Massachusetts Institute of Technology



November 9, 1977 Volume 22 Number 13

100 Named Educational Counselors

The band of some 1200 alumni and alumnae throughout the world who are known as the MIT Educational Council will be augmented this year with the addition of approximately 100 in the eastern Massachusetts area.

Educational counselors assist high schools and advise young men and women in the broad areas of education offered by MIT. They interview high school students as part of the application process and are available for follow-up when prospective students have questions about MIT.

The Educational Council was established in 1952 to expand MIT's recruiting efforts and to assure that potential students across the nation would have access to accurate information about the Institute.

"Because they have been students here themselves, educational counselors can impart a personal feeling of what MIT is like to prospective students," said Peter H. Richardson, director of admissions.

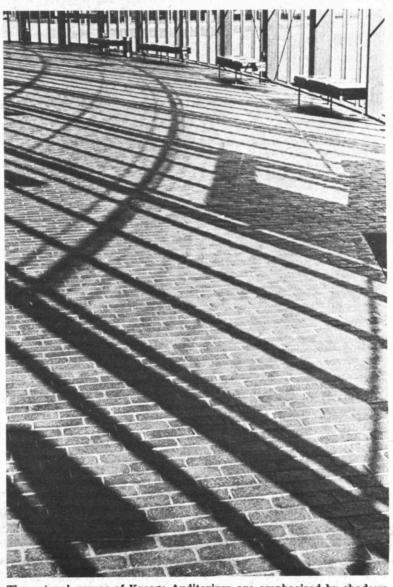
The expansion of the Educational Council into Eastern Massachusetts will provide the same kind of service for prospective students in the local area. Until now, applicants from the area have had their interviews with members of the admissions staff during campus visits and have not had the follow-up attention given applicants from other parts of the country.

Each of the local area educational counselors will have six to eight interviews during the year as well as some high school visiting. They will also attend college nights, local occasions when representatives of many colleges gather to talk with high school students and their families. The total time commitment for the new educational counselors is expected to be 10-15 hours per year.

M-m-m Good

Help for the hungry will be available Thursday, Nov. 10, when the Technology Wives Organization opens its annual fall bake sale at 9am in the Maclaurin Lobby (Building 10).

Cakes, brownies, cookies and other baked goods will be sold. There will also be freshmade sandwiches for lunch.



The natural curves of Kresge Auditorium are emphasized by shadows cast by the window frames as the morning sun shines through.

—Photo by Calvin Campbell

D. Reid Weedon Cited For Conspicuous Service

D. Reid Weedon, Jr., of Winchester, Mass., a 1941 graduate of MIT, a member of the MIT Corporation, and a long-time volunteer worker on behalf of MIT and its Alumni Association, has been named 1977 recipient of MIT's Dalton Bowl in recognition of conspicuous and sustained service in the enhancing of MIT's financial independence.

Mr. Weedon, senior vice president of Arthur D. Little, Inc., Cambridge, was presented the award, an appropriately inscribed Paul Revere Bowl, last week at the annual meeting of MIT's Corporation Development Committee by Howard W. Johnson, chairman of the MIT

Corporation.

The Dalton Bowl is named for the late Marshall B. Dalton, Class of 1915, one of the most active and respected alumni leaders in MIT history who, at the time of his death March 29, 1976, was the senior member of the MIT Corporation having served on the Institute's governing body for 39 years. Mr. Dalton, former board chairman of Arkwright-Boston Manufacturers Mutual Insurance Co., was head of

(Continued on page 3)



Alumni Fund telethon was conducted Monday night (Nov. 7) by members of the MIT 50-year class of 1928 and their wives, who solicited pledges from their classmates throughout the country. Among those making the calls, from the left, were Mr. and Mrs. Willis F. Tibbets of Reading, James Donovan of Cambridge, and Mr. and Mrs. Walter J. Smith of Winchester. Mr. Donovan is the class president and reunion

gift chairman. Volunteers from 12 other reunion classes will be conducting similar telethons over the next two weeks, according to Joan G. Sclar, administrative assistant to the director of the Alumni Fund. The Class of 1928 volunteers made their calls from the Vannevar Bush Room, which is to become part of the new Alumni Center under construction in

Solar House to Have 'No Moving Parts'

A completely "passive" solarheated building—one that collects, stores and radiates heat without any special equipment, using only its own building materials—is being constructed on the MIT campus at the west end of Briggs Field at Vassar Street.

The 900-square-foot building, believed to be the first of its kind anywhere, will demonstrate passive solar space heating by using new materials developed in recent years at MIT and by various industrial concerns. The experimental, one-story structure is expected to supply more than 85 percent of its own heat.

The building is due to be ready for occupancy by January and will be used as a classroom and studio by MIT's Department of Architecture. The project is being funded by the US Energy Research Development Administration and the MIT Godfrey L. Cabot Research in Solar Energy Fund. The approximate cost of the project is \$100,000.

The principal new building materials being utilized are:

1) A new type of window that loses one-forth the amount of heat of ordinary double-pane glass, with only a 20 per cent reduction in transparency.

2) A thin ceiling tile, with a chemical core, that stores a day's heat at constant temperature (so that overheating doesn't occur)

(Continued on page 7)

Commitment Needed In Minority Retention

A strong institutional commitment, deep faculty and staff involvement in social as well as in academic counselling and a broader funding base emerged as key points in the conclusions of a workshop on the retention of minority undergraduate students in engineering held at MIT last week.

Workshop participants concluded, in addition, that while the number of programs for minority students is increasing, the total amount of funds available for such programs is limited, leading to what was termed an "unstable situation"

The Oct. 30-Nov. 2 workshop, cosponsored by MIT and the National Research Council's Committee on Minorities in Engineering, brought about 125 university educators and staff members, students and people from industry and government who have been working on programs for minority students in engineering to the campus.

Dr. Wesley L. Harris, associate professor of aeronautics and astronautics and of ocean engineering, director of MIT's Office of Minority Education, was chairman of the workshop planning committee.

"The value of the workshop," Professor Harris said, "is contained in the definition of the minimum conditions necessary for the structuring, implementing and evaluating of academic support services

(Continued on page 8)



OFFICE OF THE CHANCELLOR

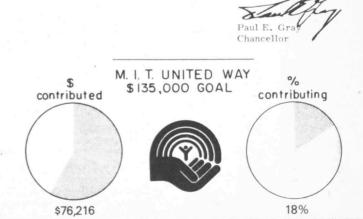
November 7, 1977

D: Members of the M.I.T. Community

At the middle of last week the United Way campaign at the Institute had received gifts and pledges totalling \$70,000, which is a little better than half way to our goal. In this respect we are ahead of the entire group of educational institutions in Greater Boston, which at the same date had reached 30% of their aggregate goal. The percentage of participation at the Institute is less encouraging, however.

The United Way is the principal source of funding for the human care agencies in the Massachusetts Bay area that serve more than a million people each year. Our friends and neighbors, indeed our families, are the beneficiaries. Every gift helps these agencies, which deserve our generous and wholehearted support.

The M.I.T. campaign will continue until November 18. I hope that all who have not yet contributed this year will do so in the ten days that remain, either by pledge or by direct donation through the departmental





Because of the Veterans' Day holiday, the deadline for listings in Institute Notices will be noon Thursday, Nov. 10.

Announcements

DEC Tour Rescheduled-Tour to DEC sponsored by the EECS Student-Faculty Committee has been rescheduled to Mon, Nov 14, 1pm. Sign-up list available in EECS Undergrad Office, Rm 38-494. Enrollment limited. DEC is a VI-A Co-op Co.

Final Examination-Official Notice. All students should obtain examination schedule at Information Ctr., Rm 7-111. Examinations not listed or a conflict in schedule must be reported to Schedules Office by Wed, Nov 23.

MIT Furniture Exchange-Open Tues & Thurs, 10am-2pm, 25 Windsor St, to buy or sell used furniture.

Graduate Student Council-Meeting, Thurs, Nov 10, Walker Memorial (Blue Rm 2nd Fl), 6pm. Dinner, 5:30pm, RSVP cashier, Walker Dining Rm.

HoToGAMIT 10-Interviews for editorship now in progress. Enthusiasm, not experience required. Info: contact TCA x3-4885 or Bill Dershowitz, x3-7130.

Lutheran Episcopal Ministry Study Groups ••-Wednesdays, 7:30pm, 312 Memorial Dr, Theology & Lifestyle: the Theology of Dietrich Bonhoeffer & Harvey Cox, Rev. Connie Par-vey. Sundays, 7-8pm, 312 Mem Dr, The Parables in Three Dimensions, Jessica Crist.

Preprofessional Advising-Thurs, Nov 10, Dr. David Falcone, Duke Univ Sch of Health Administration. Arrange for interview, Rm 10-186, x3-4158.

R/O Coordinator-Students interested in applying contact FAC Office, ASAP. Applicants for 1978 must submit a paper dealing with an R/O related problem by Mon, Nov. 14

Talbot House-December vacancies: first weekend in December (12/2-12/4) is open to any group as well as mid-week times. Information and applications, contact Renee Dunn, Preprofessional Office, Rm 10-186), x3-4158.

Technology and Culture Seminar-Free copies of essays available through Archives Mon-Wed, Nov 7-9, Humanities Library, Rm

Thanksgiving Hospitality-MIT Women's League assists students interested in sharing holiday dinner with an MIT family. Contact dormitory advisor, fraternity presidents or Freshman Advisory Council Office, Rm 7-103, by Mon, Nov. 14. Leave name, address, telephone (regular ext not dorm line), and class. If two or more students wish to go together their names should be on one list. Families (faculty, staff or friends of MIT) contact Mrs. Daniel Ray, 749-3202, or Mrs. Robert Berg. 862-8690 as soon as possible

TWO Crafts Fair-The Technology Wives Organization is seeking participants for its Crafts Fair, Thurs & Fri, Dec 15-16, 8am-4:30pm, Lobby Bldg 10. Contact: Marcia Schwenke, 862-3516 or Penny Quint, 322-8301.

Fellowship-Hastings College of Law, The Tony Patino Fellowship provides for both educational and living expenses to law students with an established interest in the needs of society. Applicants must demonstrate initiative, motivation and good citizenship. \$5 000 per year Information. Preprofessional Advising and Education Office, Rm 10-186.

Club Notes

MIT Astronomy Club*—Business meeting, Tues, Nov 22, 8pm, Rm 4-231. Followed by talk, Prof William H. Pinson. New members

MIT Badminton Club-Weekly sessions, Fri, 7-10pm & Sun, 10am-1pm. All welcome. Please bring rackets and birds. Info: Joo Kum 5-9682

MIT Baha'i Association*-Wed. Nov 9, 7pm Mezzanine Lng, Stu Ctr. Info Mahmood, 492-2889.

MIT-Wellesley Ballroom Dance Club** -Regular weekly meetings at MIT, dances and social events. Formation team starting up with possibly Ron Guisky as advisor. Admission will be charged, reduced rates to members. Volunteers needed. Contact: Jung Cho. 5-7273 Dorm or Sharon Pastonza 5-8667 Dorm.

MIT Bridge Club*—ACBL duplicate open pairs game Thurs, 7pm Stu Ctr Rm 407. Info: 494-8593. Admission .25.

Page 2, Tech Talk, November 9, 1977

MIT/DL Bridge Club**-ACBL duplicate bridge. Tues, 6pm, Stu Ctr Rm 473.

MIT Chess Club**-Informal speed chess, analysis, etc., every Sat, 1-7pm, Stu Ctr Rm 407 Info: Brad. DL5-8156

MIT Comic Book Club*-Wkly discussion meetings, Tues, 7pm, Rm 7-102.

MIT Ecology Action*—General meeting, Wed, Nov 9, 7pm, Stu Ctr Basement (Rm W20-002).

MIT Hillel Reform Weekend*-Fri-Sun, Nov 18-20, sponsored by MIT Hillel and New England Regional VAHC. Fri. Nov 18: 6pm. Deli-dinner Kick-off, place TBA, Free, limited reservations 25 people, call Hillel Office, x3-2982; 7pm, Services with Prof David Altshuler, Chapel; 9:30pm, Oreg Shabbat, Prof Altshuler, Judaic studies, George Washington Univ, will speak on "Reform Is Judaism," Stu Ctr Rm 473, refreshments. Sat, Nov 19: 8:30pm, Coffeehouse, live entertainment & Israeli food, admission at door, members, \$1.50, other \$2 Stu Ctr Mezzanine Lng. Sun, Nov 20: 11am, Sunday Brunch "American Judaism after the Self-Destruction of the Synagogue, Prof. Altshuler, admission at door, members \$1.25, other \$1.50 Stu Ctr Mez Lng.

Hobby Shop-Mon-Fri, 10am-6pm, Rm W31-031. Fees: \$10/term for students, \$15/term for community. Info: x3-4343.

MIT Go Club*-Regular meetings, Mon, Stu Ctr Rm 491, Wed, Rm 4-145, 8-12pm. Go is played, taught, discussions on strategy. Occasional speakers on basic strategy announced in advance. Instruction available to all new

MIT Goju Karate Club*-Instruction. Wed & Fri, 7-9pm, Stu Ctr Rm 491 or 407. Info: x3-2018.

MIT Judo Club**-Mr. Yanagi, 6th degree black belt, chief instructor. Judo practice: Mon, Wed, Fri, 5:30-7pm; Sat, 1-3pm. Du Pont exercise rm. Teaches conditioning, coordination and balance. Beginners welcome. Mike, 3-7319, Lance, 3-2559.

MIT Juggling Club*-Juggling practice and get-together Suns, 1-4pm, Kresge Oval (in front of Stu Ctr). We teach beginners.

MIT Math Club**-Meetings Sundays, 4:30pm, Rm 4-182. All undergrads welcome. Info: DL

Scuba Club**-Meetings Tues, 7pm, Rm 20E-021 to discuss upcoming weekend dives. Pool sessions after meetings or alternate Tues. Scuba rentals available from scuba locker. Check schedule at pool.

MIT Shotokan Karate Club**-Rigorous training in classical style of karate. PE credits may be earned. Active in intercollegiate competi tion. Varsity Club Lng, du Pont Gym. Call x3-6550 or DL 5-9633 for dates and times.

MIT Space Habitat Study Group*-Interdisciplinary discussions of space industrialization, colonization and related issues. Thurs, 7pm, Marlar Lng (Rm 37-252)

Tech Model Railroad Club-Meetings, Sat, 4pm; Operating Sessions, Fri nights; Rm

MIT Tiddlywinks Association*-Meetings Wed, 8pm, St Ctr Rm 473.

Transcendental Meditation Club-If interested, contact Imelda Rojak, x3-5295, leave message including interest in TM club, name, campus address and ext.

MIT Turkish Student Club*-Memorial Day for Kemal Ataturk, founder and 1st president of the Republic of Turkey. Lecture and discussion on his achievements, Thurs, Nov 10, Rm

MIT UHF Repeater Association*-Monthly meeting, Tues, Nov 15, 9pm, Stu Ctr Rm 400. Refreshments. Info: Jim Fenton, x5-9269

Unicycle Club*— Learn to ride, play uni-polo, learn stunts, etc. Sundays, 1-2:30pm, Kresge Oval (in front of Stu Ctr)

IAP Notices

Athletic Association**-Anyone interested in organizing an athletic activity during IAP please stop by AA Headquarters or contact Ed Cluss, x3-4327. Possibilities include: one-onone basketball, volleyball tournament, arm wrestling, Bruin or Celtic outings. Minimal time requirement.

Religious Activities

The Chapel is open for private meditation 7am-

Black Christian Fellowship*-Bible Study, Saturdays, 7:30pm, McCormick Seminar Rm A. Info: x5-6324 Dorm.

Campus Crusade for Christ-Fri, 7:15pm, Rm 37-252. Info: Dan Lu, DL 5-9641.

Chinese Bible Study Group-Fri, 8-10:30pm, The Cambridge Church of the Nazarene, 234 Franklin St., Cambridge. Info: Chris Law, DL

Christian Students Fellowship*-Thurs, Nov 10. "Guided Into All Reality." 7pm. Rm 1-236.

Christian Worship Service*-Sundays, 10:45am, chapel, Prayer following service.

No Information

The Information Center (Rm 7-111) will be closed Friday, Nov. 11.

Hillel Services -- Reform: Fri, 6:30pm. Chapel; Orthodox: Fri, Kosher Kitchen, 15 minutes before sundown; Sat, 8:45am, Kolker Rm (Rm 24-414); Conservative-Egalitarian: Sat, 10am, basement, Hillel Bldg, 312 Memorial Dr

MIT Islamic Society*-Friday Prayers will be held in Kresge Rehearsal Rm B at 1pm.

Prayer Time**-Fri, 1-2pm, Rm 20E-207. Public welcome to attend Bible class with guest speakers, music, refreshments. Led by Miriam R. Eccles, founder-director, Alpha and Omega Missionary Society.

MIT Seekers -Sun, 9:55am, leave for AM service at Park St. Church, Boston, from McCor mick Hall; 4:55pm, group leaving for the PM service & college Fellowship Time, Park St. Church, from McCormick Hall. Info: Scott Cunningham, DL 5-9224.

Southern Baptist Students-Sun, 9:45-11am, Metropolitan Baptist Church, Porter Sq, Cambridge. Info: Roch Skelton, 262-5090

Tech Catholic Community*-Liturgies, Sun, 9:15am, 12:15 & 5:15pm, Tues, 5:05pm; Thurs, 5:05pm; Fri, 12:05pm. Chapel.

United Christian Fellowship-MIT-ICF prayer, singing & teaching, Fri 7pm, Rm 1-236. Info: Bill Spencer x3-6813.

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

New UROP Listing

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

Experimental Neurophysiology
Children's Hospital This lab is currently conducting research in experimental models of epilepsy. Behavioral, neurophysiologic and neuropharmarcologic correlates of chronic epileptic activity induced at selected brain sites is being studied in laboratory rats. Two students are invited to assist in sterotaxic surgical implantation of chronic electrodes, electrical brain stimulation to induce seizure activity, and microiontophoresis of centrally acting drugs to assess chemical alterations. Should have background in introductory biology and chemistry; some background in physiology and the neurosciences helpful. For credit only; a commitment of two semesters required

Boston Police Department
The Boston Police Department is presently involved in a number of research projects. 1) An evaluation of how the department's personnel are presently utilized and formulation of recommendations for improved efficiency of department resources. 2) Analysis of reported crimes and development of a model to predict where future crimes are likely. 3) A review of the department's information systems network, and evaluation of effectiveness of new computer aided dispatching system. Contact Len or Suzy Buckle, Rm 9-513, x3-1788, Bioengineering Opportunity for undergraduate to design pressure-release valve for tracheotomy pa-

tients. Project will involve manufacture

testing of valve, as well as design aspect.

Nutrition and Food Science

Contact Prof. David Gordon Wilson, Rm 3-447.

Undergraduates invited to participate in project involving fermentation by Clostridia

acetobutylicum, an anaerobic bacteria capable of producing acetone and butanol.

Goal is to increase rate of production and final concentration of these products. Techniques

involve basic microbiological techniques, as well as analytical techniques such as gas

chromatography. Areas of research include membrane studies to determine ways of in-

creasing tolerance to solvents and metabolic

studies of solvent pathways to determine the

Opportunity for student with background in

economics to help in assessment of market

potential for integrated community energy

systems in New England. The student will be

working with questions involving pricing, fran-

chises, sources of capital and costs, and rate

structures for public utilities. A senior with

some knowledge of energy principles (BTU's, kilowatt hours, etc.) would be preferable. S/he

Opportunity for inventive mechanical engineering student to devise weight assisted

pulley system to help mobilize hospital patient

who requires assistive apparatus for upper ex-tremity mobility. The patient is in his late fif-ties and has been in a wheelchair most of his

life. He has muscular dystrophy and currently

has only minimal muscle function in his

fingers, head, and neck. Most of his mobility is

through weight shifting of his shoulders, and

use of an electric wheelchair. The proposed

device would be primarily a wheelchair at-

tachment to assist him in his watch repair ac-

A person with strong interest in the study of

crystal structure of proteins by x-ray diffrac-

tion is sought by the Fibers and Polymers

Laboratory. These proteins are used in the

fabrication of artificial skin and blood com-

patible tubing. Background in small (or wide)

angle x-ray diffraction is necessary. Start November or later.

Contact: Professor I.V. Yannas, Rm 3-336,

The following companies will be interviewing

fice, Mon-Fri, 9am-3pm, Rm 12-170, x3-4733.

Wednesday, November 9-Bell System; Inland

Steel Co; Institute of Paper Chemistry; Mobil

Oil Corp; Rand Corp; RG Vanderweil Engin-

eers, Inc; Schlumberger Well; Shell Dev Co;

Sperry Microwave Electronics. Thursday,

November 10-Ampex Corp; David W Taylor

Naval Ship R & D Ctr; Mitre Corp; Rand Corp;

Raytheon Co; Schlumberger Well Services;

Sperry Microwave Electronics. Monday, Nov-

ember 14-Analytic Services, Inc; Bell Labs;

Courier Terminal Sys Inc; ITT/TCC; Rock

well Internat'l; Science Applications, Inc;

H-Y ANTIGEN AND THE GEN-

ETICS OF SEX DETERMINA-TION by Dr. Steve Wachtel, Mem-

orial Sloan Kettering Cancer Cen-ter. Live from Harvard University. FEEDING THE CABLE—253-2870 Produced by the MIT Film Section. A class experiment in filming ev-eryday life. Call 253-2870 about

your everyday life idea.

BASEMENT VIDEO PRESENTS

The Dating Game at MIT. Recorded 1/4/77.

should have some 15hrs/wk available.

St John of God Hospital

X-ray Diffraction

Mass Energy Policy Office

mode of regulation. Contact Prof. A. Sinskey, Rm 56-121, x3-6721.

Energy Systems in New England

Friday, Nov. 11 Channel 8: $\label{eq:channel} \text{VETERANS DAY} - \text{NO SCHEDULED PROGRAMMING}$

Monday, Nov. 14

ONE OUT OF FOUR ATIMI ADOUT THE MIT EXPERIMENTAL MUSIC STUDIO WITH RICH STEIGER & THE MIT WRITING PROGRAM WITH KEN SKIER. by Barry Brams/Mark Abbate. Recorded 11/23/77. BASEMENT VIDEO PRESENTS The Dating Game at MIT. Record-

ONE OUT OF FOUR A film about

ed 11/4/77. FEEDING THE CABLE—253-2870

Produced by the MIT Film Section.
A class experiment in filming everyday life. Call 253-2870 about your everyday life idea.
WHAT IS ENGINEERING?
MECHANICS with J.P. Den Hartog. Lecture given as part of MIT Freshman Engineering Seminar Series. Recorded 10/6/77.
THE ROLE OF CELL SURFACE GLYCOPROTEINS IN RECOGNI-

4:30-6pm GLYCOPROTEINS IN RECOGNI TION PHENOMENON by Dr. Gilbert Ashwell, N.I.H. Live from Harvard University.

Channel 10: 12:30-8pm

NEWS/SPORTS SHOW by Video Club. Tuesday, Nov. 15

10-12noon

Channel 8:

INVITATIONAL SONGFEST MIT Chorallaries, Logs, Jackson Jills, Tufts Beelzebubs, Wellesley Widows. Videotaped 10/28/77 by MITV NOON HITS from Harvard Univer 12:30-1pm sity.
MACRO & MICRO FOOD & NU 1-2:30pm

GREATER

TRITION PLANNING IN DEVELOPING COUNTRIES by Dr. Paul Lundven. Recorded 10/24/77.

10/24/77.
MIT SYMPHONY ORCHESTRA
Dalia Atlas conducting works by
Schoenberg, Stravinsky, & Mahler.
Videotaped 10/29/77 by MITV.

4:30-5pm MITV REFLECTIONS by MITV.

POLITICS & TELEVISION (17.34) with Ed Diamond. Guest Earl Ubell, former producer of Eyewitness News, NY.

Systems Planning Corp. Tuesday, November 15—Bell Labs; Cincinnati Milacron Chemicals, Inc; Dept of the Navy/CAPSO-N; Griffiths Air Force Base; ITT/TCC; NASA/Goddard Space Flight Ctr; Naval Ordance Station; Rockwell Internat'l: Univ of PA/Sch of Public & Urban Policy; Westinghouse Electric Corp. Wednesday, November 16-Bell Labs; CIA; Gen Electric Co; Rockwell Internat'l/Rocketdyne Div; Science Applications, Inc; Union Camp R & D;

Graduate Studies

UCAR Fellowships in the Atmospheric

The University Corp for Atmospheric Research (UCAR) sponsors a program of graduate study fellowships leading to the PhD degree in atmospheric sciences and in related fundamental disciplines. Fellowships cover a year of study at any accredited US graduate school in broad field of atmospheric sciences. Stipend is \$4,000 plus tuition for the academic

Deadline: Feb 1, 1978. Contact: Graduate School Office, Rm 3-136.

Libraries

All Libraries will operate on a regular schedule Veterans' Day, Friday, Nov. 11, except the Chemistry Reading Room, Von Hippel Materials Center Reading Room and Historical Collections, which will be closed.

Stop Smoking Program Set

Stop Smoking Programs are offered at MIT approximately twice each year, sponsored by the Medical Department.

The next one will be held beginning Monday, Nov. 14, noon-1pm in the Student Center West Lounge.

Programs are open to all membrs of the MIT community, at a charge of \$10. Those interested should call x3-1316 for further information and pre-registration.

Echoes -

50 Years Ago

Former acting MIT President Dr. Arthur A. Noyes '86 and Dr. William D. Coolidge '96 received medals from the Royal Society in London. Dr. Noyes was commended for his work in physical chemistry and Dr. Coolidge for work with cathode and roentgen rays. Dr. Coolidge won the Nobel Prize for his research in the development of the cathode ray tube.

40 Years Ago

The 5:15 Club will sponsor the second in its series of lessons in modern dancing. A professional instructor will teach more steps of the Big Apple, Posin' and the Shag.

The question "Will Isolation keep the US out of War?" will be debated at the Tech Open Forum. Institute students will hear Clark Eichelberger, Director of the League of Nations Association debate Frederick J. Libby, Director of the National Council for the Prevention of War, who is in favor of the policy of isolation.

25 Years Ago

Radar antennae situated on Bldg. 24 mark the new technique of using radar in meteorology. This new procedure has become very important in basic research and in weather forecasting, because it provides a detailed, three dimensional view of weather phenomena.

Prepared by Marcia Conroy, MIT Historical Collections,

> TECH TALK Volume 22, Number 13 November 9, 1977

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1:30-2pm

2-3:30pm

Dalia Atlas conducting works by Schoenberg, Stravinsky, & Mahler. Videotaped 10/29/77 by MITV. ONE OUT OF FOUR A film by the United Way. WHAT IS ENGINEERING: MATERIALS SCIENCE with N.J

MATERIALS SCIENCE with N.J. Grant. Lecture given as part of MIT Freshman Engineering Seminar Series. Recorded 9/29/77.
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RECORDED 11/23/76.
NUCLEAR FUEL CYCLES &
WASTE MANAGEMENT: THE
APS REPORT by Ernest Moniz,
Physics. Recorded 10/20/77.

8-9pm

or Chuck Wexler, Rm 9-524, x3-2089.

CABLE TV

X3-3625

Wednesday, Nov. 9

12noon-1pm

1-1:30pm

1:30-3pm

SCHEDULE

November 9 - 15, 1977

7:30-8pm

8-9pm

11-11:30pm 11:30-12noon

12noon-1pm

WHAT IS ENGINEERING?
MATERIALS SCIENCE with N.J.
Grant. Lecture given as part of
MIT Freshman Engineering Seminar Series. Recorded 9/29/77.
BASEMENT VIDEO PRESENTS 1-1:30pm The Dating Game at MIT. Record

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THE ENGINEERING OF FOODS by Prof. Rha, Dept. of Nutrition.
Peccycled 10/18/77

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ONE OUT OF FOUR A film by the United Way.
REGULATION OF IMMUNE RE

REGULATION OF IMMUNE RESPONSES BY SPECIFIC
SUPPRESSOR T CELLS AND T
SUPPRESSOR FACTORS by Dr.
Ronald N. Germain, Dept. of Pathology, Harvard Medical School.
Live from Harvard University.

Thursday, Nov. 10 Channel 8: 10-12noon MIT SYMPHONY ORCHESTRA

12-12:30pm 1-1:30pm

during the time period covered by the current Institute Calendar. Those interested may sign up in the Career Planning and Placement Of-

Placement

The IAP Corner

Local Architects, Planners To Participate in IAP

By MARY ENTERLINE Editor, IAP Guide

Boston-area architects and urban planners can study architectural graphics, color theory, the design of theaters, statistics, housing policy in developing countries, and eighteen other topics by enrolling in the School of Architecture and Planning's Independent Activities Period offerings this January.

This will be the second IAP in a row in which the School will open its January seminars to practicing professionals as part of a continuing education program. Last IAP about 40 professionals registered for IAP offerings.

The idea for turning IAP activities into a continuing education program came from William Ronco of Lexington, Mass., acting assistant director of the Lab of Architecture and Planning and a PhD candidate in the Department of Urban Studies and Planning. Before coming to MIT, Mr. Ronco was director of continuing education for the Boston Architectural Society; so it was only natural that when he learned that the School did not have a continuing education program, he decided to try to have one instituted.

Rather than investing money and time in developing a special program and the bureaucracy necessary to support it, Mr. Ronco proposed that the School simply send out to alumni and other professionals a brochure advertising its IAP offerings as "January Seminars." To offset the cost of the mailing, registrants were charged a small fee, last year ranging from \$5 to \$50 depending on the course.

Besides being easy to institute, Mr. Ronco said that this program is different from the typical continuing education program consisting of special evening or weekend classes which "bring in professionals and put them in boxes, away from others, so that they

have no contact with students and faculty." By letting professionals attend IAP seminars, Mr. Ronco said they were able to become involved in the real MIT. At the same time on the basis of their practical experience in the fields of architecture and planning, they are able to make contributions to classroom discussions which benefit students and faculty.

Of course, in opening IAP offerings to professionals, Mr. Ronco emphasized that the School is not closing them to students and other members of the MIT community. "The policy is never to exclude students, but rather where possible to open activities also to practitioners," he said.

"It's more difficult to have a mixed class; it puts a greater strain on the person teaching the course, but the benefits are worth it," added Mr. Ronco, who himself taught a seminar last January on "Professional Practice and Human Interaction."

After the success of the program last IAP, the School of Architecture and Planning ventured further into the continuing education field and joined with the Harvard School of Design to offer extension courses during the summer and at night this semester. One of the School's offerings, a one-week seminar on nontraditional techniques in economic development, brought three people all the way from Alaska.

Mr. Ronco doesn't expect anyone to come that far for the IAP seminars which will only be publicized in the Boston area. However, he hopes this year to create a new option which would permit some professionals to attend as many offerings as they wish.

Anyone wanting information on the continuing education program should contact Nancy Doolan in the Lab of Architecture and Planning, Rm. 4-209, Ext. 3-1354.



CONGRATULATIONS are extended to Dr. James R. Killian, Jr., (left) 1977 recipient of the Eugene McDermott Award of the Council for the Arts at MIT, by Luis A. Ferré, chairman of the Council. Mr. Ferré presented the award to Dr. Killian at the Council's annual meeting luncheon on November 2.

-Photoby Calvin Campbell

McDermott Arts Award Presented to J.R. Killian

The Eugene McDermott Award of the Council for the Arts at MIT, presented annually for "major contributions to the arts as a means of human fulfillment," was presented at the Council's sixth annual meeting luncheon on November 2 to Dr. James R. Killian, Jr., honorary chairman of the MIT Corporation.

Chairman of the Council Luis A. Ferré, in announcing the 1977 McDermott Award recipient, cited Dr. Killian as "someone who has given MIT a sense of the importance of art in life."

Ida Rubin, chairwoman of the Council's Award Committee, spoke of the accomplishments of Mr.

McDermott and of Dr. Killian. Mr. McDermott, in whose memory the Award was established in 1974, was a geophysicist, a founder and former president of Texas Instruments, Inc., a Life Member of the

Corporation, and a benefactor to the Institute in education and the arts. Among Dr. Killian's many achievements, Mrs. Rubin cited his presidency of MIT (1949-59), his work as special assistant for science and technology to President Eisenhower (1957-59), and his service as chairman of the MIT Corporation (1959-71). On behalf of the arts, she mentioned his efforts to establish the School of Humanities and Social Science, his service as first chairman of the Visiting Committee on the Arts, and his efforts 'to make the work of the Council a meaningful part of MIT.

Mrs. Rubin also read from a letter from Mrs. Margaret McDermott who wrote, "... how pleased and proud Gene would be to have another association with Jim—a person for whom he had such admiration and affection."

The Award citation, presented by Mrs. Ferre to Dr. Killian, read in part, "Jim Killian himself has received many honors for the many contributions of his manyfaceted career. Now we specially honor his continuing contributions-in the words of the Institute's founding charter—to the 'advancement, development and practical application of science in connection with the arts . . . ' No one has seen this connection more clearly than Jim Killian nor spoken more persuasively of an enlarged vision of education in which the sciences and the arts have much to say to one another.'

In accepting the Award Dr. Killian paid tribute to the "civility, elegance and beauty" that Mr. and Mrs. McDermott have brought to MIT. He cited many examples of the burgeoning of creative ideas and of the arts at MIT, observing that "over the past one hundred years MIT has evolved a role for itself in the arts and humanities marked by imagination and leadership . . . We have every reason to emphasize that this great institute of technology considers art not simply as an embellishment but as an essential part of its task of educating men and women for the kind of society we are eager to

achieve in this country."
Former recipients of the McDermott Award are Gyorgy Kepes, artist and founder of the MIT Center for Advanced Visual Studies (1974), Klaus Liepmann, musician and for many years director of music in the MIT Department of Humanities (1975), and Paul Tishman, noted New York builder, collector of African art and first chairman of the Council for the Arts at MIT (1976).

Draper to Speak

Dr. Charles Stark Draper, Institute Professor Emeritus and president of the Draper Laboratory, will discuss "The Engineer" in the Cambridge Forum Series on great vocations, Wednesday, Nov 9, at 8pm at the First Parish in Cambridge, 3 Church Street. The program is open to the public free of charge.

for three years in the Department of Physics. Dr. Boyle is interested in changes in the chemical composition of seawater, rivers, and estuaries. A native of Aberdeen, Md., he is a member of the American Geophysical Union and Sigma Xi, and he was a NATO postdoctoral fellow at the University of Edinburgh from 1976-1977. He received the BA from the University of California at San Diego in 1971, and the PhD from the joint program in oceanography of MIT and the Woods Hole Oceanographic Institution.

4 Appointed

Four assistant professors have

been appointed in three departments

in the MIT School of Science,

according to Robert A. Alberty,

The new assistant professors are

Edward A. Boyle and Charles C.

Eriksen, appointed for three years in

the Department of Earth and

Planetary Sciences; Robert S.

Langer, Jr., for two years in the

Department of Nutrition and Food

Science; and Margaret H. Weiler,

Assistant

Professors

Dean of the School of Science.

Dr. Eriksen has done research on waves and currents in deep ocean. He was born in San Francisco, Ca., and he received the BA from Harvard College in 1972, and the PhD from the MIT/Woods Hole Joint program in 1977. His honors include membership in the American Geophysical Union and the American Meteorological Society. He was a postdoctoral investigator at Woods Hole from 1976-1977.

Dr. Langer, who will be a visiting assistant professor, has been doing research in inhibiting the growth of cancer tumors and new methods for administering drugs as a research associate at Children's Hospital Medical Center of the Harvard Medical School since 1974. He received the BS from Cornell University in 1970, and the ScD from MIT in 1974, both in chemical engineeering. While a graduate student at MIT, he received the Karl Taylor Compton award for outstanding contributions to the MIT community. Dr. Langer is a member of the American Institute of Chemical Engineers, the American Chemical Society, Sigma Xi, and Tau Beta Pi. He was born in Albany, NY

Dr. Weiler's research has dealt with semiconductor magneto-optics and nonlinear optics. She has been a staff member and research assistant at MIT's Francis Bitter National Magnet Laboratory since 1965. A member of Sigma Xi, Phi Beta Kappa, the American Physical Society, and the Optica Society of America, she received the AB from Radcliffe College in 1962, the MS from the University of Maine in 1964, and the PhD from MIT in 1977.

Savicki Named Course XVI AO

Donna R. Savicki, assistant to the director of the Innovation Center since January 1974, has been appointed administrative officer of the MIT Department of Aeronautics and Astronautics.

She succeeds John R. Martuccelli who resigned the post to head the School of Engineering's new Engineering Internship Program.

From September 1973 to January 1974 Mrs. Savicki was a research assistant in the School of Library Science at Simmons College where she received her MS. She also

received the
BA, summa cum laude, from the
University of Massachusetts,
Boston, where her major was

From September 1967 to June 1968 she studied German at Trinity College, Washington, DC, and was honored by the German Embassy for special accomplishment in the German language and literature.

D. Reid Weedon Cited for Service

(Continued from page 1)
MIT's Committee on Financing
Development in the 1940s and early
1950s, served as first chairman of the
MIT Development Committee when
it was formed in 1951, and was senior
member of the CDC at the time of his
death

First recipient of the award was Mr. Dalton himself in December, 1975, when the CDC at its annual meeting that year singled him out for special recognition in the form of a Revere Bowl suitably inscribed. Following his death a few months later, the bowl was established as a permanent annual award named in his honor and recognizing individu-

als whose service in support of the Institute's financial goals was both conspicuous and sustained over a period of many years.

The 1976 recipient honored at the CDC meeting a year ago was Cecil H. Green of Dallas, Tex., Life Member, Emeritus, of the MIT Corporation, a member of the Corporation since 1958, and one of MIT's principal benefactors over a long period of years. A 1923 graduate of the Institute, Mr. Green was co-founder of Geophysical Services, Inc., predecessor company to Texas Instruments, Inc. Mr. Green and his wife, Ida, have for many years taken an active interest in MIT and have



1977 DALTON BOWL RECIPIENT at MIT is D. Reid Weedon (right) of Winchester, Class of 1941, senior vice president of Arthur D. Little, Inc., Cambridge. Presenting the Bowl is Howard W. Johnson (left) chairman of the MIT Corporation. The award recognizes conspicuous and sustained service over many years in enhancing MIT's financial independence.

-Photo by Calvin Campbell

endowed buildings, laboratories, professorships and numerous fellowships and scholarships for students. Mr. Green has been, since 1973, an honorary lecturer in the MIT Department of Earth and Planetary

Sciences.

Mr. Weedon, the 1977 Dalton Bowl recipient, has been a member of the CDC since 1965 and is presently area chairman for Boston for MIT's \$225-million five-year Leadership Campaign. He is a past president of the Alumni Association, has held most of the major offices in the Association, and has provided leadership for various fund raising activities as class agent for the Class of 1941 and as chairman of the MIT Alumni Fund. He was a principal architect of the Alumni Association's Long Range Planning Committee of the last decade and is a recipient of the Association's Bronze Beaver Award for his service.

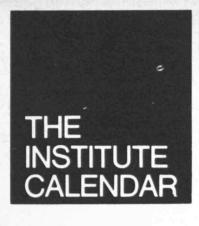
In addition, Mr. Weedon has been a leader in MIT's Interfraternity Conference and was a founder of MIT's Independent Residence Fund to help independent living groups build new facilities. He was elected to the Corporation for a five-year term in 1970 upon nomination by the Alumni Association and was renominated and reelected to a second five-year term in 1975.

No Paper

Tech Talk will not be published Wednesday, Nov. 23, because of the Thanksgiving holiday.

The Institute Calendar in next week's paper (November 16) will cover the period of November 16 through December

Deadline for submitting listings for the Institute Calendar, Institute Notices and Classified Ads is Thursday noon, Nov. 10, because of the Veterans' Day holiday Friday,



November 9 through November 20

Events of Special Interest

UROP Symposium: Undergraduate Research in Physics* — Wed, Nov 9, 3:30-5pm, Rm 4-339, Refreshments will be served. 3:30pm, Pulsars & X-Ray Burstars; Astrophysics with SAS-C, Herman Marshall; 3:45pm, Possible Molecular States in Nuclei, Robert Ledoux; 4pm, "Where Am I Pointed": Problems in Aspect Determination in Balloon-Borne X-Ray Astronomical Packages, Wis Macomson; 4:20pm, Xenon Flouride Spectroscopy & Molecular Binding, Jeff Manni; 4:40pm, Superconducting Tunneling, Jay Liebowitz.

T.W.O. Bake Sale* - Thurs, Nov 10, 9am-sellout, Lobby 10.

Seminars and Lectures

Wednesday, November 9

Boundary Mixing & Lateral Advection: The Vertical Mixing Mechanism of the Deep Ocean* — Laurence D. Armi, physical oceanography, W.H.O.I. Oceanography Sack Lunch Seminar. 12n, Rm 54-425. Bring lunch, coffee served.

Intensification of Heat Transfer at Resonance Oscillation of Turbulent Gaseous Flow in Tubes* — Yuri Ryzhov, technical sciences, Vice-Rector, Moscow Aviation Institute. Aero/Astro Seminar. 2pm, Rm 37-252. Coffee preceding, Rm 33-222.

CODEX: Innovator in Data Communication, Part II* — John W. Pugh, Robert W. Stearns, Steve Finn, CODEX Corp, Newton. Seminar in Recent Innovations in Electrical Engineering. 3-5pm, Rm 16-134.

Design & Fuel Management of PWR Cores to Minimize System ORE & Separative Work Requirements* — E. Fujita, G. Nuclear Engineering Seminar. 3pm, Rm NW12-222.

High Power Solid State AC Motor Drives* — Alexander Kusko, electrical engineering. E.P.S.E.L. Seminar. 3pm, Rm 4-145.

Detailed Investigations of Volcanic & Tectonic Structure of Oceanic Spreading Centers* — Robert Ballard, Woods Hole Oceanographic Institute. Earth & Planetary Sciences Colloquium. 4pm, Rm 54-915.

Numerical Simulation of Radioactive Plumes in a Turbulent Stratified Atmosphere* — R. Bennett, G. Nuclear Engineering Seminar. 4pm, Rm NW12-222.

Some Comments on Devices for Power Generation by Rectification of Thermal Noise* — Richard B. Adler, electrical engineering. Thermodynamics Seminar. 4pm, Rm 1-114. Coffee 3:45pm.

Thursday, November 10

Lithium-Ion Soft X-Ray Laser* — Howard Hyman, AVCO, Everett, EECS Optics Seminar. 3pm, Rm 36-428.

Analytical Methods for Studying Transport of Substances to the Atmosphere from the Sea* — James L. Fasching, chemistry, University of Rhode Island. Analytical Chemistry Seminar. 4pm, Rm 8-205.

The Chemistry & Technology of Palm Oil* — S.H. Ong, dean, School of Chemical Sciences, University of Science, Malaysia. Nutrition & Food Science Seminar. 4pm, Rm 16-134.

On the Role of Fractional Radix Number Notations in the Theory of Autonomic One-Dimensional Discreet Time Systems* — Martin E. Kiliski, electrical engineering, Northeastern University. Systems Communication & Control Seminar. 4pm, Rm 39-500.

Optimizing Distributed Data Basis in Computer Networks* — Howard Morgan, decision sciences, University of Pennsylvania. Operation Research Seminar. 4pm, Rm 24-215. Coffee & doughnuts, 5pm.

The Incommensurate-Commensurate Phase Transition in Charge Density Wave Structures — A Landau Theory Approach* — Shirley Jackson, Bell Laboratories, Murray Hill, NJ. Physics Colloquium. 4:15pm, Rm 26-100. Tea 3:45pm, Rm 26-110.

Monday, November 14

The Ekofisk Blow-out, April 1977* — Johannes Moe, managing director, Foundation of Scientific & Industrial Research, University of Trondheim, Norway. Sea Grant Program & Ocean Engineering Seminar. 3pm, Rm 66-110.

The Mechanical Design of Trees* — Thomas McMahon, applied sciences, Harvard University. Applied Mathematics Colloquium. 4pm, Rm 2-338. Refreshments 3:30pm, Rm 2-349.

The Neutron Bomb* — Harry Hoyt, Los Alamos Scientific Laboratory, NM. CIS Technology & International Security Seminar. 4pm, Rm E53-482.

Role of Nutrition in Economic & Social Systems* — Kenneth Boulding, director, Institute of Behavioral Sciences, University of Colorado. International Nutrition Policy & Planning Program Seminar. 4pm, Rm 66-168.

Wind Mixing in Lakes* — Kathy Hurley, G. Water Resources & Environmental Engineering Seminar. 4pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

Tuesday, November 15

Manifestations of Magnetism in Metallic Glasses* — K.V. Rao, physics, Clarkson College of Technology, NY. National Magnet Laboratory Seminar. 1:30-3pm, Rm NW14-2209. Refreshments 1:15pm.

Boundary Layer Transition* — F.D. DeMetz, David Taylor Naval Ship Research & Development Center, Bethesda, MD. Applied Mechanics Seminar. 3pm, Rm 5-134. Coffee following, Rm 1-114.

CO₂ Laser Heating of Plasma in Long Solenoids — Experiment & Theory* — Z.A. Pietrzyk, University of Washington, Seattle. Special Plasma Fusion Seminar. 3:30pm, Rm NW14-2209. Refreshments 3:15pm.

The Analysis of Censored Time Series* — Peter Robinson, statistics, Harvard University. Seminar on Statistics. 4pm, Rm 2-338. Coffee 3:30pm, Rm 2-349.

Excited State Chemistry: Examples & Applications* — Paul L. Houston, chemistry, Cornell University. Seminar in Physical Chemistry. 4pm, Rm 4-370. Coffee 3:45pm, Rm 6-321.

Planning Tools for Urban Water Resources* — Uri Shamir, civil

engineering, Technion Israel. Water Resources & Environmental Engineering Seminar. 4pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

Plethysmographic Experiments on Human Legs Exposed to External Pressure* — Bob Thirsk, G. Fluid Mechanics Seminar. 4pm, Rm 5-234.

Problems in Small-Scale Modeling of Flows in Nuclear Power Plant Containment Systems* — Bill Anderson, G, Dario Boriani, '78. Fluid Mechanics Seminar. 4pm, Rm 5-234.

World-Wide Distribution of Energy Resources* — Said Khandani, mechanical engineering. Nuclear Engineering Seminar. 4-6pm, Rm 24-121.

Wednesday, November 16

Impressions of Three Weeks in the Peoples Republic of China* — Walter Rosenblith, Provost. CIS Seminar. 12n-2pm, Rm E53-471. Bring lunch.

Using Helium Isotopes & Tritium as Oceanographic Tracers* — William J. Jenkins, chemistry, W.H.O.I. Oceanography Sack Lunch Seminar. 12n, Rm 54-915. Bring lunch, coffee served.

How the HP-35 Came to Be* — Bernard M. Oliver, Vice President of Research & Development, Hewlett-Packard Co, Palo Alto, CA. Seminar on Recent Innovations in Electrical Engineering. 3-5pm, Rm 16-134.

A Drift-Flux Model for Subchannel Analysis* — A.I.G. Faya, G. Nuclear Engineering Seminar. 4pm, Rm NW12-222.

Nd Isotopes & Mantle Evolution* — Keith O'Nions, Lamont Doherty Geological Observatory. Earth & Planetary Sciences Colloquium. 4pm, Rm 54-915.

The Rational Introduction to Classical Thermodynamics* — Eric Lype, mechanical engineering, Stevens Institute of Technology. 4pm, Rm 1-114. Coffee 3:45pm.

There is No Such Thing as a Perfect Glass* — Marc Kastner, physics. Undergraduate Physics Colloquium. 4:15pm, Rm 4-339.

Work In Progress* — Christopher James, photographer. Creative Photography Lab Lecture. 4:30pm, Rm W31-310. Coffee served.

Thursday, November 17

Tunneling Studies in A-15 Superconductors* — M.R. Beasley, applied physics & electrical engineering, Stanford, CA. National Magnet Laboratory Seminar. 2pm, Rm NW14-2209. Refreshments 1:45.

Picosecond Electronics & Picosecond Spectroscopy in Semiconductors*
— David Auston, Bell Telephone Laboratories, Murray Hill, NJ. EECS Optics Seminar. 3pm, Rm 36-428.

Developments in Commercial Satellite Communications* — Dr. Harrington, Communications Satellite Corp., Washington, DC. Systems, Communication & Control. 4pm, Rm 39-500.

Energy, Food & the Future* — David Pimentel, entomology, Cornell University. International Nutrition Policy & Planning Program Seminar. 4pm, Rm 16-134.

Hydrodynamics of Ships Near Banks & Beaches* — **E.O. Tuck,** applied mathematics, University of Adelaide, Australia, visiting professor, ocean engineering. Water Resources & Environmental Engineering Seminar. 4pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

Issues in the Construction of Urban Transportation Facilities* — Russell K. McFarland, U.S. Dept of Transportation, Office of the Secretary. James A. Henderson Memorial Lecture. 4pm, Rm 9-150.

Miltary Technology & Cultural Change: The New England Indians in the 17th Century* — Patrick Malone, director, Slater Mills Historic Site, Pawtucket, RI. Seminar on Perspectives on the Social History of Technology. 4pm, Rm 20D-205. Coffee 3:30pm.

Philosophical Foundations of System Dynamics* — James A. Bell, philosophy, University of South Florida. System Dynamics Seminar. 4pm, Rm E52-461

Polyaromatic Hydrocarbons in Earth, Air, Fire, & Water* — Ronald Hites, chemical engineering. Analytical Chemistry Seminar. 4pm, Rm 8-205.

New Work With Clusters, Cells & Tissue* — John G. King, physics. Physics Colloquium. 4:15pm, 26-100. Tea, 3:45pm, Rm 26-110.



SARAH CALDWELL, artistic director of the Opera Company of Boston and a member of the Council for the Arts at MIT, talks with Council members (left to right) Leo L. Beranek, president of television station WCVB, and Roy Lamson, MIT special assistant to the president for the arts, before participating in a panel discussion, "Connections: Integrating the Arts and Sciences in Contemporary Education," held November 2 during the Council's annual meeting.

-Photo by Calvin Campbell

Friday, November 18

Proline-Rich Salivary Proteins* — Frank G. Oppenheim, oral biochemistry, School of Graduate Dentistry, Boston University. Special Topics in Oral Science Seminar. 8:30am, Rm E18-601.

Almost All That We Know About Rare-Gas Fluoride Exciplex Lasers'
— Mordechai Rokni, AVCO Everett Research Laboratory. Spectroscopy
Laboratory Special Seminar. 11am, Rm 66-360. Coffee 10:30am.

Studies of the Regulation of Platelet Phospholipases* — Dr. Daniel Deykin. SCOR Luncheon. 12:30-2pm, E17-421. Bring your own lunch.

Transportation Policy In Massachusetts* — Carla Karash, Assistant Secretary of Transportation, State of Massachusetts. Center for Transportation Studies Luncheon/Seminar. 12:45pm, Stu Ctr West Lge, Free. Buffet lunch, 12n, \$1.

Tracer Technology — The Second Problem of Fluid Mechanics* — Octave Levenspiel, chemical engineering, Oregon State University. Chemical Engineering Seminar. 2pm, Rm 66-110.

The Role of Microvascular Permeability in Cancer Chemotherapy* — Joseph F. Gross, chairman, chemical engineering, University of Arizona at Tucson. Mechanical Engineering Seminar. 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

Scientific Sexism: From Freud to Sociobiology* — Freda Salzman, University of Massachusetts, Boston. Black Rose/Black Circles Lecture. 8pm, Rm 9-150.

Visual Connections/Sequential Thinking* — Barbara Crane. Creative Photography Lab Lecture. 8pm, Rm W31-310.

Community Meetings

Wives' Group** — Group leaders: Charlotte Schwartz, sociologist & Myra Rodrigues, social worker, both from Medical Dept; Carol Hulsizer, faculty spouse in residence, Ashdown Hse. Wed, 3-5pm, Stu Ctr West Lng. Babysitting, Stu Ctr Rm 473. Karen, x3-2916. Wed Nov 9: Barbara Wimpey will present a slide Show on South Africa.

Undergraduate Economics Association Sherry Hour** — Wed, Nov 9, 4:40-5:40pm, Rm E52-391. Economics majors & undesignated freshmen & sophomores welcome.

T.W.O. International Cooking** — Wendy Glasser, Boston, will prepare Chicken Paprika. Wed, Nov 9, 8pm, Rm 10-340. Admission: 50¢ members, 75¢ non-members. Will sample dish. Info: Patty Dobson, 646-4080, Taslim Sabur, 494-0296.

Course VI Steak Fry* — Thurs, Nov 10, 6pm, Bldg 13 Lobby. Tickets: \$3.75 in advance, \$4 at door. Avail Rm 38-476.

T.W.O. Weekly Exercise Class** — An hour of exercise led by Marilyn deKleer. Newcomers welcome. Every Thurs evg, 8-9pm, Exercise Rm, 2nd fl, DuPont Gym. Donation: 50c. Info: Linda Morecroft, 494-8434.

Women Faculty Luncheon** — Tues, Nov 15, 12n-2pm, Rm 1-236. Agenda incl discussion on Faculty Development. By invitation, Free.

Community Meeting With Campus Patrol** — Sponsored by The Wives' Group & the International Student Association, discussion on how to protect oneself & one's property. Refreshments. Tues, Nov 15, 5-6:30pm, Stu Ctr West Lge. Info: Karen Devine, x3-2916.

Faculty Club Special Dinner*** — Mexican Buffet. \$6.75 incl tax. Tues. Nov 15, Happy Hour 4:30-6:30pm; Dinner served 5:30-8pm. Reservations: x3-4896.

The "Tech" Lodge** — Wed, Nov 16, Masonic Temple, 1950 Mass Ave. Regular communication of Richard C. Maclaurin Lodge AF & AM. Harvest Dinner, 6:30pm, \$5. Dinner reservations, x8-3467 Draper. Annual meeting, 8pm. Master Masons welcome.

Creative Photography Lab Weekend Workshop* — Conducted by Barbara Crane, examples & discussion of the philosophy behind creative use of large scale photography for contemporary architecture. Sat, Nov 19, 10am-5pm, Sun, Nov 20, 10am-9pm, W31-310. \$15/MIT Students, \$25/non students. Limited to 15.

Social Events

Live Music at the Muddy Charles* — The Beryl Street Band will play, sponsored by the GSC. Thurs Nov 10, 8pm-12m, Muddy Charles Pub, 1st flr Walker Memorial, River side. Free. Beer 35¢, wine 40¢.

15 Lansdowne Disco** — MIT Night sponsored by the Undergraduate Association. Thurs, after 10pm, 15 Lansdowne St., Boston, near Fenway Stadium. Admission free with MIT ID.

Mezz Coffeehouse** — SCC. Fri, Nov 11, 9pm-12m, Stu Ctr, Mezzanine Lge. Free. Free refreshments.

Strat's Rat* — Sponsored by the SCC. Dancing & Drinking, Live DJ, Beer & wine 35¢/glass. Fri, Nov 18, 8:30pm-1am, Sala. Free. College ID required.

Movies

Doctor Zhivago** — Humanities Dept Film. Wed, Nov 9, 3pm, Rm 14N-0615. Free.

Manhattan Melodrama** — Humanities Dept Film. Thurs Nov 10, 9pm. Rm 4-270. Free.

Silver Streak** — LSC Movie. Fri Nov 11, 7 & 9:30pm, Rm 26-100. Admission 75¢ w/MIT or Wellesley ID.

The Soft Skin (Truffaut)* — MIT Film Society. Fri, Nov 11, 7:30 & 9:45pm, Rm 6-120. Donation \$1.25.

Willie Wonka & the Chocolate Factory** — SCC Movie. Fri, Nov 11, 12m, Sala. Free. Free popcorn.

Taxi Driver** — LSC Movie. Sat Nov 12, 7 & 9:30pm, Rm 26-100. Admission 75¢ w/MIT or Wellesley ID.

The Promised Land (Chile)** — International Students' Association Film Festival. Sun, Nov 13, 2pm, Rm 9-150. Free.

The Ruling Class** — LSC Movie. Sun, Nov 13, 6:30 & 9:30pm, Rm 26-100. Admission 75¢ w/MIT or Wellesley ID.

Olympia, Parts I & II** — The Film Experience: Humanities Dept Film Mon, Nov 14, 7pm, Rm 14N-0615. Free.

Therese** — The Film Experience: Humanities Dept Film. Tues, Nov 15, 7pm, Rm 66-110. Free.

The Film Experience** — Humanities Dept Films. Thurs, Nov 17, Rm 4-

Network** — LSC Movie. Fri, Nov 18, 7 & 10pm, Kresge. Admission 75¢ w/MIT or Wellesley ID.

270. 7pm, The Killing; 9pm, The Roaring Twenties. Free.

lence (Bergman)* — MIT Film Society. Fri, Nov 18, 7:30 & 9:30pm, 20. Donation \$1.25.

LSC Movie. Sat, Nov 19, 7 & 9:30pm, Rm 26-100. Admission 75¢

2pm, Rm 9-150. Free.

International Students' Association Film Festival. Sun,

my Thing Happened on the Way to the Forum** - LSC Movie ov 20, 6:30 & 9pm, Rm 26-100. Admission 75¢ w/MIT or Wellesley ID.

usic

Library Concert* — Brady Millican, pianist. Wed Nov 9, 5:15pm. will include works by Beethoven, Villa-Lobos, Debussy, and Mac-

day Noon Hour Concert* - Catherine & Robert Strizich will present ram of Baroque guitar & lute duets. Thurs, Nov 10, 12n, Chapel. Free.

Artist Series: American Brass Quintet* - Sun, Nov 13, 8pm, Program will include works by Gabrieli, Lawes, Coperario, Carter, bel, Bach & Dahl. Free.

Hour Concert* - Harpsichord Recital by Aline Parker. Thurs, Nov n, Chapel.

Brass Ensemble* - Robert Pettipaw, conductor. Works by baldi, Gabrieli, Byrd and others. Sat, Nov 19, 8pm, Kresge. Free.

heater and Shows

- MIT Musical Theatre Guild Play. Nov. 4, 5, 10, 11, 12, 8pm, Nov. 6, 4pm. Admission \$3.75, w/MIT ID \$2.50; Sun & Thurs \$3, w/-ID \$2. Info, x3-6294.

ening of One-Act Plays* - MIT Dramashop. Fri & Sat, Nov 18 & n, Kresge Little Theatre. Free.

Dance

MIT Dance Workshop* - Classes taught by Beth Soll. Modern Technique, Wed, 6-7:30pm, W31-125; Independent Student Work, Wed, W31-125. Modern Technique, Mon, 5:15-6:45pm, McCormick Dance Studio; Improvisation/Composition, Mon, 7-8:30pm, McCormick Dance Studio.

More Tango Workshop* - MIT-Wellesley Ballroom Dance Club. Will review basic steps & go on to more advanced. Sun, Nov 13, 2:15-4pm, Sala. Donation 50¢.

MIT Folk Dance Club - International: Sun, 7:30-11pm, Sala. Balkan: Tues, 7:30-11pm, Stu Ctr Rm 491. Informal: Fri, 12n-2pm, Kresge Oval (Bldg 7 Lobby in bad weather). Israeli: Wed, 7:30-11pm, Sala.

Exhibitions

Exhibition & Sale of Original Oriental Prints** — Sponsored by the MIT Student Art Association. Pieces from Japan, China, Tibet, Nepal, Thailand, & India will be shown, and a representative will answer questions. Nov 7 thru 9, Mon & Wed, 10am-5pm, Tues, 10am-7pm, West Lge, Stu Ctr. Info: x3-7019, 1-5pm.

Photographic Exhibit by MIT Student Art Association* - Instructor Linda Wasko, Thru Wed Nov 30, Lobby 7 Corridor,

Esther Felix: Paintings* - Faculty Club Exhibit. Thru Nov 30, 9am

Eye of the West: Camera Vision & Cultural Consensus* - An exhibition of contemporary photography focusing on the idea of the representation of reality utilizing the photographic medium, organized by Peter Schlessinger, director, Apeiron Workshops, Inc, & Starr Ockenga, director, MIT Creative Photography Lab. Thru Wed, Nov 30, Mon-Sat, 10am-4pm, Hayden Gal-

Women See Men* - On exhibit Tues, Nov 15 thru Fri, Dec 16, Mon-Sat, 10am-6pm, Sun 12n-8pm, Creative Photography Gallery. Public Opening,

Unfinished Works* - Music Library, Rm 14E-109. Examples of unfinished musical compositions from Bach to Bartok.

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

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

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

Graphics by MIT Design Services* - On exhibit in Bldg 7 corridor.

Athletics

Maggie's Self-Design Fitness Class** — An athletic class that can fit into anyone's schedule: choose 12 hrs for 2 credits. 12n-1pm, 1-2pm, 5-6pm, Mon-Fri, duPont Wrestling Room.

MIT Grad Soccer* - Mass Industrial League. Uniform: Dark blue shirt w/-MIT seal on left breast, white trunks & socks. Show up dressed to play 1/2 hr before home game time. All games Sat, 2pm, Briggs Field. Nov 12: Canary

Home Schedule* — Thurs, Nov 10 — Field Hockey, Endicott, 3pm, Briggs

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

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

***Open to members only

Send notices for Nov 16 through Dec 4 to the Calendar Editor, Room 5-111, Ext. 3-3270, before noon Thursday, Nov 10.

Because of the Veterans' Day holiday, the deadline for listings in the Institute Calendar, Institute Notices and Classified Ads will be noon Thursday, Nov. 10.

Photo Gallery to Present 'Women See Men' Show

"Women See Men," a series of more than 90 photographs of men taken by women photographers, will be on exhibit from Nov 15 through Dec 16 in the Creative Photography

A public opening for the exhibition will be held from 5 to 7pm on Tuesday, Nov 15.

The exhibition represents the work of 70 women photographers, including several by Starr Ockenga, assistant professor of photography and director of the Creative Photography Laboratory at MIT.

Chosen for their excellence and effectiveness rather than as a feminist manifesto, the photographs confirm that women see men in diverse ways-often in ways that men do not see themselves. They reveal men in unguarded moments expressing a variety of emotionsmelancholy, sensuality, vulnerability, aggression. Among the many portraits on exhibit are those of such figures in the arts as Merce Cunningham, Fritz Lang, Norman Mailer, Isaac Bashevis Singer and Saul Steinberg. Equally important are the studies of young children and old, forgotten men.

The photographs reveal men in the

unaccustomed role of being beheld and conscious of the woman's eye. They also reveal women in the act of seeing-their fantasies, hopes, disillusionment, searching and compas-

"Women See Men" is derived from the book of the same title recently published by McGraw-Hill Book Company. Edited by Yvonne Kalmus, Rikki Ripp and Cheryl Wiesenfeld, the book has an introduction and text by Ingrid Bengis.

According to the editors, "Women See Men uses photography as a vehicle to interpret and redefine relationships. Taken on the simplest level, this collection presents a telling graphic statement about the place of men in society. More importantly, the photographs illuminate many of the questions, mythr and misapprehensions that stil plague the delicate exchange be tween women and men."

The Creative Photography Gallery, on the third floor of du Pont Gymnasium, is open to the public free of charge from 9am to 10pm on weekdays; from 10am to 6pm on Saturdays, and from noon to 8pm on Sundays.

THE AMERICAN BRASS QUINTET will give a free concert at 8pm on Sunday, Nov. 13, in Kresge Auditorium. Quintet members are (left to right) Louis Ranger, trumpet; Raymond Mase, trumpet; David Wakefield, French horn; Ronald Borror, tenor trombone, and Robert Biddlecome, bass trombone.

American Brass Quintet to Perform Here

Guest Lecture, Workshop Planned at Photo Gallery

Barbara B. Crane, associate professor of photography at the School of the Art Institute of Chicago, will give a lecture and weekend workshop at the Creative Photography Laboratory.

The lecture, "Visual Connections/ quential Thinking," will be held at 8pm on Friday, Nov. 18, and be open to the public without charge. The workshop, from 10am to 5pm on Saturday and Sunday, Nov. 19 and 20, will be limited to 15. Applications—accompanied by a \$15 lab fee for MIT students, \$25 for nonstudents-must be submitted to MIT Rm W31-310 by Tuesday, Nov. 15. Workshop participants will discuss and see examples of creative use of large-scale photography for con-temporary architecture. The workshop will also explore combining images, random and modular imagery, repeat and serial pictures in order to produce a cohesive, singular visual statement.

Ms. Crane's photographic work in progress explores visual experimentation and social documentation. Among her recent projects are "City Compressions," prints showing the layering of city buildings, and "Unexpected and Random Relationships" made possible by a 1974-75 grant from the National Endowment for the Arts.

She received the BA degree from

New York University in 1950 and the MS degree from the Institute of Design at the Illinois Institute of Technology in 1966. She has taught at the School of the Art Institute of Chicago since 1967 and served as artist in residence at the Oxbow Summer Art School in Michigan in 1976 and as visiting professor of photography at the Philadelphia College of Art in 1977.

Ms. Crane has exhibited her work at many one-women and group exhibitions, including "Be-ing Without Clothes" at MIT's Hayden Gallery in 1970. Her photographs are included in the permanent collections of the Art Institute of Chicago, the Pasadena Art Museum, and the International Museum at George Eastman House in Rochester, NY, among others.

Mooradian, Kelley **Elected OSA Fellows**

Dr. Aram Mooradian and Dr. Paul L. Kelley, leader and associate leader, respectively, of the Quantum Electronics Group (Group 82) at Lincoln Laboratory have been elected fellows of the Optical Society of America.

Election as Fellows is conferred upon scientists who have served with distinction in the advancement of optics.

The American Brass Quintet, five brass virtuosi acclaimed for the quality of their ensemble playing, will give a concert at 8pm on Sunday, Nov. 13, in Kresge Auditorium at Sponsored by the MIT Music Section, the concert will be open to

The Quintet, whose repertoire spans five centuries, will open the concert and Three Canzoni by Gabrieli and the Triumph of Peace and Divers Masque Music-music from five different masques-by Lawes, an anonymous composer and Coperario. The program will also include Quintet for Brass, written for the American Brass Quintet by Elliott Carter in 1974. The Quintet gave the world, US and New York premieres of this work, always with great praise from the press, and has recorded it for Columbia Records. Following intermission the Quintet will play Trio for Brass (1962) by Nelhybel, Contrapuncti III and VII from the Art of the Fugue by J.S. Bach and Music for Brass Instru-

the public free of charge.

The style, elegance and flexibility of the American Brass Quintet have inspired many composers to write works especially for them. The repertoire for brass players has also grown as the Quintet has searched for unknown works from the past, editing them for publication.

ments (1944) by Ingolf Dahl.

The Quintet has performed throughout the United States at many universities and chamber music societies and has toured in Europe, Asia and South America where they have peformed at such distinguished Festivals as those of Shiraz in Iran, Edinburgh in Scotland and Spoleto in Italy. They have been in residence at the Aspen Music Festival since 1970 and have recorded for Columbia, Nonesuch, CRI and SERENUS, among others.

Formed in New York City in 1958, the American Brass Quintet made its debut in 1960. Its members are Raymond Mase, trumpet; Louis Ranger, trumpet; Ronald Borror, tenor trombone; Robert Biddlecome, bass trombone; and David Wakefield, French horn.

Mr. Mase received the bachelor of music degree from the New England Conservatory of Music and was the 1972 recipient of the Albert Spalding award given to the "most promising instrumentalist in the program" at Tanglewood. He has played with the Boston Symphony Orchestra, the Opera Company of Boston, and has been soloist with the Boston Pops under the direction of Arthur

Mr. Ranger, who received the pachelor of music degree at the Juilliard School of Music, is a member of the New York Philharmonic, the American Symphony Orchestra and the Musica Aeterna Orchestra in New York City. He has performed with many symphonic and chamber music organizations, including the Boston Symphony Orchestra, the Chamber Music Society of Lincoln Center and the Joffrey Ballet.

A doctoral candidate at Yale University, Mr. Borror currently performs with the New York City Ballet Orchestra, New York Cornet and Sacbut Ensemble and New York Renaissance Band. He has performed with many musical organizations, including the Waverly Consort, New York City Opera and the orchestras of various Broadway shows

Mr. Biddlecome is bass trombonist of the New York City Ballet Orchestra, the American Symphony Orchestra, and a member of the Group for Contemporary Music. A graduate of the Juilliard School of Music where he received the bachelor's and master's degrees, he has performed with almost every major musical organization in New ork City. He is an assistant to the dean of Aspen Music School and on the faculty of Brooklyn College.

Mr. Wakefield has performed with such groups as the Arioso Woodwind Quintet, Music Aeterna Orchestra, Israel Chamber Orchestra and New York Philharmonic. He is currently a doctoral candidate at the Juilliard School of Music where he received the bachelor's and master's degrees.

Epstein Wins ASCAP Award

Dr. David M. Epstein, conductor of the MIT Symphony Orchestra and professor of music in the Department of Humanities, has received a 1977-78 award from the American Society of Composers, Authors and Publishers in recognition of his professional stature as a composer.

Given to assist and encourage writers of serious music, ASCAP Awards are based on the unique prestige value of each writer's catalog and the performances of his compositions.

Professor Epstein is completing the orchestration on a cello concerto commissioned by the New York State Council for the Arts.

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CLASSIFIED

Ads are limited to one per person per issue may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Only Institute extensions may be listed. extension. Only institute extensions may be listed. Members of the community who have no extensions may submit ads by coming in person to the *Tech Talk* office, Room 5-111, and presenting Institute Identification. Ads may be telephoned to Ext. 3-3270 or mailed to Room 5-111. Please submit all ads before noon, Thursday, Nov 10. They will be printed on a first come first serve basis as space permits.

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For Sale, Etc.

Tbl, 2 lvs, 6 chrs, \$45; K cbnt, \$5; DR chst, nds paint, \$20. Call 864-6570.

Hndmd, wshbl Holly Hobby dolls, \$15. J. May, x8-2843 Draper.

Wdn dsk, 4x2, w/drwrs exc for studying, \$15. Rajan, 492-8943, evgs.

Dsslvng prsnl cllctn orntl geomtrcl tribl rugs & kilims, Iranian, mstly scttr sz. Appntmnt, 489-

'71 Yankee Dolphin Sprkmn & Stphns Dsgn 24' otbrd fbrgls sloop, slps 4, 6hp Evrd otbrd, spr ocnd, \$8,500 or best. Call 235-5030.

Raleigh Intrnl, 22 1/2", mint cond, all Campy xcpt Dura Ace sd pulls, Cinelli hdb & stm, spr tubulr in-cl, \$375. Call 527-3255, aft 6.

Chroma 80/16C Memorex 2x1200 video tp, 3 rls, \$45/ea or best. x8-4785 Draper.

F 10 sp bike, touring hndlbrs, carrier, exc cond, \$75. Marcia, x3-4444. Studded snows, E78-14, gd cond, on rims w/hbcps,

Pr snows, bias bltd, H78 15, blk wl, mtd & blncd, 3K, rim fts GM cars, \$60. Dave, x7689 Linc.

Astrophyscl Jrnl, perf cond, 6/1/68-1/1/74, \$50 or best. Prof Lewin, x3-4282.

ADS 500 spkrs, perf cond, 2 mo, \$200; Scott S-10B spkrs, \$130; 8 trk oc \$55. Mike, x3-6717. \$130; 8 trk dck, nw, \$25; PE trntbl by Dual,

K tbl, \$7; Brass fnshd frpl scrn & andirons, \$32.

F 3 sp bike, exc cond, incl lt, gnratr, sddle bg, best. Laura or Kurt, 547-2067, evgs.

F fig skts, sz 1 & 2, 5/pr. Mary Ann, x8-1811 Drap-

Goalie pads, Cooper GP34,23" lng, exc cond, \$20; Goalie hlmt, \$10. Bill x8-3546 Draper.

Sony stereo r-to-r tpe rcrdr mdl TC630. J. Anthony, x8-2885 Draper.

'72 trvl trlr, 161/2, exc cond. Dave, x3-4489.

AKG D208E mcrophns, 2, perf cond, w/wrrnty crds, orig \$90/ea, ask \$130/pr. Sandy, x3-5717.

Beam, 6x10, 10' long, \$15. Charlie, x7133 Linc.

Gas htr for 6v VW, w/manul, \$25; 1 pc rf rck for VW bug, perf cond, \$25. x3-6685.

Lg solid wd DR tbl & 4 mtchng chrs, \$95. Call 354-6349, evgs.

Stamp clictrs US Commrtv 1st Day Cvr Clictn, late '30s-early '50s, sngls, blks, plt blks. Peter, x5-9390 Dorm.

B&W tv & earphne, \$60; Big lmp, \$15; Dsk w/big

mirror, \$40. Call 494-8147

Rmote cntrl lft hnd strmln mirror; Univrsl shldr & lap st blts; Corvair igntn prts; All nw, best. Gerald.

Br nw truck tire, 12/15 LT, best. Mark, x3-6924, kp tryng.

Sears best auto flr mdl rm humdfier, exc cond, \$35; Smith-Corona prtbl man typwrtr w/case, \$35, exc cond. Ed, x3-5778.

Pr studded bltd snows, B70-13, 10K, \$30/w/o whis, \$50/w/whls, x3-4840.

Dbl bed: bx spr, mttrss, wlnt hd & ft, \$65. x3-4502. Pr f Frye bts, exc cond, 7B, nw \$67, ask \$50. Irene,

Plyr-Rcrdr, 8 trk, mny pre-recrded tps, flk, rock, jazz, rsnbl. Cliff, 232-7831, evgs.

Collier Baby crrge w/mttrss, \$20; 2 wlnt step tbles & coctail tbl, \$20/ea or 3/\$50. 2 mtchng 24" lmps, ceramic bse w/shds, \$15/ea or 2/\$25; Mpl twn bd frm w/hdbrd & ftbrd, \$15. x3-4271.

w studded snows H70-14, exc tread, \$30 3933.

Beaut wht crib, purch at Best & co, w/hrsehr mttrss, lk nw, \$25. Call 862-3509.

Video Equpmnt ½", Sony prtapac AV3400 bttry pwrd cmra/rcrdr systm, \$950; Sony AV3600 rcrdr, \$450; Panasonic plyr, \$250; Panasonic Editor NV3130 for clr w/vrtcl intrvl, \$1,250. Call 484-1654, evgs.

Sml Advent spkr, \$45. Mark, x7856 Linc, or x5730

Immtn antque brss chndlier w/gls tear-shpd prisms, 6 cndl flm bulbs, 18" dia, \$75 nw, ask \$30. x3-4271.

F 3 sp bike, lk nw, \$40. Call 782-0812.

Kenwd KA-3500 amp, 40 w/chnnl, exc cond, 6 mo, 1 yr 3 mo PL grntee, \$125; 2 EPIs 120 spkrs, 10° woofers, 4 mo, exc cond, \$200. Pioneer trntbl PL-12X, \$90. Call 648-9435, aft 5.

Scuba gear: msk, fins, buoyancy life vst. Call 625-

Antique mhgny bureau, 6 drwr, 23x40x53, \$50 or best, x3-5095

Vehicles

'63 VW Bug, reblt eng, gd bdy, best. Carl, 1-356-

'64 Volvo wgn, 22S, wht, supr cond, nw trans, 7 mtd tires, many xtras, rel, \$1,050 firm. Call 648-1569, 7-10.

'65 Chryslr Nwprt, 4 dr, rns wl, nds sm wrk, mny xtras, ask \$200. x7431 Linc, 662-6919 evgs.

'65 VW Squrbk, sm rst, gd running cond, \$300 or best. Call 494-8212.

'66 Ford Falcon, 85K, 31K on reblt eng, mtd snows, rel strtng, \$350. Dick, x3-4494, 862-9855, evgs. '67 Bronco, 4 whl dr, eng exc, tires fair, \$500. x3-

'67 Dodge Van, 130K, 22K mi on eng, 225 cu in, bdy gd, chassis gd, running cond; nds lttl mech wrk & fw sml pts, \$800. x3-4430.

'69 Cougar, V8, pwr st, dsk brks, vy rel, exc int & gd running cond, \$500 or best. x3-5736 or 661-1864. '69 Ford Flcn, gd mech cond, \$550 or best. Marcel,

'70 Dodge Polara, 70K, rns wl, 2 nw tires, nd tune-up, \$600. Call 354-7607, 8-10pm.

'71 Chevy van, cstm, brnze mags, S.B. radials, headrs, dual exh, rf rck, spoilr, insul, crptd, panelled, dbl bd, hi bck swyl recln buckets, 3K reblt eng, many xtras, \$4,500. Gary, x3-7006.

'71 Ford Pinto, std, 79K exc mech cond, nw bttry, cam shft, \$850 or best. x3-6230.

'71 Ford 4 dr sdn, vy gd cond, \$800 or best. Jim, x3-

'72 Capri, 63K, 2600cc, gd mech, nw tires, bttry, tune up, snows, sme bdy wrk, \$1,500. x3-4137.

'72 Chrgr SE, exc cond, no dnts or rust, vy rel, lw K, \$1,400 or best. x3-5736 or 661-1864.

'72 Fiat 128, std, gd cond, 50K, \$1,000. x3-6587 or 536-9644, aft 9.

'72 Yamaha 350, RS-C, exc cond, 12K, mny xtras, \$500. Mark, x5-8314 Dorm, or 494-0318. '73 Dodge Drt sprt, 6 cyl, 44K, auto, pwr st, rear defog, vinyl rf, mtd snows, exc cond, \$1,900 or Best. x3-7239 or 893-3373.

'73 Fiat 128 SL, 37K, gd cond, nds 2 frnt tires, \$1,600. Call 489-0510, evgs.

73 Pinto wgn, 23K, auto, radio, gd cond, \$1,795.

'73 Porsche 914, 2.0 liter, yel/blk, apprace & perf groups, ziebart, exc cond. Tom, x3-2555.

'74 Maverick, 6 cyl, 4 dr, pwr st, auto, radio, nw tires, mfflr, 30K eng, 88K Chassis, exc cond, \$2,050 or best. x8-3698 Draper.

'75 TR7, 4 sp, amfm, blu, exc cond, 23K, \$3,700 or best. x5-8221 Dorm.

'76 Ford Econo 100 wndw van, 7K, exc cond, ask \$3,950. Call 494-0357.

'76 Honda 550FS spr sprt, mint cond, $5\frac{1}{2}$ K, mny xtras. John, x3-4811, 868-5162 evgs.

Housing

Arl, 21/2rm apt, \$195 incl ht & ht wtr, avail 12/1. x3-

Brk, 3BR apt, B, K, lg LR, frpl, prch, nr T & schls, \$390 incl ht & prkg, avail 12/1. Hannah, x3-6405. Camb, nr Kendl Sq, furn, LR, BR, K, B, avail immed, \$185 incl ht. Cary, x8-1419 Draper, aft 12n. Camb, 3BR apt, \$390/mo or \$120, \$120, \$150, lg sttng rm. K. 10 min wlk to MIT, x5-6601 Dorm

Camb, BR apt on Windsor St, avail mid-Dec, use of wshr, dryr, pkg, rent incl util: \$225/unfurn, \$310/furn. x3-7894.

Camb, Fresh Pond, 6 rm apt, Tobin schl dist, \$300.

Camb, Tang Hall, 3 prsn apt, avail immed or 12/1. Arthur, x3-7566 or 494-8378.

Frmghm, studio, ac, dw, disp, ww, \$250 incl util.

Jam Pln, furn rm, ww, quiet, nr T, \$25/wk. Nancy,

W Med, $5\,{}^{1\!/}_{2}$ rms, exc loc ovrlk Mystic Lk, nr T, \$275, avial 12/1. Call 483-8856, 4:30-6.

W Pbdy, 51' fl bsmnt rnch, priv 3/4 acre, 2-3BR, cntrl ac, lg frpl, fam rm, 12x14DR, lg cstm cbnt K, prof lndscpng, mny cstm xtras. Call 535-0590.

Animals

Free, 2 cats, 1 m, 6 mo, 1 f, 2 yrs. x3-6550.

AKC Sibrn Hsky pups, champ breeding, wht & gry, blck & wht, immed sale, \$100. Carl, 1-372-7886. Irish Setter m, 2, 5 mo, AKC & paprs, \$150/ea. Nancy, x3-5254.

Wanted

BR apt nr Harv Sq, approx \$225 incl ht. Joan, 523-7900 x551, 8:30-5.

Pr radial snows for Astre or Vega, BR78-13 or equiv. x5484 Linc

Camb, m grad stu sks apt to shr for pssbly 2 mo, am non-smkr. x3-7268, bef 4.

License plts, othr states, cntries, wl pay \$1+ dep on item & cond. x8-1288 Draper.

Exp manu typist w/gd knwldg of Spanish, to type dctrl dssrtn, fl time, 11/20/77-12/15/77. Wayne, x3-

Ride to Kingston, Ontario, or nrby, Thnksgvng, shr exp. Eddie, x5-9388 Dorm.

Phtgrphy stu sks sml-med sz drkrm to use 5-10 hrs/wk, can schdul unusl hrs, & repay time by doing phtgrphic or tchncl drkrm wrk, hve gd tchncl bckgrnd. x5-6535 Dorm or x5-6536 Dorm, evg, lv

Used wl mnt hot air hand dryrs, 2, in gd cond. x8-3370 Draper

K chnt or cntr lvl tbl. Mark, x3-6030.

Snows, 2, A78-13, A70-13, 175R-13, 175-13 AVI. Call 661-2067.

Ride to Somerset, PA on PA trnpk or Johnstown PA, for Thnksgvng, lv Wed 11/23, ret Sun 11/27, wl shr exp. Jeff N. x5-7396 Dorm.

Crfl dshwshr for delicate china & crystl, pots & pans, Thnksgvng day, 11/24, 1-5pm. X3-1661. Ice skts, cheap, sz 10-11. Mike, 494-8872.

Roommates

Arl, prsn to shr lg lux cmfrtbl 8 rm apt w/f & 2m, nr T, \$107.50. Ron, x3-5593 or 646-2350.

Camb, neat fradly f to shr 2BR apt w/wrkng f, 15 min to MIT, pkg, no pets, sec dep \$130 incl ht. Call 521-1440 aft 7.

Camb, Cntrl Sq, Magzn St, prsn for 2BR apt in 3 fam hse, gd lt, yd, macrobiotic K, essntly veg, \$150. Ann, x8-4288 Draper.

Dor, prsn wntd to shr 3BR hse, \$150 incl util. Call 265-3144, aft 6.

Parking

Note to parking sticker swappers: please remember to inform your supervisor and the Campus Patrol of the exchange you have made so that their records accurately reflect your new parking area.

WI swp Albany or West for East. x3-4156.

West for East or Albany. x3-3179.

Carpools

Nd ride frm Whitmn to MIT, 8-4. x3-2153.

To join or start, frm Jamaica Pnd area to MIT. Steve, x3-4020.

Nd ride to & frm Som, wl shr gas & expnses Andrea, x3-4971.

Wld lk to join frm Brighton Cntr to MIT 9-5. x3-

Miscellaneous

Guitrsts, sngrs, muscns, loan talnt for beneft of ptnts at Clinicl Rsrch Cntr, nd all knds muscl entrtnmnt, esp folk music & music for chldrn & teens, Vlnteer approx 2 hrs. Jane, x3-3595 9-12, or x3-6331, 1-5.

Typing to yr specs, equtns. Sheila, x3-5705. F sks f to shr trvl arrngmnts on MIT spnsrd trip to Majorca, Sp, Feb 19-26. x3-1550.

Retired? 55 or over & thnkng about it? Join MIT-Camb Chptr, Am Assoc of Retired Persons. Info: Membrshp Chrprsn, Jim Maclary, x3-2745.

Typing, thesis, manu, paprs, accur & efficnt, IBM Correctng Selec. Lisa, x3-7106.

Oldr prsn who has studied Spnsh at Brltz sks native Spnsh spkng prsn w/whm to convrse in Spnsh 1/wk thru Nov. Mr. Cox, 536-0460, days;

Typing, IBM Corrctng Selec. Linda, x3-7023.



This list includes all non-academic jobs currently Ints. includes all non-cademic Joos currents available on the MIT campus. Duplicate lists are posted on the Women's Kiosk in Building 7, outside the offices of the Special Assistant for Women and Work (10-215) and Minority Affairs (10-211), and in the Personnel Office, (E19-239).

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

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

Information on openings at Lincoln Laboratory (Lexington, Ma.) is available in the Personnel Office. Employees at the Institute should continue to con-

tact their Personnel Officers to apply for positions for which they feel they qualify. Dick Higham

3-1594

3-4267

Carolyn Scheer 3-1595 (Secretary - Ann Perkins) Virginia Bishop 3-1591

Pat Williams

Ken Hewitt

(Secretary — Paulette Chiles) Sally Hansen 3-4275 Lewis Redding Richard Cerrato

(Secretary — Jenni Leibman)

Applications Programmer in Administrative Computing Services to translate external program specifications into new or modified computer programs; prepare program logic diagrams and data flow; program, test and debug computer programs; document new programs or changes in existing programs; assist users with programming problems and answer questions; attend classes and seminars to develop and maintain know-how in programming. Associate degree and computer programming. Associate degree and computer programming experience necessary. A77-77 (11/9).

Admin. Staff, Senior Applications Analyst in the Office of Facilities Management Systems with a small group involved in developing a new, computerized space inventory system including an equipment inventory component. Other office projects include systems support of the INSITE II system for MIT and a consortium of other institutions, and testing the space cost analysis system. Responsibilities will include coordinating and carresponsionities with include coordinating and carrying out in-house programming and system development projects; designing and assisting in testing acceptance and installation procedures; preparing user manuals; training users. A Bachelor's degree or equivalent, in computer science required, plus 3-5 years experience in programming systems analysis and design. Knowledge of PL/1 and FORTRAN and of the IBM OS operating system also necessary. Experience in writing user oriented documentation is an asset. A77-73 (11/9).

Admin. Staff, Personnel Officer, Office of Personnel Services will have responsibility for policy interpretation, advice and assistance for all categories of non-academic employees in the School of Engineering. Will also assist with recruitment, interviewing, placement of applicants for all MIT positions. Bachelor's degree, or equivalent combination of education and experience, proven human relations skill, tact and ability to handle sensitive information required. Experience in personnel or counseling, particularly in the placement scientific/technical personnel, as well as nowledge of human relations helpful. A77-78

Admin. Staff, Director of Patent Marketing, part-time, in the Vice President for Research Office to conduct pre-patent application studies of potential

market in U.S. and abroad; identify and cultivate market in U.S. and abroad, identify and cultivate markets for patents and patent packages; enhance technical and patent relationships between the In-stitute and industry and government; increase pa-tent understanding and consciousness of Institute community; identify need of society or nation, and commercializable needs of industry which might be addressed by Institute research efforts. A Ph.D or equivalent in engineering or applied science; teaching experience in higher education; basic un-derstanding of patent and licensing law; ad-ministrative and direct experience in research and development lab environment required. A77-76 (11/2).

Sponsored Research Staff, Programmer/Data Analyst for the Earth & Planetary Sciences Analyst for the Earth & Planetary Sciences
Department to join a research group located at the
Haystack Observatory, Middleton, MA. Duties
will include programming the HP21 MX computer
and analyzing data obtained in very-long-baseline
interferometry experiments for applications to
astrometric, geodetic, astrophysical and
geophysical experiments. An advanced science or
engineering degree and several years programming engineering degree and several years programming experience required. Experience in radio in-terferometry desirable. R77-201 (11/2).

Sponsored Research Staff, Biophysicist or Medical Physicist, in the National Magnet Laboratory to Physicist, in the National Magnetic fields over human body and biological preparations. Equipment used includes a superconducting detector in a magnetically shielded room. A Ph.D. in experimental physics, biophysics or electrophysiology required. Some "wet biology" experience desirable. R77-93 (5/18).

Exempt, Nurse Practitioner/Physician Assistant in the Medical Department, Off Hour Clinic. Duties include treatment of episodic illness; preventative health care activities; initiating the screening and health care activities; initiating the screening and diagnostic evaluation of patients. Applicants must be Mass. Registered Nurses who have completed an Adult or Nurse Practitioners Program or Physician Assistant Program. A minimum of 2 years nursing experience, preferably in Ambulatory Care and/or Emergency Room also necessary. 4:00 PM -12:00 Pm shift weekdays. Will work every other weekend on rotating shift. E77-59 (11/9).

Exempt, Preventative Maintenance Appraiser in Physical Plant to examine scheduled preventative maintenance tasks on building equipment; determine appropriateness and completeness of planned mine appropriateness and completeness of planned activities; identify, related material requirements; appraise completed work and determine follow up needs. Will also maintain records on equipment status and history. Position requires 3 years experience in mechanical system maintenance. Previous office experience is desirable. E77-55

Exempt, Estimator/Scheduler, in Physical Plant Work Control Center to estimate labor and materials requirements for mechanical maintenance work; establish priorities; plan and schedule jobs for trade shops; maintain statistics and other related information. Position requires at least 3 years experience in building mechanical systems maintenance, as well as knowledge of work measurement and effective cost control techniques. Previous estimating and office experience desirable. E77-56 (11/2).

Exempt, Admin. Asst., part-time, in the Office of the Dean, School of Humanities and Social Science to handle a large volume of student contact on matters of academic policies and procedures; provide information on transfer credits, require-ments etc.; act as liaison with other Institute of-fices. Will also compile statistics; assist in arranging seminars and in other School activities. A Bachelor's degree, good organization and com-munications skills required. Some experience in an academic environment is helpful. 20 hrs./wk. E77-

Exempt, Accountant, in the Sponsored Accounting Exempt, Accountant, in the Sponsored Accounting Section of the Comptroller's Accounting Office to perform internal cost audits of gesearch contracts and grants; coordinate accounting, cash flow and audit functions with Office of Sponsored Programs, other MIT administrative and academic depart. ments; prepare billings and varied fiscal reports as required. A general business education plus 3-5 years accounting experience, or a Bachelor's degree in Accounting, or equivalent education/experience required. E77-32 (7/20).

Editorial Asst. IV in the Chemical Engineering Dept. to assist the project staff in editing, producing and testing of educational materials for graduate engineers including preparation of camera-ready copy. Duties also include assistance recruiting and training authors; perform literature searches; record meetings; write and edit project reports. Good typing, excellent editing, writing and organizational skills required. Educational training in science or engineering or equivalent is desirable. Familiarity with MIT procedures helpful. Occasional overtime required. B77-654 (11/9).

Data Entry Operator III in Administrative Computing Services to operate data entry equipment; punch cards from previously coded data or through application of routine codes; operate verifier. High school training or equivalent required, as well as previous training or experience in operation of data entry equipment. B77-585 (10/19).

Jr. Exhibition Assistant II, part-time, temporary to run errands; keep supplies, gallery and storerooms in order; prepare packages for shipping; assist in exhibition set ups; drymount signs and labels; take inventories. Knowledge of tools and display materials necessary, as well as some technical skills. Willingness to perform a wide variety of tasks and desire to learn museum work is variety of tasks and desire to learn inuseum work is also required. Experience in careful handling of art objects important. Must be able to work variable and irregular days and hours. 20 hrs./wk. Tem-porary thru 12/17, but may be extended. B77-627 (11/2)

Secretary V to the Director, Office of Personnel Services. Responsibility will include typing and editing correspondence as well as drafting and/or preparing responses to routine correspondence and inquiries; formatting and typing varied reports; compiling statistical data and conducting some compining statistical data and conducting some library research. Assist with general office projects as necessary. Position also includes providing secretarial services to a Personnel Assistant: inrelated forms; arrange interviews. In addition to excellent general secretarial and interpersonal skills, applicants should have the ability to interpret policy and express it clearly to others. A willingness to develop sufficient understanding of personnel-related issues to be able to perform as ed research projects is also necessary. B77-625

Science and Technology Dept. to perform diver-sified secretarial duties: compose, type, edit routine correspondence; format and type technical and non-technical reports and proposals; arrange visits and meetings; answer phones; handle petty cash; transcribe machine dictation; file; maintain calendar. Will also assist with general office pro calendar. Will also assist with general office projects as necessary. Good secretarial skills, organizational ability and command of English language required. Several years of experience and shorthand skill desirable, as well as a college degree. 37.5 hrs./wk. B77-652 (11/9). Secretary IV to Administrative Officer in the Chemical Engineering Dept. to perform general secretarial duties: type; transcribe dictation; file; answer telephones; maintain contract and grant

Secretary IV-V in the Harvard/MIT Health

ecords; assist in arrangements for visitors; coor records, assist in arrangements for visitors, cou-dinate departmental secretarial requirements. Organizational ability required, as well as good secretarial skills. Shorthand or speedwriting and use of dictating equipment desirable. B77-655

Secretary IV in Urban Studies and Planning to type correspondence, reports and class material; arrange travel; schedule appointments; xerox; file; occasionally help with departmental typing load. Excellent typing, as well as technical typing ability, and machine transcription skill requir Shorthand and editing knowledge helpful. P. secretarial experience also necessary. B77-(11/9).

Secretary IV in the Division for Study and Research in Education to handle a wide variety of duties: type correspondence, manuscripts, reports, proposals; make travel arrangements; answer telephones; schedule appointments. Machine transcription, shorthand and good typing required. Ability to organize and recognize priorities, as well as ability to interact with visitors, students and other members of the Division also necessary Previous secretarial experience essential; interest in education preferred. Non-smoking office. B77. 632 (11/9).

Secretary IV to the Treasurer of the Corporation will perform varied duties in a busy office: including a large volume of contact with other Institute offices and representatives of outside organizations; take and transcribe shorthand did organizations; take and transcribe snorthand dictation; arrange travel; reconcile office accounts. Position requires good organizational skills and ability to complete detailed projects with accuracy. Excellent secretarial skills including shorthand also necessary. College or secretarial school training and office experience preferred. Position begins in January, 1978. B77-647 (11/9).

Secretary IV to Administrator Officer in the Lat Secretary IV to Administrator Officer in the Lab for Computer Science to perform a wide variety of general secretarial duties: type; answer phones; arrange meetings; schedule appointments; maintain personnel records; edit and type lab reports on the computer. Must be able to recognize priorities and handle several activities in a busy office simultaneously. Excellent telephone and secretarial skills desirable. Previous MIT experience and/or college background are also desirable. Will be required to learn basic computer-text editing techniques. B77-639 (11/9).

Secretary IV to the Head of the Engineering Libraries and library staff to type correspondence; distribute mail; file; purchase and order supplies; maintain purchase orders and invoice files; handle maintain purchase orders and invoice ties; handing petty cash. Will also compile monthly circulation statistics, as well as review, analyze and monitor monthly financial statements. Secretarial and bookkeeping or accounting experience necessary Secretarial school or college training desirable B77-636 (11/9).

Secretary IV to 3 faculty members in the School of Humanities and Social Sciences to type; file; transcribe machine dictation; make travel arrange-ments. General secretarial skills, including excellent typing, required. Reading knowledge of French desirable. B77-598 (11/2). Secretary IV to office staff members in the Institute Information Office (Design Services) t

keep records; typeset camera-ready copy with IBM composer; file; keep office books. Bookkeeping experience, good command of English language and 2-3 years secretarial experience required. B77-628 (11/2). Secretary IV to 3 faculty members in the Management Science Group, Sloan School of Management. Will type correspondence, course material containing technical data; organize material into presentable format; arrange appointments; answer some inquiries independently. Position requires ex-

cellent secretarial skills including typing from handwritten draft or machine dietation. Previous secretarial experience, and ability to work in-dependently also necessary. B77-624 (11/2). Secretary IV. part-time, to a professor in the Architecture Dept. to answer phones; type letters and manuscripts; arrange travel; maintain files arrange review for Ph.D. program applications. Good typing skills and ability to organize required. Foreign languages helpful, especially Italian. 26 hrs./wk. B77-626 (11/2). hrs./wk.

Secretary III-IV in the Physical Plant to type correspondence; file; supply and maintain stock room; handle petty cash; arrange meetings; answer telephones. Duties also include preparation of inputs for Physical Plant computer system, as well as some accounting responsibilities. General office experience required. B77-637 (11/9).

Secretary III-IV to 2 administrators in Office of Sponsored Programs to perform general secretarial, administrative and clerical duties. High school or equivalent training with 3 years secretarial experience or formal secretarial training with 1 year office experience required. B77-633

members as required. Excellent typing and organization skills, ability to work under occasional pressure required. Secretarial experience preferred. Non-smoking office. B77-380 (11/2). Sr. Library Asst. IV in the Catalogue Dept. to par-Sr. Lorary Ass. 17 III the Catalogue rept. to participate in pre-cataloguing searching; distribute current acquisitions; process pre-catalogue returns; file; catalogue serials and periodicals. Accurate typing and capacity for detail required. College graduate with library experience preferred. Foreign language facility desirable. B77-630 (11/9).

Secretary, Receptionist III, in the Admissions Office: answer phones; schedule appointments; perform general secretarial duties for various staff

Sr. Library Asst. IV in the Catalogue Department to catalogue monographs in all languages and subject fields using Library of Congress record on OCLC data base by means of OCLC 100 terminal or from NVC; establish name and series authority or from NVC; establish name and series authority records; recatalogue books from Dewey Decimal to LC classification; maintain various files. College graduation and typing ability required. Attention to detail and ability to interpret complex directions also necessary. Library experience helpful. M-F 9AM-5PM with possible evening or weekend shifts after training. B77-597 Additional position: 9AM-5PM or 12 Noon-8PM based on selected applicants availability. B77-623 (11/2).

Library Asst. III in the Science Library to charge and discharge books, answer inquiries and redirect telephone calls; register library users; write over-due notices and fine slips; type book cards; take statistical counts; check out and renew reserve books; reshelve Science Library materials; oc books, resinerve Science Library materials, oc-casionally relieve bookchecker. High school graduation, or equivalent, good clerical aptitude, accurate typing, attention to detail and ability to work with minimum supervision required. Some college training desirable. Work requires some physical exertion for stocking books. Hours: Mon.-Thurs. 3PM-11PM and Sun. 3PM-11PM. Hours may be slightly changed thru 11/30/77, and schedule will vary in summer months. B77-622

Library Asst. II, part-time, temporary, in the Dewey Library to assist users of Library in obtaining reserved material from a closed stock collection; reshelve books; send overdue notices; bill overdue fines. Previous library experience helpful. Ability to serve Library users in a courteous and cooperative manner, while enforcing strict regulations required. 20 hrs./wk. Sept. - May. During December, may work up to 35 hrs./wk. B77-634 (11/9).

Sr. Clerk V. Account Representative, in Administrative Computing Services to act as liaison between computer operations facility and users of the service to ensure quality and timeliness of production commitments; prepare jobs for process-ing; review completed jobs. Position requires at ing; review completed jobs. Position requires at least 4 years experience in data processing, particularly in scheduling and operation of equipment, training in operation of hardware and in job control languages. Customer service experience also required. 37.5 hrs./wk. B77-648 (11/9).

Clerk IV, full time, part-time, Communication Console Operator in the Physical Plant Ad-ministrative Services section to operate the Facilities Management Systems computer console which monitors various aspects of the physical en-vironment; communicate with control center and with various shops using phones, pages, radio tranceivers; perform various clerical functions as required. May occasionally operate general

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tephone system. High school graduation, or uvalent, English language skill, and ability to act appropriately to emergency conditions re-iried. Comparable experience and familiarity th terminology of HVAC control systems, etric and pneumatic equipment desirable. Part-net: 12 midnight-7:15 AM Sat. & Sun. B77-614.

Clerk III, Medical Receptionist, in the Medical Clerk III. Medical receptions, in the Medical partment will receive patients; coordinate flow patients and medical records; answer phones; vide back-up telephone coverage for secretaries others. Typing skill, ability to deal effectively a patients and department members required. parable public oriented position, 37.5 hrs./wk. 649 (11/9). ants should also have work experience in a

Clerk III in the Comptrollers Accounting Of-Accounts Payable section to route incoming outgoing mail: sort, date stamp; distribute ines; perform related duties, as required. Posi-requires proficiency with figures and ability to requires proficiency with figures and rate adding machine. B77-645 (11/9).

Clerk III in the Comptrollers Accounting Ofe. Accounts Payable section, will audit invoices, st payments, code invoices for payment. Posi-on requires ability to work with figures and officiency with adding machine. B77-646 (11/9).

rk III in the Physical Plant to perform general lerk III in the Physical Plant to perform general fine work: file; post; type; answer phones; relieve letype operator for breaks, lunch hours, etc. Oc-isionally act as telephone operator on console-pe switchboard. Good typing and general office ork experience required. B77-638 (11/9).

erk III in the Physical Plant Administrative Ser-ces Dept. to process time cards; stock slips; assist preparation of purchase orders; process invoices; ide back-up to other clerical personnel as re red. Typing skill required. Also necessary is of-clerical experience. B77-617 (11/2).

urly, Asst. Animal Tech., in the Division of ourly, Asst. Animal Tech., in the Division of aboratory Animal Medicine to perform various ties related to care of animals: feed, water; clean ges and utensils. Will also perform housekeeping nction in animal areas as necessary. Position re-pires high school graduation, or equivalent and lowledge of animals. Applicants must be willing participate in formal training programs and minars. H77-184 (11/9).

esign Drafter (Mechanical/Electromechanical) in le Laboratory for Nuclear Science to design or as-st in design of experimental apparatus and equipunder direction or supervision of research engineering personnel; perform rudimentary s and fluid flow calculations. Position requires ress and fund now calculations. Position requires follo years of experience plus graduation from a 2 ars day technical school, or its equivalent. nowledge of materials, mechanisms, fits and erances, and manufacturing practices are also essary. Experience in an R & D environment ferred. H77-185 (11/2).

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

DMINISTRATIVE STAFF:

Systems Programmer, Info. Processing

John
John</l 77-52, Applications Prog., Admin. Comp. Serv.

2-54, Benefits Officer, Off. of Pers. Rel. (9/7) 2-56, Systems Prog., Info. Proc. Serv. (9/7) 2-57, Director, Tutored Video Instr., Ctr. for aced Eng. (9/7)

A77-58, Systems Analyst, Off. of Bus. Syst. Dev.

721) A77-60, Acquistions Editor, MIT Press (9/21) A77-61, Acquistions Editor, MIT Press (9/21) A77-62, Admin. Staff, Industrial Liaison Off.

72, Staff Accountant, Div. of Hlth. Sci. &

WEEKLY:

IWEEKLY:
B77-324, Sec. IV, National Magnet Lab. (8/10)
B77-385, Sec. III-IV, Chem. Eng. (8/31)
B77-385, Sec. III, Alum. Assn. (10/26)
B77-399, Sec. IV, Energy Lab. (10/26)
B77-450, Sec. IV, Mat. Sci. & Eng. (9/7)
B77-451, Sec. IV, Industrial Liaison Off. (10/19)
B77-473, Sec. IV, Res. Lab. of Elec. (9/14)
B77-517, Sec. III-IV, Mech. Eng. (10/5)
B77-518, Sec. III-IV, Mech. Eng. (10/5)
B77-518, Sec. III-IV, Elec. Eng. & Comp. Sci.

B77-527, Sec. III-IV, Elec. Eng. & Comp. Sci.

B77-531, Sec. IV, Biology (10/5) B77-537, Sec. III-IV, Chem. Eng. (10/5) B77-544, Sec. IV, Economics (10/5) B77-554, Sec. III-IV, Elec. Eng. & Comp. Sci.

10/5)
B77-570, Sec. III, Ocean Eng. (10/26)
B77-572, Sec. III, Energy Lab. (10/26)
B77-575, Sr. Clk. III, Registrar's Off. (10/26)
B77-576, Sr. Sec. V, Energy Lab. (10/26)
B77-579, Sec. IV, Biology (10/26)
B77-581, Admin. Asst. V, MIT-Wellesley

B77-581, Admin. Asst. V, MIT-Wellesley pward Bound Prog. (10/26) B77-583, Sr. Clk. IV, Ctr. for Advance Eng.

585, Data Entry Oper. III, Admin. Comp. rv.)10/26) B77-587, Sec. IV, Treasurer's Off. (10/26)

B77-587, Sec. IV, Freasurer's Off. (10/26) B77-589, Sec. IV, Sea Grant (10/26) B77-590, Sec. IV, Hlth. Sci. & Tech. (10/26) B77-591, Sec. IV, Clinical Res. Ctr. (10/26) B77-594, Sec. IV, Ctr. for Mat. Res. (11/2) B77-595, Sec. IV, Lab. for Nuclear Sci. (11/2) B77-596, Sec. IV, Div. of Lab. Animal Medicine

B77-599, Sec. III, Urban Studies & Planning B77-600, Acctg. Clk./Typist III, National

lagnet Lab. (11/2) B77-603, Sec. IV, Earth & Planetary Sci. (11/2) B77-606, Sec. IV, Dean for Student Affairs (11/2) B77-607, Sr. Lib. Asst. IV, Humanities (11/2) B77-610, Sec. IV, Ling. & Philosophy (11/2) B77-611, Sec. IV, Elec. Systems Lab. (11/2)

CADEMIC STAFF: C77-18, Asst. Radiation Protection Off. Medical ept. (5/4) C77-23, Mngr. of Financial Serv., Medical Dept.

(725)
 (77-29, Tech. Asst., Biology (7/20)
 (77-34, Nursing Super., Medical Dept. (8/10)
 (77-36, Social Worker, Medical Dept. (10/5)
 (77-41, Tech. Asst., Nut. & Food Sci. (10/19)
 (77-43, Processing Librarian, Barker Eng. Lib.

C77-44, Tech. Asst., Biology (11/2)

PONS. RES. STAFF: D76-17, Biochemist, Res. Lab. of Elec. (2/25) R77-17, Systems Theory Res., Elec. Syst. Lab.

R77-37, High Energy Physics Res., Bates Linear

ccelerator (3/9) R77-51, Sr. Res. Eng., Energy Lab. (3/23) R77-53, postdoc. res., Physics, Res. Lab. of Elec. R77-73, Plasma Physicist, National Magnet

ab. (4/27) R77-74, Plasma Physicist, National Magnet ab. (4/27)

R77-79, postdoc. res., Physics, Lab. for Nuclear ci. (5/4) R77-80, postdoc. res., physics, Lab. for Nuclear

R77-91, Sr. Accelerator Physicist, Lab. for uclear Sci. (5/18) R77-94, Design Eng., National Magnet Lab.

R77-95, Biophysicist, National Magnet Lab

Solar House to Have 'No Moving Parts'

(Continued from page 1) and then releases the retained heat at night.

3) A sunlight reflecting louver built into the south window assem-

Timothy E. Johnson, a research associate and lecturer in the Department of Architecture, who heads the research team, said the window assembly has a "better insulation that the usual wood stud

"Most of the heat loss in any building is through the windows, especially at night," he explained. 'The fact that the windows let in slightly less heat because of the 20 per cent loss in transparency is insignificant when measured against the fact that you are losing much, much less heat than would normally be the case."

Johnson said the secret to the thermal resistance of the newlydeveloped window is a special coated plastic material that is inserted between the two sheets of glass that make up the double panes. Another factor is air space that is created in the double panes by inserting the plastic.

The ceiling tiles are only one inch thick, Johnson said, but have the heat-holding ability of six to seven inches of concrete.

An inner layer-a chemical core that melts at room temperature-absorbs solar energy during the day, thus keeping a room at constant temperature and preventing overheating, which is wasted heating. At night, as the room temperature starts to drop, the core returns to a solid state, giving off the heat it has stored during the

The core, therefore, acts as a built-in thermostat to stabilize the temperature in the room.

The physical principle involved is that a substance takes on heat as it changes to a liquid state, and liberates heat as it becomes solid. The most common example is a block of ice.

The MIT researchers found themselves with the probelm of

R77-97, Chemical Eng., Energy Lab. (6/1) R77-98, Elec. Eng., Har/MIT Div. of Hlth. Sci. Tech. (6/1) R77-105. Managing Dir., energy Lab. (6/22) R77-110, Spons. Res. Staff, Lab. for Nuclear Sci.

R77-112, Spons. Res. Staff, Lab. for Nuclear Sci.

R77-137, Spons. Res. Staff, Bates Linear Accelerator (8/31)

R77-150, Spons. Res. Staff, Res. Lab. of Elec. (8/31)

(9/7) 153, Reactor Util. and Elec. Sup., Nuc. Reactor Lab. (9/7) R77-160, Spons. Res. Staff, Nut. & Food Sci.

R77-161, Elec. Engineer, Mech. Eng. (9/7) R77-170, Combustion Engineer, Energy Lab.

(9/28) R77-183, Staff Scientist, Neurosciences Res.

R77-183, Staff Scientist, Neurosciences Res. Prog. (10/19)
R77-189, Experimental Physicist, National Magnet Lab. (10/26)
R77-190, Mechanical/Areonautical Engineer, Energy Lab. (10/26)
R77-192, Comp. Language Devel., Lab. for Comp. Sci. (10/26)
R77-196, Computer Prog., Lab. of Architecture & Planning (10/26)
R77-198, Tech. Asst., Nuclear Eng. (11/2)
R77-200, Elec. Engineer, Energy Lab. (11/2)

E77-44, Admin. Asst., Nuc. React. Lab. (9/28) E77-46, Admin. Asst., Comptroller's Acctg. Off.

E77-47, Eng. Asst., Aero/Astro. Dept. (10/19) E77-48, Asst. Operations Mngr., Housing & Food Serv. (10/26)

E77-53, Food Supervisor, Food Serv. (10/26) E77-54, Eng. Asst., Ctr. for Mat. Res. (11/2)

H77-58, Tech. A, Bates Linear Accelerator (6/8) H77-89, HVAC Designer/Draftperson, Physical

H77-137, Tech. A, National Magnet Lab. (9/14) H77-148, Instrument Systems Worker, Physical

Plant (9/28) H77-170, Waiter/Waitress, Endicott House

H77-174, Tech. A, Lab. for Comp. Sci. (11/2)

The following positions have been FILLED since the last issue of TECH TALK:

B77-221 Reactor Operator IV

Reactor Operator IV Sec. IV

Spons. Res. Staff Section Head V Sr. Clk. III

Spons. Res. Staff Sec. IV

Engineer Spons. Res. Staff Sec. III-IV

Glassware Washer

. Staff

Keypunch Sr. Clk. III

Acct. Asst. V Spons. Res. S Sr. Clk. III

Sec. IV Sec. IV

The following positions are on HOLD pending final

Acad. Staff

Sr. Clk. III Acctg. Asst. V Lib. Asst. IV

HOURLY

R77-197 B77-419 B77-574

B77-604

B77-608

R77-199

B77-549

B77-437

H77-143 B77-574

B77-503 B77-605 R77-22

decision: C77-42

E77-51

7-133, Technical Editor/Writer, Energy Lab.

how to get as much sunlight as possible directly to the ceiling tiles. To accomplish this, they designed special venetian blinds-narrower than usual, and mirrored on their top surfaces-that reflect sunlight to the ceiling.

By aiming the sunlight upward, the blinds eliminate glare and fading problems. They can be closed at night to gain visual privacy.

The angle of the blinds is adjusted to reflect a maximum amount of sunlight, according to the sun's position, but the angle has to be changed only about once a month.

"You do it just as you would to operate a normal blind," Johnson said. "It is a simple procedure, and is the closest we come to having a mechanical system."

Some of the special tiles will be used in settees beneath the windows as additional heat retainers. The use of the floor was ruled out because floors are normally cover-

Supplemental heating will be supplied by electrical baseboard heat. Electricity was chosen for the experimental building, Johnson explained, because its use is so easily monitored. The building will be completely instrumented, he said, with temperature sensors built into all the materials.

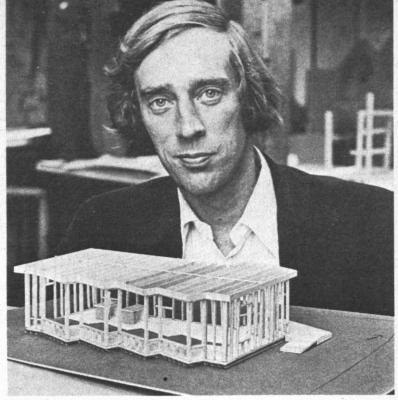
The demonstration building has been designed to thermally mimic either a detached house or an apartment so that solar-heating for high-rise construction can also be studied. For this reason, neither the roof nor the east, west or north walls will be used for solar heating. A total of eight double-paned windows will be arrayed on the south side of the building.

"We're thinking of an apartment or office space closed in above and below and on three sides, with only one major exposure to the outside," Johnson said. He said that the roof and floor of the experimental building as well as three of the walls, will be heavily insulated in order to approximate the conditions in an apartment building.

Johnson said that the research findings also will be applicable to detached, single-family homes.

The building is being constructed with screw-together steel studding-it has the appearance of giant erector set units-both to meet fire codes and also to allow for easy modification for future experimentation.

"We expect to be changing the



Timothy E. Johnson displays model of solar-heated building being built at

configuration of the building somewhat during the planned fiveyear life of the project," Johnson said.

Johnson said that MIT's "total natural approach" to solar heating, utilizing materials that are mostly an outgrowth of research at MIT, represents a major advance in passive solar heating. "We are at a solid state, molecular level, with no moving parts," he said.

There have been earlier experiments in passive solar heating, he said, but these have been largely unpopular because of overheating, inefficiency and glare.

"Solar heating as it now stands is not economical," Johnson said, "and limits what you can do architecturally."

"The advantage of the passive approach is that the payback is expected to be three times faster than with the flat-plate collector method, with its costly pumps and fans and other equipment," he said. "Our materials-primarily windows and tiles-are a bit more expensive than present construction materials, but it should take only nine or 10 years to get your investment back when compared vears. In addition, you can now apply the passive approach to apartment buildings as well as singlefamily homes.

Johnson said some of the materials for the experimental building already are being produced by American industry and will be on the market shortly.

Companies donating material to the experimental project include the Rolscreen Company of Pella, Iowa; Suntek Corporation of Corte Madera, Caif.; P.P.G. of Pittsburgh, Pa.; Wheeling Steel of Wheeling, W. Va.; Pella Windows of Pella, Iowa; Cabot Corporation of Boston and the Architectural Research Corporation of Livonia,

Design work on the experimental building has been done by Johnson; Edward B. Allen, associate professor of architecture; Sean Wellesley-Miller, assistant professor of environmental controls; and two graduate student architects, Stephen Hale of New York City and Christopher Benton of Macon, Georgia.

Johnson said that more than 30 undergraduate and graduate students are working on the building construction.

Katrina Wootton Elected To Corporation

with oil heating, rather than 30

Katrina M. Wooton, Seattle, Wash., a 1977 MIT graduate in mathematics and now a graduate student at Yale University's School of Organization and Management, has been elected a member of the MIT Corporation. She will serve the two years remaining in the term of David R. Wilson, who resigned to undertake graduate studies at MIT.

Announcement of the election was made by Howard W. Johnson, Chairman of the Corporation, MIT's governing body.

The Corporation includes five members serving staggered fiveyear terms who are members of recently-graduated classes and who are nominated by vote among members of those classes.

this year by members of recent classes was Vincent S. Castellano who received SM degrees in electrical engineering and in management from MIT in June of this year. He presently is employed by the Federal Reserve Bank in New York City. His five-year term will run through 1982.

Miss Wootton was first runner up to Mr. Castellano in this year's voting and was elected on that basis to complete Mr. Wilson's term when he re-entered the Institute as a graduate student in the Department of Mechanical Engin-

The three persons besides Mr. Castellano and Miss Wootton now serving five terms after nomination by recent classes are: The person nominated earlier Laurence Storch, Class of 1971. a

Washington, D.C. attorney whose term expires in 1978; Dr. Shirley Ann Jackson, Class of 1968, a member of the technical staff at Bell Telephone Laboratories, Inc., Murray Hill, N.J., whose term expires in 1980; and James A. Moody, Class of 1975, a student at Georgetown University Law Center, Washington, D.C., whose term expires in 1981.

There are presently 93 members of the Corporation including 24 who are Life Members: 17 who are Life Members Emeriti; 45 who are fiveyear term Members (including those nominated by members recent classes); the Officers of the Corporation and other members who serve ex-officio.

Eleven Vie for UMO

It makes cents to be ugly during the UMOC (Ugliest Man on Campus) contest at MIT.

As of 5pm on Monday, Nov. 7, the eleven candidates vying for the 1977 UMOC title had raised a total of \$1,883.45. The contest ends Thursday, Nov. 10.

UMOC contestants are soliciting votes at one penny per vote in all corners of the Institute. People unable to give money directly to the candidate of their choice may cast votes at a booth in Lobby 10.

Each year campaign proceeds, usually several thousand dollars, are given to a different charity. Proceeds of this year's campaign will be given to the American Red Cross.

Striving to be the ugliest one of

all this year are J. Arthur and his Randoms, Delicia, the Flasher, Gorilla, the Hump, Leo, Professor Marcus, the Pec, the Spirit of Transparent Horizons, Super Gnurd and James Tetazoo. A number of write-in votes have also been cast-\$70.01 worth as of November

Alpha Phi Omega, the MIT service fraternity, sponsors the an-nual contest. Frank Caserta, a junior in mechanical engineering from Brooklyn, NY, is chairman of this year's campaign.

The MIT student Center Committee and McDonald's restaurant have donated prizes to be given to the candidates who raise the most

C.G. Clougherty

A funeral Mass for Coleman G. Clougherty, 78, of Quincy, a retired deputy chief of the Boston Fire Department, was held Tuesday, Nov. 8, in Holy Name Church, West Roxbury. He died Saturday, Nov.

Mr. Clougherty came to MIT as chauffeur in the President's Office in 1957, following his retirement from the fire department. He retired from MIT in 1967.

He is survived by his widow, Alice Fryett Clougherty; four sons, Coleman F. of Clinton, N.J. Edward V. of West Roxbury, Alfred J. of South Hampton, Pa., and Leo E. Clougherty of Orange, Calif.; two sisters, 15 grandchildren and three great grandchildren.

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MIT PRESIDENT Jerome B. Wiesner, left, talks with participants in a workshop on the retention of minority undergraduate students in engineering which was held last week at MIT. Others from left are Dr. Clarence G. Williams, special minority affairs assistant to Dr. Wiesner and to Chancellor Paul E. Gray; Dr. Edward R. Kane, president of the DuPont Co. and chairman of the National Advisory Council on Minorities in Engineering, who spoke on "Retaining Tomorrow's Engineers: An Industry Perspective," and Dr. Wesley L. Harris, director of MIT's Office of Minority Education and chairman of the committee that planned the

Commitment Needed In Minority Retention

(Continued from page 1)

designed to reduce attrition of targeted students.'

Among those conditions, he said, are a strong institutional commitment, an effective faculty that is teaching with competence, additional funding to support tutorial programs and provide scholarships, and meaningful counseling that deals with social as well as academic issues.

"It is important," Professor Harris said, "that this definition of conditions was arrived at by a synthesis of several tested experien-

Dr. Clarence G. Williams, special minority affairs assistant to the MIT president and to the chancellor, said the workshop was significant, in addition, because of the involvement of Chancellor Paul E. Gray and Dr. Edward R. Kane, president of the DuPont Co. Kane is chairman of the National Advisory Council on Minorities in

The efforts of people such as Chancellor Gray and Dr. Kane will allow a new audience to be reached, Dr. Williams said, and what that audience will hear is the definition of minimum conditions referred to by Professor Harris.

"This effort by such national leaders is extremely important at this stage in development of programs for the retention of minority students in engineering," Dr. Williams said

Fall Blood Drive Nets 1,689 Pints

The Fall 1977 MIT Red Cross Blood Drive collected 1,689 pints of blood and had the highest turnout in ogy Community Association (TCA),

sponsor of the drive. Several dozen individuals, including many with no affiliation to TCA, volunteered hours of time working at the drive and an additional 260 people offered to donate blood, but were deferred for medical reasons, according to a letter from TCA to the

MIT community.

'The Technology Community Association would like to thank all of the people reponsible for the success of the Fall Blood Drive," said Jim McCormack, secretary, speaking for TCA in the letter. "It is such responses to the needs of the community which make TCA projects (such as the Blood Drive) work," he continued.

"The results of this drive indicate once again that people at MIT really do care about others," the letter continued. "We hope that they will continue to give of themselves. . .

The conference approached the question of retention from four directions: Academic Problems; Counseling; Organization, Funding and Governance, and Pre-College and College Programs.

Among its conclusions and recommendations:

 A principal responsibility of the general faculty is to generate scholarship in minority students.

-An "early warning system" is essential if the institution and the student are to respond in a timely way to academic and social prob-

-Such a warning system should be centralized.

-There is a need for skill clinics that would cover such topics as how to to study, how to take notes effectively, and "quizmanship."

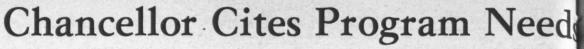
A need exists for an enhancing of the intellectual exchange between the faculty and the student. The conference referred to "mentorship" in this regard.

 A higher attrition rate among students who transfer from junior colleges to four-year engineering colleges was identified and should be explored.

—A single person in authority is vital to the success of programs aimed at the rentention of minority students. This is true, the workparticipants concluded, for both academic and counselling programs.

-A faculty person-but not necessarily a minority faculty person-should be the single person in authority for such programs.

-The total available funds for programs is limited, but the number of programs is increasing, leading to an unstable situation.



The following are excerpts from remarks by Dr. Paul E. Gray, MIT's Chancellor, delivered during the workshop on the retention minority undergraduate students in engineering.

In his address, "An Institutional Commitment to the Retention of Minority Engineering Students, Dr. Gray listed "six elements of our academic programs which bear on retention of minority students and which must be considered in appraising and building. institutional commitments.

The elements are: Adequacy of financial aid, effectiveness of advising, program flexibility, efforts to ease the transition to university life, effectiveness and availability of academic support and a willingness to recognize and sort our errors in judgment.

The excerpts follow. Financial Aid

Minority students are, on the average, much more likely to reflect family economic circumstances that are well below national norms. Consequently the availability of adequate financial aid is often, for these students, the sin qua non of enrollment in an engineering or science program.

What are the components of an adequate program of financial aid? First of all, need must be fully met. That is, the cost that remains after making reasonable expectations of assistance from the student's family and from his or her own summer or part-time earnings must be provided for by the institution. Needless to say, those expectations for assistance-the parental contribution in the jargon of the College Scholarship Service—must be fair and reasonable and must reflect accurately the detailed economic circumstances of the family, including the fact that families in lower income ranges often face higher costs for some of the basic necessities of life than do families in higher income ranges. Finally, the financial aid program, which almost without exception these days includes a significant element of self-help in the form of subsidized loans, must seem reasonable to the prospective student, who may be quite skeptical about loans in general, let alone a loan for something as elusive, unfamiliar, and intangible as a college education. You and I know that the levels of loans expected of young men and women entering upon preparation for careers in science or engineering are generally not unreasonable when measured in terms of likely career path and earnings potential. It should come as no surprise, however, that many minority youngsters are quite apprehensive about educational loans of the size often associated with present college costs. This apprehension requires that we make a special effort to avoid placing excessive loan burdens on students



SIGMA XI WINNERS—Two MIT students have been awarded grants from Sigma Xi, the honorary science society, to support their Undergraduate Research Opportunities Program projects. The winners, Debra Kaden of the Department of Nutrition and Food Science and Nino Pedrelli, whose major is civil engineering and management, accept the official notice of their \$750 awards from Dr. George Wolf, professor of physiological chemistry in the Department of Nutrition and Food Science, who is secretary of MIT's Sigma Xi chapter. At the left is Dr. Margaret L.A. MacVicar, associate professor of physics and UROP director. Sigma Xi is devoted to advancing research in pure and applied sciences. Ms. Kaden's project involves bacterial mutation assay of soot and soot components. Mr. Pedrelli is studying the legal aspects of risk in tunnel contracting. -Photo by Cathryn M. Chadwick

with prospective students about financial aid matters in ways that encourage a reasonable and balanced perspective about these matters.

I am painfully aware that the costs associated with adequate financial aid programs are nontrivial issues for essentially all of the institutions represented here. At a time when many institutions, particularly privately-supported ones, are struggling with rampant cost increases made more burdensome by the heavy hand of government regulation and interference, the budgetary demands of financial aid programs must compete with other legitimate academic needs and priorities. Nevertheless, we all must recognize and act on what seems to me to be an incontrovertible fact: Those minority students we enroll cannot perform up to their abilities, let alone up to our expectations for them, if they are constantly worried either about how to eat next week and how to buy next term's textbooks or about the impact their education is having on the welfare of their families. Without adequate financial aid we are likely to be working with distracted or worried students, which is not a satisfactory setting for education...

Advising In engineering and other scientific programs it is, I believe, particularly important that the advising responsibility be shouldered by the faculty. Advising is, after all, teaching, albeit in a different mode, and faculty have the professional experience and insight that is essential to the effective advising of engineering students.

It should go almost without saying that the responsibility of advising minority students must be one that is shared by several members

of the faculty...

Our minority colleagues bring an important perspective and special knowledge to the advising of minority students. In addition, they inevitably serve as role models for minority students and often have a unique capacity to support minority students in their educational ambitions and plans. Nevertheless, it is certainly unfair, and, I believe, unwise as well, to require or permit a few members of the faculty to carry, because they are minorities, the lion's share of the responsibility for advising minority students. In this respect, as in so many other aspects of the education of minority students, our pluralistic objectives or ends are best served by appropriately pluralistic means.

Program Flexibility In my experience, minority students are frequently unaware of opportunities that exist to vary the pace of their educational programs or to break those progams with a term or a year of employment or other activity.

I believe that it is in the interest of our students and that it contributes to retention if we permit, and encourage where appropriate, reasonable departures from the 'normal" rate of progress. Of course, doing so requires that we accommodate those students who choose to take more than four years by providing reasonable, continuing access to financial aid, housing, and other amenities of undergraduate life.

Transition

For most of the minority students with whom we are concerned, our institutional settings represent both a more demanding, faster-paced academic environment and a less-structured, morepermissive social environment than they have experienced previously.

At the very time their studies require that they develop a new singlemindedness and intensity of purpose about their academic tasks, the new social environment in which they function offers more freedom and fewer guidelines. The adjustment is, for many students, a wrenching one.

Here at MIT we believe that this transition, and the adjustments it requires, can be eased by introducing a subset of our minority undergraduates to the Institute in a setting which courages them to adapt to th demands and freedoms of this community without quite the inten sity and "on-the-permanent record" character of the regular academic year. Toward this end we invite these students to par ticipate in a seven-week, pre freshman year summer program known as Project Interphase. They study subjects in calculus, physics chemistry and humanities thereby gaining important ex perience and practice in critica academic skills. At the same time they have a chance to adjust to new lifestyle and to learn about the social, cultural, and academic communities in which they wil spend four or more years.

Academic Support Many, but by no means all, of the minority students we enroll will be less well prepared for fast-paced science-and mathematics-based programs than are our traditional students. These difficulties have little to do with ability or potential-they have to do with prior

In my experience these differences in preparation or readiness are more related to the extent or duration of previous instruction in necessary areas of preparation than to coverage of specific topics..

educational experience.

To the extent that this is a problem-and it is not a problem that is confined to minority students-we as teachers are not likely to discover its existence through casual questions about prior preparation. Rather, the problem will become apparent only as the student undertakes subjects which place a premium on the selfconfident use of mathematics or elementary physical principles in other disciplines.

The existence of academic problems of this kind requires that we make available to students flexible, supportive resources when the need arises. Such support can come in many forms: The use of videotaped instruction, modules for self-paced study, short courses in specific techniques, and tutoring have all been employed successfully. What matters most for success is that the supportive resources be available when the need arises...

Errors of Judgement Some fraction of the minority students we enroll will not only be less well prepared for engineering programs than their peers, but some will have less innate ability to cope with such programs. And some of these students will, in spite of heroic efforts on their part and on the part of others interested in their welfare, find academic success an unattainable goal and will inexorably fall farther and farther

I believe that we have a dual responsibility with respect to these students, who, after all, entered our institutions at our invitation. First, we have the responsibility to go the second and third miles in providing them with guidance, counsel, and support in their efforts to test their ability to succeed in our programs.

However, if and when it becomes clear that consistent performance at the necessary level of achievement is unlikely, we have the additional responsibility of helping that student sort out the alternatives open to him or her and of guiding and supporting that student while he or she accomplishes the necessary redirection of plans and

There may be those who would argue that this position runs counter to our objective of improving retention. I disagree intensely. Is it not much better for a student to move positively and affirmatively to a different course of study, perhaps even to a less demanding career path in a technical field? Is it not preferable to "climb out" of a program with one's dignity and self-respect intact, than it is to persevere against impossible odds until, inevitably, that student either drops out in anger and aimless frustration or flunks out with a searing sense of failure that may cripple a lifetime?

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