whends $354-7039$ ．

 House sit want in Aug early Sept，neat cou
plant sit，pet sit．Call Sophie 577.0648 eve．

Responsbl prof $\mathrm{M}, 33$ ，akk nice 1 BR apt，Camb
June 1, exc reference avail．Call x 540 L Lincl． Usd Martin six．string acoustic suitar，must be in
exc cond．Pete Besen x $x$ 3．401． 4r wagon or hatch．
mlk．Call $237-1350$ ．
W1 pay 830 for working fridge，perfer 5 cuff ．Call
$x 5.5654$ Dorm，lv msg East Campus．
71 Hammol plate，mint cond $w /$ pay top $\$$ ，Call Bill

## Roommates



We type，anythng．tech．etc， 1 IBM Correct Select．
reas rates．

WI trpe theses，manu，tech，fast \＆accur，IBM
Correct Select．Debbie $33-1848$ ．
Writers！anyone in MIT cmm
writing group．Joan $x 3-2672$ ．
Typing all subj（sci，eng，tech or hum）theses，let．
ter，reports， 1 IMM Correct Select．Ginny $\times 3$－3292．
Heating，air cond，ventalation，insulation work
be done．Arthur Dubuis 891－7499 aft 4 4．30pm．


$\underset{\substack{3.4778 \\ 3.159 \\ 3-1595}}{\substack{2 \\ \hline}}$

## 



Persuns whn are NOT MIT employes should call
The Peremsnnel Iffice on extension $3-425$ ．
Information on openings at Lincoln Laboratory
（LLxington，Ma．）is available in the Personnel
Employees at the Institute should continue to con
tact hhir Peresunnel oficers to apoly
Dick Hikham
Pat Wikinam
Carrom Scheer



 chemical kinetics and combustion helpful．R78－73
4／／5）．
Sponsored Research Staff in Nutrition and Food
Science to perform quantitative mutation assays；
particicpate in development of automated assay
procedures and experiments of aobing mechanisms
of mutan in bactera．A minimum of a
Bachelor＇s degree in microbiology ior related field
as well as laboratory experience required．R78－75
（4／5）．
 Academic Staff．Technical Instructor in the
Chemistry
Chepartment to maintin facilities and





\section*{| Position |
| :---: |
| $13 / 22)$. |}

 to formulate end produce superconductinnet alloys，
proerss alloys int high current high critical field
wires and
ribbons；measure and optimize the
 metalurury or materials science required．Ex．
periene in the preparation of superonducting
materials，measuremat of strese and strin，




Sponsared Research Staff．to do postdoctoral
research．in the Research Laborat ory of

 Sponorored Research Staff in Nutrition and Food
Science to do research on metabolism and func．

 A Bacheoror segree
required．$R 78 .-74 / 4 / 5$





## 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 Center's Avery Fisher Hall in New
York City Wednesday, April 12, at York Cit
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 Sil bersee," Berlioz's Harold in Italy,
with Marcus Thompson as viola soloist, and Stravinsky's "Scherzo a la Russe" will also be on the program.
The Orchestra's appearance at
Lincoln Center is jointly sponsored 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,

## ome so members strong, is a The Mir Symphony Orchestra <br> The MIT Symphony Orchestra

## Javan to Hold Chair


#### Abstract

eral active international fields of research. These include nigh resolution nonlinear laser spectroscopy, laser studies of molecular dynamics and relaxation, and the extension of microwave detecechnology into the infrared and ptical regions. Dr. Javan has made major contributions to the field of highenergy lasers and other areas of industrial laser applications. He is the author of hundreds of papers. with government and industry in developing a variety of technological innovations in the laser field. For his work on gaseous lasers, Srofessor 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 of the Research and De 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 student in 1949. He received his PhD in physics in 1954 and re- mained at Columbia as an in-


gram at MIT. Founded in 1884, its gram at MIT. Founded in 1884, its members are drawn from the MIT and Wellesley College communities. MIT musicians represent al fields of engineering, biology, chemistry, management, physics, economics and psychology as well
as humanities. 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 Phila delphia, 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 pre-
vious concerts at Carnegie Hall in New York, about one of which New York Times critic wrote
"Shades of Leonardo! There new Renaissance in the making. It was a concert that would have
been a credit to a professiona orchestra.' cordingstly begun a series of re cordings on the Vox/Turnabout label. Three records, which have
been received with critical praise have been issued so far
Conductor David Epstein, professor 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 Symphony and the Boston Pous Symphony and the Boston Pops. Juilliard and Amadeus String Juilliard and Amadeus String chamber groups in the Boston chamber groups in the Boston
area. Stravinsky's "Scherzo a la
Russe" was composed in the early Russe was composed in 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. had his earlier bastrated the work for large orchestra, exhibiting the brilliance, wit, and clear, precise control of sound that marks all of
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 Byron's Childe Harold, Berroz recollects some of his own early experiences during the time he re-
sided in Rome as a winner of the French Prix de Rome. The characFrench Prix de Rome. The charac-
ter of Harold is represented in this

 his dramatic flair, unusual sense of compositional organization and brilliant capacity for orchestrabrion.
Steinberg to Give Music Lecture

Michael Steinberg, Director of Publications for the Boston Symphony Orchestra, will give a E.T A. Hoffmann as 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 Ger-
many, educated there, in England, many, educated there, in England,
and in the United States, was 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.


From left: John Thayer, Ron Lyons, Curtis Fennel (top), Mike Davis and Crap Game in New Yorse" "The Oldest Established Permanent Floating

## Musical Theatre Guild <br> To Present Guys and Dolls

musical mixture of New York City's gamblers and missionaries will be presented by the Musica Theatre Guild at Kresge Auditorium beginning Friday, April 7 at 8 pm .
Performances will also be held Saturday, April 8, and ThursdaySaturday, April 13-15, with a matinee at 4 pm 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 Miss Miss Adelaide, whose despair of ever marrying Nathan has led to severe bronchial complications "A Portalized in the plaintive song "A Person Can Develop a Cold." The second, a new involvement between Sky Masterson, big time gambler, and Sarah Brown, mis sionary at the Save-A-soul Mission in Times Square, results from
get Sarah to accompany him to persuades the straight-laced Sara to go with him by promising to failing mission
Songs from Guys and Dolls in clude "Fugue for Tinhorns" ("I've got the horse right here"), "Luck 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 duction of Brigadoon. Music Di duction of Brigadoon. Music The cast is: Sky Masterson David Cohen, Emerson College David Cohen, Emerson College 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,
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 offices located in an adjacent space. A one-quarter inch scale model 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 1 pm 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 formaly dramatic and colorful, seemed trafficked the heavily trafficked 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 configura tion of the work also echoes the Roman numeral X, a fitting and conspicuous emblem for Lobby 10.

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 unds allocated through the Institute's art purchase policy as 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 s 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.


[^0]:    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 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

[^1]:    24 The layoff provisions of collective bargaining agreement will take precedence whenever they are in conflict with these guidelines.

