Massachusetts Institute of Technology



December 13, 1978 Volume 23 Number 18

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New JCUS Study Reports **Discriminatory Redlining**

Discrimination in home financing is based far more on an individual's race than on the location of the property, according to a comprehensive study released last week by Robert Schafer at the Harvard-MIT Joint **Center for Urban Studies**

The nation's most exhaustive study to date of urban mortgage lending also reveals that New York's ceiling on mortgage interest rates reduces the amount of money available for economic development in the state and the opportunities of lower-income households to own their own homes. The study is based on data from the five largest metropolitan areas of New York State.

Central to the national debate on housing discrimination, the study challenges current assumptions about the role of redlining in mortgage lending. Redlining is the practice of refusing to lend or of granting mortgages with less favorable terms in certain neighborhoods-even though the expected returns and financial risks are the same as for mortgages granted in other neighborhoods

"Nationally-as in New York State, recent discussion about mortgage lending has focused solely on geo-graphic discrimination," said Mr.

(Continued on page 8)

Wiesner Backs Continued Nuclear Power Development

(The following article, covering a speech by MIT President Jerome B. Wiesner given earlier this fall, was written by Charles Helman of the North Adams Transcript. It is reprinted here by courtesy of the Transcript.)

By CHARLES HELMAN Transcript Staff

NORTH ADAMS-Jerome B. Wiesner, president of MIT, believes the United States should continue to develop nuclear power and other advanced technologies despite the possible risk of harmful side effects.

He made the statement at a lecture Tuesday inaugurating this year's Robert C. Sprague Lecture Series at North Adams State College

While advocating a gradual approach to the introduction of new

Symphony to Air

The MIT Symphony Orchestra concert held on Saturday, Dec. 9, will be broadcast on WTBS-FM, 88.1, this afternoon (Wednesday, Dec. 13), and Friday, Dec. 15, at 4pm. The program for the concert, conducted by David Epstein, includes the premiere performance of faculty member Edward Cohen's Stone and Earth for mezzo-soprano and string orchestra, Handel's Suite from The Faithful Shepherd and Mahler's Symphony No. 1 in D Major.

Doherty Chair

technologies with adequate provisions to safeguard the public inter-est, Dr. Wiesner said the public may have gone "overboard" in its insistence that all risks be eliminated before nuclear power, new pharmaceutical products, or controversial genetic engineering research be allowed to proceed.

"If every time we discover potential risk we don't dare it, we face the even greater risk of becoming totally paralyzed as a nation," Dr. Wiesner said.

The United States is already falling behind the Japanese in the con-

(Continued on page 8)

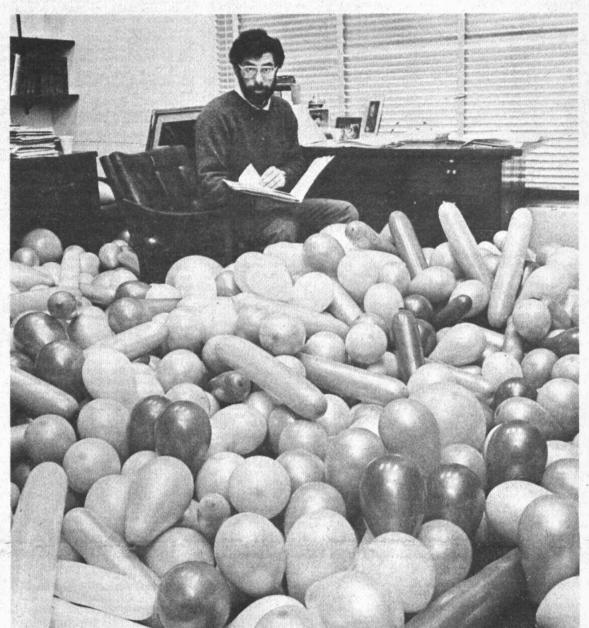
The Tech Index Spans 26 Years

The second section of the Tech Index, covering the years from 1951-1960, has been completed.

Divided into topic and person sections, the index is an alphabetical guide to all stories run in The Tech during that period. References under each subject are arranged chronologically.

David Boccuti, director of The Tech Indexing Project, said that the first section, 1961-75, has been revised, clearing up inconsistencies and errors. Work has also been done on current issues, so that altogether the index provides an easy to use guide to events at MIT over a span of 26 years.

The project was begun four years ago. Its goal is the complete index of all issues of The Tech back to Number 1 in 1881.



Chemistry professor Robert J. Silbey returned to MIT Monday, Dec. 11, after having been away in England to find his office (Rm. 6-225) filled with 1,000 balloons of assorted sizes, shapes and colors. Two graduate students who were on hand to watch his reaction—Craig C. Jensen of San Rafael, Calif., and Christopher Reiser of Cambridge—admitted they were responsible for the prank, Professor Silbey said. Why did they do it? No special reason, he replied, "we're a friendly department." How did he get rid of the balloons? "I stuck a scissors into each of them," Professor Silbey said. "The people from down the hall came running to see who was shooting at whom." It took him half an hour to complete the job. —Photo by Calvin Campbell

Venus Experiments Reported Working

MIT Pioneer Venus spacecraft are reported working on schedule.

Dr. Peter G. Ford, a research staff member in the Department of Earth and Planetary Sciences, said that as of Tuesday his group working on the fourth floor of the Green Building had received five

experiments aboard full days of radar mapping information from the mission control center at Mountain View, Calif., via high speed data transmission lines. The data is being collected in strips, he said, one strip each day during the hour when the spacecraft orbiting Venus is closest to the planet's surface.

unisex rates will apply to retirees

for benefit payments commencing

on or after July 1, 1979. The new

rates, which will apply to benefits

payable from both the Fixed Fund

and Variable Fund, have been set

so that "no retiree, male or fe-

male, regardless of annuity option

selected, would receive less on or

after July 1, 1979, than if retire-

(Continued on page 7)

Processing of the data is taking place at Mountain View and MIT. Early data were to be forwarded to the US Geological Survey in Arizona starting Tuesday, where they will be used to make a map of the Venus surface with heights of features accurate to about 100 meters.

Principal experimenter Dr. Gordon Pettengill is working at the mission control center at Ames Research Center, National Aeronautics and Space Administration, in

Nominations Due

The MIT Sea Grant Program has asked department heads to submit nominations for the fifth awarding of the Henry L. Doherty Professorships in Ocean Utilization.

The nomination deadline is Dec. 31.

Faculty members interested in being nominated for the two-year professorships should contact their department head or Dean A. Horn, director of the Sea Grant Program, which administers the chair.

The appointments are open to all assistant professors and nontenured associate professors from an academic department concerned with marine resource development and management.

Professors Alician V. Quinlan, Department of Mechanical Engineering; Ole S. Madsen, Depart-ment of Civil Engineering; and Francis Noblesse, Department of Ocean Engineering, hold the chairs through June 30.

The index is available for use at The Tech's office, W20-483, and microfiche copies will be sold for a nominal fee.

No Information

In observance of the Christmas Holiday, the Information Center (Rm. 7-121) will be closed from 7p.m. Friday, Dec. 22, until 9 a.m. Tuesday, Dec. 26.

The Center will also be closed for the New Year's week-end from 5 p.m. Friday, Dec. 29, until 9 a.m. Tuesday, Jan. 2.

No Tech Talk

Tech Talk will not be published December 20 and 27. Regular publication will resume with the issue of January 3, 1979. Deadline for listings in the Institute Notices, Institute Calendar and Classified Ads will be noon Friday, Dec. 29.

Retirement Plan Annuities

Unisex Rates Set for Staff

Unisex annuity rates in the MIT Retirement Plan for Staff Members-eliminating any distinction between male and female rateswere announced Friday, Dec. 8, at the annual meeting of the Plan's Administrative Committee.

Allan S. Bufferd, MIT assistant treasurer and recording secretary, and secretary of the Administrative Committee said that the new

WCC Seeks Several Translators

The World Council of Churches (WCC), which will hold an international conference on Faith, Science and the Future at MIT July 12-24, will need the services of several translaters.

Professor David J. Rose of the Department of Nuclear Engineering, a member of the WCC committee making arrangements for the conference, said that a considerable number of documents will need to be prepared in all four conference languages-English, French, German and Spanish. Professor Rose said the WCC hopes to

be able to hire the translaters from the MIT community. They will work before as well as during the conference.

The need is for translaters whose mother tongues are the conference languages "and who very preferably have some familiarity with theological terms (and scientific ones, too),' Professor Rose said.

A WCC committee will be at MIT Jan. 12-17 and will meet people interested in being translaters. Arrangements can be made by calling Barbara Weinblatt, x3-1703, Rm. 4-237.

Mountain View.

Data analysis has not yet begun for two other MIT experiments. In both cases equipment on board spacecraft at the planet performed well. The data were correctly taken and preliminary indications are that it is usable for one project. Scientists working on the third experiment do not yet know if the data were properly received and recorded at the four Earth stations.

The two experiments are the differential long-baseline interferometry (wind speeds) experiment conducted using the Pioneer Venus sounder probes and bus (for which the data have not yet been verified) and radio science experiments using signals from the orbiter. Dr. Charles Counselman is principal experimenter and Dr. Irwin I. Shapiro and Dr. Ronald G. Prinn are co-experimenters for the former and Dr. Shapiro is principal experimenter for the latter with Dr. Robert Reasenberg as associate.

INSTITUTE NOTICES

Announcements

Clubs and activities planning to meet during IAP are asked to call Betsy Huntington, x3-2701, by Friday, noon, Dec. 29, for inclusion in the January 3 issue. All standing announcements will be removed from Institute Notices until a new listing is received.

Students with ambulatory difficulties should contact Dean Bonny Kellerman, Rm 7-105, x3-6771, to arrange to preschedule subjects for the spring term.

Freshman evaluation forms are due on Friday, Dec. 15. Instructor turn in deadline, Tuesday, Jan. 02.

Second Term Registration Material due in the Registrar's Office, E19-335, Thursday, Dec. 21. \$5.00 fine for any registration received after this date. Material is available at the Registrar's Office.

Degree Candidates-spring term pre-billing**-Degree candidates with two term waiver of the Student Hospital and Accident Plan are being pre-billed for the spring term. If you are a de-gree candidate without a two term waiver, but intending to register for the spring term, please pick up the appropriate financial forms at the Student Accounts Office, E19-215.

Payment Reminder**-The final deferred payment for this term was due Dec. 1. To avoid a late payment fine of \$20.00, make your pay-ment by Dec. 14.

February degree candidates with past due balances**-should make immediate payment to avoid jeopardizing conferral of their degrees

Financial Aid Applications for 1979-80**-Undergraduate financial aid application forms were mailed to current aid recipients Monday, Dec. 11. Aided students who do not receive this material by Dec. 14 should get the forms from the Student Financial Aid Office, Rm 5-119. Forms are also available for those not currently receiving aid who wish to apply for 1979-80

Registration for IAP Physical Education classes**-Monday, Jan. 8, 10:30am-12noon in duPont Gym.

Foreign Students**-Those who plan to travel outside the United States during the holiday/ vacation period will need documents to return to the U.S. for spring studies. To insure possession of necessary travel documents, see the Foreign Student Office, Rm 3-107.

Baylor Summer Surgery Laboratory Program**-Students with medically oriented career in mind will assist in scheduled experiments in Baylor labs and conduct independent experiments. Stipend to help defray living exes. Info: Preprofessional Office, 10-186, pense x4158.

*Oak Ridge Associated Universities Student Research Particlipation**-Gives selected students opportunity for independent research under guidance of Department of Energy staff scientists. Eligible juniors will be considered for 10 week appointments with stipend of \$125/wk. Applicants must be enrolled in U.S. institutions and be U.S. citizens or permanent resident aliens. Application deadline, Jan. 8, 1979. Info: Preprofessional Office, 10-186, x3-4158.

Club Notes

Actors' Workshop*-Meetings Saturdays, 4:30pm, Little Theatre. Theatre games, improvisations, cold script readings. No experi-ence necessary. Info: Albert Ruesga, dl5-7343 or x3-2908.

tactics, Mondays and Thursdays, 8pm, Rm

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

MIT Judo Club®-Practice every Monday, Wednesday and Friday, 5-7pm, duPont Exercise Room (2nd fl). Beginners welcome. Info: Lance, x3-1570.

MIT Juggling Club^e—Thursdays, 7:30-11pm Rm 491 Student Center; Sundays, 1-4pm, Kresge Oval. Visitors welcome.

MIT Motorcycle Research Association* Monthly meetings, first Tuesday of each month, 7pm, Muddy Charles Pub (Rm 50-110). Info: Rm 13-5146, x3-6924.

MIT Pershing Rifles***-Commando Platoon meetings every Tuesday, 8pm, Rm 20E-017, monthly field training exercises. Drill Platoon practice every Monday, Wednesday and Friday, 7:30am, duPont. Rifle Platoon, range fir-ings every Thursday, 6-8pm, duPont Range. Info: Rm 20B-101, 623-0233.

Scuba Locker Sale*-Used Dacor BCs, orig. \$100, now in good condition, \$35. Equipment rental hours for winter, call Scuba Locker Manager, Mark Brent, 782-3686.

MIT Shotokan Karate Club**-Rigorous training for self-defense and spiritual well-being Practice Mondays and Thursdays, 7:20 Tuesdays and Fridays, 6-7:30pm; :30am; Varsity Club Lounge. Beginners welcome. Info: Jim, x3-3283.

MIT Tae Kwon-Do Club⁶--Korean style karate. General meetings, Tuesdays, 8-10pm, Saturdays, 3-5pm, T.Club Lounge. Beginners welcome. Info: dl5-9278.

MIT T'ai Chi Club**-Meetings, Thursdays, 4:15pm to 6pm, the Dance Studio, Rm W31-225. Teacher, Prof Eugene Liu, encourages particiation at all levels. Info: Janesh Vaidyanathan, x3-6813.

MIT Tiddlywinks Association*-Weekly meetings, practice, coaching, preparation for tour-naments and strategy sessions, Wednesdays, 8-11pm, Student Center, West Lounge or W20-473 if pre-empted.

Undergraduate Math Club**-Meets Sundays, 4:30pm, Rm 4-182. All undergraduates welcome. Info: dl5-8439.

Wu-Tang, MIT Chinese Martial Art Club*meets Monday, 8-10pm, W20-407, Wednesday, 8-10pm, W20-491, and Saturday, 1-3pm, W20-491. Learn physical and mental discipline through practice of Kung-fu, also Northern Praying Mantis and T'ai Chi. Beginners welcome. Info: Chen-dao Lin, dl5-9640

Religious Activities

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

Tech Catholic Community®—Sunday masses: 9:15am, 12:15 and 5:15pm. Weekday masses: Tuesdays and Thursdays, 5:05pm, Fridays, noon, in the Chapel.

Interdenominational-Worship and holy communion, Wednesdays, 5:05pm, Chapel, spon-sored by Lutheran-Episcopal Ministry.

MIT Islamic Society^{*}—Weekly Friday prayers, 1pm, Kresge Auditorium, Rehearsal Room B. Weekly Quranic Study Class, Fridays, 6:30pm, Rm 4-153.

Christian Service*-Sundays, 10:30am, Chapel. All invited.

Jewish Religious Services*-Traditional services, daily 8am, Rm 7-102. Friday night, Sun-down Kosher Kitchen, 50-005. Saturday, 9am, Bush Room 10-105. Mincha and Seudah Shlishit, info: 3-2982. Conservative Services, Saturdays, 10am, 312 Memorial Drive. Reform Services, Fridays 6:30pm, Chapel. Schedule. Hillel Office

Bible Study*-Friday afternoons 1-2pm, Rm 20E-207, Bible class, music, guest speakers, Miriam R. Eccles, founder-director, Alpha and **Omega Missionary Society**.

MIT Seekers**-Sundays, leave for AM service at Park St. Church, Boston from McCormick Hall, 9:55am; leave for collegeage Bible teaching, PM service, college fellow-ship time at Park St. Church, 4:55pm from McCormick Hall. International students welcome to Focus, Friday nights, Sunday mornings. Info: Jerry Platz, d15-7115

MIT Vedanta Society*-Meditation and dis-

transport of metabolic substrates into the brain will be studied in rats. The transport of phospholipids will also be investigated and the relevance of such studies to neurotransmitter metabolism and to psychiatric and neurologic disorders will be considered. This project will offer the student the opportunity to learn neurochemical assay procedures, nutritional and drug administration techniques, small animal surgery methods, and the proper handling of radioisotopes. Contact Dr. Richard J. Wurtman, 56-245. x3-6732 or Bill Millington, 56-245, x3-6733.

Automated Biological Assays

An opportunity exists for a student to help develop manual and automated devices to fac-ilitate specific cell-growth type assays. In particular there is a need to develop a method for automatically extracting a small known quantity of liquid from a container; then based on a cell count from that sample, automatically dilute the remaining fluid to a given cell density. A method for carrying out the above process has been developed on paper. Initial work will relate primarily to fluid flow and metering. If successful, this will be followed by micro-processer control and data acquisition. Contact Prof. Nathan Cooke, x3-2216, room 35-130.

Research Program On Communications Policy

The following four projects are open starting in January: 1) Historical research on development of printing and changes in associated literary forms. Good background in history and literature required. 2) Legal research on certain 1st Amendment issues. 3) Statistical research-social indicator construction dealing with communication. 4) Instrument development and pretesting for psychological experi-ment. Write Doris Lannoy, E53-401.

Birth Seasons In Different Macaques Species Several recent studies have shown that steroid hormones play different roles in regulating the feminine sexual behavior of rhesus versus stumptail monkeys. Some pre-liminary evidence suggests that this difference correlated with the existence or abmay b sence of breeding and birth seasons in these respective species. In collaboration with the New England Regional Primate Center, it is proed to study the birth records of rhesus and stumptail macaques born at the Center in order to confirm or deny the hypothesis. Contact Dr. M.J. Baum, x7558, room 37-315. Meclean Hospital

The role of the olfactory system in investi-gation of novel stimuli is being studied be-haviorally and anatomically in the Mongolian



12-1pm 1-3pm

Chan

2:30-3pm

7-9:30pm

1-3pm

12-2pm

2-4pm

12-12:30pm

2:30-4pm

Channel 8:

12-2pm

2-4pm

Wednesday, December 13 Channel 8: PAUL WINTER CONSORT-by BASEMENT VIDEO. 11am-12pm MIT SCIENCE REPORTER. BASKETBALL-MIT vs. New

England College. Thursday, December 14

11am-12:30pm RAINBOWS-Prof. Walter Lewin, RAINBOWS-PTOL Walter Lewin, Dept. of Physics. NOON HITS-weekly student-pro-duced show. Live from Harvard. INDUSTRIAL BIOSYNTHESIS OF METABOLITES-PTof. A. De-main, Dept. of Nutrition and Food Science. 12:30-1:30pm 1:30-2:30pm

Science. HOME COOKING—weekly folk music show. Live from Harvard. POLITICS, TELEVISION, AND THE NEWS—Ed Diamond, Dept. of Political Science. Live from 9-150

Friday, December 15 Channel 8: 11am-1pm

TECHNOLOGY AND WORK: WHO DECIDES—F. Runnels and F. Rosen, Pres. and Vice-Pres. of the All-Unions Committee to Shorten the Work Week. CARL SAGAN—noted exobiologist speaks on spacecraft and extra ter-restrials. By VIDEO CLUB.

Monday, December 18

Channel 8: ANALYTICAL ISSUES IN DI-VERSIFYING FOOD POLICY IN INDONESIA-C. Peter Prof. of Economics of Food and 12-12:30pm Agriculture, Harvard School of Public Health. POLITICS, TELEVISION, AND THE NEWS-Ed Diamond, Dept. of Political Science, with guest Jack Cole, Channel 7, WNAC-TV. 12:30-1:30pm 1:30-2:30pm 2:30-3pm

gerbil. Positions are open for: 1) Someone interested in learning experimental anatomical methods to map the anatomical projections of the olfactory system of the Mongolian gerbil using autoradiography and horseradish peroxidase methods. Students majoring in biology, physiological psychology, or a related subject preferred. Experience with histology also desirable. 2) Someone to conduct specific behavioral tests using gerbils that have received destruction of particular areas of the brain thought to be involved in the behaviors. Can obtain experience in behavioral testing, research methods, and surgical techniques.

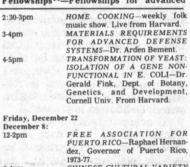
Graduate Studies

Fellowships for Women Graduate Students Sponsored by Wellesley College***-1. Alice Freeman Palmer Fellowship for study or research abroad or in the US. Fellow must be 26 or younger at time of appointment, and must remain unmarried throughout her tenure. Stipend: \$4,000. 2. Mary McEwin Schimke Scholarship to help financially with child care and household responsibilities. Based on scholarship and need. Candidates must be over 30 and currently pursuing gradu-ate study in literature or history. Stipend: \$500-\$1,000. 3. M.A. Cartland Shackford Medi-cal Fellowship for the study of medicine with a view to general practice, not psychiatry. Stipend: \$3,500. 4. Harriet A. Shaw Fellowship for study and research in music and allied arts in the US or abroad. Candidates must be 26 or ounger at time of appointment. Stipend: \$3,000. Applications must be at Wellesley by January 2, 1979. Info: Dean Jeanne Richard, Graduate School Office, Rm 3-136, x3-4869.

Amelia Earhart Fellowships**-Grants of \$4,000 offered to women for graduate study and research in aerospace related sciences and engineering. Application deadline: Jan 1, 1979. Info: Graduate School Office, Rm 3-136

Lena Lake Forrest Fellowships**-The Business and Professional Women's Founda-tion sponsors the Lena Lake Forrest Fellowship Program and the BPW Foundation Re-search Grant Program which support research pertaining to economic, educational, political, social or psychological factors affecting working women. Awards range from \$500 to \$3,000. Applicants must be doctoral candidates or postdoctoral scholars whose proposal for research has been approved by an ac-credited graduate institution. Only US citizens are eligible. Info: Graduate School Office, Rm 3-136. Application deadline: Jan 1, 1979.

Belgian American Educational Foundation Fellowships**-Fellowships for advanced



CHINESE CULTURAL VARIETY 2-4pm

SHOW-by VIDEO CLUB.

Monday, December 25 No programming scheduled—Institute holiday.

December 26 Tuesday,

Chann 12-12:4

12:45-1

1:30-2:

2:30-3:

3:30-4

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12-1pm

1-2pm

2-4pm

3-4pm

Channel 8:

12-1pm

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ay, Decei	mber 26
el 8:	
15pm	PHYSICAL CHEMISTRY IN FUTURE ENERGY TECHNOL OGY-Dr. John M. Deutch, Di
	rector of Energy Research, US Dept. of Energy.
1:30pm	RESTORING THE ENVIRON MENT FOR RESEARCH AND
	DEVELOPMENT-Dr. Edward Kane, President, E.I. duPont de Nemours and Co.
:30pm	PHOTOGRAPHY OF BIRDS BUGS, BATS, AND BULLETS- Dr. Harold Edgerton, Institute
:30pm	Prof. Emeritus. AVIATION GROWTH IN THE
.oopin	EIGHTIES: FOR WANT OF AN AIRPORT-Duane W. Freer, Di rector, Office of Aviation Policy
1.10	Federal Aviation Administration. TELEVISION WITHOUT
pm	GUILT-Prof. David Thorburn Dept. of Humanities.

Wednesday, December 27 PHYSICAL CHEMISTRY: TRENDS IN A LIVELY SCI-ENCE-Dr. John Ross, Dept. of Chemistry. ARTHUR AMOS NOYES AND THE RESEARCH LABORATORY OF BUYEVIAL CHEMISTRY. DE THE RESEARCH LABORATOR I OF PHYSICAL CHEMISTRY-Dr. Linus Pauling, Nobel laureate, and President, Linus Pauling Institute of Science and Medicine. A MUSICAL EVENING TO RE-MEMBER-by VIDEO CLUB.

Thursday, December 28

study at one of the Belgian universities or other institutions of higher learning for the 1979-80 academic year. Candidates must be US citizens under age 30 with speaking and read-ing knowledge of French or Dutch. Candidates must have Master's degree or be working toward a PhD or equivalent. Info: Graduate School Office, Rm 3-136. Application deadline: Jan. 2, 1979.

NATO Advanced Research Fellowships**-A limited number of grants will be offered to 1979-80 candidates from NATO member states to promote study and research leading to pub-lication on aspects relevant to the North Atlantic Alliance. Candidates must be nationals of member states and must undertake research projects in one or more member countries. Grants are intended for scholars of established reputation. Applicants must apply to the appropriate authority of the countries of which they are nationals. Info and list of research areas: Graduate School Office, Rm 3-136. Application deadline: Jan 5, 1979.

Pharmaceutical Manufacturers Association Research Grants**—Doctoral dissertation research grants to encourage original research in areas relating to the socioeconomic aspects of the health care products industry. Doctoral candidates pursuing a degree in economics or related social and administrative sciences may apply. Applicants must have completed all course work leading to the doctoral degree and passed all qualifying examinations. The maximum stipend is \$2,500. Info: Graduate School Office, Rm 3-136. Application deadline: March 15, 1979.

Bell Laboratories Graduate Research Programs for Women**-Financial support for outstanding women students doing full-time doctoral studies in chemistry, computer sci-ence, economics, electrical engineering, experimental human psychology, materials sci-ence, mathematics, operations research, phys-ics and statistics. Fellowships (2) provide tui-tion and fees and stipend of \$525/mo. plus book and related travel allowance. Grants (4) pro vide annual award of \$1,500. Both are renewed on yearly basis. Application deadline: Jan 15, 1979, supporting material, Jan 31. Info: Dean Jeanne Richard, Rm 3-136, x3-4869

Josephine de Karman Fellowships*-Twelve fellowships of \$2,500 each for 1979-80 academic year. Graduate students in any discipline entering third year or more of graduate study are eligible. Special consideration to applicants in the humanities. Info: Rm 3-136. Appli-cation deadline: Jan 31, 1979.

Echoes

December 3 - December 9

50 Years Ago

The Boston School Commitee paid tribute to the first President of Technology by naming a school in Hyde Park the William Barton Rogers Intermediate School. Dr. Rogers served as the Institute's President from 1865-1870 and again from 1878-1881.

40 Years Ago

Even the Institute Commitee now admits that the slide rule is the outstanding symbol of the Tech undergraduate. President of the Commitee William F. Wingard '39 borrowed a "slipstick" twice during this week's meeting to determine whether the number of votes counted constituted a twothirds majority. Interesting to note is the fact that once, even with the help of technolohy's favorite device, he managed to calculate incorrectly.

25 Years Ago

Parents of students living in the Institute dormitories may visit the student's room at any time according to a decision of the Dormitory Commitee at its meeting on Monday. Previously, visiting was allowed only during open house hours. However, the Dormitory Commitee suggests that parents who arrive outside of open house hours call the student's room before going to the upper floor of the dormitories.

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

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

MIT Chess Club*-Informal speed chess, analysis, etc., Saturdays, 1-7pm, Student Center Rm 407. Info: Charlie, dl5-6170, or Ed, dl5-6574.

Exotic Fish Society*-Meeting 8pm, Thursday, Dec. 14, Student Center Basement.

Figure Skating Club**-People who can skate backwards comfortably, bring your figure skates every Sunday from 11am-1pm to the MIT ice rink.

Graduate Student Council***-Meeting, 6pm, Walker Blue Room. Dinner, 5:30pm.

Club Latino-MIT ***- Regular meetings to organize activities and discuss future plans, Tuesdays, 7:30pm, place variable; call Juan, 494-0330, or Jesus, dl5-8327, for info. Wellesley students welcome

MIT Go Club*-Regular meetings, games, instruction, lessons and books on strategy and courses on the Gita by Swami Sarvagatananda of the Ramakrishna Vedanta Society of Boston. Fridays, 5pm, Chapel.

New UROP Listings

For more detailed information on UROP opportunities 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.

Dynatech R/D Company

Dynatech would like to meet students interested in the following areas: 1) Biocompatible Polymers. An ethical drug delivery system has been developed based on polymers which are slow to release the therapeutic agent. Delivery systems for sustained release through tissue absorbable preparations use implantable cartridges of a tissue compatible hydrolyzable polymer matrix in which the medicant is dispersed. As the polymer disintegrates through hydrolysis into metabolizable fragments, the physically entrapped drugs are released. Applications are to fertility control, treatment of narcotic patients and prevention of malaria. 2) Fuel Gas Production. Dynatech is carrying out a program to develop a process for fuel gas production from biomass. The conversion is by anaerobic digestion, a conventional fermentation technique. For credit only,

Blood-brain Barrier Transport

Tuesday, December 19 Channel 8

HENRY MOORE SCULPTURE DANCE-by BASEMENT VIDEO. AMERICAN TELEVISION: A CULTURAL HISTORY-Comedy; All in the Family-Prof. David Thorburn, Dept. of Humanities. MIT SCIENCE REPORTER. AIRCRAFT AND SPACECRAFT 12:30-1:30pm 1:30-2:30pm AIRCRAFT AND SPACECRAFT NAVIGATION-Charles Stark Draper, Prof. Emeritus, Dept. of Aeronautics and Astronautics.

Wednesday, December 20

2-4pm US POLICY AND PROGRAMS ON DOMESTIC MALNUTRITION-Carol Tucker Foreman, US Assis-Carol Tucker Foreman, US Assis-tant Secretary of Agriculture. POLITICS. TELEVISION, AND THE NEWS-Ed Diamond, Dept. of Political Science, and guest Bill Aber, News Director, Channel 4, WBZ-TV.

Thursday, December 21

Channel 8 PRIME CONCERN-featuring the 12-12:30pm MIT Laboratory for Computer Sci-12:30-1:30pm

1:30-2:30pm

CYCLE OF LIFE-by John NOON HITS-weekly student-produced show. Live from Harvard. THERMOECONOMICS-Prof. Myron Tribus, Director, Center for Advanced Engineering Studies. HOME COOKING-weekly folk music show. Live from Harvard. IMPRESSIONS OF THREE

WEEKS IN CHINA-Provost Walter Rosenblith.

Friday, December

THE CONTEMPORARY INTER NATIONAL SCENE: A VIEW FROM EUROPE-Prof. Jacques Freymond, Institut des Hautes Etudes Internationale, Geneva. DRESS REHEARSAL WITH THE BOSTON REPERTORY BAL-LET-by BASEMENT VIDEO. GEODESY AND GEOPHYSICS-a Draper Laboratory Seminar.

Monday, January I

AFRICAN JOURNAL-interview with photographer Carol Beck TRENDS IN COMPUTER-AIDED MANUFACTURING-Eugene Merchant, Cincinnati Millacron, Inc LOUISE NEVELSON AT MIT LOUISE NEVELSON AT MIT. POLITICS, TELEVISION, AND THE NEWS-Ed Diamond, Dept. of Political Science, with guest Mike Taibbi of Channel 5, WCVB-TV. AND

Prepared by Marcia Conroy, MIT Historical Collections, x4444.

TECH TALK Volume 23, Number 18 December 13, 1978

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No Programming Scheduled-Institute holiday. Tuesday, January 2 Channel 8: 12-12:30pm 12:30-1:30pm :30-2:20pm 2:20-4pm

ence. NOON HITS-weekly student-pro-duced show. Live from Harvard. THE END OF WHITE SOUTH AFRICA: HOW SOON?-Donald Woods, author of Biko.

The effects of drugs and toxic metals on the

Page 2, Tech Talk, December 13, 1978

CIS Is Host to Visiting Scholars

MIT's Center for International Studies is host to 12 visiting scholars and researchers this school year, Professor Eugene B. Skolnikoff, the director, has an-nounced. They are:

Lt. Col. Robert M. Clewell, US Army-Visiting Scholar engaged in research to evaluate US strategic nuclear policies in terms of consistency with defense requirements and arms control objectives

Dr. Herbert S. Dorick, associate director and senior research associate at the Center for Communications Policy Research, Annenberg School of Communications, University of Southern California-Visiting Scholar working closely with Dr. Ithiel de Sola Pool, Arthur and Ruth Sloan Professor of Political Science, and the Research Program in International Communications Policy

Dr. Michael Handel, Department of International Relations, Hebrew University, Jerusalem, Israel-Research Fellow continuing his work on the use of surprise in diplomacy and on the impact of the latest developments in conventional weapons technology on strategy, tactics, and the regional crisis and balance of power.

Dr. Nancy K. Hetzel, Research Associate, Environmental Studies Program, Dartmouth College-Re-



Charles E. Eliot, MIT Rhodes scholar.

C.G. Eliot Named **Rhodes Scholar**

search Fellow associated with the Program on International Environmental Issues

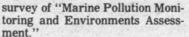
Dr. Roberto Hukai, head of the Reactor Physics and Projects Department, Institute of Atomic Energy, Sao Paulo, Brazil-Research Fellow studying the Brazilian nuclear program and its international implications.

Dr. Baruch Kimmerling, assistant professor, Department of Sociology, School of Economics and Social Sciences, Hebrew University, Jerusalem, Israel-Visiting Scholar studying relations among Arab and Jewish communities in mandated Palestine, and the connection between Zionist ideology and Israel's economic structure

Dr. Ian Lustick, assistant professor, Department of Government, Dartmouth College-Visiting Scholar doing research on organization theory and comparative business theory in an effort to draw up rules for designing decision systems

Dr. Brian Martin of the United Nations Environment Program-Visiting Scholar associated with the Program on International Environmental Issues and working on a scientific, economic and policy

The IAP Corner



C.V. Narasimhan, Under-Secretary-General for Inter-agency Affairs and Coordinator, United Nations-Visiting Scholar doing a study on the New International Economic Order, tracing the development of the UN system and analyzing its past contributions.

Lt. Col. Wolfgang W.E. Samuel, US Air Force-Visiting Scholar with research interests centering on the implications of science and technology for the military strategy of the Western alliance.

Dr. Alden Speare, associate professor, Department of Sociology, Brown University-Visiting Scholar continuing research work on urbanization in East Asia, in association with Dr. Myron Weiner, Ford Professor of Political Science, and the Migration and Development Study Group.

Hartojo Wignjowijoto, research economist-Research Associate (and a research staff member at the Energy Laboratory) whose work includes the optimal taxation of exhaustible natural resources, and modeling financial aspects of long-term macro-economic energy models

Szep, Flavin and Sargent **To Offer Political Focus**

Boston Globe political cartoonist Paul Szep, Channel 4 news satirist Dick Flavin, and former governor Francis W. Sargent will be speaking at MIT this January as part of a series of activities organized by the Department of Political Science and its public policy program. Each activity will explore the relationship between politics, policy, and a different medium: cartoons, humor and satire, games, and posters.

Paul Szep, twice winner of the Pulitzer Prize for his cartoons, will begin the series with a talk entitled, "Politics, Policy, and Cartoons," on Tuesday, Jan. 9, 7:30 to 9:30pm in 9-150. He will first speak about the history and significance of political cartoons, and then with a slide show review some of his own cartoons on state and national issues

Two days later, on Jan. 11, the same time and place, Mr. Sargent-an MIT alumnus-will moderate a panel on "Politics, Policy, Humor, and Satire." Dick Flavin will be one of the panelists, with others to be announced. One of the topics that may be discussed is why there was so little humor during this fall's state-wide election campaigns.

"In selecting the subject for this activity, we thought it would be engaging and have widespread appeal," said Patty Joffee, administrator of the public policy program, "but humor can be used to make serious points, and we hope participants will get tuned into serious political issues.

The third activity, "Politics, Policy, and Games," will be a gamedesign contest for students. The

national relations and non-technical topics," Ms. Joffee said. "Although students can be the only official contestants, we encourage them to work as teams with faculty members.

The fourth activity in the series will be a political poster exhibition in Lobby 7. All of the posters will be on loan from faculty members and students at MIT and Wellesley Col-

lege. "The Political Science Department at Wellesley is lending us some World War I posters, and we'll have posters from many countries, including Cuba, India, France, and Germany," said Ms. Joffee. "Although plans are not firm yet, we will have some kind of official opening for the exhibit on January 8 or 9.'

In bringing these activities to the attention of the MIT community, Ms. Joffee said she hoped people would also become involved in the many other, more serious offerings being jointly sponsored by the public policy program, the political science department, and the Center for International Studies. Topics for these activities include the Massachusetts legislature, health care, educational planning for public places, the Boston waterfront district, South Africa, the crisis of democracy, and the SALT treaties.

In conjunction with the technology and policy program and the Program in Science, Technology, and Society, the public policy program is also sponsoring a threeday visit for students with policy makers in Washington, D.C., Jan. 29-31. Seminars, informal meetings, and tours will be arranged at such places as the Office of Science and Technology, the Environmental Protection Agency, the Department of Health, Education, and Welfare, the Department of Defense, and the Department of Transportation. Interested students should contact Christiane Tellefsen, 7-101, x3-2148.



The Fifth Annual MIT Chamber Players Midnight Concert will be presented this Friday, December 15, in Lobby 7. Bring blankets to sit back and enjoy what is truly becoming an Institute tradition for the holidays. -Photo by Roger Goldstein

Chamber Players to Present 5th Annual Midnight Concert

The MIT Chamber Players will present the Fifth Annual Midnight Concert on Friday, Dec. 15, 1978, in Lobby 7.

The free concert, featuring some 35 players, will be performed under spotlights in the darkened main lobby of MIT. The public is encouraged to bring blankets for seating.

Marcus Thompson, founder and director of the MIT Chamber Players, will conduct a program of 18th and 20th century composers. Mr. Thompson is associate professor of music in the MIT Department of Humanities.

The program will open with Stravinsky's Ragtime for Eleven Instruments-a piece that combines instruments normally found in jazz ensemble music as well as in chamber works.

Vivaldi's Concerto Grosso, Opus 3, No. 10, in B Minor, for four violins and orchestra, will feature four soloists who are MIT students involved in chamber music here. They are: first violin, Thomas Lee, a sophomore in biology; second violin, Daniel Yuan, a junior in physics; third violin, Robert Briselli, a senior in chemical engineering; and fourth violin, Allen Olsen, a graduate student in physics.

The last movement of Vivaldi's piece includes a cello solo played by Boyd Mathews, a junior in electrical science and engineering, and the continuo part with cadenza by freshman Neil Paynter, on the harpsichord. It is interesting to note that this work so impressed composer J. S. Bach, that he transcribed it to A Minor for four harpsichord soloists. Solo performers in Mozart's Symphonic Concertante for Oboe, Clari-

Tau Beta Pi Initiates 58

The MIT Massachusetts Beta Chapter of Tau Beta Pi, the national engineering honorary society, held its Fall initiation Sun-3, in the Marlar

net, Horn, Bassoon and Orchestra are Fred Cohen, oboe; MIT research associate Stephen Umans, clarinet; MIT alumnus Tom Stephenson, bassoon; and MIT chamber music faculty member Jean Rife, French horn.

The Midnight Concert will conclude with Stravinsky's Symphonies of Wind Instruments, dedicated to Claude Debussy. There are 24 players in the piece, which provides a collection of unrelated episodes reappearing without an organized pattern and ending with a soft, slow chorale.

The audience is invited to a reception immediately following the concert.

Orlen Assumes **MTDC** Position

Joel Orlen, executive officer in the Office of the Provost, has been named secretary of the Massachusetts Technology Development Corporation.

The MTDC was created by the state legisla-

ture to provide start-up capital, early-stage financing and management assistance to launch innovative, technology-based busithat nesses have the poten-



jobs and expand tax revenues for the state.

Dr. Robert C. Seamans, Jr., dean of the School of Engineering, is a member of the board of directors of MTDC. His appointment, announced last month by Governor Dukakis, continues an MIT involvement with state efforts to develop technology-based businesses that began in 1968 when Dr. Jerome B. Wiesner became a member of the Governor's Advisory Committee on Science and Technology. Dr. Wiesner urged that a separate organization be created to aid technologyoriented businesses. The result was the Massachusetts Science and Technology Foundation, organized in 1969. Dr. Wiesner became a member and served on the foundation until this year when the MTDC was established as the successor organization. He suggested the appointment of Dean Seamans to that group. Mr. Orlen, who helped establish and develop the foundation, has been involved for several years with MIT's efforts to assist the state in developing technologyoriented industry. He provided staff support for Dr. Wiesner during his tenure on the foundation and will also assist Dean Seamans with the MTDC.

Charles G. Eliot, an MIT senior in chemistry, a Canadian from Dorchester, New Brunswick, was one of 11 Canadian citizens chosen to receive a Rhodes scholarship for two years of study at Oxford University in England, beginning next fall.

Eliot, 21, plans to study in the area of nuclear magnetic resonance of enzymes. The Rhodes selection is based to a large extent on versatility. Eliot speaks Greek and spent two years studying music at the National Conservatory of Greece in Athens. has acted extensively with the MIT Shakespeare Ensemble, has played guitar with the Chamber Music Society and the Early Music Society, holds a varsity letter in track, and is a published poet.

The 32 Americans selected to receive Rhodes scholarships will be announced later this month. The last MIT Rhodes scholar was James E. Adams, Jr., who received the scholarship in 1977 and was the Institute's first Rhodes scholar to come out of the Department of Humanities.

contest is divided into two categories-board and computer games. According to Ms. Joffee's description of the contest, "The possibilities are endless-think about elections (Popes and Presidents), energy (Oil Embargo), transportation (Mass Transfusion), or international relations (Defectors-A Game of Sex and Money)."

Contest rules will be available in the public policy program Office, E53-460, beginning January 3. Contestants and anyone else interested can pick up professional tips from a designer of educational games at a seminar on Friday, Jan. 19, 11:30am to 1:30pm in the Schell Room (E52-461). The deadline for submitting entries is January 22, with judging on January 25.

"We planned this contest because MIT people are into building and making things. There's been a history of international relations gaming during IAP, and we would like to extend it to non-inter-

Ting to Receive **Honorary** Degree

Dr. Samuel C.C. Ting, holder of the Thomas Dudley Cabot Institute Chair, professor of physics at MIT, and 1976 co-Nobel Prize winner in physics for his discovery of the J particle, will receive an honorary doctor of science degree from University of Michigan, his alma mater, during that university's winter commencement ceremonies Dec. 17.

Professor Ting received his undergraduate, master's and doctoral degrees from University of Michigan.

To be eligible for membership, a student must be a registered undergraduate in the School of Engineering. In addition, juniors must place in the top eighth of their class and seniors in the top fifth. All student electees must also have "exemplary character."

Those initiated were:

Dante Archangeli, Robert Baldwin, Bernard Beard, Bruce Bornstein, Mark Chan, Wu-Cheng Cheng, Daniel D'Eramo, Beth Doll, David Eckerson, Michel Floyd.

Steven Garverick, Gregory George, Peter Griffith, Deborah Hanchar, Charles Harm, Mohammed Hasan, David Hoover, Jonathon Hurd, William Kincaid.

Robert Klein, Scott Kubowicz, Mickey Lee, Robert Light, Roberto Lopez, Bruce Lubow, Carolyn Major, Mark Matson, Daniel Naor, Richard Newcome.

Trung Nguyen, Hong Nguyen-Phuong, Anthony Palmere, Anthony Patera, Brian Pentland, Jocelyn Petit, Martin Prince, Laura Rees, Andrew Robinson

Jason Sara, Robert Schlingensiepen, John Shriver, Samuel Singer, Russell Steinweg, David Stern, Steven Stern, Yu Hun Suh, Wilson Tam, Keith Taylor.

Pei-Ti Tung, Vijaj Vazirani, Suphat Watanasiri, Allen Wells, Douglas Williams, Gregory Wilson, William Wood, Paul Yen, Perry Yu, and Joseph Zachary.

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Seminars & Lectures

Wednesday, December 13

Developing Testing, and Operating Lincoln Experimental Satellites 8 and 9 (LES-8/9)* — William W. Ward, Lincoln Laboratory. Aeronautics and Astronautics General Seminar, 3pm, Rm 37-252. Coffee served preceding seminar Rm 33-222.

Mechanism of Coherent Structures in Turbulent Boundary Layers* — Dr. Marten Lanahl, professor, aeronautics and astronautics. Applied Mechanics Seminar, -3pm, Rm 3-270. Coffee following seminar, Rm 1-114.

Secant Methods for Non Linear Optimization* — John Dennis, Cornell University. Numerical Analysis Seminar, 3pm, Rm 2-151.

Choice and Anaylsis of Design Basis Accident* — **D. Litai**,Doctoral Seminar, Nuclear Engineering, 4-4:30pm, Rm NW12-222.

Quantum Thermodynamics[•] — Dr. James Park, professor, physics, Washington State University. Thermodynamics Seminar, 4pm, Rm 1-114. Coffee served 3:45pm.

Simultaneous Confidence Intervals for Linear Combinations of Two Inverse Linear Regression Parameters* — Prof S. Zacks, chairman, mathematics and statistics, Case Western Reserve. Statistics Seminar, 4pm, Rm 2-135. Tea and Coffee served 3pm, Rm 2-349.

Development of a Technique to Simulate Helium Embrittlement in Fusion Reactor Materials* — S. West, Doctoral Seminar, Nuclear Engineering, 4:30-5pm, Rm NW12-222.

Thursday, December 14

Time and Frequency Resolved Spectroscopy of Atoms, Molecules and Crystals* — Michael Salour, assistant professor, electrical engineering and computer science. Modern Optics and Spectroscopy, Spectroscopy Laboratory and Research Laboratory of Electronics, 11-Noon, Rm 66-110. Coffee served 10:30am.

Subpicosecond Spectroscopy of Semiconductors* – Dr. R. L. Fork, Bell Telephone Laboratories, Holmdel, New Jersey. Electrical Engineering and Computer Science Optics Seminar, 3pm Rm 39-400.

The Age of Transition: Planck* — Prof Abraham Paris, Rockefeller University, Physics Colloquium, 4pm, Rm 26-100. Tea served 3:30pm, Rm 26-110.

Length Scale Analysis for Buoyant Jets[•] — Prof Steven Wright, civil engineering, University of Michigan, Water Resources and Environmental Engineering Seminar, 4-5pm, Rm 48-316. Coffee at 3:45pm, Rm 48-410.

Friday, December 15

The Tragedy of Angola[•] — **Ambassador Natheniel Davis**, former assistant Secretary of the State for Africa. MIT African Luncheon Seminar, 12:45-2pm, Rm E53-484. Everyone welcome off-the-record.

Chemical Engineering Seminars^{*} – Jose Costa, Effectiveness Factors of Immobilized Multienzymatic Systems, 2pm. Guest Speaker: **Prof J. A. Quinn,** University of Pennsylvania, Gas Tansfer Through the Skin, 3pm, Rm 66-110. Coffee served.

Recent Experimental Results on XXIIB* – Dr. D. L. Correll, Lawrence Livermore Laboratory. Plasma Fusion Seminar, 3pm, Rm NW16-212. Energy Quality and the Hierarchy of Nature^{*} — H. T. Odum, Graduate Research Professor of Environmental Sciences, Director of The Center for Wetland, University of Florida, Gainseville, Florida, Mechanical Engineering Seminar, 3pm, Rm 3-133. coffee 4pm, Rm 1-114.

The Charge Flow Transistor* — Stephen D. Senturia, associate professor, electrical engineering and computer science. Center for Materials Science and Engineering Colloquium, 4pm, Rm 9-150. Refreshments at 3:30pm.

Media Planning Development* — Antonio Muntadas, media analyst and conceptual video artist, Center for Advanced Visual Studies. The Visible Language Workshop, Architecture Department, and the Community Fellows Program, Department of Urban Studies and Planning seminar series of videotape and film screenings, 4pm, Rm 7-403.

Monday, December 18

The Structure and Dynamics of the Leading Edge of a Gravity Current* — Dr. Rex Britter, US Environmental Protection Agency, North Carolina. Water Resources and Environmental Engineering Seminar, 4-5pm, Rm 48-316. Coffee at 3:45, Rm 48-410.

Tuesday, December 19

A General Solution to the Buffer Storage Problem in a Production Line* — Prof Y. C. Ho, Division of Applied Sciences, Harvard University, Laboratory for Information and Decision Systems Colloquim, 4pm, Rm 37-212.

Protein-Protein Interactions in the Structure of the Erythrocyte Membrance* – Dr. Daniel Branton, Harvard University. Biology Colloquium, 4:30pm, Rm 6-120. Coffee served 4pm, Vestibule, 5th Fl, Bldg 56.

Wednesday, December 20

The Inverse Eigenvalue Problem* - Prof Gene Golub, Computer Science, Stanford University, Numerical Analysis Seminar, 3pm, Rm 2-151.

PDP/11 Users Group-DEC Presentation of Do It Yourself* — Presentation at 2pm, coffee and doughnuts at 1:30pm, Rm 39-530.

Thursday, December 21

The Variable Projection Algorithm* — Prof. Gene Golub, Computer Science, Stanford University. Laboratory for Information and Decision Systems Seminar, 10am, Rm 35-338.

Wednesday, December 27

Analysis, Testing and Design of the Hinged Plate Air Cushion Suspension* — David Mercaldi, Doctorial Thesis Presentation, Mechanical Engineering, 3pm, Rm 3-446.

Community Meeting

Wives' Group* — Thurs, Dec 14, the Mass Horticultural Society will be demonstrating how to make CHRISTMAS WREATHS. All materials will be supplied, except scissors, so bring your own. If you plan to come, phone Carol, x3-1614 so we can be sure to have enough material for everyone. \$3.50 per person, 3-5pm, Rm 407, Student Center. Babysitting provided.

Technology Wives' Organization Children's Holiday Party* — Puppet show, refreshments and a visit by Santa Claus. Door opens at 10:45am, TWO members children, 75¢/child; non-members children \$1/child. For information and reservations call Wendy Glasser 924-0133 evenings. Sun, Dec 17, 11am, Sala de Puerto Rico, Student Center.

Wives' Group* — Wed, Dec 20, Uma Chandru & Shampa Mazumdar, members of the Wives' Group, will show a movie and discuss 'Marriage in India', 3-5pm, West Lounge, Student Center. Babysitting provided.

Technology Wives Organization Weekly Exercise Class^{**} — An hour of serious exercise led by professional Marilyn de Kleer. Every Monday through Dec 18, 8pm, Exercise Room, 2nd floor, Du Pont Gym. Info: call Marilyn de Kleer 494-9056.

Lobby 7 Events

Christmas Convocation* — Music by the Chamber Players, carolling, and refreshments served by the Women's League. Wed, Dec 13, Noon-1pm,free

Laduvane* — An unusual quartet that is going to play Balkan and othe ethnic music, also Christmas music. Fri, Dec 15, Noon-1pm, free.

Chamber Players* — Performing Fri, Dec 15, Midnight, free reception following concert.

Social Events

Holiday Buffet*** — Includes Roast Beef and Roast Ham, Yorkshin Pudding, dessert, coffee, \$7.75 per person, tax included. Wed, Dec 13. Rese vations call x3-4896.

Christmas Rat[•] — Sponsored by the SCC. Dancing and drinking; live Dubeer, wine, soda and eggnog, 35¢/glass, wine available by the bottle, pinata and prizes, come celebrate! Fri, Dec 15, 8:30pm-1am, Sala de Puerto Ricc 2nd floor, Student Center. Free. College ID required.

Faculty Club*** — Open Monday through Friday: Luncheon served Noon 2pm; Dinner served 5:30-8pm. Happy Hour: Monday through Friday, 4:30 6:30pm, wide variety of drinks \$1.05.

Movies

Charles Eames Film Festival* — Sponsored by the Council for the Arts Wed, Dec 13: Powers of Ten; Clown Face; Day of the Dead; The World of Franklin and Jefferson; Black Top, 3:30-4:30pm, Rm 10-250. Free.

Charles Eames Film Festival* — Sponsored by the Council for the Arts. Thurs, Dec, 14: A Computer Glossary; Textiles and Ornamental Arts of India; Daumier: Paris and the Spectator; House, 3:30-4:30pm,Rm 10-250, Free.

Shampoo** - LSC movie. Fri, Dec 15, 7pm & 9:30pm, Rm 26-100. Admis sion: 75¢ w/MIT or Wellesley ID.

Fritz the Cat** — LSC movie. X-rated. Sat, Dec 16, 7pm & 9:30pm, Kresge Auditorium. Admission: 75¢ w/MIT or Wellsley ID.

The Producers with Zero Mostel^{**} — SCC Midnite movie. Sat, Dec 16, Midnight, Lobdell Dining Hall, Student Center. Free.

Exhibits

Drawings for Outdoor Sculpture 1946-1977* — This broad survey of 58 sculptural drawings by such twentieth-century masters as Alexander Calder, Mark di Suvero, David Smith, Christo and Barnett Newman consists of work done in a number of media including watercolor, oil paint, india ink and pencil. Sponsored by the Committee on the Visual Arts. On view daily 10-4pm; Wed evenings, 6-9pm, through Dec 19, Hayden Gallery, 160 Memorial Drive, Cambridge, MA.

Drawing Made Material* — New work by three young artists: France Barth, New York; James Ford, San Francisco; Sandi Slone, Boston. Spon sored by the Committee on the Visual Arts. On view daily, 10-4pm; Wee evenings 6-9pm through Dec 19, Hayden Corridor Gallery.

Department of Architecture Fourth Floor Exhibition Program* Works of Alumni. On view Dec 11 through Dec 21, Bldg 7.

Aspects of Art and Science* — An exhibition of diverse art objects illustrating the concepts of Cyril Stanley Smith. On view through Dec 22, 9:30am-5pm, Margaret Hutchinson Compton Gallery, Bldg 10, 77 Mass Ave, Cambridge, MA. Organized by the National Museum of History and Technology, Smithsonian Institution. Presented by the Compton Gallery Committee with the assistance of The Committee on the Visual Arts.

On Subjectivity* — A project presentation by Muntadas, A Publication in Stages, on view daily Dec 22-23 and 26-29; A video tape show daily Noon-1pm & 3-4pm. Hayden Gallery, 160 Memorial Drive, Camb, MA. Sponsored by the Committee on the Visual Arts in collaboration with the Center for Advanced Visual Studies, Visible Language Workshop and the Consulate General of Spain in Boston. Public Preview Thurs, Dec 21, 5-8pm, artist will be present.

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Sat,	Jan 6	closed	closed	9-6	closed	9-6	closed	9-5	10-5	closed	9-8	closed	9-8	12-6	closed	9-5	24 hrs	closed
Sun,	Jan 7	closed	closed	1-9	closed	1-10	closed	1-11	2-11	closed	1-11	closed	1-11	2-10	closed	1-11	24 hrs	closed
Mon,	Jan 8						Librari	es resu	me regul	ar sched	ule							

artment of Architecture Fourth Floor Exhibition Program* ected Projects from Fall Studios. On view daily Jan 2 through Feb 8.

and Machine: The Development of Scientific Illustration in naissance Europe* - The relationship between art and science in edical and mechanical textbook illustrations of the Renaissance will be exred through photo-enlargements and original works. Sponsored by the nmittee on the Visual Arts. On view daily Jan 3-24, Hayden Corridor llery.

using on Faces* - Three painters, as well as a technical staff from aroid will be in residence to explore the qualities and potential of aroid Corporation's experimental format camera. The artists in idence: Joel Janowitz, Jan 3-8; Jim Dine, Jan 10-14; Chuck Close, Jan 17-Noon-2pm, Hayden Gallery. Sponsored by the Committee on the Visual Made possible by a grant from the National Endowment for the Arts d the generous support of the Polaroid Corporation.

ust and Music* - Music Library, Rm 14E-109. Musical and pictorial resentations of the Faust legend.

art Nautical Museum* - Permanent exhibit of rigged merchant and val ship models, half models, of yachts and engine models. Open daily in ldg 5, 1st floor.

[]T Historical Collections* - Katharine Dexter McCormick, '04; Vanvar Bush, '16 Bldg 4 corridor. The New Technology Exhibit 2nd floor lcony of Lobby 7. Energy Exhibit, Bldg E40, 1st floor. Solar Energy, Idg 8 Main corridor. Center for Space Research, Astrophysics Exhibit fain Corridor, Bldg 4. Rogers Building Exhibit, Bldg 4. Norbert Wiener, Karl Taylor Compton, Bldg 4. Laboratory for Physical Chemistry

MIT Historical Collections* - In house exhibits include antique globes; The Ellsworth A. Wente Collection of motors and meters; rare instruments including compasses, sundials and other measuring devices from the 17th and 18th centuries; Early Alumni and several exhibits of memorabilia and photographs honoring prominent graduates of the Institute. Charles Stark Draper: Many Facets of the Man; The Compton Years, a photographic essay of the lives of Dr. & Mrs Karl Taylor Compton. On view daily, 9am-5pm, 265 Mass Ave, 2nd floor, Camb, Mass

The Outdoor Collection* - There are many fine pieces of contemporary sculpture displayed on the MIT campus, including works by Alexander Calder, Louise Nevelson, Pablo Picasso, Henry Moore, Tony Smith and Jacques Lipschitz. For information and guides to the campus, call the Information Office x3-4795.

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

MIT Science Fiction Society* — Come visit the world's largest lending science fiction library. Hours posted on the door. Rm W20-421.

Theater

Black Nativity* - Performed by the National Center Afro-American Artist, Elma Lewis School of Fine Arts. Sponsored by the St. Bartholomew's Church. Fri, Dec 15, 8pm curtain time, Kresge Auditorium. Admission: \$5 adults; children and students with ID. \$1. Ticket information call 354-8582 or 862-3313.

		RVICE SCH 78 HOLIDAY		N
Thursday .	E	ast day of Commo Baker and MacGreg		:00 p.m.
Friday	Dec. 22	STUDENT CENTER Lobdell	Breakfast Lunch Snack Dinner	7:30a.m10:00a.m 11:00a.m 2:00p.m 2:20p.m 4:30p.m 5:00p.m 7:00p.m
Saturday	Dec. 23	20 Chimneys	Lunch Evening CLOSED	CLOSED 7:00p.m12:30a.m
Sulorday	.Dec. 25	20 Chimneys	OPEN	9:00a.m 2:00p.m
Sunday an	和自己的网络中国人民主义中的变色	ERRY CHRISTMAS	& 20 Chimney	
Tue <u>s</u> day-Friday	Dec. 26-29	Lobdell	Breaktast Lunch Snack Dinner	7:30a.m10:00a.m 11:00a.m 2:00p.m 2:20p.m 4:30p.m 5:00p.m 7:00p.m
Network and the second second		20 Chimneys	CLOSED	
Saturday, S Monday		1, Jan. 1 Lobdell APPY NEW YEAR	& 20 Chimney	s CLOSED
Tuesday-Friday	Jan. 2-5, 1979	Lobdell	Breakfast Lunch Snack Dinner	7:30a.m10:00a.m 11:00a.m 2:00p.m 2:20p.m 4:30p.m 5:00p.m 7:00p.m
		20 Chimneys	Lunch	CLOSED
Saturday-Sunday	Jan. 6-7	Lobdell		CLOSED
	Sat. Sun.	20 Chimneys 20 Chimneys		9:00a.m 7:00p.m 9:00a.m 1:00a.m
	w			
Friday	Dec. 22	Morss Hall	Breakfast Lunch Dinner	7:30a.m10:30a.m 11:00a.m 2:00p.m CLOSED
		Pritchett		CLOSED
MORSS HA	LL AND PRITCHETT	CLOSED DEC. 23, 1	978 THRU JAN	l. 1, 1979
Tuesday-Friday	Jan. 2-5	Morss Hall	Breakfast Lunch Dinner	7:30a.m10:30a.m 11:00a.m 2:00p.m CLOSED

Under Milk Wood* - Educational Studies Playhouse Fri & Sat, Jan 5, 6, 8pm, Rm 26-100, admission \$2. Fro information call x3-4882.

Athletics

Home Schedule* - Wed, Dec 13: JV Track, Governor Dummer & Naval Academy Prep, 4pm. Sat, Dec 16: Track, Alumni Meet, 2pm.

Dance

Dance Workshop** - Workshop director Beth Soll will teach both technique and composition/improvisation classes. Class meets Mon & Wed, 3-5pm, T-Club Lounge, duPont Gymnasium. For further information call x3-2908.

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

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

***Open to members only Send notices for Jan 3 through Jan 14 to Calendar Editor, Rm 5-113,

before Noon, Friday, December 29



WINS FELLOWSHIP-Michael E. Mauel, right, of South Bend, Ind. winner of the Charles LeGeyt Fortescue Graduate Fellowship awarded by the Institute of Electrical and Electronics Engineers, shows Professor Paul L. Penfield, Jr., the equipment used in his mirror fusion research project, which is directed by Dr. Louis D. Smullin, Dugald Caleb Jackson Professor of Electrical Engineering. Professor Penfield, of the Department of Electrical Engineering and Computer Science, is awards chairman of the IEEE's Boston section. Mr. Mauel was selected from nearly 100 applicants for the Fellowship, which provides a \$5,500 stipend for a year. The Fellowship is named for the pioneer electrical engineer who died in 1936. A prolific inventor, Dr. Fortescue was the recipient of some 185 patents. It is the second year in a row that an MIT student has won the Fellowship.

Muntadas' 'On Subjectivity' To Be Exhibited in Hayden

Hayden Gallery will exhibit a Project Presentation by media analyst and conceptual video artist Antonio Muntadas, "On Subjectivity," a publication and a videotape on December 22, 23 and 26-29, 1978.

This special exhibition will open with a public preview, Thursday, December 21, 5-8pm, with the artist attending. Gallery hours will be 10am-4pm daily with a screening of the videotape at noon and 3pm.

The MIT Committee on the Visual Arts organized the presentation in collaboration with the MIT Center for Advanced Visual Studies the MIT Visible Language Workshop and the Consulate General of Spain in Bos-"On Subjectivity" is a study of information-how it is communicated, presented through the catalyst of media and, finally, interpreted. Using photography and television, Muntadas seeks to foster an awareness of the "invisible mechanism" of communication as it occurs in the public context. He examines subliminal consciousness and the way it can be manipulated by media, making distinctions between perception and comprehension.

exhibition.

To produce the publication, Muntadas selected 50 photographs from The Best of LIFE, a book of photographs that originally appeared in Life Magazine. He distributed copies of the photographs-without captions-to 250 people who were asked to supply captions from their own understanding of the images. It is the results of this endeavor that have recently been published and will soon be available to the public.

The videotape, "On Subjectivity," includes the reactions and opinions of people who were asked to view se

a service of the service of the		Pritcherr	CLOSED	
Saturday	Jan. 6	Morss Hall	CLOSED	
the stranger and star		Pritchett	CLOSED	
Sunday	Jan. 7	Morss Hall	CLOSED	
Martin Charles	a standard and the	Pritchett	Noon-Midnite	
Monday	Jan. 8 🖌	LL DINING HALLS RESUM	AE REGULAR SCHEDULE	

Piene to Launch First Night Sculpture

MIT will participate in the opening of First Night, Boston's third annual New Years celebration, with the launching of Otto Piene's "Milwaukee Anemone," an inflatable sky sculpture.

The event will take place on the Boston Common, Sunday, December 31, 1978, from noon to sunset (weather permitting). The public will be encouraged to participate.

Mr. Piene's "Milwaukee Anemone" is an air-filled, red dacron flower, 45 feet in diameter, rising 150 feet into the air with an attached "stem" that connects to a ground-based air blower. The sculpture is lifted by seven, 200 foot long helium-filled, looped tubes of clear polyethylene. It is held and directed by ropes, providing an established center for the flying flower.

Launching and flying the sky sculpture will require the assistance of many support staff and public volunteers. The environmental event will also depend upon cooperative weather conditions. The "Milwaukee Anemone" was originally commissioned by the Milwaukee Art Center. Mr. Piene is a sculptor and director of the Center for Advanced Visual Studies at MIT. His works have been exhibited throughout the United States and Europe. Most recently, several of his sky sculptures were launched in Washington, D.C., at the National Mall site of "Centerbeam," a group sculpture produced by some 24 fellows at the Center.

Novacek Wins Award

Eugene Novacek, a junior in civil engineering from Southfield, Mich., has received a \$1,000 scholarship award from the Associated General Contractors of America and a \$500 award from the Massa-

The publication, "On Subjectivity," was recently produced through the MIT Visible Language Workshop and the MIT Center for Advanced Visual Studies, where Muntadas has been a Fellow since 1977. The book will be presented for the first time in this

chusetts Construction Advancement Program. Mr. Novacek is working toward a degree in construction engineering and management.

lected excerpts of daily television programs, edited by Muntadas into a collage of images that appear in a narrative, subjective form. The 50-minute tape (black-and-white and color) stimulates evaluation of the potention of the television medium and its intentional and unintentional influence on our daily lives.

A native of Barcelona, Spain, Muntadas has lived and worked in the United States since 1972, working primarily with the video medium. He initially used video to document his work and later began to exploit and explore the nature of the medium itself. He has received grants from the Sumner Foundation for the Arts and the Fundacion Juan March, Madrid, Spain, and has exhibited his works throughout the United States, South America and Europe. "On Subjectivity" (the videotape) was recently presented at the Museum of Modern Art, New York, and will be at the Centre Beaubourg, Paris, next February.

Tech Talk, December 13, 1978, Page 5

Pr Pirelli steel belted rads, 165SR15, exc cond, \$55; pr Gdyear Suburbanite rads snows, GR78-15, exc cond, \$55; pr rims for Volvo,\$30. Call Gary x3-5726 or 891-5724.

Pr Sears snows, sz F78-14, usd 1 seas, 3.5K, \$50. Call Buzz x3-3244.

Amateur radio transcvr, Drake TR-4C w/AC-4 power supply, \$500. Call 661-9046.

21" B&W TV w/stand, \$10; 4 draw grey metal file cab, mint cond, \$25. Call Bruce x3-7802. Frigidaire refrig 12.3cf, 8.84 refrig, 3.41 freezer, exc

nd, \$100 ask. Call 924-3340

CLASSIFIED

Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Persons who have no extensions or who

wish to list only home telephones may submit ads

by coming in person to the *Tech Talk* office, Rm 5-113, and presenting Institute identification. Ads may be telephoned to x3-3270 or mailed to Rm 5-113. **Dead line is noon Friday before publication**.

Waterbed qu sz 6'x7' w/out liner \$100; waterbed qu sz 6x7' w/liner \$125; refrig gd working cond, \$50; Advent 100A noise reduction unit, perfect \$250.

Call x3-6963 or 782-8810 eves Zaeem, lv msg if not

Tw bed extra long, extra narrow, matt & frme, \$30 or best, exc cond. Call Meredith 864-3919.

Pr snows 520-13 for midget \$20. Call Lisa x3-6898.

W bike Raleigh 3 spd 26' nrly nw, \$70; Canon EF Camera W/f/1.4 lens, \$290. Call 862-3952.

Magnificent org water color sea scape matted by

famous No Shore artist, holiday long gown, reas sz 7-9, 8-10, bright orange w/maribou stole; striking blond sheard raccoon coat 7-9, squirrel stole, mink dyed, gd cond, Duncan tufle tble w/blt storage leaves. Call 646-2351.

Super Quad sys for the prc of stero! JVC SQ/ dis-crete 4 ch/200W recvr w/blt in equalizers; BSR beltdrv turble; nw Shure cart, 4 KLH mod 6 spkrs, great sound, \$750 nego. Call Mike 661-8857

Nw steel rads ER78-14, never mntd, \$40 ea, 5 for

Pr Omega IIIB spkrs, exc cond, ret \$320, wl sell for \$250. Call for specs Glenn x5-6125 Dorm.

IBM executive typewtr w/supply of ribbons, exc cond, \$190 or best. Call Norma x3-5963 or x3-5961.

2 nw Fulda 145/13 tires for Rabbit, Fiat, etc, \$25.

Snow blower, \$40. Call Michael x8-2884 Draper

Pr snows 7.75x14 mntd on rims, gd cond, \$85 fit

Pr snows F70-14 mntd, nw whis, usd 1 seas; baby

high chr, baby carriage, blck fire place screen. Call

Support the VLW, buy one-of-a-kind wrapping paper, 15 sheets, 20'x20' per roll, \$4, suitable for framing! Call x3-4416.

Dble bed, complete, 2 tw beds w/box spr, matt, dresser, desks, uph chr, sofabed, clean, solid, cheap, also Kware, lamps, returning o'seas. Call Crook x3-5735.

Whirlpool refrig, 12 cf, 2 dr, 2 yrs old, gd apt sz. Call 646-5310 aft 6:30pm.

M hockey skates sz 9, nvr worn, \$10. Call x8-1315

Remmington hand sty dryer, 2 spd, 3 sty attach-ments, lk nw, \$15 or best. Call 494-0389.

2 10 spd bikes, Motorbecane & Peugeot, vy gd cond w/kryptonite lock, \$110 ea. Cáll x3-4414 or 926-6630 eves.

Frlpl wood, 16" season, split hardwd, \$95/cord, \$50/½ cord, delivery prc varies w/loc, smaller amnt avail for pick up. Call 862-7938.

TEAC AN-50 Dolby \$45; Dynaco FM-5 tuner, \$95; Soloman 555 Equipe bindings, nw in box, \$50. Call Yum 862-0631.

Solid pine shelves, Med sty, 2" thick, lengths or 8', 5' & 3', 4 shlvs, \$100 or best. Call Mike x3-4462 or 494-0360.

3 prs ski boots, Reiker, sz 9, 5 buckle, gd cond \$15.

Falcoen, 4 buck, sz 6, almst nw, \$20; Yama 2 laceup sz 5, \$5. Call Charles x8-4043 Draper.

Pr 7.00x13 snows, exc cond, gd for VW's \$40. Call

Wood international 14 sailboat, cotton sails, fine cond. Call A.R. Gurney x3-3616 or 244-3164.

Plant light w/flo bulb, 46"L, nw \$30. Call Rita x3-

Xcountry skis, Bonna 2400, 215cm, poles &

bindings, \$90; downhill skis Head 320, 170cm, incl bindings poles, boots, sz 7, \$75. Call x3-3386.

78x14, Call Geo. Blair 494-1403

ly msg if not in.

\$3600, Call 646-8681.

Call Ed x3-5763.

894-2285 aft 5pm.

Draper.

x5-9623 Dorm

\$175. Call Tom x3-6702

ADS

X3-3270

For Sale, Etc.

Tires, camera, 3 mntd, 2 stdd snows, 560-15, 4 ply, 1 600-15L, 6 ply, \$30 ea; unmntd stl rads snows, 205-15/GR78-15, \$45. Kodak inst 500, f/2.8 w/case, flash & bulbs, best, Call Bob x7643 Lincl.

Hitchcock DR set, oval tble w/gold leaf trim, 2 chrs, brnd nw. Call Pat 482-2930 x295.

Hand knitted W pullover sweater, light heather blue, 100% wool, sz 14, \$25; Maytag, port washe apart sty, \$60. Call Nancy x3-8222.

15 gal fish tank w/stand, filter, fish & gravel, \$40. Call Jackie x3-1443.

Brnd nw Uniroyal A78-13 bias belted tires, perfect cond, taken off nw car, \$50 pr. Call Bob x7288 Lincl.

Bincoulars swift, high quality optics 7x50 rubber armored & 10x50 brnd nw in box, low prc. Call David x3-8161 or 738-7734 eves.

Nw Veto clarinet & Selmer Bundy tenor sax-ophone, 30% off; wanted: Yamaha acoustic guitar. Call x7500 Lincl.

Chest, \$35: fish tank, \$15: card tble, \$10, vacuum slo; recd rack, \$10; Danish the \$50; 2 Danish end tbles \$50; GAF super 8 camera, \$25; ironstone china \$20; coffee bean grinder, \$15; fondu pot. Call 492-1992 eves.

Girls iceskates, sz 5-6, girls bike, both almst nw.

Match tw matt & box sprng, Certa + frme, all nw, \$80. Call David x3-1827

Pr stdd snows, retreads, not mntd, usd only $^{1/2}$ seas, sz C78-13, \$35 pr. Call Donna DeJongh x3-5655 or 625-4972 eves.

Mag tapes 8" BASF 600-6000 bpi, nw & usd, 8W stepping motors, 300 rpm, 3 degr steps, Z protected, Bendix plugs 12-60 pin, MS-30 series, in org plastic, Call Steve 782-0029 best eves.

G iceskates sz 12, 1, 2, \$3 pr; Hyde M skates nw, sz 10, \$10; M ski boots, sz 10, \$5. Call Jean x3-2515. W Humanic ski boots, sz 9, \$20; Garrard trntble,

\$15. Call Jeannine x3-2163.

Circular slide projector; steam trunk, 30x23x40, \$15; 7 tires, H78x15 w/rims, \$15, 6.50-13, \$10; F70-14, \$10; F78-14, \$20; G78-14, \$12; F70-14, \$12; 7.60-tr, \$10; F78-14, \$20; G78-14, \$12; F70-14, \$12; F 15, \$12. Call x3-2627 or x5-9819 Dorm.

K set w/4 chrs. 12; dble bed, 30; chest 25; child bed, 15, crib, 10; rug 10; other hsehold furn. Call Jacob 232-4655 not on Sat.

13" Broadmoor color TV, \$150; bkshelf, \$5; tble lamps, \$1.50; metal chr, \$5; desk, \$10; Presto p htr, \$10; 10 spd bike, \$15. Call Chow 494-9191

Ski bindings, look Gt, lk nw, \$23; Nordica ski boots, M sz 10, \$25. Call x3-5235 or 729-5837. Fig iceskates, M sz 81/2, only usd 1, \$15. Call 494-

0073 eves. Magnavox home entertainment ctr, 25" color TV, onial conso AM/FM radio, stero, & spkr jacks, coloni cab, \$300 prc nego. Call Grace x3-5822.

Coleman 2 burner camp stove, usd 1 summer, lk nw, \$20; 2 person mess kit, \$3; assrtd silverware, K utensils & pots, reasonable prc. Call Margaret x3-

4862. Brnd nw ladies Timex Cavatima watch, \$10; Dole radiator values, reas prc. Call 232-0484 days.

2 prs of childs downhill ski equip; new toy refrig, 5yr old girl. Call x3-5685

4 rims 5 stolds, to fit SR78x14 tires, \$7 ea; '76 Cl Camero 305, gold, 13K, chrome rims, AM/FM, stand, \$4000. Call x3-2215.

Ampex 750 reel to reel tape recrdr, 3 head, echo, sound on sound, working but old, \$80; sony TC-255 r-to-r, tape recrdr, 2 head, gd cond, \$90. Call Tom 494-8245 aft 6pm or x3-7089 days.

Stained pine colonial loveseats 2, \$195/both; stained pine captains chr, \$45; M Raleigh 10 spd, Reynolds frme, lk nw, \$90. Call Erving x5781 Lincl or 862-7041

Vehicles

'66 English Ford Cortina, 4 dr, 70K, gd bdy, gd run cond, gd mlg, \$375 or best. Call Henry x3-3471. '68 Velocette motorcycle, absolutely mint, 0.5K, classic 500cc, British single, serious inquires only.

Call x3-8253 or (1) 263-8942. '68 Buick Skylark Special Deluxe, gd run cond, grey 6 cyl, PS, auto, AM, ask \$300. Call 738-4576 grey 6 cyl, PS, auto, AM eves or am ask for Lee.

'68 Ford Falcon, gd eng, some rust, 6 tires, \$300 or best, mst sell. Call x3-7269.

'69 Chevy Impala, gd bdy, dependable eng, \$399. Call 484-1874

'70 Chevy Stat wg, auto, PS & PB, A/C, gd looking & gd running car, \$700. Call Jim x8-2872 Draper. '70 Camero V8, auto ,PS, PB, A/C, nw exh & shocks 4 nw, steel btld rads, im late, \$1300

'74 Fiat 128 spt cpe nw '75, exc cond, \$1500 or best. Call x7747 Lincl or 926-1563 eves.

'74 Ply stat cust, 4 dr, V8-318, auto, PS & PB, r & h, 5 nw ww gl rad, blue w'vynl rf blue vynl int 14-18 mpg 56K, in West Gar daily, exc cond, ask \$2350. Call x3-2255 or 272-4590 eves.

'75 Mercury Bobcat, 4 cyl, stand, inter & exter, exc cond, 35K, \$1695. Call Ken x685 Lincl.

'75 VW Bug, exc cond, 30K \$2200. Call Tom x3-6074 or 524-6332.

'76 Ford Torino, 4 dr, 8 cyl, A/C, PS, AM/FM stereo tape deck, vnyl top, rads, snows, theft alarm, exc. cond, \$330 or best. Call Tony 484-4237 aft 5pm

Save gas! '76 Fiat 128, 30K, \$1800. Call Madeline 547-7138 or x3-4168.

'78 Pontiac Sunbird, PS, PB, AM/FM radio, r/defog, snows incl, br w/tan inter, moving mst sell, \$3500. Call Billu x7860 Lincl.

Housing

Belmont 7 rm, 3 BR, frpl, D&D K, avail Feb 1, \$425/mo + util. Call 484-5126 eves

Eastgate sublet, 1 BR apt, lg LR, furn, avail Dec 18-Jan 7, everthing incl, clse to Kendall subway. Call 494-0073 eves.

Camb, Central Sq area, attractive furn rm, kitchenette, incl ht + util on T. Call x3-3864. Sublet apt 2 BR for Jan in Westgate. Call x3-1348 or 494-8508

Ski 93 over Xmas, 2 BR, 2B, condo slps 6 walk to skiing, also avail Feb sch vac; \$250/wk, Feb monthly rental possible. Call x3-6169.

Somervlle, Porter & Harvd Sqs areas, ideal for pro & foreign visitors, mod 2BR, A/C, ww, all appl, \$285/mo w/no ht. Call 729-9130.

b, sublet from Feb 1, exceptionally furn LR, DR, B, lg K. yard, nr T. \$425/mo. Camb. 547-3708

Bos apt w/1BR, LR, K & B, avail Feb 1, \$270/mo, Bay State Rd, nr Kenmore Sq. Call 267-6815.

Needham hse for rent immed, 3 BR, 1 1/2 B, LR, DR, K, fl bsmnt, gar. Call 329-3890 days or 449-0699 aft

Sublet Camb apt, 1 blck from MIT now thru June \$150/mo + gas for furn 1 BR, K, LR. Call Susie x3-4856

Sublet apt, furn studio, Harv Sq, March to Aug. '79. Call 864-6237 Mgozi.

Ski 93, 3 BR, 2B, slps 12, betw Loon & Waterville, avail for season rental \$2200 + elect. Call x8-3401 Draper or 643-7571.

Sublet from Dec 22-Jan 31 Beacon St. studio ant. loft frpl, hrdwd flrs, furn, park avail, cls to Mass Ave, rent nego. Call Sandy x3-6782 or 236-4205 eves.

Animals

Meuzza the Magnificient: delightful 6 mo old calico cat nds loving friend to live w/could that be you? Please call Stephani x3-2916.

Xmas kittens: Sari, Kamish's 4th finest & final litter, little fluffy felines, assort black, orange & white, give the gift that purs. Call Linda x3-1614.

Free kitten 6 mos old, playful, intellegent has all shots. Call x3-6782 or 236-4205 eves

Free adorable kittens, 6 wks old. Call Helen x3-2710

Lost and Found

Lost: Lg glss mug in Walker Cafe. Call Luba x3-

Lost: ladies br suede lambskin-lined left hand leather glove, betw Main Bldg & Student Ctr, 12/6/78, if found pls call x3-2916.

Wanted

Old Hansel & Gretel records (2) on Musicraft label, sung by Earl Rogers. Call Chris Kirchberg x3-4768

Nd lenses for Olympus OM1. Call David x3-7108. Garage usd for auto work on daily basis. Call x3-2272 or 522-8027.

Couch cushions meas 24" x 66 to 68" comb length. Call Jim C x3-2896 lv msg if not in.

Would like to buy 2 tickets to King Tut exhibit in NY. Call Kathy x5-8316 Dorm.

Port dishwasher in gd cond, Call 494-8193

Babysitter wntd to care for 2 year old, 1 or 2 afternoons/wk in our Eastgate apt. Call 494-0333. Auto AM/FM radio, any make. Call Rich x5845

Sturdy steel desk approx 5' x 21/2'. Call x3-6794.

Wl drive your car from Bos to Florida for \$50 + ex-penses, responsibl adult F, reference upon request. Call Martha Rucki (413) 737-2407 or (413) 592-2097

Carpools

Rd offered to New Orleans, lv aft finals or during IAP. Contact Eric 267-5451.

Acad. Staff, Manager, Financial Information and Planning. Responsibilities will include strategic financial planning activities; preparation of cost/revenue analyses; negotiation of internal program financing arrangements; designing and implementing financial MIS; preparing School's annual budget. Will supervise operation of School's Computer Facility; establish operating policy; maintain and upgrade hardware; budget and allocate funds for computer time for teaching, research or administration. Additional respon-sibility includes non-academic personnel ad-

research or administration. Additional respon-sibility includes non-academic personnel ad-ministration, space usage and physical plant func-tions. An MBA, or equivalent, knowledge of EDP systems required. Candidates should be able to manage several projects simultaneously, and to relate effectively with people from various dis-ciplines. C78-36 (12/6)

Sponsored Research Staff, Systems Programmer, in the Sloan School of Management to work a large

in the stoan School of Management to work a lag interactive system for econometric and statistical analysis called TROLL, Responsibility will include maintaining and enhancing the TROLL system. Familiarity with IBM 370 Assembler, Fortran and a structured language, such as PL/1 is required.

Sponsored Research Staff, Research Analyst, in the Sloan School of Management to develop statistical and systems analytic methods for

analysis of econometric models; implement this

system using TROLL functions and Fortran. Posi-tion requires knowledge of Fortran, TROLL, systems theory and econometrics. R78-297 (12/13)

Sponsored Research Staff, Temporary, in Materials Science and Engineering to perform an engineering and economic analysis of current and proposed primary production technologies of magnesium; determine the research, development and pilot production studies nescessary to max-imize angree and economic afficiency. Paritin re-

and phot production studies lescessary to mar-imize energe and economic efficiency. Position re-quires an educational background in Metallurgy and Material Science with an advanced degree in Materials Systems Anlysis. A background in the analysis of production technology and economics of metals.

metals, cost engineering and pricing policy is also necessary. Temporary through Nov. 1979. R78-298

Sponsored Research Staff, Systems Analyst/Programmer in the Artifical Intelligence Laboratory to develop and maintain PDP11 software supporting exotic peripherals; determine nature of and localize hardware failures; assist researchers in development of system software in-terfaces, and perform picture input and output operations for computer vision group. Experience

operations for computer vision group. Experience with PDP11 Assembly Language, with PDP11 As-sembly Language, with DOS operating system, knowledge of PDP11 architecture and UNIBUS, of process control computer methods and photographic techniques are required. Interest in computer wision and in collaborating with

computer vision and in collaborating with

Sponsored Research Staff, Technical Asst., in the Harvard-MIT Division of Health Sciences and

Harvard-MIT Division of Health Sciences and Technology to prepare reticulocytes, lysates, cell extracts, and other biological components; perform protein synthesis assays, protein kinase assays and gel electrophoresis; assist in various duties as necessary. Bachelor's degree required. Experience in molecular biology or biochemistry techniques also neessary. R78-275 (12/6)

Sponsored Research Staff, Electron Microscopist, in the Center for Materials Science and Engineer-ing to operate a Vacuum Generators HB-5 scann-ing transmission electron microscope; assit user with research problems and interpretations of their results; cooperate in operation and administration of microscopy facility. A Ph.D. degree in a physical

science or engineering required. Experience in electron microscopy, image interpretation and in-strumental techniques also required. R78-276 (19/2)

Sponsored Research Staff, Research Engineer, in the Center for Materials Science and Engineering

the Center for Materials Science and Engineering to do research on graphite intercalation com-pounds. A Ph.D. is required as well as well as ex-pertise in preparation, characterization and measurement of the physical properties of these materials. Experience in techniques of crystal

growth, x-ray diffraction and electron microscopy, infra red and Raman spectroscopy are also neces-sary. R78-277 (12/6)

Sponsored Research Staff, Research Engineer, in the Center for Materials Science and Engineering to assume full responsibility for operations of physical electronics model 590A Scanning Auger Microprobe and model 548 AES/RSCA/LEED

System: instruct and supervise students; maintain

quipment; participate in discussion with poten

tal users, perform general organizational and ad-ministrative duties, perform research in catalysis, corrosion, absorption and surface and grain-boundary segregation. Ph.D. and experience in

surface science, vacuum technology electronics, signal processing and electron beam technology re-

Sponsored Research Staff, Research Engineer, in

the Center for Materials Science and Engineering

the center for matching sectors and highering to perform and train others: perform routine opera-tion of conventional transmission electron microscopes; prepare suitable microscopy specimens; maintain electron microscopes; operate

and maintain peripheral equipment; maintain in and maintain peripheral equipment; maintain in-ventories on expendable item. Bachelor's degree in a physical science, special interest in; and under-standing of some aspect of electron microscopy re-quired. Experience with vacuum equipment and darkroom techniques also required. R78-279 (12/6)

Sponsored Research Staff, Tech. Asst., in Nutrition and Food Science to conduct research on an en-zyme from serum and tissue of patients who have

bladder tumors. (Enzyme functions in the area of glycoproteins.) A Master's degree in biochemistry or a related field, some laboratory experience re-quired. R78-281 (12/6)

Sponsored Research Staff, Chief Linac Operator, at the Laboratory for Nuclear Science, Bates Linear Accelerator (Middleton, MA), will be in-volved in linac start-un and operation, diagnosis of

quired. R78-278 (12/6)

researchers is also necessary. R78-299 (12/13)

R78-296 (12/13)

(12/13)

Carpool, MIT-Framingham or Natick, M-F, 9-5pm. Call Halina x3-6758. Nd ride Deedham to MIT, wl shr expenses. Call Kathy x3-2691.

Going to Ll by car Dec 22, return Dec 26, want someone to shr expenses 1-way or rt. Call Susan x3-7709.

Miscellaneous

Voice & piano lessons by experienced, qualified instructor, prv & group lessons, designed around indv nds, basic tech, relaxation & repertoir, all in-quiries welcome, free introductory lesson. Call 643-5791.

Wl type theses, MS, tech, fast & accurate, IBM Correct Select. Call Debbie x3-1848.

Persons fluent in French, Spanish, or German eded to translate for July conference at MIT. science, religion, or humanities, background help ful. If interested please call Barbara x3-1703.

Exp sec wl do theses, MS, reports, fast & accurate,

IBM Self Correct, Call x3-4528. Retired watchmaker formerly w/E.B. Horne Co

will repair watches at home, reasonable rates. Call Rosalie x3-6867 5pm, M-F.

Pro typing. Call Linda x3-5956.

Wl type, anything, tech, etc, IBM Correct Select, reas rates. Virgina 926-8894.

Free haircuts at Diego at the Loft, Newbury St. For appointment call Maggie aft 7pm, 492-6350.

Surplus Property

MIT surplus property for transfer of sale for research or teaching programs only:

Spectrum Analyzer, Mfg, Signal Analysis Ind, Model-21; Display Monitor, Mfg, Kratos Display Div. Model-M221; Cabinet, Mfg, Digital, Model-9A Computer w/acc., Mfg, Digital, Model-PDP-9. Case # 104

Video Converter; Recorder Controller; Tape Recorder. These items were part of the Mark I Recorder. For further information contact W. A. Derry, Property Officer x3-2777. Reference Case # 105

Precision Test Receiver, Airborne Inst. Lab, Model 30MC Type 130, \$1,350. Reference-Case # 106

PDP-7A-109 Central Processor w/tape readr, tape punch, tape drives, CRT Display. Reference Case #107.

Tank Section (part of wind tunnel), 76" long 46' dia. Reference Case #108.

Trailer, Van Type, Mfg. Spim, Serial 49, 19'10" long, 8'2" high floor to roof, 7'9" wide, Dual Wheels. Reference Case #109.

Worthington Air Compressor, Two Stage w/60 HP motor, Pittsburgh Lectrodryer Dehumidifier size 250, Model BWC and one Electric Magnet, 5 ton, 6'x6' dia. deflecting type, 3/4"cap. Reference Case # 110

Tracerlab Spectrometer mod SC-81 14050-58; Chromatography 7620-145; Beckman P/T Meter, 82345-12; Electric Calculator 14040-176; Gasflow 82345-12; Electric Calculator 14040-176; Gashow Proper, Counting Sys, 7620-85; Printer, 7620-89; Coleman Spectrophometer, 644-42; N.I. Rate Meter, mod 1613A. 943-7; GM Survey Instrument 785-10; BA Count Rate Meter, 7620-8; N.I. Rate Meter, Mod 1613A S/N 282. Reference Case # 111

Enviromental chamber Size 30"D x 27"H x 60"L w/refrigeration and heating unit. Range -20° F to 250° F. Reference Case # 112.

Rock Saw Mfg. Felker, Ki-Met Model 12080. Reference Case # 113

Data Storage Incremental Tape Recorder; A. B. Dick Photo Copier. Reference Case # 114.

POSITIONS

AVAILABLE

Agfa Optima Compur 35mm camera w/maxi mite electronic flash, both in vy gd operating cond, \$60 for set or best. Call x3-7287 John Oteri.

Ariens, snow blowers w/chains, 5 hp, 20", 3 spd. fwd & reverse nw Dec 77, \$495. Call 894-3788 or x3-

Pr 14" Semperit rad snows & pr 14" Mich SAX rads, \$70 per pr or best; almst any part for BMW 2002 & Volvo 122S from parts car, best. Call Mike x7592 Lincl or 924-3696.

Minolta XE-7 black bdy, auto SLR w/f/1.4 lens exc cond, \$350; 2X teleconverter, \$25. Call 625-5063 aft

Heath 90W guitar spkr 2 10" & horn, man casters, 20' cable, \$90: Hobart disposal, batch-feed auto vair ign wires, point set, distributor cap, nw Universal seat belt & shoulder strap kit, nw \$10. Gerald x3-4726.

2 prs snows F70-14 tubeless, mntd, on rims, \$60 ea pr, usd 1 seas; pr truck tires 700x15 6 ply, brand nw \$70. Call x3-1877.

Dark carved wood bookcase w/glass drs, 41/2x51/2', \$150 or best. Call 547-9784.

Akai AA-1030 30W/ch recvr, 0.3% THD, tape dub bing, variable FM muting, mint cond, all man & org packing matls, \$200 or best. Call to make appt for demo x5-9387 Dorm or aft 2pm.

Almst nw ice skates, girls Riedell, 4^{1/2}w, \$25; M Hyde sz 7, \$20: Henke plastic ski boots, sz 6, \$10; Hyde sz 7, \$20; Henke plastic ski boots, sz 6, \$10; pr rims, fit '72 Ford LTD, \$5. Call Barbara x3-5259.

Call 964-2309 aft 6pm.

'70 VW Fastback, '72 eng, 58K, runs ok, bdy nds work, mst sell. \$400 or best. Call Holly x3-7786.

'71 Lincoln Town car, 4 dr. auto, 63K, all pw. fully loaded, leather inter, all works, gd tires, 2 sm dents & some rust, nd muffler, \$895. Call Mary x3-5210.

'71 Fiat 128, gd cond, low mlg, nw batt & starter, \$800 nego. Call Martain x3-3689 or 484-0072.

'71 Chevy Station wg, vy gd ocnd, AM/FM, A/C, nw brks, timing chain, alternator, batt, regulator, no rust, PS, PB, auto, V-8, \$850 or best, Call 738-8253 eves.

'72 Pinto Wg, auto, recent frnt brks, Sears batt, mntd snows, gd eng, bdy nds work, \$295. Call 964-5867 eves

'73 Dodge Polara, A/C, AM/FM, 8 cyl, driven mostly in Calif. Call Mike 354-7885. \$1800 or best.

73 Toyota Corona Mk II, auto, PS, AM/FM, stl belted rads & rad snows, red bucket seats, r/win dow defrost, 50K, \$2000 firm. Call 646-8772.

'73 Datsun 610 rust free Calif car, nw carb, brks cyl head, gd rads, all around, AM/FM stereo, reg gas! \$1350. Call Larry x256 or x381 Lincl.

'73 Dodge Polara, 8 cyl, A/C, AM/FM, 75K, Calif car, Call Mike 354-7885 eves.

'74 Mustang II, exc cond, 4 spd stand, 4 cyl, nw tires, exc serv record, brnze w/tan inter. Call 426-7769 or 395-7265.

'74 Vega Hatchback, gd cond, some bdy rust, burns a little oil, 50K, 4 spd man trans, AM, back win-dow defrost, stl beltd rads whitewall tires, snows on rims incl. \$750. Call x3-1737.

'74 Fiat 124 spt, 5 spd, AM/FM, radials, exc cond, \$1950. Call Bob D. x3-2701.

collect.

1 or 2 rider wntd to Daytona or Palm Beach area back, lv apprx Dec 22 return about 3 wks, da flexible. Call Richard or Naomi 628-3192 eves.

Cat sitter nd for 3-4 days Xmas week, wl pay. Call Helen x3-2701.

run cond, wi nd thru Dec 28. Call Prof Senge x3-1575.

Unfurn 1Br apt in quiet prv home, prefer Arl, Brkline, Camb. Call Joe x3-2529.

Roommates

M rmmate want to shr 2Br apt, Inman Sq, conv to MIT or Harv, avail approx, Jan 1, \$125/mo + util Call 776-2645.

Rmmate wanted, mature W wntd to shr lg 2BR Al lston apt, quiet, sun & vy conv to T, 20 min walk to Harv & Central Sq. Bos College greenline 10 min walk, 2nd fl. \$125/mo, ht incl. lease. may be renewed in Sept. Call Laurie or Lisa 782-1280.

Quiet, responsible F wntd to shr spac E Arl apt w/2 W. bus & stores 2 min walk, \$85/mo + util avail Jan 1 or earlier. Call Nancy x3-7283.

3 W sk W to shr spac hse in Needham, prv BR & study conv to Needham Ct. Call 444-3542.

Camb 10 min to MIT, Harv rmmate nd for apt flly furn, LR, K, prv rm unfurn, \$111/mo, plus util. Call 354-5987 eves.

Rmmate to shr furn 2 BR apt w/MIT grad student, Jan 1 or soon aft, Line St, Cambridge, \$125/m Call Bob 354-4130 8-9am, eves.

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

This list includes all non-academic jobs currently

available on the MTT campus. Duplicate lists are posted on the WTT campus. Duplicate lists are posted on the Women's Kiosk in Building 7, out-side the offices of the Special Assistant for Women and Work (10-215) and Minority Affairs (10-211),

and in the Personnel Office, (E19-239).

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

lick Higham	3-4278
Pat Williams	3-1594
'arolyn Scheer Secretary — Tertia Perkins) —	3-1595
'irginia Bishop	3-1591
lichard Cerrato	3-4266
Ken Hewitt Secretary — Paulette Chiles)	3-4267
ally Hansen	3-4275
awrence Milan	3-2928

Lawrence Milan kathleen Rick Jenni Leibman) (Secretary -

Admin. Staff, Industrial Liaison Officer, in the In-Admin. Stall, Industrial Latison Officer, in the in-dustrial Liason Program to provide interface between MIT and member firms; solict new com-panies. Bachelor's and Master's degree required, including one degree in chemical engineering, materials science or mechanical engineering. Three years industrial experience also necessary. Excel-lent interpersonal skills and indepth knowledge of MIT also required. MIT degree preferred. A78-73

3-4269

Admin Staff, Programmer Analyst, in Information Processing Services to be responsible for design and programming of internal IPS business systems. Immediate tasks involve expanding a VM370 accounting system and gaining a working knowledge of Multics data base systems. Appliconts must have design experience in a business enviroment and a thorough knowledge of 370 COBOL. A78-81 (12/6) 11901 12

iagnosis o volved in linac start-up and operation, faults and making minor repairs, and respon sibility for safety of personnel and equipment. A Bachelor's degree in physics or engineering, or equivalent, analytical skill, as well as knowledge of electronic repair and ability to function in emergencies required. Experience in the microwave field, ability to make measurements, and to test devices are desirable. Position requires a rotating shift. R78-282 (12/6)

Sponsored Research Staff, Mech. Engineer, in the Sponsored Research Staff, mech. Battes Linear Ac-celerator (Middleton, MA) to work on design, development and maintenance of a variety of par-ticle accelerator and nuclear research facilities, in-cluding high vacuum, cooling, temperature regulation, cryogenics, magnetic systems, mechanical structures and mechanisms. Initial assignment will be on vacuum systems development project. A BS in Mechanical Engineering as well as an under-standing of engineering fundamentals, including machine shop and welding practices required Some experience with high vacuum systems, in cluding cluding leak dectection practices, turbo pumps vac-ion pumps is desirable, R78-283 (12/6)

Sponsored Research Staff, Accelerator Physicist, in the Laboratory for Nuclear Science, Bates Linear Accelerator to do research involving design as well as implementation of current projects. Pro-jects include beam switchyard expansion with beam sharing computer monitoring and control. beam sharing computer monitoring and control, spectrometer systems and detector development. A strong background in the basic physical sciences including electromagnetic theory at the Ph.D level or equivalent required. A strong interest in D ap-plied physics is neessary. R78-284, R78-285 (12/6)

Sponsored Research Staff, in the Laboratory for Computer Science, Computer Systems Research Group to participate in development of a local computer network and a distributed computer system. Primary duties will be protocol design and

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development of system and language software, although some hardware familiarity will be help-ful. Programming ability in both assembly and high-level languages, in depth familiarity with at least 1 large scale operating system, or with com-piler construction technology required. A degree in computer science, preferable at an advanced level, also necessary. R78-287, R78-288, R78-289 (12/6)

Sponsored Research Staff, in the Center for Transpontation Studies to assist in development, analysis and evaluation of national energy emergency plans: evaluate travel and fuel effects, equity, public acceptability, environmental and legal aspects of plans; develop implementation plans; estimate plan costs. An advanced degree in pians, estimate pian costs. An advanced degree in civil engineering or a related field, and/or ex-perience in urban and passenger transportation or related fields required. Well-developed oral and written communication skill, analytical and organization skills are also necessary. R78-290, R78-291, R78-292 (12/6)

Sponsored Research Staff, Systems Program-mer, in the Laboratory for Computer Science to design and implement TOPS-20 system software design and implement 1075-20 system software for a high bandwidth local network; participate in software development concerned with data base and knowledge base applications. College degree or related work experience in operating systems and experience with TOPS-20 system required. R78-oge (1962) 286 (12/6)

Exempt, Nurse, in the Medical Dept.'s Infirmary to perform primary bedside nursing; administer first aid and emergency treatment. Massachusetts registration and 2 years experience in medical/surgical nursing required. Experience in first aid and/or emergency clinic desired. 11pm-7am, flexibility to work other shifts, every other weekend off. E78-68 (12/6) weekend off. E78-68 (12/6)

Exempt, Admin. Asst., in the Earth and Planetary Decempt, Admin Assc. in the Partn and Planetary Sciences, Radio Physics Group to design and operate a system to control and monitor financial aspects of Group's contracts. Will participate in proposal preparation and act as liaison with related Institute administrative offices. A Bachelor's degree in accounting or comparable ex-perience in financial administration, in long-term projections, cost control and monitoring preferred. E78-69 (12/6)

Admin. Asst. V in the Nuclear Engineering Dept to prepare payroll reports; monitor academic and research programs; prepare budgets; type cor-respondence; handle a variety of tasks associated with records and information. Good interpersonal, communications and typing skills and ability to make independent judgment required. Experier in payrolls, accounting, purchasing and person procedures also required. B78-755 (12/13)

Tech. Asst. V in the Laboratory for Computer Science to maintain the UNIX system (software on the PDP-11/70): develop new software drivers; supervise hardware lab, stockroom, order supplies and construct electronic prototypes. Knowledge of PDP-11 assembly language, BCPL, etc., familiar-tic with divide and englor circuitic and ability to wire wrap equipment required. 35-40 hrs./wk. B78-743 (12/6) tiy with digital and analog circutis and ability to

Admin. Asst. V to assist the Director of the Development Office will perform duties relating to general office management; develop and imple-ment procedures to support various projects; review incoming correspondence and refer or take action as appropriate; compose and type cor-respondence and brief reports; maintain various records and research data. Strong organization and interpersonal skills are required, as well as writing ability and typing skill. B78-750 (12/6)

Admin. Asst. V, to provide administrative and secretarial support to Manager of Financial Infor-mation and Planning at the Sloan School: coor-dinate student assistant appointments, allocate computer time; organize space moves; screen mail and telephone calls; schedule meetings; order sup-lies; bandle alerical duties related to correction of plies; handle clerical duties related to operation of a coffee room; type correspondence from machine a coffee room; type correspondence from machine dictation or written draft. Position requires several years of experience and good typing skills. B78-740 (12/6)

Secretary V in the Neurosciences Research Program to assist Foundation Scientist in a variety of tasks: type scientific manuscripts; prepare bibliographies; schedule appointments; maintain of tasks: bibliograph Exce Excellent secretarial skills, preferably including shorthand, required. Good editorial skills are also necessary, as well as a willingness to learn scientific terminology and bibliographic procedures, 37.5 hrs./wk. Position is based off-campus (in Jamaica Plain). B78-746 (12/6)

Secretary IV in the Provost's Office to handle a variety of duties including responsibility for a large, complex filing system; arrange complicated travel schedule; type correspondence and perform a full variety of general secretarial duties. Excel-lent general secretarial skills, command of the English language, ability to anticipate and recognize priorities required. B78-754 (12/13)

Secretary IV, in Mathematics to assist a faculty Secretary IV, in Mathematics to assist a faculty group: type papers with mathematical content, as well as course material and general cor-respondence; arrange travel; maintain files and records. Excellent typing skill, ability to organize work load independently required. B78-757 (12/13)

Secretary IV, to the Executive Officer in the Chemistry Dept. to assist with various ad-ministrative processes: key and parking space distribution; room reservations; type forms, cor-respondence and other material including some manuscript typing for faculty; maintain files. Good typing skills required. B78-758 (12/13)

Secretary IV in Nutrition and Food Science to provide secretarial support to research groups in-volved in research on nutrition in developing countries: transcribe machine dictation, compose short letters and memos; handle a variety of other general secretarial duties. Good organization and secretarial skills required as well as ability to speak and write Spanish. B78-666

qired. Technical typing skill preferred. B78-742 (12/6)

Secretary III/IV in the Civil Engineering Head-quarters Office to perform general secretarial duties, greet and assist visitors; maintain publications files and bulletin board; distribute mail. Will also operate computer board; distribute mail. Will also operate computer board; distribute mail. Will also operate computer board and prepare reports as requested. Good general secretarial skills required. Secretarial and computer terminal ex-perience preferred. B78-744 (12/6)

Secretary III/IV to assist two Chemical Engineer-ing faculty members and their research staff. Will type classroom materials, proposals, reports; ar-range meetings; coordinate travel plans; maintain files; interact with students. Excellent technical typing skill, or willingness to learn, ability to transcribe machine dictation required. B78-745 (12/6)

Section Head V, in the Rotch Library to assume responsibility for the Circulation Section: train, direct and schedule work for circulation, desk and stacking assistants, schedule all student positions; monitor student budget funds; perform duties reated to response corrections intermet diverse. reated to reserve operations; interpret library policies and practices; provide information to users; participate in desk functions; file cards; maintain inventory. Will also be responsible for stack maintenance and accuracy of shelf location of books. Bibliographic, interpersonal, supervisory, typing and organizational skills required. Ex-parinces in meanains all anext cof insulation also perience in managing all aspects of circulation also requred. B78-749 (12/6)

Library Asst. III in the Hayden Library Circulation Section to shelve materials; distribute materials to other locations; maintain statistics; search for mis sing items; charge and discharge materials; in-terpret loan procedures; collect fines; take renewals; answer and direct telephone inquiries; take statistical counts; supervise student assist take statistical counts; supervise student assis-tants; perform miscellaneous duties; assist in scheduling, training, directing and monitoring ac-tivites of the stackers. Excellent interpersonal skills, physical stamina for stacking, ability to work independently and attention to detail re-quired. Sun-Thurs. 3pm-11pm, Some schedule flexibility is neessary. B78-734 (12/6)

Library Asst. III in the Dewey Library to shelve and maintain books and special collections; retrieve materials requested; search for lost materials; carry out book inventories as necessary; supervise student assistants; assist at circulation desk. Organizational skills, ability to handle a variety of duteies and to work with a minimum of supervision required, as well as dependability and hysical stamina for stacking. Occasuconal even. physical stamina for stacking. Occasuconal even-ing or weekend work may be required. B78-748 (12/6)

Sr. Clerk III, in the Comptroller's Accounting Of fice, Travel Section, will check various material for accuracy, assist in transferring expenses from one account, to another; answer telephone inquiries regarding travel expense matters; type reimburse-ment checks. Typing skill, and ability to com-municate effectively with others required. B78-756 (2010): $(12/13)^{\circ}$

Hourly, Electrician, in Physical Plant to install and maintain all types of electrical equipment and systems. Will work from blueprints, verbal instruction or sketches. A minimum of 5 years applicable experience and Mass. State license required. Must be able to work all shifts and an irregular schedule. Some electronic experience is desirable. H78-201 (2010) (12/13)

Hourly, Machinist A, in the Nuclear Reactor Laboratory, marinast A, in the vacuum tractor tractor Laboratory to set up and operate all commonly used machine tools; make tools; jigs and fixtures as may be required. Will handle and be exposed to radioactive materials. Postion requires at least 5 years applicable experience as machinist. H78-197 (12/13)

Hourly, Tech. B, Temporary, in the Energy Laboratory to assist students in fabricating, as-sembling and maintaining experimental hardware; assist in making experimental runs. Graduation from 2 year day technical school, or equivalent, is' the minimum requirement. Basic mechanical machining or electrical skills also required. Tem-porary, for 4 months. H78,199 (12/13) porary for 4 months, H78-199 (12/13)

Hourly, Campus Patrol Officer, required 3-5 years experience in all phases of law enforcement (criminal law, court procedures, criminal in-vestigation, case prepartion, complaint investiga-tion; report writing). Will be required to obtain Emergency Medical Technician certification; may be required to complete additional police academy training. Must qualify in use of firearms, have a valid driver's license and an bonorable dischare valid driver's license and an honorable discharge from any earlier police service. Candidates must pass Institute physical exam. 40 hrs./wk. rotating shift. Position includes long hours occasionally. H78-202 (12/13)

Hourly, Lab Asst., in the Center for Cancer Research to change animal cages; sterilize and clean operating room instruments and hoods; maintain supplies and clean work area in animal High school research laboratories. High school ed equivalent, required. H78-200 (12/13) education, or

Hourly, Machinist B, in the Laboratory for Nuclear Science to work form blue prints, specifications, verbal instuctions or sketches; will set up and operate commonly used machine tools. At least 3 years of applicable experience is re-quired. 40 hrs./wk. H78-167

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

- ADMINISTRATIVE STAFF
- A77-3, Admin. Staff, Systems Programmer, In-formation Processing Services (2/16) A78-14, Admin. Staff, Asst. Dir., MIT As-routers (2017)
- Ario 14, Aumin. Staff, Alson Ario 14/12) Ar8-20, Admin. Staff, Alumni Association (5/3) Ar8-38, Admin. Staff, Systems Programmer, In-

- B78-511, Sec. IV, Sloan School (9/13) B78-518, Tech. Typist IV/Magcard Operator, (9/13)
- B78-523, Tech Asst. V. Alumni Association
- M33
 B78-562, Sec. IV, Energy Lab (11/15)
 B78-570, Sec. IV, Civil Engineering (9/27)
 B78-573, Editorial Sec. IV, Materials Science &
- Engineering (9/27) B78-589, Sec. IV, Earth & Planetary Science (11/8)
- B78-598, Sec. IV, Research Lab of Electronics (10/4)
- (10/4)
 B78-617, Sr. Clerk III, Admissions (10/11)
 B78-636, Sec IV, Resource Development (10/11)
 B78-650, Sec. III, Technology Review, Alumni
 Association (11/1)
 B78-654, Clerk III, Part-time, Campus Patrol
- (11/29)
- (11/29) B78-658, Sec. IV, Lab for Nuclear Science (11/8) B78-663, Sec. III/IV, Electrical Engineering & Computer Science (11/8) B78-674, Sec. IV, Development Office (11/15) B78-675, Sec. III/IV, Mechanial Engineering (11/9) (11/8)
- [1/8]
 B78-676, Sec. IV, Sloan School (11/15)
 B78-677, Edit. Asst. IV, MIT Press (11/15)
 B78-678, Sec. IV, Chemistry (11/15)
 B78-681, Sec. III/IV, Energy Lab (12/6)
 B78-683, Account Rep. V, Admin. Computing
- Service (11/29) B78-687, Sec. IV, part-time, Economics (11/29)
- B78-690, Clerk III, Medical Dept. (11/29) B78-691, Clerk IV, Center for Advanced Engineering Study (11/29) B78-693, Clerk IV, Center for Policy Alternatives
- (11/29)B78-694, Sec. IV, Earth and Planetary Science
- (11
- [1/29]
 B78-696, Sec. IV, Political Science (11/29)
 B78-697, Sec. IV, Sloan School (11/29)
 B78-698, Admin. Asst. V, Sloan School (11/29)
- B78-700, Sec. IV, Housing and Dining (11/29) B78-700, Sec. IV, Housing and Dining (11/29) B78-704, Clerk III/IV, Research Lab of Electronics (12/6) B78-705, Secretary IV, Information Processing Service (12/6) D78-705, Secretary V, School of Frederic
- B78-707, Sr. Secretary V, School of Engineering (12/6
- B78-709, Sr. Clerk/Receptionist III, Office of Personnel (12/6) B78-710, Secretary IV, full or part-time, Biology
- Dept. (12/6) B78-711, Editorial Secretary IV, Graphic Arts
- (12/6)B78-712, Technical Illustrator IV, Research Lab
- of Electronics (12/6) B78-714, Secretary/Receptionist III/IV, Physics Dept. (12/6)
- Dept. (12/6) B78-716, Secretary IV, Sloan School (12/6) B78-717, Sr. Secretary V. Sloan School Fellows Program (12/6) B78-722, Secretary V, Psychology Dept. (12/6) B78-724, Secretary V, News Office (12/6) B78-725, Clerk III/IV, temporary, Architecture
- Dept.(12/6) B78-730, Sr. Clerk III, Comptroller's Accounting
- Student Loan Office (12/6) B78-731, Sr. Secretary V, Nuclear Engineering (12/6)
- B78-732, Sr. Clerk IV, Alumni Association (12/6) B78-733, Secretary III/IV, Lab for Computer Science (12/6)
- HOURLY STAFF: H77-89, HVAC Designer/Draftsperson, Physical Plant (10/5) H78-23, Machinist A, Nutrition & Food Science
- (3/8)
- H78-106, Sr. Technician (Electronic), National Magnet Lab (8/16) H78-183. Mechanic A. Lab for Nuclear Science
- (12/6) H78-184, Technician A, Lab for Nuclear Science (12
- H78-185, Technician A (Eletronic), Lab for Nuclear Science (12/6)
- ACADEMIC STAFF:
- C78-6. Acad. Staff, Asst. Eng. Librarian, Engineering Library (4/5) C78-17, Acad. Staff, Research Associate (7/12) C78-23, Acad. Staff, Marketing Representative,
- Medical Dept. (8/30) C78-26, Acad. Staff, Librarian, Head, OCLC/LC
- Cataloguing Section, Libraries (9/20) C78-29, Acad. Staff, Applications Programmer, Electrical Engineering (10/11) C78-32, Acad. Staff, Associate Dewey Librarian, Dewey Library (11/8)
- C78-33, Acad. Staff, Records Mangement Of-
- C78-33, Acad. Staff, Records Mangement Of-ficer (11/1) C78-34, Acad. Staff, Librarian, Libraries(11/29) C78-35, Acad. Staff, Director of the Lanuage Laboratory, Humanities Languaage Section (12/6)
- EXEMPT STAFF
- E77.56, Exempt, Estimator/Scheduler, Physical Plant (11/9) E78.35, Exempt, Tech. Supervisor, Physical
- Plant/Telecommunications (8/16) E78-36, Exempt, Principal Operator, Physical
- Plant (8/16) E78-57, Exempt, Food Production Supervisor, Food Science (10/25) E78-58, Exempt, Technical Asst. Alumni As-
- sociation (11/1)
- sociation (11/1) E78-61, Exempt, Asst. Accountant, Lab for Nuclear Science (11/8) E78-64, Exempt, Publications Supervisor, In-dustrial Liason Program (11/29) E78-65, Exempt, Draftsperson, Planning (11/15)
- SPONSORED RESEARCH STAFF: R77-53, Spons. Res. Staff, Res. Lab of Electronics (4/12)

Unisex Rates Set for Staff **Retirement Plan Annuities** patrick, assistant director of the

mittee.

mittee.

Lincoln Laboratory, have been re-

elected as the two elected mem-

bers of the five-member Adminis-

trative Committee. Dean Siegel

serves as chairman of the Com-

Mr. Bufferd said a third Plan

member had received about four

per cent of the vote as a write-in

candidate, out of about 700 votes

cast, and that the Plan member

had been advised of the results and

invited to give his opinions on the

Plan to the Administrative Com-

Glenn P. Strehle, MIT treasurer,

Retirement Plan trustee and

treasurer of the Trustees, said the

Trustees had voted to raise to

seven and one-half per cent the dis-

tribution rate for calendar year

1979. The distribution rate is essen-

tially the interest paid on Fixed

Fund accounts. It is compounded

twice yearly and thus the effective

rate is slightly higher than seven

Mr. Strehle said the increase

was the second in three years. The

distribution rate had been set at

seven and one-quarter per cent for

calendar years 1977 and 1978. It

had been seven per cent for the

Chairman Siegel told the meet-

ing that an Ad Hoc Committee had

initiated a broad study of re-

tirement and related benefit issues

and welcomed suggestions from

members of the Retirement Plan.

He presented the charge to the

Committee from Chancellor Paul

E. Gray and noted that the Com-

mittee is due to make a report in

Summary of CEP Meeting on

December 7, 1978.

he has asked the Committee on

Nominations to give him a slate of

nominations for a Faculty Advis-

ory Committee on the Presidency,

which will advise the Corporation

Committee on the Presidency with

regard to criteria and organization

for the presidency, as well as indi-

viduals to be considered for the position. He has written all members

of the faculty asking them for ad-

visory committee membership to

contact the Nominations Commit-

The CEP reviewed and appro-

ved-with changes the revised pol-

icy statement regarding copyright

policy for student theses. The pol-

icy will be presented to the faculty

for a vote at the December facutly

The CEP reviewed and approved

a revised title and charge for the

Staff-Administration Committee.

The revised faculty rule reflecting

the changes will be presented to

the faculty at its December

The CEP discussed the purposes

of the science distribution require-

ment and the procedures and cri-

teria for approving science distri-

meeting.

meeting.

bution subjects.

tee with ideas and suggestions.

The Chairman announced that

CEP Summary

And Agenda

June.

calendar years 1973 through 1976.

and one-half per cent.

(Continued from page 1)

ment benefit payments had been initiated before that date." The cost of assuring this, he said, "will be predominantly borne by the Institute."

In the Fixed Fund, annuity rates for both males and females have been increased, female rates more than male rates to bring them to the same level; in the Variable Fund, male annuity rates have decreased slightly while the female annuity rates have increased to the new unisex level.

Different approaches for the two Funds had to be used because of the differences in the Funds, Mr. Bufferd said, adding that the Fixed Fund annuity rates were raised more than necessary to compensate for the slight downward movement in the male annuity rates in the Variable Fund. The Fixed Fund rates could be raised, he said, because the nature of the Fixed Fund allows for support by the Institute, where the Variable Fund does not.

Mr. Bufferd said that the change, recently voted by the Trustees, eliminates any distinction between male and female rates, whether benefits will be received by retiring employees or by contingent annuitants such as spouses.

Mr. Bufferd also announced that Professor Abraham J. Siegel, associate dean of the Sloan School of Management, and Henry W. Fitz-

R78-136, Spons. Res. Staff, Lab for Computer Science (8/16)

- Science (8/16) R78-145, Spons. Res. Staff, Electronics Engineer, Lab for Computer Science (8/16) R78-146, Spons. Res. Staff, Electrical Engineer, Bates Linear Accelerator (8/16) R78-147, Spons. Res. Staff, Systems Program-mer, Lab for Nuclear Science (8/16) R78-148, Spons. Res. Staff, Organic Chemist, National Magnet Lab (8/16) R78-154, Spons. Res. Staff, Program Director, Neurosciences Research Program (8/30) R78-160, Spons. Res. Staff, Programmer, Center for Space Research (8/30) R78-162, Spons. Res. Staff, Systems/Scientific

- R78-162. Spons. Res. Staff. Systems/Scientific From Statistics and Statistics an

R78-170, Spons. Res. Staff, Programmer, Center

Ior Space Research (8/30) R78-184, Spons. Res. Staff, Research Engineer, Artificial Intelligence Lab (9/13) R78-189, Spons. Res. Staff, Radiochemist, Nuclear Reactor Lab (9/13) R78-197 Spons. Res. Staff, Dervert Butter, R78-197 Spons. Re

R78-197, Spons. Res. Staff, Research Engineer,

R78-197, Spons. Res. Staff, Research Engineer, Energy Lab (9/13)
R78-201, Spons, Res. Staff, Earth & Planetary Science (9/20)
R78-206, Spons. Res. Staff, Tech. Asst., Arteriosclerosis Center (9/27)
R78-207, Spons. Res. Staff, Applied Magnetism Research, National Magnet Lab (9/27)
R78-208, Spons. Res. Staff, Postdoctoral Research, Nuclear Materials, Nuclear Reactor (9/27)

(9/21) R78-209, Spons. Res. Staff, Postdoctoral Research, Nuclear Materials, Nuclear Reactor

R78-211, Spons. Res. Staff, Postdoctoral Scien-tist, Physics, Center for Space Research (10/4) R78-212, Spons. Res. Staff, Physics, Center for

Space Research (10/4) R78-217, Spons. Res. Staff, Research Associate, Civil Engineering (10/18) R78-225, Spons. Res. Staff, Research Associate, Nutrition & Food Science (10/18) R78-228, Spons. Res. Staff, Research Engineer, temporary, Energy Lab (10/18) R78-237, Spons. Res. Staff, Nutrition & Food Science (10/18)

Science (10/18) R78-238, Spons. Res. Staff, National Magnet Lab (10/25)

R/8-240, Spons. Res. Staff, Systems Programmer, Lab for Computer Science (11/1) R78-250, Spons, Res Staff, Reserach Associate Materials Science & Engineering (11/1) R78-252, Spons. Res. Staff, Tech, Computer Programmer, temporary, Energy Lab.(11/1) R78-253, Spons. Res. Staff, Digital Engineer, Research Lab of Electronics (11/15) P78 255 Spone. I pos Staff Breaganch Engineer

R78-246, Spons. Res. Staff, Systems Program-

for Space Research (8/30)

(9/2)

(9/27)

Secretary IV in the Alumni Association to type con respondence: arrange travel; prepare mailings and program materials; arrange meetings; assist ad-ministrative assistant with various duties. Will be trained on Word Processor and in research gather-ing techniques. Excellent typing, shorthand and excellent typing. organizational skills, good interpersonal skills and excellent command of English language required. Secretarial school training preferred. B78-735 (12/6)

Secretary IV in the Laboatory for Nuclear Science to work with Heavy Ion Research Group. Will prepare correspondence, class material; maintain supplies; organize meetings; arrange travel and perform all other general secretarial duties, Excellent secretarial skill including shorthand required. Secretarial school training preferred. B78-737 (12/6)

Secretary IV in the Division for Study and Secretary IV in the Division for Study and Research in Education, will provide secretarial support to several faculty members. Duties include manuscript and proposal typing; arranging gravel and meetings; answering phones. Ability to transcribe machine dictation, to interact effectively with a variety of people, and secretarial ex-perience required. Shorthand preferred. Non sm-oking office. B78-738 (12/6)

Secretary IV, part-time, in the Foreign Language and Literatures Headquarters Office, Humanitie Dept., to answer phones; type and mimeograph material; file. Typing skill required. Knowledge of Spanish helpful. 17.5 hrs/wk. Position is for academic year only (Sept.-May). B78-739 (12/6)

Secretary IV in the Mathematics Dept. to perform reception duties; type correspondence, proposals, budgets; assist in preparation of inter-departmental information; handle mail; maintain records and supplies; perform various other duties as necessary. Excellent typing and interpersonal skills and ability to work with interruptions re-quired. At least 1 year of office experience also reformation Processing Services (8/30)

A78-44, Admin. Staff, Industrial Liaison Officer (8/30)

A78-56, Admin. Staff, Asst. Director, Resource Planning & Development (10/25) A78-67, Admin. Staff, Director of Systems Plan-ning and Development, Information Processing Services (10/4)

A78-69, Admin, Staff, Fiscal Officer, School of

Engineering (10/1) Asst. Director, Consortium on Financing Higher Education (10/18)

Higher Education (10/18) A78-70, Admin. Staff, Managing Editor, Technology Review (Alum. Assoc.) (10/25) A78-71, Admin. Staff, Budget Officer, Fiscal Planning & Budget Office (11/8) A78-74, Admin. Staff, Asst. Director of Finance, Office of the VP, Financial Operations (11/8) A78-76 Admin. Staff, Staff Surthme Programmer In.

A78-76, Admin. Staff, Systems Programmer, In-

Arto-16, Admin. Staff, Systems 1 Optimizer, her formation Processing Services (11/8) A78-77, Admin. Staff, Administrative Invest-ment Officer, Treasurer's Office (11/15) A78-79, Admin. Staff, Asst. to Director for Ad-

ministration, Plasma Fusion Center(12/6)

A78-80, Admin. Staff, Applications Guidance coordinator, Office of Facilities Management Coordinator, (Systems (12/6)

BIWEEKLY STAFF: B77-655, Sec. IV, Chemical Engineering (10/25) B78-154, Sec. V, Lab for Nuclear Science (11/15) B78-178, Sec. IV, Provost's Office, Upward Bound Program (10/11) B78-156, Account Part, V Administrativa Com.

B78-185, Account Rep. V, Administrative Com-

puter Services (4/26) B78-275, Sec. IV, Harvard/MIT Division of Health Sciences & Technology (6/8) B78-306, Sec. IV, Research Lab of Electronics

(7/12)

B78-329, Sec. IV, part-time, Medical Dept. (10/4)

B78-343, Sec. IV, Energy Lab (11/15)

Electronics (4/12) R77-91, Spons. Res. Staff, Sr. Accelerator Physicist, Lab for Nuclear Science (5/18) R77-137, Spons. Res. Staff, Experimental Physicist, Bates Linear Accel. (3/31) R77-161, Spons. Res. Staff, Elec. Engineer, Mechanical Engineering (9/7) R77-201, Spons. Res. Staff, Prog./Data Analyst, Earth & Planetary Science.(10/26) R77-211. Spons. Res. Staff, Computer Systems Design, Lab for Computer Science (12/7) R77-22, Spons. Res. Staff, Prog. Language Design, Lab for Computer Science (12/1) R77-212, Spons. Res. Staff, Prog. Language Design, Lab for Computer Science (12/7) R77-213, Spons. Res. Staff, Computer Software Designer, Lab for Computer Science (12/7) R77-228, Spons. Res Staff, Plasma Physicist, Res. Lab of Electronics (1/4) Kes. Lab of Electronics (1/4) R77-230, Spons. Res. Staff, Computer Software Designer, Lab for Computer Science (1/11) R78-55, Spons. Res. Staff, Staff Scientist, Arteriosclerosis Center (4/5) R78-58, Spons. Res. Staff, National Magnet Lab (4/2) (4/12)R78-60, Spons. Res. Staff, Combustion Engineer, R78-60, Spons. Res. Staff, Combustion Engineer, Energy Lab (4/12)
R78-64, Spons. Res. Staff, Earth & PLanetary Science (4/12)
R78-70, Spons. Res. Staff, Energy Analyst, Energy Lab (4/12)
R78-83, Spons. Res. Staff, Lab for Nuclear Science (4/19)
R78-85, Spons Res. Staff, Technical Asst.Nutri-tion & Food Science (4/19)
R78-85, Spons Res. Staff, Res. Engineer. Civil

R78-93, Spons, Res. Staff, Res. Engineer, Civil R78-102, Spons. Res. Staff, Lab for Nuclear Science (5/31) R78-103, Spons. Res. Staff, Lab for Nuclear Science (5/31) R78-103, Spons. Res. Staff, Lab for Nuclear Science (5/31) H78-95 B78-720 R78-252 Science (5/31) R78-104, Spons. Res. Staff, Physicist, Temp, Lab for Nuclear Science (6/7) R78-105, Spons. Res. Staff, Temp., Lab for Nuclear Science (5/31) R78-113, Spons, Res. Staff, Sloan School of C78-31 Management (7/12) R78-117, Spons. Res. Staff, Temp., Economics (7/12)
 R78-119, Spons. Res. Staff, Theoretical Plasma Physicist, National Magnet Lab (7/12).
 R78-125, Spons. Res. Staff, Lab for Information & Decision Systems (7/12).
 R78-135, Spons. Res. Staff, Research Lab of Electronics (7/26)

R78-255, Spons, LRes, Staff, Research Engineer, Energy Lab (11/15) R78-257, Spons, Res. Staff, Computational Plasma Physicist, Plasma Fusion Center (11/15) R78-258, Spons. Res. Staff, Tech. Asst., Earth & Planetary Science (11/5) R78-264, Spons. Res. Staff, Cell Culture Center

(12

R78-265, Spons. Res. Staff, Technical Asst.,

R78-269, Spons. Res. Staff, Technical Asst., temporary, Biology (12/6) R78-269, Spons. Res. Staff, Technical Asst., Nutrition & Food Science (12/6) R78-271, Spons. Res. Staff, Center for Informa-tion Systems Research, Sloan School (12/6) R78-272, Spons. Res. Staff, Research Specalist, Fragery Leb (12/6)

R78-272, Spons. Res. Staff, Researcn Specanst, Energy Lab (12/6)
R78-273, Spons. Res. Staff, Technical Asst., part-time, Divison for Study & Research in Educa-tion (12/6)
R78-274, Spons. Res. Staff, Software Manger, Mechanical Engineering (12/6)

 The following positions have been FILLED since

 the last issue of Tech Talk:

 B78-721
 Tech. Asst. V

 B78-657
 Clerk III

 R78-194
 Spons. Res. Staff (cancelled)

 B78-657
 Sec. III/IV

 H78-95
 Hourby

 Hourly B78-639 Admin Asst, V Sr. Sec. V Programme Sr. Clerk IV B78-708 Acad. Staff B78-686 Sr Clerk IV Admin. Staff Sec. V A77-86 B78-606 Secretary IV B78-542 B78-719 Secreatry IV Spons, Res. Staff R78-259 B78-747 Lib Asst. IV Hourly Sec. III/IV B78-718 H78-195 Hourly Sec. IV B78-684

The Committee also discussed issues involving the timing of final examinations and the size and description of undergraduate seminars.

Agenda for CEP Meeting on December 14, 1978.

1. Discussion of accreditation by the New England Association of Schools and Colleges.

2. Discussion of counselling services for students at MIT.

Jones Among 12 To Study in China

Lucy Jones, a graduate student in earth and planetary sciences at MIT, will be among 12 American students to take part in the first US/China student exchange program.

Ms. Jones is interested in the Chinese techniques of earthquake prediction and will attend the Institute of Geophysics in Peking. Before coming to MIT, she studied Chinese language and literature at Brown University.

Tech Talk, December 13, 1978, Page 7

New JCUS Study Reports **Discriminatory Redlining**

(Continued from page 1)

Schafer, associate professor at Harvard University.

"This concern is somewhat misdirected since our findings indicate that individuals, more than neighborhoods, are the object of discrimination. Clearly, we must increase our efforts to ensure equal access of all races to the home-buying market."

In 18 months of research, the study examined the relationship between mortgage lending practices and neighborhood and applicant characteristics in five metropolitan areas: New York and Nassau-Suffolk, Albany-Schenectady-Troy, Buffalo, Rochester, and Syracuse.

Most of the mortgage lending in New York State is based on objective factors such as the income and net wealth of the applicant and the value of the property. The study, however, found that at least some savings banks discriminate against individual black applicants in four of the five areas. Only in the Albany-Schenectady-Troy area are all applicants treated much the same. In the other four areas, black applicants have twice as great a chance of being turned down for a mortgage as do white applicants with similar socioeconomic, property and neighborhood characteristics.

In New York City and its surrounding counties, other minority applicants (mostly from Hispanic and Asian families) also fare worse than white applicants with similar backgrounds. In the Albany-Schenectady-Troy and Syracuse areas, however, these minority applicants are treated much the same as similarly situated white applicants. The study's results are inconclusive in the Buffalo and Rochester areas.

In reviewing the extent of redlining in the state, the study found evidence of discrimination against particular neighborhoods in the Albany-Schenectady-Troy area. But there was no evidence of such redlining in the Rochester and Syracuse metropolitan areas and very little in the Buffalo area.

In the New York and Nassau-Suffolk area, the study showed mixed results about geographic discrimination. Out of seven neighborhoods said to be redlined, two appear not to be redlined while the other five might be

One issue in the redlining debate has been whether older neighborhoods in general are discriminated against in mortgage lending. The results of this study concerning the relationship between redlining and the age of a neighborhood are inconclusive in all five areas.

The research on New York State's usury law indicates that in periods of high interest rates the law's interest ceiling on home mortgages thwarts its intended purpose-to help prospective homebuyers and encourage economic development in the state.

From 1974 to 1977, New York resi-

Szekely Speaks At Steel Meeting

Much of the world's new steelmaking capacity will be installed in coming decades in developing countries and it is of crucial importance that the new facilities incorporate all the known environmental control devices, Professor Julian Szekely said in a paper presented at the recent United Nations Environmental Program in Geneva Professor Szekely's paper, "The Environmental Impact of the Steel Industry in Developed Countries," was one of four position papers presented at the meeting, which was devoted to the steel industry and the environment.

dents lost up to \$2.4 billion in mortgage funds through out-of-state loans because the New York interest ceiling was set below the prevailing market interest rates. Furthermore, lowerincome families suffered the most because they received disproportionately less mortgage credit during this period.

The study concludes by offering several policy options that might be used to stop discrimination in home financing. According to Mr. Schafer, -"Mortgage credit scoring sys-

- tems should be developed to evaluate the credit-worthiness of each application so that similarly situated applicants receive equal treatment.
- "The New York State Banking Department should use its information on mortgage applications to detect unlawful discrimination and take appropriate affirmative action, such as establishing lending targets, when it encounters discrimination in an institution.
- -"Legislation prohibiting most forms of discriminatiion already exists at both the state and federal levals with one exception-the arbitrary use of the location of the property. The use of individual characteristics of neighborhoods that are reliably related to risk should be allowed.
- -"The usury ceiling should be set no lower than the market interest rate because mortgages with competitive interest rates will increase the amount of mortgage money available to New York State residents, especially lower-income households.

Discussing the overall report, Arthur Solomon, director of JCUS, said, "Schafer's report clarifies a national problem which has become highly polarized, and marked more by rhetoric and emotional allegations than by objective factual analysis. It provides the foundation for constructive action by both the public and private sectors.

The funding for the project was provided by a grant from the Savings Banks Association of New York State. Research assistants for this study included John A. Kirlin, Amy F.

Philipson, Gary J. Reid and Mark S. Roberts. A faculty review panel which included professors from Harvard and MIT advised on the project.

SDP II Seeks Applications

The Office of Personnel Development is now accepting applications for the second Supervisory Development Program (SDP II).

The program, which is open to all Institute supervisors, is intended to be practical in its orientation and will focus on matters of MIT policy such as hiring, termination, salary administration, performance appraisal, conflict resolution, motivation, delegation of responsibility, and affirmative action. Some sessions will be entirely devoted to policy, while other ns will comb licy and hune p man relations skills needed for policy implementation. Those interested in participating in the SDP II should complete a short application form, which can be obtained by calling Vera Ballard, x3-4277. All applications must be received in the Office of Personnel Development by Wednesday, Jan. 3, 1979. The Supervisory Development Program Selection Committee will choose participants according to criteria designed to achieve a heterogeneous group of supervisors from departments, laboratories and centers. The first session will be held on Tuesday, January 23, 1979 at 2:00pm in Rm E18-320. Sessions will continue to meet every Tuesday for ten weeks. Principal instructors for the program will be Claudia Liebesny, director of Personnel Services, and Drs Adam and Maureen Yagodka. co-directors of the Office of Personnel Development.



STONE JAR, porphyritic rock, Egyptian, from Asasif, Thebes, early dynastic, reused XVIII dynasty. On loan to MIT from the Metropolitan Museum of Art, New York, this bowl proudly displays the white geometric forms of crystals, probably calcite, in dramatic random sections against a dark granular polycrystalline background. This piece is one of 72 objects and rare books from major museums and collections in the United States and Great Britain on exhibit through December 22 at the Margaret Hutchinson Compton Gallery in "Aspects of Art and Science." Organized by the Smithsonian Institution's Museum of History and Technology, the exhibition illustrates the views of Dr. Cyril Stanley Smith on the relationship between art and science. Gallery hours are 9:30am-5pm, Monday through Friday.

Wiesner Backs Continued Nuclear Power Development

(Continued from page 1)

sumer electronics industry because of technological breakthroughs made in Japan's research and development laboratories, he said.

"I believe we have the technical know-how to manage problems presented by nuclear waste and reactor safety," the former science advisor to President John F. Kennedy said.

Dr. Wiesner said he was puzzled about how to design a regulatory system that sets limits for business without shackling the initiative necessary to a free enterprise system."

The influential scientist said he had no simple answer for critics who charge that while it may be theoretically possible to design a foolproof nuclear power system the possibility of human error made the technology dangerous. But he discounted the possibility of significant nuclear terrorism.

In answer to a question from the audience of 75 people, Dr. Wiesner said the so-called "small is beautiful" approach to technology is not practical. When those technologies labeled "soft," such as solar power, are looked for as the solution to large scale social issues, they too generate technical difficulties, he said.

Collecting solar power in outer space via orbiting collectors that would beam power back to earth stations requires technology as complex as that needed for nuclear power, he said.

"In his talk on "Technology and Social Evolution," Dr. Wiesner argued that a technological system, like a biological system, must be flexible enough to evolve and adapt to changing conditions.

science and technology are somewhat schizophrenic,' he said. "Few would really claim their ancestors were better off 150 years ago."

There is actually plenty of energy that can be tapped for the next few hundred years, Dr. Wiesner said, including nuclear, fossil, solar, and even the heat of the earth's core. It will just be increasingly expensive to harness, he said.

Cheap energy from chopping down a tree and burning wood or digging a hole in the desert and striking oil will have to give way to more complicated and possibly hazardous technologies, he said.

Company Gives To Seeler Fund

Nuclear Metals, Inc., of Concord, Mass., has announced the establishment of a matching fund for employees and friends who contribute to the Albert O. Seeler Reading Room Fund at MIT.

Dr. Seeler was director of the Medical Department at MIT from 1960 until his sudden death in 1976. He was also active in teaching and research in the Greater Boston community, and served as medical director of Nuclear Metals at the time of his death. The Fund was started by his friends and colleagues to establish a reading room in his name as part of the new Center for Health Services and Health Sciences at MIT.

Dr. Melvin H. Rodman, who succeeded Dr. Seeler as MIT's medical director, said that Nuclear Metals has pledged a minimum contribution of \$5,000 to the Fund.

Kovach Works To Be Played

Visiting professor and composer in residence Andor Kovach will present a short selection of original compositions in the Little Theatre, Kresge Auditorium, on Wednesday, December 13, 4pm.

The program of tape recordings will include Euridice, overture for full orchestra, as inspired by the play of the same title by Jean Anouilh. The recording was performed by the Radio Philharmonic Orchestra of Holland, directed by Carl von Garaguly.

Another work to be presented in this audition will be Concerto for Piano and Orchestra No. 1, recorded by the Suisse Romande Orchestra, Geneva, directed by Ernest Ansermet. This perfor-mance will feature soloist Bela Siki.

In September, Andor Kovach was appointed to his position with



the MIT music faculty for a period of three years. Now a Swiss citizen, Mr. Kovach was born in Hungary where he studied at the Liszt Ferenc State Music Academy in Budapest as a

member of Zoltan Kodaly's master class in composition.

Having received the degree of music professor, Mr. Kovach later studied with Clemens Krauss in Austria and received a master's degree in orchestral conducting. Mr. Kovach was also the only private composition student ever to work under Bela Bartok.

Although his longer worksoperas and concerti-as well as his chamber music compositions are regularly played in Europe, they are less known in the United States. Recently, some of Mr. Kovach's compositions were performed in Michigan and Texas. Two of his major pieces, the First Piano Concerto and the Third Symphony, will be broadcast by WNCN Radio, New York, on December 18 and 21. The latter work was commissioned by Swiss conductor Dr. Paul Sacher, who also commissioned such notables as Bartok and Stravinsky.

Two Sailboats Given to Pavilion

Two new sailboats were recently donated to the MIT Sailing Pavilion by Tech graduates.

Harry Duane '57 of Worcester Mass., donated an International 470 class sailboat to the MIT sailing program. The 470 is one of the classes raced in the Olympics and the new addition to the fleet will provide valuable boat handling training for the Tech sailing teams and members of the Nautical Association.

Ragnar Naess '23 of New York City donated a Laser class sailboat to the Sailing Pavilion. This raises Tech's fleet of this very popular singlehander to five and MIT's total sailing fleet to 65.

He also served as a technical expert for the estimated 80 delegates who attended.

Professor Szekely said there was "quite effective transmittal of information" at the meeting. He viewed the session as "a very interesting opportunity for the US to export pollution abatement technology to numerous developing nations, many of which would be in an excellent position to pay hard cash for such technology.

Information about the program will be mailed to Institute supervisors within the next week.

A too cautious approach to technological development could slow social evolution, he argued.

"We used to say we'd take a calculated risk, but there was no real way to measure risks. Now that we know how to calculate risk, we don't know how to deal with that knowledge," he said.

Politicians and bureaucrats are faced with information such as estimates that saccharine use increases an individual's chance of contracting bladder cancer in one in 10,000 cases. Translated into 500 new cancer victims nationwide. what should the government do to control saccharine, used as an artificial sweetener in soft drinks and other foods, he asked.

There is increasing attention paid to the second order effects of technologies, Dr. Wiesner said. When electricity and the internal combustion engine were introduced, few predicted side effects such as pollution.

However, "those who distrust

'Weekend of Music' Announced

"A Weekend of Music" will be by the Bostonia String Quartet, and presented on December 16 and 17 in the MIT Little Theatre, Kresge Auditorium, by the Council for the Arts at MIT in cooperation with the Graduate Student Council.

Baritone Vincent Ricento and pianist Thomas Zajkowski will give a recital of "French Poetry Set to Music," incorporating the writings of great French poets and composers such as Verlaine, Poulenc, Beaudelaire and Duparc.

The program will also feature chamber music of Mozart, performed

Pergolesi's two-act comic opera, "La Serva Padrona," sung in English by the Musicians of Cottage Farm.

The concerts will begin at 8pm, Saturday, Dec. 16, and 3pm, Sunday, Dec. 17. Tickets will be available at the door for both events, \$7.50, or for one concert, \$5.00. Tickets for senior citizens and students with ID are \$5.00 and \$3.00. Members of the MIT Community may attend free. For ticket reservations and information, call 427-2931.

Works-in-Progress Program Offered

The MIT Drama Program will present an evening of works-in-progress, Wednesday, Dec. 13, and Friday, Dec. 15, at 8pm in the Little Theatre.

The evening will feature student works, choreographed and performed by members of Beth Soll's Dance Workshop. Discussion and improvisations will introduce the audience to the process of choreography.

Staged readings of student scripts-

in-progress from Professor Albert R. Gurney's playwriting seminar will be presented, with authors available for comments and discussion.

An offering of dramatic monologues will be performed as final projects by members of Mark Ammons' Acting I class.

Following the performances, wine and cheese will be served at a reception in the Green Room.

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