

Sticker Deadline

Proper display of a 1978-79 parking permit (sticker) will be required for all cars effective Monday, Oct. 2, according to Campus Police parking personnel.

Parking permits are required for use of all MIT parking facilities, 7:30am-5:30pm, Monday through Friday.

Offices planning seminars and conferences at MIT during the academic year are cautioned that available parking resources preclude accommodations for any large groups. Brochures for such events should mention parking difficulties to those expected to attend.

Persons with questions about these matters may call parking personnel at x3-7275 or x3-7276.

Elting Morison To Open Series At Alumni Institute

Professor Elting E. Morison will open the 1978-79 MIT Boston Seminar Series on Monday, Oct. 2. His topic will be "Production Line vs. Team Assembly, or Volvo vs. GM."

Professor Morison, the Elizabeth and James Killian Class of 1926 Professor, Emeritus, and senior lecturer in the School of Humanities and Social Science, is one of six MIT faculty members serving as series speakers this year.

The meetings are held once a month through March at the Faculty Club. Information about subscriptions can be obtained at the Alumni Association, which sponsors the programs through the MIT Alumni Institute.

Alumni Institute activities are designed to offer opportunities for intellectual stimulation for MIT alumni and their spouses. The Boston Seminar Series provides a chance for alumni to interact with key MIT faculty members on topics of current interest.

The 1978-79 seminar series—under the general heading of "The Interactions Between Science, Technology and Society"—will explore the relation of science and technology to questions of value and choice in modern industrial society and to societies adjusting to an industrial mode.

The other speakers:
November 14—Myron Weiner, professor of political science,

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The Chorallaries singing in close harmony to a balloon-carrying audience, do their part in launching the United Way/Boston Black United Fund drive Monday noon in Lobby 7. —Photo by Calvin Campbell

Lobby 7 Celebration Marks United Way/BBUF Drive

Amid brightly colored bouncing balloons and serenades by the Gospel Choir, Logarhythms and Chorallaries, the 1978 United Way/Boston Black United Fund campaign was launched Monday in Lobby 7.

In a letter to the MIT community, Chancellor Paul E. Gray set forth the aims of the campaign: "We have established a realizable goal of \$140,000 for the United Way drive—a 15 per cent increase over last year. This is a significant increase . . .

"Participation will be the key factor in reaching the goal," the Chancellor said. "Last year nearly one-third of the community contributed to the United Way. This year I hope we will increase our participation to nearly 50 per cent. The addition of new donors, even at very modest levels, will be important in helping the Institute meet its goal."

Because the Boston Black United Fund (BBUF) is new this year, no goal has been established for it, Dr. Gray said.

"Every gift or pledge to the

United Way and the Boston Black United Fund expresses our commitment to helping our friends and neighbors and sometimes, ourselves," Dr. Gray said. "Please give serious consideration to your personal support of these efforts."

More than 100 solicitors will begin person-to-person distribution of pledge cards and brochures this week in an effort to reach every employee. Contributions may be made by cash, check or payroll deduction and all are tax deductible.

When pledge cards are completed they should be returned to the solicitor who will make weekly reports to the campaign office. The campaign is scheduled to run through October 27.

Upcoming Holidays

MIT will observe the Columbus Day holiday on Monday, Oct. 9, and Veterans' Day on Friday, Nov. 10. Future holiday notices will be announced as appropriate.

Indigo Is Not A Spectral Color

There's been a good deal of talk about MIT and the arts recently, so when we spotted a poster announcing an art lottery for students at that citadel of science last week we decided to drop in at Hayden Gallery to see for ourselves what, culturally speaking, was up. As it happened, we ran into an old friend in the hallway as we approached the Gallery to check out its contents the morning before the lottery was to be held. It was Roy G. Biv, that familiar fictional character who serves every old schoolperson like ourselves as a mnemonic device for recalling the colors of the rainbow. Biv was lurking in a poster heralding the 1972 Munich Olympics, not an arc but as a wavy line on a sort of temperature chart that had serial photographs of a

running man at the bottom. It seemed to us that Biv himself was running backwards, red being the color at the extreme right. Further down the corridor, we found Biv ensconced in the middle of another poster. This time he was done up as colored pages torn from a desk calendar in a poster by Jim Dine announcing something called "Art in Science" for the Albany Institute of History and Art back in 1965. Red was the color at the extreme left.

Our sense of the natural order of things restored, we entered the Gallery to confront a big sign which read MIT Student Art Lottery and Loan Exhibition. To the right was a large gaudy Lichten-

stein poster in silver, blue and pale gold with red and blue dots done for the Fourth New York Film Festival. Next to it was a glowing green, blue, red and pink Warhol for the Fifth New York Film Festival. Both were part of the Catherine N. Stratton Collection of Graphic Art, according to the cards next to each work, and both were serigraphs. We weren't sure what a serigraph was and turned to the attendant's desk to ask.

The young man sitting behind the desk smiled pleasantly and clicked a small counter. Prompted by this statistical cue, we asked him how many people had signed up for the lottery. He

Understanding Taste Seen Key to Nutrition

Three internationally-known food scientists told a symposium at MIT Tuesday (Sept. 26) that a better understanding of the role that taste plays in people's dietary habits could increase the nutritional value of food, increase the world food supply and stabilize world society.

One of the scientists said that an extensive educational program is needed from the elementary school level through the college level to inform consumers about the nutritional value of food.

The scientists are: Dr. Morley R. Kare, professor of physiology and director of the Monell Chemical Senses Center at the University of Pennsylvania, Philadelphia; Dr. Emil M. Mrak, chancellor emer-

tus of the University of California at Davis; and Loren B. Sjöström, a retired vice president of Arthur D. Little, Inc., and presently consultant to the widely-known Cambridge consulting firm.

Dr. Kare received the 16th Annual Underwood-Prescott Memorial Award, which was presented by Dr. Walter A. Rosenblith, provost of MIT.

The award and symposium are sponsored by MIT and the Wm. Underwood Co. of Westwood, Mass., the nation's oldest canning company. The award is named in memory of Wm. Lyman Underwood, grandson of the man who founded the company in Boston in 1822, and Dr. Samuel C. Prescott. (Continued on page 8)

Federal Monetary Policy Effect Questioned in Study

By CHARLES H. BALL
Staff Writer

An MIT-Harvard University study has challenged a long-accepted premise among monetary experts—that instability in the housing construction sector is an unfortunate but necessary price to pay for achieving a stable national economy.

According to Dr. Arthur P. Solomon, director of the MIT-Harvard Joint Center for Urban Studies, the analysis points to the need for a thorough review of the monetary policies that periodically have caused severe disruptions in the housing sector.

Under traditional monetary policies, the Federal Reserve Board restricts the money supply from time to time in order to re-

strain inflationary pressures. This causes short-term interest rates to rise, touching off a chain of events that eventually drives up mortgage loans and brings about a decline in housing starts.

The result has been to make residential construction—often called the "handmaiden" of monetary policy—one of the most volatile and unstable sectors of the nation's economy.

There have been seven major housing cycles since World War II, and in the most recent one, housing starts fell from a peak annual rate of 2.5 million units in the first quarter of 1972 to a low of 953,000 in the second quarter of 1975.

Although the recent growth of longer-term certificates of deposit

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Sea Grant Awarded \$1.3M To Continue Program at MIT

The Sea Grant Program at MIT—the first private institution of higher learning in the United States to be designated a Sea Grant College—has received a \$1.3 million grant from the federal government for the continuation of its program of research, advisory services and education aimed at developing and managing ocean and coastal resources.

The program grant is the seventh annual one to be received by the Sea Grant Program at MIT. The \$1.3 million represents 57 per cent of the Sea Grant Program

budget. The remaining 43 per cent comes from industry, state and local governments, MIT, and other educational institutions who have joined in a partnership to solve the problems that result from increasing, and sometimes conflicting, use of marine resources.

MIT's involvement with the Sea Grant effort began in 1966 and grew into a coherent program by 1971. Two years ago the US Department of Commerce, which administers the national Sea Grant Program through its National Oceanic

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else around the Institute, helping with various aspects of the collection. Did you know that MIT has about 1,000 art works in its Permanent Collection?"

A young woman stopped at the desk to ask how long students could keep a work if they won it. ("One year.") A young man came to ask if it was all right to enter a neighboring student's name in the lottery. "Are you sure your taste is the same as his?" "Well, I don't know," the young man said. "But there's a print from Great Neck over on the wall there and I thought I'd put his name in. He's from Great Neck. He loves it. I despise it."

We drifted off and found a small sign on the wall telling art

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China Study Group Plans Celebration

The MIT China Study Group, made up of Chinese students, has invited the MIT community to day and evening festivities on Sunday, Oct. 8, to celebrate the 67th national day of the Republic of China.

The daytime program, from 10am to 5pm at the Student Center, will include exhibitions of stamps, handicrafts and paintings, as well as a "Kaleidoscope" of lion dances, a demonstration of Chinese "kung-fu" and martial arts, and other activities.

In the evening, the Youth Goodwill Mission of the Republic of China—made up of 14 students from colleges in the Republic of China—will present a "Cultural Variety Show" in Kresge Auditorium starting at 8pm.

The program will include Chinese classical music, folk songs, native dances such as the sword, lantern, lion and rainbow dances, and Chinese brush painting. Tickets are \$1 for students and \$2 for the public.

The president of the MIT China Study Group is Song-Feng Wang, whose message to the MIT community is, "Please come and share our glorious Chinese heritage."

No Lunch at Club On October 6

A luncheon for the MIT Corporation will be held Friday, Oct. 6, in the MIT Faculty Club and as a result the Club will be closed for lunch that day to members of the MIT community.

"We regret any inconvenience this may cause our regular members," said Brian Smith, manager of the Faculty Club, "but space limitations force us to take this step for this occasion."

The Faculty Club will return to its regular schedule after the Corporation luncheon and will be open for dinner as usual on the evening of October 6.

INSTITUTE NOTICES

Announcements

Graduate students**—Applications for advanced degrees in February 1978 must be returned to the Registrar's Office, E19-335, by September 29, 1978.

National Hispanic Scholarship Fund**—Grants ranging from \$200 to \$600 for graduate and undergraduate students of Hispanic American background. Applicants must be US citizens and presently enrolled and attending college as full-time students. Application deadline: Oct 20, 1978. Info: Graduate School Office, Rm 3-136.

Marshall Scholarships**—Approximately 30 Marshall Scholarships are awarded annually by the British Government to US citizens under 26, to study for a degree at a university in the United Kingdom for a period of at least two academic years. Applications due Oct 22, are available at the Graduate School Office, Rm 3-136.

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

RUNE—MIT journal of arts and letters, on sale in Lobby 10 Monday, Sept 18-Friday, Sept 29, 10am to 4pm. Price, \$1.00.

Club Notes

ACM Student Chapter Meeting*—New members welcome. Discussion of lectures, programming contests, other activities for coming year. Wednesday, Sept 27, 4pm, Chipman Room, 8-314. Info: Bill Wehl, d15-7546.

MIT Baha'i Association*—Discussion, "Foundations of World Unity." Tuesday, Oct 3, 7:30pm, Student Center, West Lounge. Info: Laura, x3-3521.

Beginning Sailing Instruction**—every Monday and Thursday, 5:15pm, through November, at MIT Sailing Pavilion.

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

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

MIT Ecology Action*—General meeting, Wednesday, Sept 27, 7-8:30pm, W20-002.

EECS Student-Faculty Committee**—Meeting, Oct 3, 4pm, Jackson Room (38-466). Newcomers welcome, refreshments.

Graduate Student Council**—Open hearings for Institute Committee seats, both presidential and faculty, Wednesday, Sept 27, 5pm, Rm 4-159. Housing and Community Affairs Committee meeting, Tuesday, Oct 3, 5pm, Rm 50-210. Activities Committee meeting, Thursday, Oct 5, 5pm, Rm 50-210. Info: x3-2195.

MIT Go Club*—Regular meetings, games, instruction, lessons and books on strategy and tactics, Mondays and Thursdays, 8pm, Rm 7-102.

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

Intramural Council Meeting**—Elections: bowling, hockey, indoor track, pool. Wednesday, Sept 27, 8-10pm, Rm 4-145. Refreshments after meeting.

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*—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 firings every Thursday, 6-8pm, duPont Range. Info: Rm 20B-101, 623-0233.

MIT Pistol and Rifle Club**—Beginners Pistol Course starts Oct 5, 6:30pm, du Pont Pistol Range for five consecutive Thursdays, stressing safety and proper handling as well as basic marksmanship. Fee \$20. Info: Andy Platias, 8-1419 (Draper).

MIT Women's Rugby Club**—Practice every Friday 5:30-7:30pm. Games alternate Saturdays. Any woman with athletic card welcome. Info, call Sharon x3-6825.

Tech Model Railroad Club*—Operating session, Saturday, Sept 30, 2pm, Rm 20E-214. Operation of Tech Nickel Plate Railroad by timetable. Soft drinks. Info: Bengt, x3-3269.

Technique, the MIT Yearbook**—Meetings every Saturday at noon, W20-451. Free film and free pizza. Drop by and talk. Info: 3-2980.

MIT Tiddlywinks Association*—Weekly meetings, practice, coaching, preparation for tournaments 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: d15-8439.

Women's Cross Country Club**—Official practice every Monday and Wednesday, 5:15pm, at the track. All women welcome. Info: Leslie Chow, 262-6844; Bill Brace, x3-3319.

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 Tai Chi. Beginners welcome. Info: Chen-dao Lin, d15-9640.

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, sponsored 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, Sundown Kasher 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 Vedanta Society*—Meditation and discourses on the Gita by Swami Sarvagatananda of the Ramakrishna Vedanta Society of Boston. Fridays, 5:15pm, Chapel.

Jewish High Holiday Services*—Rosh Hashanah Services: Traditional—Sunday, Oct 1, beginning 6pm in the Mezzanine Lounge of the Student Center; Monday, Oct 2, beginning 8:30am in the Mezzanine Lounge of the Student Center; Tues, Oct 3, beginning 8:30am in the

Mezzanine Lounge of the Student Center; Conservative—Sunday, Oct 1, beginning 6:00pm in the Sala de Puerto Rico in the Student Center; Monday, Oct 2, beginning 8:30am in the Sala de Puerto Rico in the Student Center; Tues, Oct 3, beginning 8:30am in the Sala de Puerto Rico in the Student Center; Reform—Sunday, Oct 1, beginning 6:30pm in the MIT Chapel; Monday, Oct 2, beginning 9:00am in the MIT Chapel. *Yom Kippur Services:* Traditional—Tues, Oct 10, beginning 5:30pm in the Mezzanine Lounge of the Student Center; Wed, Oct 11, beginning 8:30am in the Mezzanine Lounge of the Student Center; Mincha and Neila, Oct 11, beginning 4:30pm in the Mezzanine Lounge of the Student Center; Conservative: Tues, Oct 10, beginning 5:30pm in the Sala de Puerto Rico in the Student Center; Wed, Oct 11, beginning 8:30am in the Sala de Puerto Rico in the Student Center; Mincha and Neila, Oct 11, beginning 4:30pm in the Sala de Puerto Rico in the Student Center; Reform—Tues, Oct 10, beginning 6:00pm in the MIT Chapel; Wed, Oct 11, beginning 9:00am in the MIT 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.

Awards
A number of special awards are available to students working on UROP projects or about to begin a research project; these are a sampling; also check the UROP 78/79 Directory: Sigma Xi Research Awards. Two awards of \$750 each for research support are offered to undergraduates pursuing their own research ideas in either science or engineering. Investigate further at the UROP Office. Deadline October 16, 1978.
Class of '76. Proposals are encouraged that address a socially significant problem through science or the humanities. Personal support and/or materials are considered.
Clapp & Pollak. Proposals may be submitted at any time for wages and/or materials support for engineering design projects.

Radiation Monitoring Devices (RMD) Water-town

RMD is the world's only commercial supplier of CdTe gamma ray detectors and is now working on mini-detectors. Small sensors are becoming very important for advanced nuclear medicine instruments. Under an NSF contract they are developing, with New York University Medical Center, a 200 detector brain scanner. A student is invited to optimize existing preamplifier circuitry to improve the performance of the detector-preamplifier combination.

"Mechanical Properties" of Protein-Polymer Alloy

In this project the viscoelectric, and elastic properties, stress-strain relationship, glassy temperature of this protein-polymer alloy, prepared under different conditions, will be investigated. These mechanical properties of the alloy will be correlated with the releasing phenomenon. Isotron universal machine, mechanical spectroscopy, and differential calorimetry will be used in this project. Students who have physics background or engineering background and are interested in entering biomedical fields are preferred. Contact Prof. Langer, 16-309, x3-3107.

Peter Bent Brigham Hospital

A student is invited to participate in a project which will involve chronic heart surgery in dogs, late postoperative sacrifice and evaluation of histology by light microscopy and new vital stain techniques for the evaluation of various preservative agents on the heart muscle for increasing periods of time. A student who wishes to participate should have taken at least two years of biology. s/he would also most probably be a premedical major. Thirdly, and probably most importantly, s/he should be able to devote a complete day to the project, preferably Monday or Tuesday, when these experiments are carried out.

Neuroendocrine Research

There is an opportunity for a hardworking student to work in the field of neuroendocrinology. This project will involve the study of how the brain regulates the secretion of a pituitary hormone, growth hormone, and the influence of the diet and pharmacologic agents on this function. The student will be expected to work on all aspects of these studies. Contact Mike Arnold, x3-6709.

Materials Science and Engineering

An opportunity for a student with interest in process technology to perform analysis of a

new high strength aluminum alloy. Tasks will include meltdown and controlled solidification of specially modified 7075, a high strength aircraft alloy, and subsequent mechanical and microstructural evaluation. Credit or pay available. Contact Frank Goodwin, 4-415, x3-3217.

Graduate Study

Fulbright-Hays Grants for Graduate Study Abroad**—Application deadline, Sept. 29. Approximately 500 grants to 50 countries are being offered. Most grants provide transportation, tuition and maintenance for one academic year. Candidates must be US citizens at time of application, hold bachelor's degree or equivalent by beginning date of grant and have language ability commensurate with demands of proposed study project. Info: Graduate School Office, Rm 3-136.

Rhodes Scholarships**—Awarded for two years of study in any field at Oxford University. Applicants must be US citizens, unmarried, between ages of 18 and 24, who have received bachelor's degree before beginning of program year at Oxford. Emphasis placed on character as well as intellect. Application information from Prof. Lester Thurrow, Rm E52-252D. Application deadline, late October.

Woodrow Wilson Women's Studies Research Grants**—Research grants to encourage original and significant research about women. The grants, which average \$1,000, are awarded to students in doctoral programs in any field of study at graduate schools in the US. Applicants must have completed all pre-dissertation requirements. Info: Graduate School Office, Room 3-136. Application deadline: November 1, 1978.

NSF National Needs Postdoctoral Fellowships**—NSF plans to award 130 fellowships for postdoctoral research and study on scientific problems related to national needs. The fellowships provide a stipend of \$1,000 per month for up to 12 months of tenure. Applicants must be US citizens or nationals who will have earned a doctoral degree in the mathematical, physical, medical, biological, engineering or social sciences by the beginning of their fellowships tenure. Preapplications and further information are available in the Graduate School Office, Rm 3-136. Application deadline: November 3, 1978.

NATO Postdoctoral Fellowships**—Approximately 40 NATO Postdoctoral Fellowships will be offered for further study in the sciences at institutions outside the US. Applicants must be US citizens or nationals who have demonstrated ability and special aptitude for advanced training in the sciences and who will have, by the beginning of the fellowship tenures, earned doctoral degrees in any of the qualifying fields of science. The stipend is \$920 per month for up to 12 months of tenure. Fellowships are also provided with dependency allowances. Info: Graduate School Office, Rm 3-136. Application deadline: November 3, 1978.

Churchill Foundation Scholarships**—Approximately 10 scholarships awarded annually to US citizens between ages of 19 and 26 for the study of engineering, mathematics or science at Churchill College, Cambridge University. Applicants must have taken the Graduate Record Examinations (aptitude and advanced) no later than Oct 20, 1978. Application deadline: Nov 10. Info: Graduate School Office, Rm 3-136.

German Academic Exchange Service (DAAD) Scholarships**—For graduate study in any academic field in the Federal Republic of Germany. Candidates must be between 18 and 32, must hold bachelor's degree at time of award, and should be fluent in German. Application deadline, Nov 10, 1978. Info: Graduate School Office, Rm 3-136.

NSF Graduate Fellowships**—Three-year graduate fellowships for study leading to master's or doctoral degrees in the mathematical, physical, medical, biological, engineering and social sciences. The fellowships provide a cost-of-education allowance in lieu of tuition and required fees, plus a stipend of \$325 per month. Applicants must be US citizens or nationals at the time of application and must not have completed postbaccalaureate study in excess of 12 semester hours, or equivalent, in any field of science, engineering, social science or mathematics. Preapplications and info: Graduate School Office, Rm 3-136. Application deadline: Nov 30, 1978.

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.

2-3pm THE GREATER BOSTON SONG-FEST: Chorallaries, Widows, and Bezelbubs by MITV
7-9:30pm POLITICS AND TELEVISION: Ed Diamond and guest. Live from 9-150.

Channel 10: 10-11am IMPRESSIONS OF CHINA: MIT Provost Walter Rosenblith speaks on his three-week visit in China
11am-12:45pm SEXISM IN SCIENCE: From the Black Rose lecture series

Friday, September 29
Channel 8: 11-11:30am WOMEN'S WORK: MANAGEMENT
11:30am-12noon WOMEN'S WORK: ENGINEERING
12-1pm UNITED WAY
1-2pm DOLPHINS: Cruelty in the fishing industry
2-3pm BASEMENT VIDEO PRESENTS: Pete Smith

Monday, October 2
Channel 8: 11am-12:30pm THE INTEGRATED CIRCUIT REVOLUTION
12:30-1:30pm UNITED WAY
1:30-2pm AFRICAN JOURNAL: Repeat, Thurs., Sept. 28, 1:30pm
2-3pm THE GREATER BOSTON SONG-FEST: Repeat, Thurs., Sept. 28, 2pm

Tuesday, October 3
Channel 8: 11am-1pm GEODESY AND GEOPHYSICS: Repeat, Wed., Sept. 27, 11am
1-2pm UNITED WAY
2-2:30pm WOMEN'S WORK: ENGINEERING
2:30-3pm WOMEN'S WORK: MANAGEMENT

CABLE TV SCHEDULE X3-3625

September 27 - October 3, 1978

Wednesday, September 27
Channel 8: 11am-1pm GEODESY AND GEOPHYSICS: A Draper Laboratory seminar
1-2pm UNITED WAY
2-3pm BASEMENT VIDEO PRESENTS: Pete Smith

Thursday, September 28
Channel 8: 9:30-11am WORLD CHANGE AND WORLD SECURITY by Willy Brandt
11am-12:30pm THE INTEGRATED CIRCUIT REVOLUTION
12:30-1:30pm UNITED WAY
1:30-2pm AFRICAN JOURNAL: An interview with photographer Carol Beckwith

Lena Lake Forrest Fellowships**—The Business and Professional Women's Foundation sponsors the Lena Lake Forrest Fellowship Program and the BPW Foundation Research 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 accredited graduate institution. Only US citizens are eligible. Info: Graduate School Office, Rm 3-136. Application deadline: Jan 1, 1979.

Pharmaceutical Manufacturers Association Research Grants**—Doctoral dissertation research grants to encourage original research in areas relating to 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.

Foreign Studies

Social Science Research Council**—Fellowships for doctoral dissertation research in the social sciences and the humanities to be carried out in Africa, Asia, Latin America and the Caribbean, the Near and Middle East, or Western Europe. The programs are designed to support scholars who intend to become specialists in the area where they will conduct their research. Applicants must be enrolled full-time at universities in the US or Canada and must have completed all requirements for the PhD except the dissertation by the time the fellowship is activated. Info: Graduate School Office, Rm 3-136. Application deadline: Nov 1, 1978.

The Latin American and Caribbean Learning Fellowship**—Pre- and postdoctoral research fellowships to provide opportunities for scholars to learn about processes related to social change in Latin America and the Caribbean. The fellowships are open to scholars in the social sciences and professions. Doctoral candidates must be enrolled in higher education institutions in the US and have fulfilled all degree requirements other than the dissertation at the time of the award. Info: Graduate School Office, Rm 3-136. Application deadline: Dec 5, 1978.

Echoes

October 1 - 7

50 Years Ago

In a promotional effort *Voo Doo*, the Institute's comic monthly, has chartered one of the Skyways, Inc., airplanes to fly over the Institute. After performing a few stunts the airplane will drop a dozen subscription books over the Great Court. Those lucky enough to get one of these will receive a year's subscription to the magazine.

40 Years Ago

"Will Czechoslovakia Survive?" is to be the question under discussion at a lecture and open forum sponsored jointly by the T.C.A. and the Technology Peace Foundation.

The latest of Technology's wind tunnels, named after the Wright Brothers, was dedicated at the recent session of the Fifth International Congress for Applied Mechanics. President Karl T. Compton pressed the button which set the tunnel in operation for the first time. In addition to operating at air speeds up to 400 m.p.h., the tunnel will provide a wide range of working pressures.

25 Years Ago

The Dorm Acquaintance Dance will be held this week in Walker Memorial. An eight-piece orchestra led by George Graham is to provide music. Five busloads of women are expected from Wellesley. Admission is \$1 for men, free for women.

(Prepared by Marcia Conroy, MIT Historical Collections, x3-4444.)

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Humanities Appoints 21 to Staff

A history professor and a director of the writing program—a newly-created post—are among the appointments this year in the Department of Humanities.

Dr. Pauline R. Maier, professor of history, comes to MIT from the University of Wisconsin at Madison, where she has been Robinson-Edwards Professor of History since 1977. Before that, starting in 1968, she had been assistant professor, associate professor and director of graduate studies in history at the University of Massachusetts-Boston.



Prof. Maier

Professor Maier received her AB in American history and literature from Radcliffe College in 1960. She was a Fulbright Scholar at The London School of Economics in 1960-61, and received her PhD in American history from Harvard University in 1968.

She was Anson G. Phelps Lecturer for 1976 at New York University and Charles Warren Fellow at Harvard University in 1974-75. She received the "Younger Humanist" Award from the National Endowment for the Humanities for 1974-75.

Her book, *From Resistance to Revolution: Colonial Radicals and the Development of American Opposition to Britain 1775-1776* (1972), has become a standard reference in the literature on the American Revolution.

Emma G. Rothschild, associate professor of writing and director of the writing program, is a well-known writer in the fields of economics, political science and technology. Her principal subjects include world food problems, the US automobile and petroleum industries, the energy crisis and world armaments.



Prof. Rothschild

Professor Rothschild received a BA from Oxford University in England in 1967 and was a Kennedy Scholar in Economics at MIT in 1967-68. She was a visiting lecturer in political science at Yale College in 1976 and a research fellow at the Lehrman Institute in 1977-78.

Her publications include a 1973 book, *Paradise Lost: The Decline of the Auto-Industrial Age*.

The Department of Humanities appointments also include a visiting professor of music and composer in residence, Andras Kovach.

Professor Kovach received his baccalaureate and masters degree in composition at the Liszt Ferenc State Music Academy in Budapest, where he also received advanced training in music, teaching and orchestra conducting.

He has been professor of composition, musical analysis and

orchestration at the Cantonal Conservatory of Music in Lausanne, Switzerland, and professor of music theory at the State Conservatory in Saarbrücken, Germany.

He is the founder and permanent conductor of Museo de Arte Symphony Orchestra, Sao Paulo, Brazil, and the "Jeunesses Musicales," State Symphony Orchestra, Brussels, Belgium. He also has been a conductor of orchestras and choirs in Budapest and other Hungarian cities.

He won the International Prize in the Queen Marie-Jose Composition Competition in Switzerland in 1964, and first prize in the International Composition Competition, National Association of Choir Societies, Hungary, in 1943.

These are the other appointments announced by Professor Bruce Mazlish, the head of the department:

Dr. Edward B. Turk, associate professor of French. He received his BA from Brooklyn College in 1967, MPhil from Yale University in 1971 and PhD from Yale in 1972. He has been assistant professor of French at Yale as well as director of undergraduate studies in French.

Dr. A. Julia Allissandrotos, assistant professor of Russian. She received her BA in Russian language and literature from Swarthmore College in 1967, MA from the University of Chicago in 1969 and PhD in Slavic languages and literature from the University of Chicago in 1977. She has taught at Southwestern at Memphis.

Dr. Alan D. Brinkley, assistant professor of history. He received his AB from Princeton University's Woodrow Wilson School of Public and International Affairs in 1971, AM in American history from Harvard in 1975 and PhD from Harvard in 1978.

Dr. Kathryn J. Crecelius, assistant professor of French. She received her BA from Bryn Mawr, MA and MPhil from Yale in 1974 and 1976, and PhD from Yale in 1978.

Dr. Raymond H. Deck, Jr., assistant professor of literature for one year. He received his BA from Yale University in 1970, and MA and PhD from Brandeis University in 1974 and 1978.

Dr. Isabelle de Courtivron, assistant professor of French. She received her BA from Colby College in 1969, and MA and PhD from Brown University in 1970 and 1973. She was an assistant professor of French at Wellesley College in 1975-77 and a visiting assistant professor at MIT in 1977-78.

Dr. David Dollenmayer, assistant professor of German. He received his BA from Princeton University in 1967, studied at Munich University in 1967-68, and received his PhD in German literature from Princeton in 1977. He was an instructor at Smith College in 1976-78.

Dr. Jay J. Rosellini, assistant professor of German. He received his BA and AM from the University of Illinois (Urbana) in 1969 and 1972, and PhD in German literature from Indiana University

(Bloomington) in 1978. He has taught at the University of Illinois, Haverford College and Washington University.

Dr. Steve Barnett, visiting assistant professor of anthropology. He received his AB in philosophy from Antioch College in 1964 and his MA and PhD in anthropology from the University of Chicago in 1966 and 1970. He was an instructor at the University of Chicago in 1969-70, adjunct assistant professor at New York University in 1971-72, assistant professor at Princeton University in 1970-76, and visiting professor at Brown University in 1977.

Mark Ammons, part-time instructor in acting. He received his BA in theater arts and English from the University of Cincinnati in 1965 and MA in directing/acting from the University of Washington in 1967. He also has completed his course work toward a PhD in theater at the University of Illinois. He was an assistant professor at the University of Connecticut in 1973-76, and a visiting artist-in-residence (drama) at Tufts University in 1976-77.

Vernon G. Baker, instructor in archaeology for one year. He received his BA from the University of Vermont in 1973, MA from Brown University in 1975 and is a doctoral candidate in the Department of Anthropology at Brown.

Susan Dickman, instructor in literature. She received her BA from Stanford University in 1967 and MA from the University of Chicago in 1970 and expects to receive a PhD from the University of California, Berkeley.

Frederick Hodgson, instructor in French. He received his BA from Dartmouth College in 1972 and his MA from the University of California, Santa Barbara, in 1974 and 1978.

Amy Lang, instructor in literature. She received her BA from Sarah Lawrence College in 1971, and her MA and MPhil from Columbia University in 1972 and 1974.

Wilburn Williams, Jr., instructor in literature with a specialty in Black literature. He received his BA from Amherst College in 1971 and is a PhD candidate in the American Studies Program at Yale University.

Dr. Lee A. Warren, lecturer in the Writing Program. She received her BA from Wellesley College in 1961, MA from the University of Michigan in 1963 and PhD from Stanford University in English and American literature in 1968. She was assistant professor of English at UMass-Boston in 1976-77.

Beth B. Soll, part-time technical instructor in dance. She received a BS in dance from the University of Wisconsin in 1965. She was dance coordinator and teacher at Boston University in 1974-77 and is now a dance teacher at The Institute for Contemporary Dance, as well as a guest lecturer at BU.

Mina Vanderberg, part-time technical instructor in costume designing. She received her BA in theater arts from Brandeis University in 1976 and MFA from the University of Minnesota in 1978.

F.J. Corbató Appointed To Green Professorship

Dr. Fernando J. Corbató, professor of computer science and engineering in the Department of Electrical Engineering and Computer Science at MIT, has been named Cecil H. Green Professor of Computer Science and Engineering.



Professor Corbató

The Green Professorship of Electrical Engineering—one of six distinguished chairs given by Mr. and Mrs. Cecil H. Green of Dallas, Texas—was established in 1970 as a means of providing individual faculty members in electrical engineering and computer science with an opportunity to move into new areas of research. Appointment to the chair is generally for a two-year term.

Professor Corbató received wide recognition for his work on the development of the MIT Compatible Time-Sharing System (CTSS), which was first demonstrated in 1961. Building on the CTSS, Professor Corbató and his colleagues continued research with multiple-access systems and developed the Multiplexed Information and Computing Service (MULTICS) which became available at MIT in 1969.

Professor Corbató plans to use the professorship to study the rapidly evolving technology of Very Large-Scale Integrated circuit design.

After completing a doctorate in physics Professor Corbató joined the MIT Computation Center at its inception in 1956 as a research associate and later served as assistant director in charge of programming and research, associate director, and deputy director.

In 1963, in addition to his responsibilities at the Computation Center, Professor Corbató became the head of the Computer Systems Research Group in the Laboratory for Computer Science (formerly Project MAC) and served in that

capacity until 1972, when he became co-head of the Systems Research Division and the Automatic Programming Division. He left both those positions in 1974 when he became associate department head, a position he held until September 1 of this year.

Professor Corbató is the author of numerous papers and is co-author of several books, including "The Compatible Time-Sharing System: A Programmer's Guide."

He is a Fellow of the National Academy of Engineering, the American Academy of Arts and Sciences, and the Institute of Electrical and Electronics Engineers. In 1964 he was an ACM national lecturer, and in 1966 he received the W.W. MacDowell Award.

Born in Oakland, California, in 1926, Professor Corbató received a BS from the California Institute of Technology in 1950 and a PhD from MIT in 1956. He lives with his wife, Emily, and their four children in West Newton.

Spencer Talk to Highlight Course XV Convocation

William I. Spencer, president and chief administrative officer of Citicorp and its subsidiary, Citibank, will be one of the featured speakers at a convocation Friday and Saturday (Sept. 29-30) for graduates of the Alfred P. Sloan School of Management.

Mr. Spencer, who is a member of the National Advisory Committee on Banking Policies and Practices, will speak about government regulation in the context of the theme of his convocation, "Business-Government and National Economic Strategy: 1978-1983."

A second speaker on the morning program Friday at Kresge Auditorium will be Dr. Robert M. Solow, Institute Professor and professor of economics. In the afternoon, Dr. Lester C. Thurow, professor of economics and management, will chair a panel made up of five Sloan School graduates who are chief and senior executives of major companies.

A highlight of the convocation will be a reception Friday night at the Hyatt Regency Hotel.

On Saturday, the graduates will be able to choose from among 30 seminars given by members of the Sloan School faculty.

More than 300 Course XV graduates and their spouses will attend

the convocation, which is held every three years. About 5,300 persons have received the SB, SM and PhD degrees in management science since 1952, when the school was established as the School of Industrial Management.

The convocation excludes the Sloan Fellows and Senior Executives, who have their own convocations.

President Jerome B. Wiesner will welcome the graduates Friday morning.

Dean William F. Pounds of the Sloan School will be the speaker at a luncheon Friday at the Sala de Puerto Rico in the Student Center.

The panelists for the afternoon program will be:

Richard A. Crowell (SB '62, SM '64, PhD '67), senior vice president of The Boston Company, Inc.; John F. Fort III (SM '66), president of the Simplex Wire and Cable Company; Stanley M. Proctor (SB '43), president of the Stanley M. Proctor Company and a member of the MIT Corporation; Denis M. Slavich (PhD '71), manager, investments and economic services, Bechtel Corporation, and vice president of Bechtel Financial Services, Inc.; and Erskine N. White, Jr. (SM '49), executive vice president of Textron Inc.

Colleagues Write Book Honoring Professor Harold Isaacs' Career

Colleagues and friends have written a book in honor of Harold R. Isaacs, professor of political science, emeritus, at MIT.

The book, edited by Dr. Robert I. Rotberg, professor of history and political science, was published by Greylock, Inc., of Stamford, Conn. It includes chapters by MIT Professors Ithiel de Sola Pool, Lucian W. Pye and Myron Weiner of the Department of Political Science, Robert Shaplen of the New Yorker, the Japanese minister of education, and others. There is also an unpublished youthful essay on Hawaii by Isaacs, and a biographical chapter by the editor.

The contributors have written about Professor Isaacs' interests and theirs.

Professor Isaacs lived and wrote in the turbulent China of the 1930s before he returned to America. Then, as a Newsweek correspondent, he covered much of emerging Asia during and after World War II.

He came to MIT for the first time in 1953, and was at the Institute continuously from 1964 to 1977. The result of his writing at MIT was 10 influential books about the Middle East, Africa and Asia, and about American understanding of themselves and their relations with the Third World.

'Personetics Review' Confounds Readers

Shades of Orson Welles. A piece of satirical fiction in New Yorker magazine—purporting to be a review of a book called *Non Servium* by James Dobb surveying a field of computer research known as "personetics" and reporting that MIT scientists are creating races of disembodied but sexually-active artificial intelligences that live out their lives inside a computer memory—apparently has been taken literally by some readers.

"There is no such book, no such person as James Dobb and no such field of research," New Yorker librarian Helen Stock said. "We have been receiving telephone calls from bookstores all over the country that say they have orders for the book. The bookstores want to know where to order it. It isn't real. It's fiction."

Meantime, MIT has received at least one request—from an alumnus—for more information on the research, but the request was phrased in such a way as to suggest the alumnus suspected the "review" would turn out to be a hoax.

The only thing real about the piece that appeared in the July 24 issue of New Yorker is the author of the "review"—Stanislaw Lem, a Polish writer of

fiction who hit upon the idea of using the book review form as a literary device.

The "reviewer" describes Dobb as an English composer scientist and world leader in "personetics"—a contraction of "personae" and "genetics." Workers in the field are supposed to be able to create whole universes mathematically inside a computer, then people them with intelligent entities that live, learn and grow within the universes. Through programming, the computer scientists are said to be able to compress eons of development and evolution into minutes and hours, to stop the flow of time for observation purposes at will, and to intervene as history unveils itself.

"Now in the planning stage at MIT are programs (APHRON II and EROT) that will enable personoids—who are currently without gender—to have 'erotic' contacts, make possible what corresponds to fertilization, and give them the opportunity to multiply 'sexually,'" the review author says.

In the late 1930s, actor Orson Welles frightened the nation with what seemed to be an authentic radio account of an invasion by creatures from Mars.

Ad Hoc Committee on Grading Revised Proposals

In our last report to the Faculty we made certain proposals for changes in the Rules and Regulations of the Faculty as regards grades and grading. The proposals were intended for discussion and as preparatory steps to formal motions for a vote of the Faculty on these issues.

On the basis of the Faculty Meeting discussion, subsequent meetings that we held with groups and individuals within the MIT Community and the deliberations of the Committee over the first part of the Summer we now respectfully submit the following motions for a vote:

MOTION 1

Revise Paragraph 2.62.1 of the *Rules and Regulations of the Faculty* (September 1977) as follows:

2.62.1 The grades to be awarded to students who satisfactorily complete the work of a subject by the end of a term and the definitions of these grades are:

- A. Exceptionally good performance, demonstrating a superior understanding of the subject matter, a foundation of extensive knowledge, and a skillful use of concepts and/or materials.
- B. Good performance, demonstrating capacity to use the appropriate concepts, a good understanding of the subject matter, and an ability to handle the problems and materials encountered in the subject.
- C. Adequate performance, demonstrating an adequate understanding of the subject matter; an ability to handle relatively simple problems, and adequate preparation for moving on to more advanced work in the field.
- D. Minimally acceptable performance, demonstrating at least partial familiarity with the subject matter and some capacity to deal with relatively simple problems, but also dem-

onstrating deficiencies serious enough to make it inadvisable to proceed further in the field without additional work.

P. When the use of the single passing grade P is authorized, it may reflect performance at any of the levels, A, B, C, D. [The remainder of Paragraph 2.62.1 will remain unchanged.]

Add to the end of Paragraph 2.62.1

The factors which determine the award of grades in any particular subject will necessarily be affected by the scope and level of that subject. In relatively elementary subjects the mastery of particular skills will often be of primary importance, whereas in more advanced subjects more complex considerations may enter into the evaluation.

The Faculty wishes to make it clear that in determining a student's grade consideration will be given for elegance of presentation, creativity, imagination, and originality, where these may appropriately be called for.

The transcript of the student's record shall contain the names of the subjects taken, the grades received, and a description of the grades in use at the time the student was enrolled.

MOTION 2:

Add Paragraph 2.62.4 to the *Rules and Regulations of the Faculty* (September 1977) as follows:

2.62.4 Beginning with the Fall term of the academic year 1979-1980, the student's grade report shall include the student's academic history and (for the most recent term only):

- (a) the number of students who received a grade in each subject and the number of students who dropped after the fifth week
- (b) the percentages of A, B, C, D, F, P, I, and "other"

grades given in each subject

(c) an asterisk (*) indicating where the student's grade falls in the distribution.

MOTION 3:

The Registrar will develop a method for storing the information provided by paragraph 2.62.4 (a), (b) and (c) for the student's whole academic history. It is the intent of the Faculty that the information so provided shall be used for internal MIT purposes only.

The recommendations that the Ad Hoc Faculty Committee on Grading is presenting to the Faculty for a vote differ from those contained in the Committee's report to the Faculty of March 15, 1978, in the following sense:

- The definitions of grades reflect the input of many members of the MIT Community, especially Dean Hanham.
- The distribution of grades will be used for internal MIT purposes only. Because of practical limitations the student's grade report cannot accommodate the information provided by paragraph 2.62.4 on a cumulative basis. Motion 3 instructs the Registrar to devise a method of accumulating the information and making it available for internal MIT purposes only.
- The provision for a Letter of Recommendation has been eliminated.

Finally, we wish to acknowledge our appreciation to all those—too numerous to mention by name—faculty members, students and members of the administrative staff who assisted us during the last two years in our task.

The Committee

Tom Davidson
(Graduate Student Representative)

Drew Friery
(Undergraduate Representative)

Thomas J. Greytak

James R. Melcher

William M. Siebert

Zenon S. Zannetos

(Chairman)

MASSACHUSETTS INSTITUTE OF TECHNOLOGY												GRADE REPORT		
TERM	SUBJECT NUMBER	LAST, FIRST M			COURSE	YR	IDENT NO			DATE	TR	CR	ACAD	
		S	F	M			S	F	M					S
78-1	5.41	12	P		8.012	12	P	18.01	12	S	57			
	18.02	12	P		21.60	9	P							
78-2	6.030	12	P		8.02	12	P	14.001	9	P	90			
	18.03	12	F											
79-1	6.011	12	C		6.031	12	C	8.03	12	A	147	3.6	3.6	
	18.03	12	C		21.110	9	B							
79-2	6.032	12	C		6.041	12	B	14.06	12	B	195	3.5	3.5	
	18.04	12	C											

TERM	SUBJECT NUMBER	PERCENTAGE GRADE DISTRIBUTION			OTHER	#STUDENTS Excluding Drops	#Drops
		A	B	C			
79-2	6.032	33	31	18*	7	4	7
	6.041	37	55*	9	7	5	5
	14.06	40	51*	4	4	5	5
	18.04	37	40	8*	2	6	6

NOT AN OFFICIAL TRANSCRIPT

TO

IMPORTANT
GRADE EXPLANATION ON REVERSE SIDE

mswells

Men's Varsity Sailing Team Anticipates Good Season

The senior-laden men's varsity sailing team expects one of its better years, led by seniors Captain Leonard Dolbert (Dorchester, Mass.) and Elliott Rossen (Southfield, Mich.). MIT has a good chance of being among the top three teams in the New England district and in the top 10 in the national rankings.

The Tech sailors will compete against all the top teams in the East but can expect some stiff competition from local rivals Tufts and Harvard. The major regattas in the fall season will be the Danmark Intersectional and the New England Team Race Championship at the Coast Guard Academy, the McMillan Cup at the Naval Academy and the Schell Trophy at MIT.

The team got off to a good start the weekend of the 16th, taking first place in the Admiral Hap Moore Trophy at Coast Guard. They were victorious over Maine Maritime, Coast Guard, U.R.I., Dartmouth and Boston College. On Saturday of this past weekend, in a field of 14 top schools, Tech was runnerup to first-place host Tufts in the Tufts Fall Invitational-Lane Trophy. The next day, MIT took top honors in the Jack Wood Trophy held at MIT. Harvard, Coast Guard, Brown and Dartmouth took 2nd, 3rd, 4th and 5th places respectively in that regatta.

This coming weekend the Tech team will travel to Coast Guard to race in the Danmark Trophy.

Soccer

In their home opener last Wednesday, the MIT varsity soccer team beat Harvard University 3-1 for the first time since 1963. The team was lead by senior goalie Tom Smith (Millville, N.J.), turning in a spectacular performance throughout the game. He sealed the Tech victory by saving a penalty shot by Harvard with 1:40 left in the game. Smith finished the game with 15 saves.

Another standout was sophomore forward Jay Walsh (Foxboro, Mass.), who was playing in his first varsity competition. He assisted senior forward Zanda Ilori (Kwara State, Nigeria) on the first MIT goal, 30 seconds into the second half. Then Walsh scored the game-winner 13 minutes later on an unassisted effort. After Harvard's failed penalty shot and with only eight seconds remaining in the game, senior Mike Raphael (Ottsville, Pa.) scored MIT's third and final goal, again on an assist by Walsh.

The Techmen were not able to bring in a win over Babson, the defending New England Division III

Champion, last Saturday. The opposition completely overpowered the MIT team 5-0, controlling the ball so much that Tech never really had a chance to mount an offense.

The MIT varsity team next travels to Trinity on Saturday.

Cross Country

The MIT Cross country team opened its 1978 season last Saturday by bringing home the Engineer's Cup from Worcester. Tech scored 25 points to WPI's 33 and RPI's 66. Captain Barry Bayus (Beltsville, Md.) led the MIT harriers to victory. Captain Bayus finished first and established a new record over the hilly 4.9 mile Worcester course. The team's next competition is against Wesleyan and Coast Guard at Franklin Park this Saturday at 1:00pm.

Women's Sailing

The Tech women's sailing team did well over the weekend by qualifying three women in the Single-handed Eliminations held at MIT on Saturday. Senior veterans Barbara Biber (Needham, Mass.), Audrey Greenhill (Roslyn, N.Y.) and Diana Healy (Enfield, Conn.) will compete in the finals, postponed from Sunday until Sunday, Oct. 8, at MIT.

Other returning letterwinners who will help out this year's team are senior Captain Debra Meyerson (Pacific Palisades, Cal.), and seniors Marianne Salomone (Euclid, Ohio) and Beth Broome (Sinking Spring, Pa.) and sophomores Nancy Saraf (Hyde Park, Mass.) and Lynne Marchiando (Allentown, Pa.). The '78 team also has a good freshmen turnout which signals a rebuilding year for the '79-'80 squad.

MIT Golf League Completes First Season

Anthony L. (Tony) Tedesco, a design drafter in Physical Plant, and August (Gus) Perry, a supervisor in Campus Housing, received winners' trophies on Saturday, Sept. 16, at a banquet celebrating the successful conclusion of the first season of the MIT Golf League.

Conceived last winter, the Golf League was launched May 2 at the Fresh Pond Country Club, playing for 10 weeks before the championship rounds. Emphasis of the league is having a good time with friends.

Officers this year were: Warren D. Wells, registrar, president; Winston E. (Pat) Flynn, assistant registrar, secretary; and Tony Tedesco, treasurer.

Robert N. Clark, accounting officer in Student Accounts, kept track of handicaps and arranged the schedule. John S. Lavelle, accounting officer for sponsored programs, planned the banquet and awards.

Other members were: Joseph R. Cullinan, senior accounting officer for payrolls; John L. De Pamphilis, administrative assistant in Campus Housing; Thomas B. Duff, assistant director in the Office of Sponsored Programs; William J. Fitzgerald, systems analyst in Information Processing Services; Richard A. May, assistant controller.

Also Frank O. Melanson, documentation manager in Information Processing Services; Gordon W. Oro, fiscal officer of the Artificial Intelligence Laboratory; Gus Perry; Joseph E. Phillips, assistant supervisor of heating and



Proud trophy winners: Tony Tedesco, left, and Gus Perry

ventilation; Richard M. Pulkinen, electrician in Physical Plant; and Bruce D. Wedlock, director of the Lowell Institute School.

Plans are being made to increase the membership of the league next year. Interested Institute golfers are asked to drop a note to Pat Flynn, Rm. E19-338.

Runners Asked to Sign Up

Women of the MIT community who will be running in the Bonne Bell 10 kilometer National Championship for Women, to be held in Boston, are invited to help MIT win the award for "most participation."

Last year MIT received second place for participation although many MIT women running did not identify themselves as being from MIT. Anyone interested in helping MIT win the award—students, staff, or spouses—should call Jane Betts, assistant athletic director, at x3-4920.

Only those people already signed up for the race on Monday, Oct. 9, should call since the deadline for entries has passed.

Indoor Tennis Sign-Up Time

Applications are being accepted for the 1978-79 Indoor Tennis Season. Morning, afternoon and evening hours are available for the period beginning Sunday, Oct. 29, and running through Saturday, March 31.

Those interested in reserving time may confirm available time with Hank Motroni, x3-1451, complete application and invoice forms and forward them with payment in full to Hedy Johannessen, Rm. W32-117.

Community Fellows Program Names Six from Local Area

Six men and women active in community work and government are enrolled in the 1978-79 Community Fellows Program at MIT.

The purpose of the seven-year-old program, which is conducted by MIT's Department of Urban Studies and Planning, is to give the participants an opportunity for study, reflection and the acquisition of new skills and tools for greater effectiveness in their work.

All the Fellows are expected to develop specific proposals or programs aimed at dealing with a particular problem or meeting a critical need in their organizations or communities.

Most of the approximately 60 Fellows who have completed the program since its inception in 1971 have returned to their communities and/or home organizations to try to implement the projects developed while at MIT. Others have moved on to new careers, jobs and communities as a result of the training and opportunities offered at MIT.

The program is designed for mature individuals who already have embarked on their careers and who have had significant experience in the problem areas most relevant to the needs of their communities.

The interests and experience of the Fellows are in such diverse fields as community organization, housing development and renovation, community economic development, capital formation for minority businesses and organizations, health planning, educational planning, social services delivery, food technology, communications and environmental management.

The selection of the Fellows is based on individual ability and experience. The program, which has been funded primarily by the Rockefeller and Mellon Foundations and MIT resources, can pay for expenses, tuition and a stipend when necessary.

The program directors are Melvin H. King, an adjunct professor, a member of the Massachusetts legislature and organizer of a number of city-wide and inner city programs in Boston; Alma Armstrong, a doctoral student in the

Department of Urban Studies and Planning; and Frances C. Berry, administrative assistant.

The 1978-79 Fellows, whose selection was announced by Professor Lawrence E. Susskind, head of the Department of Urban Studies and Planning, include a husband and wife. They are:

Ashley A. Fenner and Barbara Brockett Fenner, co-managers of the A & B Consulting and Contracting Co., Inc., of Boston, a minority-owned firm specializing in engineering technologies and socio-economic planning.

Other Fellows are: Sharon Dunn, director of minority affairs at the Massachusetts College of Art.

Cecile H. Gordon, a public relations manager at the New England Telephone Company, Boston.

Russell H. Peters, president of the Mashpee (Mass.) Wampanoag Indian Tribal Council.

Tomas Rivera, director of a telecommunications demonstration project utilizing cable television at Inquilinos Boricurs en Accion, a housing development and human service organization in Boston's South End.

Horton Appointed In IL Program

Jerry R. Horton, a specialist in transportation fuel research, has been appointed Industrial Liaison Officer in the Industrial Liaison Program at MIT.

The appointment was announced by Dr. Samuel A. Goldblith, Underwood-Preseott Professor of Food Science and vice president for resource development.

The Industrial Liaison Program is a formal MIT-industry arrangement for the purpose of stimulating contacts and information exchange between the Institute's faculty and representatives of industry. Some 177 corporations are currently members of the Program.

Mr. Horton received the SB in chemical engineering from MIT in 1974 and the SM in chemical engineering practice in 1977, also from MIT.

From 1975 until his appointment at MIT, Mr. Horton was with the US Department of Transportation in Mr. Horton Cambridge, where he was responsible for the planning and execution of research on the relationships between varying fuel requirements for transportation and their impact on the energy supply industry.

Mr. Horton lives in Wellesley, Mass.



SEA GRANT OPEN HOUSE was held Tuesday, Sept. 19, to acquaint friends from MIT and elsewhere with the expanded facilities in E38. Left to right are: Richard G. Brown, chairman of the mathematics department at Boston Technical High School; E. R. Pariser, associate director for advisory services at Sea Grant; Stanley Russell, director of the MIT Secondary Technical Education Project; and Dean A. Horn, director of Sea Grant.

Sea Grant Awarded \$1.3M To Continue Program at MIT

(Continued from page 1)

and Atmospheric Administration, designated MIT as a Sea Grant College, a distinction held by only 11 other universities, none of them a private institution.

The Sea Grant Program funds, promotes and coordinates multidisciplinary research projects, educational opportunities and advisory services on marine affairs.

Projects at MIT currently are addressing the problems of planning onshore and offshore marine resource development, converting land and ocean wastes into useable resources, adapting or creating technologies for recovering ocean minerals, and devising methods and equipment for effectively farming and harvesting food from the nation's waters.

For example, in Lynn, MIT Sea Grant researchers will continue a study of noxious algal blooms that have repeatedly fouled Lynn Beach. The researchers are trying to pinpoint the cause of the blooms and find ways to control them.

The trace metal content of sewage sludge that has been bombarded by high electron irradiation will be analyzed as a first step in determining a future use for the waste.

In New Bedford, schoolchildren, participating in an MIT Sea Grant program aimed at developing marine curriculum materials for the nation's schools, have helped conduct tests with film made from chitin, a substance found in shellfish waters. The chitin film may prove to be effective in removing heavy metals and chemical pollutants from water.

Commercial fishing boats from Massachusetts fleets will be performing final tests on a new trawl door designed by Sea Grant engineers. Hydrodynamic tests on the door were conducted to minimize drag and save fuel. The door may be available in the near future through a Massachusetts manufacturing company.

Also of interest to fishermen—and to consumers—is research on developing a machine capable of skinning the spiny dogfish, an underutilized species that could open up new economic opportunities for fishermen and food processors.

Symposium to Assess Bakke Case

A symposium on the Bakke Decision will be held tonight (Wednesday, Sept. 27) at 8pm in Huntington Hall (Rm. 10-250), under the aegis of the Lecture Series Committee.

In the Bakke Decision, the Supreme Court of the United States last June upheld Allan P. Bakke in his contention that he had been unlawfully denied admission to medical school at the University of California at Davis because of a special admissions program that reserved a specific number of places for minority students.

Speakers at the symposium will be Dr. Nathan Glazer, professor of

On Cape Cod, MIT Sea Grant is supporting a project studying how Red Tide develops. Researchers have learned that changes in temperature, up or down, trigger growth of the toxic Red Tide. This information could eventually help improve predictive and control techniques.

At the Massachusetts Maritime Academy, MIT Sea Grant is involved in a joint program to develop and offer a series of courses to commercial fishermen.

How good are fiberglass hulls? A Sea Grant research project is developing a technique for using thermal tests to assess the integrity of such boat bottoms.

Another ship-design study involves efforts to design oceangoing vessels with low wave resistance. Success would mean fuel savings and reduced inshore disturbance.

Other Sea Grant-supported research projects include a study of predicting changes in waves and currents as a means of reducing erosion; research on new techniques to weld metal under water; development of underwater mechanical teleoperators—machines that will be controlled by humans and computers in deep sea exploration; further work on oil-spill cleanup; and computer models that will predict the direction and duration of oil spills.

Many of the projects will make use of the MIT Research Vessel *Edgerton*, christened last year.

MIT Sea Grant also will continue its Marine Industry Advisory Service which helps industry and business identify and use marine research results.

The MIT Sea Grant Program is directed by Dean A. Horn, also a senior lecturer in the Department of Ocean Engineering. Sea Grant's research director is Professor Jerome J. Connor, Jr., of the Department of Civil Engineering. The associate director for education coordination is E. R. Pariser, a senior research scientist in the Department of Nutrition and Food Science. The Sea Grant Program's advisory services are led by Norman Doelling, manager of the Marine Industry Advisory Service, Arthur B. Clifton, marine liaison officer, and Elizabeth T. Harding, communications officer.

education and society at Harvard, who has written several books and articles on affirmative action and the Bakke case, and James Tisdale, special assistant to the president at Brown University and a member of the US Commission on Civil Rights. Moderator will be Dr. Louis Menand, III, special assistant to the provost at MIT and senior lecturer in political science. The symposium will consist of opening statements by each of the participants, followed by discussion. The audience is encouraged to join the discussion and question the participants. Admission is free.

Three to Lecture In Universe Series

Three of eight speakers scheduled for a series of lectures on "Life in the Universe" at the Cahners Theater of the Museum of Science will be MIT professors.

The MIT professors scheduled to participate in the series are: John L. Lewis, associate professor of chemistry and geochemistry in the Department of Earth and Planetary Sciences; Marvin L. Minsky, Donner Professor of Science in the Department of Electrical Engineering and Computer Science; and Philip Morrison, Institute Professor and professor of physics.

There is no charge for admission to the Wednesday series, but tickets to individual lectures should be obtained in advance. The series starts tonight (Wednesday, Sept. 27) and all lectures will begin at 7:30pm. For ticket information call 723-2500 or write: Boston Museum of Science, Science Park, Boston, MA 02114.

Professor Lewis will speak October 11 about "Cosmochemistry." Professor Minsky will speak October 18 about "Intelligence" and Professor Morrison is scheduled to complete the series on November 15 with a lecture on "Implications and Consequences."

Other topics will include "Probabilities," tonight; "Origins," October 5; "Life," October 25; "Communication," November 1; and "Colonization," November 8.

Host Families Are Sought

Families from the MIT community are needed to take part in the Host Family Program for foreign students.

Though 104 new foreign students have been matched with host families this fall, and about 200 are continuing in the Program, 65 students still remain unassigned.

A host family can be an important part of the American experience for a foreign student. An invitation to dinner or to join in family activities is much appreciated, and lasting friendships can grow between the families and students they entertain. For information about the program, call Mrs. Mary Pinson at the Women's League Office, x3-3656, or Mrs. Jay W. Forrester, Host Family Program chairman, at 369-9372.

Alumni Institute

(Continued from page 1)

"Technology in Emerging Societies—Is Underemployment Necessary?"

December 4—Nazli Choucri, professor of political science, "Egypt: Can She Pyramid Technology?"

January 15—Nevin Scrimshaw, Institute Professor and head of the Department of Nutrition and Food Science, "Is Science and Technology Contributing to Feast or to Famine?"

February 12—Jeffrey A. Meldman, '65, assistant professor of management science, "Limitations of the Computer—Is Man's Home Still His Castle?"

March 12—Harold J. Hanham, Dean of the School of Humanities and Social Science and professor of history and political science, "Is and/or Will Life be a Great Adventure?"

Rose to Represent MIT at Ceremony

Dr. David J. Rose of the Department of Nuclear Engineering will represent President Jerome B. Wiesner and Chancellor Paul E. Gray at the installation Thursday, Sept. 28, of James M. Ham as the 10th president of the University of Toronto.

Dr. Rose, a native of Canada who became a citizen of the United States in 1958, is a longtime associate of Dr. Ham. A member of the MIT Class of 1947, Dr. Ham received his SB degree in electrical engineering and taught in that department in the 1947-48 academic year and from 1949 to 1952.

Luce Scholars Nominations Due October 11

Professor Eugene B. Skolnikoff has announced that MIT is again eligible this year to nominate three persons for the annual Luce Scholars competition.

Professor Skolnikoff is director of the Center for International Studies, which administers the program at MIT. He will name a small committee, representative of the different MIT schools, to interview applicants and make a final selection.

Fifteen winners are selected from the nominees from 60 universities. MIT has had winners in each of the four years it has submitted nominees. The two last year were Flora N. Katz of Great Neck, N.Y., and Debra S. Knopman of Philadelphia, Pa.

Persons wishing to be considered for nomination should provide—by Oct. 11—an academic transcript, an essay on the reasons he or she wants to spend a year in Asia, a brief statement of career goals, and a local address and phone number.

The material should be delivered to Professor Skolnikoff in Rm. E38-648. The telephone number is x3140.

Luce Scholars spend about 10 months in the Far East working in their professional fields. The purpose of the program, sponsored by the Henry Luce Foundation, is to offer a select group of young Americans an experience in Asia designed to broaden their professional perceptions of Asia and of themselves.

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THE INSTITUTE CALENDAR X3-3270

September 27 through October 8

Events of Special Interest

The Bakke Decision: A Symposium** — Dr. Nathan Glazer, Professor of Education and Society — Harvard; James Tisdale, US Commission of Civil Rights, NAACP, Brown University; Louis Menand, senior lecturer, Political Science. Symposium featuring opening statements followed by discussion, audience participation encouraged. Wed, Sept 27, 8pm, Rm 10-250. Free.

Free China Day* — Sponsored by the China Study Group. Celebration of the 67th National Day of the Republic of China. Featuring Stamp Exhibition, a serial story about China via more than 600 sets of colorful stamps. Also, Handicrafts, a fresh expression of tradition; Ancient Arts, duplicates of Chinese masterpieces of 50 centuries; Chinese Costumes, Lion Dance, Kung-Fu Demo, movies, slides. Sun, Oct 8, 10am-5pm, Student Center. Free. Evening Cultural Variety Show. Performance of dazzling native dances, folk songs and more, by a fourteen member Chinese students' goodwill mission from Taiwan, ROC. 8-10pm, Kresge Auditorium. Admission \$2, tickets available at the door or at the exhibitions.

Seminars and Lectures

Wednesday, September 27

Bottom Topography Effects on Recycling Rotating Flow* — Dr. Mike Davey, N.C.A.R. Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915. Coffee provided.

Some Mechanical Vibrations of a Rotating Windmill* — Prof. John Dugundji, aeronautics and astronautics. General Seminar, 3pm, Rm 37-252. Coffee served preceding seminar Rm 33-222.

How To Apply To Graduate Schools* — Prof. Robert Hulsizer, physics. Undergraduate Physics Colloquium, 4:15pm, Rm 4-339. Social Hour Follows.

Thursday, September 28

The Xenon Flash Lamp* — Harold E. Edgerton, Institute Professor Emeritus. Lecture at Noon-1pm, Rm 4-402.

Speaking Truth to Power, (The Art and Craft of Policy Analysis)* — Aaron Wildavsky, professor, University of California, Berkeley. Political Science Department, Public Policy Programs Seminar, Noon-2pm, Rm E53-482. Bring your lunch, coffee and tea provided.

Transition-Metal-Doped Solid State Lasers* — Peter Moulton, staff member, Lincoln Laboratory. Electrical Engineering and Computer Science Optics Seminar, 3pm, Rm 36-428.

An Improved Mean Spherical Approximation for Calculating Diffuse Intensity of X-Ray Scattering* — Shinn-Tyan Wu, professor of Materials Science and Engineering, National Cheng-Kung University, Tainan, Taiwan. Special Seminar, 4pm, Rm 13-5002.

Department of Urban Studies and Planning Colloquium* — Student will present their research on UROP related projects. Students interested in Urban Studies UROP projects invited to attend, 4pm, Rm 4 Bldg 7 Commons. Refreshments served.

Distortion of Turbulence in a Reciprocating Engine Cylinder* — Victor W. Wong, mechanical engineering. Doctoral Thesis Presentation, 4pm, Rm 31-161.

1/f Noise: An Infrared Catastrophe (The history of low frequency fluctuations)* — Prof. Paul M. Horn, University of Chicago. Physics Colloquium, 4pm, Rm 26-100. History of LF fluctuations in solids is reviewed. Tea served at 3:30pm, Rm 26-110.

Your Job Search: How an Employer Evaluates You* — Dr. David Parker, president, D. P. Parker and associates, Inc., Personnel Consultants. Career Seminar, 4pm, Rm 10-250.

Friday, September 29

Single Beam Elevated Structures for the Two Way Passage of Automated Guideway Transit Vehicles* — Clarence W. de Silva, mechanical engineering. Doctoral Thesis Presentation, 10:30am, Rm 1-203.

The Future of US Flagship Owners* — James Barker, chairman of the Board, Moore-McCormack Resources. Center for Transportation Studies Luncheon Seminar, Noon-12:45 Buffet Luncheon (optional), 12:45-2pm seminar, Mezzanine Lounge, Student Center, luncheon fee \$1.25.

Chemical Engineering Seminar* — Howard D. Franklin, Mineral Matter Effects on Coat Pyrolysis and Hydro Pyrolysis, 2pm. Anthony J. Dileo, The Role of Diffusion Potentials in the Ultrafiltration of Macro-Ions, 2:50pm, Rm 66-110.

Plastic Flow and Fracture in Metallic Glasses* — Prof. Ali S. Argon, mechanical engineering. Mechanical Engineering seminar, 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

The Theoretical and Experimental Basis for the Structure of Micelles* — Prof. George Benedek, physics. Center for Material Science Colloquium, 4pm, Rm 9-150. Refreshments served 3:30pm.

Observations on N. isthmi in R. pipiens or Why One Distrusts Neurophysiology* — Prof. Jerome Y. Lettvin, biology and Edward R. Gruberg, Post Doctoral Fellow, Research Laboratory of Electronics. Psychology Colloquium, 4:30pm, Rm E10-013. Coffee served at 4:15pm.

Monday, October 2

The State of the Air Transportation Industry: Problems and Prospects* — James R. Atwood, Deputy Assistant Secretary for Transportation Affairs, Department of State. Sponsored by the Flight Transportation Laboratory, Aeronautics and Astronautics Seminar, 2pm, Rm 35-225. For further information call x3-2424.

Radiation from Burning Hydrocarbon Clouds* — Gary Desgroseilliers, research assistant, mechanical engineering. Fluid Mechanics Seminar, 4-5pm, Rm 3-234. Coffee at 3:50pm.

Wave Induced Pore Pressures and Effective Stresses in a Porous Bed* — Ole S. Madsen, associate professor, civil engineering. Water Resources and Environmental engineering Seminar, 4-5pm, Rm 48-316. Coffee at 3:45pm, Rm 48-410.

Production Line VS. Team Assembly*** — Elting E. Morison, Elizabeth and James Killian Class of '26, Professor Emeritus; Senior Lecturer, School of Humanities and Social Science. The Interactions between Science, Technology and Society. An Alumni Institute Program. There will be drinks and conversation before dinner; dinner served at 6:30pm, followed by the Seminar.

Tuesday, October 3

Research Opportunities in the Laboratory for Information and Decision Systems* — Michael Athans, first in a series of LIDS Colloquiums, 3pm, Rm 33-206. Future Colloquiums will be given Mondays at 4pm, Rm 37-212.

Back to Basics: The Yeast Histone and Ribosomal Protein Genes* — Dr. Michael Rosbash, Rosentiel Center, Brandeis University. Biology Colloquium, 4:30pm, Rm 6-120. Coffee served at 4pm, Vestibule 5th Floor, Bldg 56.

Fact and Fancy of Defects in Glasses* — Marc Kastner, associate professor, physics. Physical Chemistry Seminar, 4pm, Rm 4-370. Coffee 3:45pm, Rm 6-321.

Long-Term Ambulatory Monitoring of Physiological Variables in Humans* — A. Willem Monster, associate professor, Physiology and Rehabilitation Medicine, Moss Rehabilitation Hospital, Temple University, Philadelphia, PA. Sponsored by the Committee on Biomedical Engineering, 4-5:30pm, Rm 37-212.

Statistical Aspects of Growth Studies* — Mohamed el Lozy, Nutrition Department, Harvard Christine Wateraux, Biostatistics Department, Harvard University. Statistics Seminar, 4pm, Rm 2-338. Coffee and tea will be served before seminar 3:30pm, Rm 2-349.

Theory of Local and Global Interactions for Electrons in the Heliosphere* — Dr. Jack Scudder, Goddard Space Flight Center. Astrophysics Colloquium, 4:15pm, Rm 37-252. Coffee 3:45pm.

Wednesday, October 4

Domestic Policies of the Military-Bureaucratic Complex in the People's Republic of China* — Prof. Jurgen Domes, Saar University, Saarbrücken, West Germany. Center for International Studies — Political Science Department Seminar, Noon-2pm, Rm E53-482, everyone welcome, bring own lunch.

Bio-Electrical Engineering Area Seven Open House** — Brief presentations, laboratory tours and demonstrations will be given, 3-5:30pm, Rm 36-428. Refreshments served. All Graduate Students welcome.

Thursday, October 5

Preprofessional Advising and Education Office Seminar** — Paul Carrington, assistant dean, Duke University, School of Law. Meeting at 10am, Rm 12-150.

Fabry-Perot Laser Beam Switching* — Philip Henshaw, Lincoln Laboratory. Electrical Engineering and Computer Science Optics Seminar, 3pm, Rm 36-428.

New Trends in International Air Transport Bilateral Agreements* — James R. Atwood, Deputy Assistant Secretary of State for Transportation Affairs. Flight Transportation Laboratory Aeronautics and Astronautics Seminar, 3pm, Rm 35-225.

Lasers, Light, Matter* — Prof. A. L. Schawlow, Stanford University, California. Physics Colloquium, 4pm, Rm 26-100. Tea served 3:30pm, Rm 26-110.

Measurement of Trace Elements on Marine Samples Using Plasma Emission Spectrometry* — Dr. Thomas R. Gilbert, New England Aquarium Laboratory. Analytical Chemistry Seminar, 4pm, Rm 8-205.

Debt Versus Development in the Third World Countries: The Role of Commercial Banking* — Cheryl Payer, author of "The Debt Trap" and editor of "Commodity Trends in the Third World Countries." Seminar for International Students, 5pm, Rm E53-482.

Friday, October 6

The Future of South Africa's Legal System* — Sidney Kentridge, leading South African barrister and head of Biko family team in 1977 inquest. MIT African Luncheon Series, 12:45-2:15pm, Rm E53-482, everyone welcome, bring own lunch.

Intrinsic Approach in Process Optimization and Synthesis* — Prof. H. Nishimura, University of Tokyo. Chemical Engineering Seminar, 3pm, Rm 66-110. Coffee will be served.

Library Tour Schedule

Aeronautics and Astronautics Fall Tours* — Wed, Sept 27, 10:15am, Rm 33-316. For further information contact: Kate Herzog x3-5666.

Humanities Library Fall Tours* — Wed, Sept 27, 4pm. Thurs, Sept 28, 11am. Rm 14S-200. For further information contact: Kathy Powers x3-5673.

Barker Engineering Library* — Wed, Sept 27, 3:15pm. Thurs, Sept 28, 5:15pm. Rm 10-500. For further information call Carol Schildhauer x3-5663.

Lindgren Library Fall Tours* — Fri, Sept 29, 3:30pm, Rm 54-200. For further information call Sandy Spurlock x3-5686.

Microreproduction Laboratory Fall Tour* — Rm 14-0551. For tour information contact: Peter Scott x3-5667.

Libraries 1978 Fall Tour Schedule* — Student Center, Rm W20-500; Von Hippel Materials Center Reading Room, Rm 12-2137 and the Rotch Visual Collection, Rm 7-304 will offer tours upon requests, as will the Dewey Library, for groups of three or more. For further information contact: Nancy Schrock x3-7098.

Community Meetings

Wives' Group** — Wed, Sept 27, Holly Heine, assistant dean, Office of Student Affairs will speak on "Life at MIT," 3-5pm, West Lounge Student Center. Babysitting provided.

W1MX* — Radio Society will be having its Annual Fall Membership meeting. All Current members are urged to attend this meeting and all interested people are cordially invited. Wed, Sept 27, 9pm, Rm 4-270. For further information call Chris Hanson x5-6419 Dorm or Bob Clarke 327-7249.

Women's Forum Working Groups** — Organizing working group(s) to address issues of importance to women and men at the Institute. Mon, Oct 2, 1pm, Rm 10-105.

Wives' Group** — Wed, Oct 4, Dorothy Bowe, associate director, Student Financial Aid, will speak on "How to Plan a Budget and Spend Your Money Wisely." 3-5pm, West Lounge, Student Center. Babysitting provided.

The 9th Annual Plant Sale** — Sponsored by the Women's League. Thurs, Oct 5, from 9am, Student Center Steps, volunteers will be selling potted plants for students' rooms. Donations of begonias, impatiens, coleus, geraniums, or any kind of house plant are desirable. Proceeds are devoted to Student Service Projects. Call Mrs. Ray 749-3202.

Relaxation and Breathing* — Class in learning to relax and breathe correctly through Yoga techniques, 7-9pm. For location and details call Cynthia Friedman x3-7101, 1-5pm or 661-2648.

Rune Open House** — Sponsored by Rune, the MIT Journal of Arts and Letters. An open house for all people interested in any phase of publication of Rune, editing, production, advertising, and to meet and talk with present staff. Thurs, Oct 5, 5pm, Rm 14N-309. Refreshments served. For further information call Susan Ann Silverstein 354-4652.

Still Room in Drawing, Pottery, Photography & Calligraphy Classes of the Student Art Association** — Registration open until classes get filled. 1-5pm, Student Center, Rm 429. Additional information call x3-7019.

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.

Social Events

Steak Fry** — Sponsored by the Materials Science and Engineering Department. Thurs, Sept 28, 5:30-7:30pm, Lobby 13. Admission \$4.50 in advance, \$5 at the door. Contact Undergraduate Office, Pat Govagan.

The Mezz** — Sponsored by the SCC. Coffeehouse performers in a relaxed atmosphere, refreshments available. Fri, Sept 29, 9pm-Midnight, Mezzanine Lounge, 3rd floor, Student Center. Free admission.

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

Program of Fluid Mechanics Films* — Wed, Sept 28, Flow Visualization 4-5pm, 31 minutes, Rm 1-190.

American Graffiti** — LSC movie, Fri, Sept 29, 7 & 10pm, Kresge Auditorium. Admission: 75c w/MIT or Wellesley ID.

Ninotchka** — LSC Classic Film. Starring Greta Garbo. Fri, Sept 29, 7:30pm, Rm 10-250.

Midnight Movie** — High Plains Drifter with Clint Eastwood. Sponsored by the SCC. Sat, Sept 30, Midnight, Sala de Puerto Rico, Student Center. Bring your blankets and sit on the floor. Free.

Dr. Zhivago** — LSC movie. Sat, Sept 30, 6 & 10pm, Rm 26-100. Admission: 75c w/MIT or Wellesley ID.

A Touch of Class** — LSC movie. Sun, Oct 1, 6:30 & 9pm, Rm 10-250. Admission: 75c w/MIT or Wellesley ID.

Program of Fluid Mechanics Films* — Thurs, Oct 5, Pressure Fields and Fluid Acceleration, 4-5pm, lasts 30 minutes, Rm 3-270.

Grapes of Wrath** — LSC Classic Film. Fri, Oct 6, 7:30pm, Rm 10-250.

Gone With the Wind** — LSC movie. Fri, Oct 6, 8pm, Kresge Auditorium. Admission: 75c w/MIT or Wellesley ID.

Science Fiction Double Feature** — LSC movies. Sat, Oct 7, The Day the Earth Stood Still, 6 & 9:30pm; The Time Machine, 7:45 & 11:15pm, Rm 26-100. Admission: 75c w/MIT or Wellesley ID.

Hamlet** — LSC movie. Sun, Oct 8, 6:30 & 10pm, Rm 10-250. Admission: 75c w/MIT or Wellesley ID.

Music

Guest Artist Series* — Susan Davenny Wyner, soprano, and Yehuda Wyner, piano. Program will include works by Handel, Mozart, Strauss, Berlioz and Carter. Sponsored by the Humanities Department, Music Section. Sat, Sept 30, 8pm, Kresge Auditorium. Free.

Exhibits

Exhibition and Sale of Original American and European Prints by Marson Graphics Inc** — Representative from Marson will speak. Sponsored by the Student Art Association. Thurs, Sept 28, 10am-7pm; Fri, Sept 29, 10am-5pm. West Lounge, Student Center.

Carol Beckwith, Photographs* — Sponsored by the Committee on the Visual Arts. On view Fri, Sept 29 through Nov 3, 7 days a week, 10-4pm. Wed, 6-9pm. 160 Memorial Drive, Camb, MA.

Metamorphosis: Totems, Masks and Objects* — Sponsored by the Committee on the Visual Arts. By San Francisco artists Phil Pasquini (iconic reliquaries and monstrances); Ivan Majdrakoff (box-like totemic environments filled with artifacts of the 50s and 60s); Ursula Schneider (life-size masks of invented physiognomies); Elin Elisofm (fetish objects). On view Sept 30-Nov 3, 7 days a week, 10-4pm; Wed 6-9pm. Public preview for 10pm, Fri, Sept 29, 8-10pm. 160 Memorial Drive, Camb, MA.

On Campus Photography Show* — Exhibition on view daily, Building Rogers Building. Sponsored by the Historical Collections.

The Wednesday Afternoon Photography Lecture Series* — Linda Connor will give an informal lecture and present her work in photography. Made possible by a grant from the Minolta Corporation. Wed, Oct 4, 4:30pm. Creative Photography Gallery, 120 Mass Ave, Camb. For information call x3-4424.

Department of Architecture Fourth Floor Exhibition Program* — Works of Jan Wampler. On view daily through Oct 5, Bldg 7, 4th floor.

Harry Callahan and Aaron Siskind Photography Exhibit* — A major two-man show on view daily through Oct 20, Creative Photography Laboratory, 120 Mass Ave, Camb, MA. For further information call 253-4424.

The Compton Years* — A photographic essay of the lives of Dr. & Mrs. Karl Taylor Compton. Mon-Fri, 9am-5pm, Historical Collections, 265 Mass Ave, 2nd floor, Camb, Mass. For further information call 253-4444.

Charles Stark Draper: Many Facets of the Man* — Major photographic show on view Mon-Fri, 9am-5pm, Historical Collections, 265 Mass Ave, 2nd floor, Camb, Mass. For information call 253-4444.

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

MIT Historical Collections* — In house exhibits include antique globes; The Ellsworth A. Wentz 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. On view daily, 9am-5pm, 265 Mass Ave, 2nd floor, Camb, Mass.

MIT Historical Collections* — Permanent exhibition Mon-Fri, 9am-5pm, Bldg N52, 2nd floor. Katherine Dexter McCormick, '04; Vannevar Bush, '36; Bldg 4 corridor. The New Technology Exhibit 2nd floor balcony of Lobby 7. Energy Exhibit, Bldg E40, 1st floor. Solar Energy, Bldg 8, main corridor. Center for Space Research, Astrophysics Exhibit, main corridor, Bldg 4. Bldg 6 Dedication Exhibit.

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, 253-4795.

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

Musical Caricatures* — Music Library, Rm 14E-109. Numerous cartoons of various aspects of music, especially pictures of famous composers and conductors.

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

Athletics

Fall Sports Home Schedule* — Varsity Cross Country: Sat: Sept 30, Wesleyan & Coast Guard, 1pm. JV/Frosh Cross Country: Sat, Sept 30: Wesleyan & Coast Guard, 12:30pm. Varsity Men's Sailing: Thurs, Sept 28 & 29: NEISA Fall Intersectional, Schell Trophy, 9:30am. Women's Sailing: Sat, Sept 30 & 31: Man-Labs Trophy, 9:30am. Varsity Soccer: Wed, Oct 4: Northeastern scrimmage, 3pm. Sat, Oct 7: Bates, 2pm. JV/Frosh Soccer: Thurs, Oct 5: Curry scrimmage, 3:30pm. Women's Volleyball: Wed, Sept 27: Salem State, 7:30pm. Oct 5, Thurs: Boston University, 7:30pm. Water Polo: Fri, Sept 29 & 30, Invitational Tournament, 4-9pm. Sat 30, all day. Fall Tennis: Wed, Sept 27, Brandeis, 3pm. Oct Wed, 4: Boston University, 3pm. Fall Women's Tennis: Mon, Oct 2, Boston College, 4pm.

Theater

Tech Show Organizational Meeting** — Welcome anyone with any interest in the Tech Show. Thurs, Oct 5, 7:30pm, Student Center, Rm 407.

Dance

Beginning Waltz Workshop* — Sponsored by MIT Ballroom Dance Club. Come learn the Waltz. Beginners welcome, no partner necessary. Sun, Oct 1, 2-4pm, Burton Dining Hall. Admission: 50¢.

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.

Hatha Yoga** — Mon, Sept 25, intermediate 5:45; beginners 7:05pm; Rm 10-340. For further information call E. Turchinetz 862-2613.

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 Oct 4 through Oct 15 to Calendar Editor, Rm 5-113, x3-3270, before Noon, Friday Sept 29.

MIT Press Book Focuses On Arab Accomplishments

By SHARON BASCO
MIT Press
Publicity Manager

The *Genius of Arab Civilization*, recently published by the MIT Press, is an elegant, opulent volume in which accomplishments of the Arab world are illustrated and discussed, and eloquently examined by noted international authorities on the culture. Arab/Islamic contributions to the European Renaissance and to the modern world are portrayed colorfully in text and in reproductions of art objects, buildings, manuscripts, and scientific instruments.

A civilizing influence itself, *The Genius of Arab Civilization* examines the Golden Age of Islam—when Arab literature flourished, the great codes of Islamic Canon Law were formulated, trade and commerce extended halfway around the world, and philosophy, mathematics and medicine of the ancients were assimilated and given new content.

For a civilization that made its most notable achievements centuries ago, in a world very different from the one we know today, the past is more than a legacy. It's a source of inspiration, and it can be a factor in revitalizing the identity and aspirations of its modern heirs. Just as it long ago helped make possible the Renaissance of Europe, the genius of Arab civilization today helps guide the social and cultural rebirth of the modern Arab world.

Commissioned specifically to work on this book, scholars from Harvard, Columbia University, the Smithsonian Institution, and the American University of Beirut are among those who contribute essays. They discuss accomplishments of the Arab world in history, philosophy, literature, architecture and art, the life sciences, mechanical technology, trade and commerce. The book was edited by John R. Hayes.

A hardcover edition of *The Genius of Arab Civilization* was published by New York University Press in 1975. The paperback edition is newly available at bookstores and from The MIT Press for \$15.00.

Other New Books

Six new books—three in mathematics, one dealing with health care, one on technology in society, and a sixth on design—have just been published by the MIT Press.

The six are:

On Systems Analysis: An Essay Concerning the Limitation of Some Mathematical Methods in the Social, Political, and Biological Sciences by David Berlinski, professor of philosophy at the University of Puget Sound, questions several underlying definitions of general systems theory using philosophical and logical arguments.

Ordinary Differential Equations

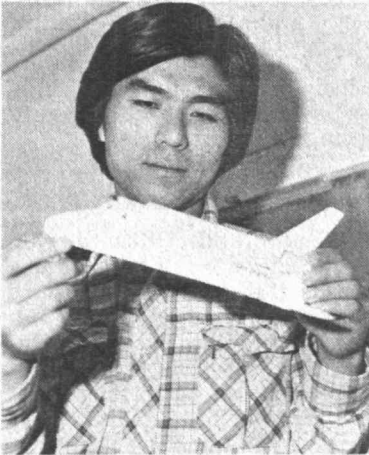
by V.I. Arnold, professor of mathematics at Moscow University (translated from Russian by Richard A. Silverman), treats ordinary differential equations in an unusually graphic manner by emphasizing their geometric nature.

An Introduction to Number Theory by Harold M. Stark, professor of mathematics at MIT, provides a less rigorous, more narrative approach to the subject than most texts. It is designed for the student who wants a general knowledge of number theory but who will not continue in the field.

Humanizing Health Care: Alternative Futures for Medicine by Robert F. Rushmer, M.D., at the Center for Bioengineering at the University of Washington, Seattle, offers methods for evaluating current health care and developing effective policies in future endeavors.

Autonomous Technology: Techniques-Out-of-Control as a Theme in Political Thought by Langdon Winner, associate professor of technology studies and political science at MIT, evaluates technology's effect on society and stresses the need to set technology in a political context which assures the priority of human concerns.

Structure in Nature Is a Strategy for Design by Peter Pearce, former professor of design and presently president of Synestructics, in Studio City, Calif., explores how objects in nature develop the most stable structural forms—forms that contrast sharply with the rectangular shapes of man-made designs.



GLASS IN SPACE—Bo K. Chi, a senior in chemical engineering at MIT, looks at a model of the Space Shuttle Enterprise which will carry experiments designed at Clarkson College under a NASA grant. The project involved looking at how glass can be manufactured in outer space. Mr. Chi specifically investigated how bubbles are formed during glass production. The project adviser was Clarkson Professor R. Shankar Subramanian of the chemical engineering department. Mr. Chi, son of Mr. and Mrs. Yong Tae Chi of Montebello, Calif., was one of 20 college students of high scholastic rank spending their summers at Clarkson working in the Undergraduate Research Participation Program, which is funded by the National Science Foundation.



Portrait of two Maasai warriors, Kedong Valley, Kenya, 1975. This and more recent photographs of African life by Carol Beckwith will be on exhibit in the Hayden Corridor Gallery, September 30-November 3.

Choucri Named Full Professor In Course 17

Dr. Nazli Choucri Field has been promoted from associate professor to professor in the Department of Political Science, effective July 1.

Professor Choucri received the BA from American University in Cairo in 1962 and both the MA and PhD from Stanford University, in 1964 and 1967.

She was an assistant professor at Queen's University in Kingston, Ontario, in 1967-69, before coming to MIT as an assistant professor in 1969. She became associate professor in 1972 and has been associate director of the Technology Adaptation Program since 1976.

Her primary fields of interest are international relations and international political economy, public policy in developing areas and the politics of international trade in natural resources. She has been a consultant to the United Nations Population Policy Section, and to several United States agencies.



Dr. Choucri

Concert Cancelled

Because of illness, the Susan Davenny Wyner concert scheduled for Saturday, September 30, 8pm, at Kresge Auditorium has been cancelled. The next scheduled concert in the MIT Guest Artist Series will be on Friday, October 20, 8pm, at Kresge Auditorium, featuring pianist Frank Glazer.

Beckwith's 'African Journal' Photos in Hayden Corridor

The Hayden Corridor Gallery will present "African Journal," an exhibition of some 40 new color photographs by Carol Beckwith from September 30-November 3.

Sponsored by the Committee on the Visual Arts at MIT, this exhibition represents the Institute's participation in Artweek Boston, a week-long celebration of local artists, October 14-22. A special public reception will be held on Friday, September 29, 8-10pm.

Ms. Beckwith's photographs document her personal experiences in Africa. She has traveled extensively there and presently lives with a Maasai community in Kenya, where she is completing a book about Maasai lifestyle and environment (Harry Abrams, publisher).

The MIT show will include photographs of African art forms, dress, ceremonies and architecture, featuring the Dogon cliff villages and Old Cairo. The photographer's eye for pattern, texture, color and

SAA to Sponsor Graphic Art Sale

The MIT Student Art Association will sponsor an exhibition and sale of original graphic art from Marson Graphics, Inc., of Baltimore, Md., on Thursday and Friday, September 28 and 29.

The exhibition, in the Student Center West Lounge, will include etchings, woodcuts, lithographs and serigraphs and will feature works by Daumier, Picasso, Chagall, Rouault and Whistler, among others.

A representative from the company will come along with the collection to answer questions for people who wish to browse and/or purchase. The exhibition will be open to the public on Thursday, 10am-7pm, and Friday, 10am-5pm.

structure enhance the emotional impact of her images.

After graduating as a painting major from the Boston Museum School in 1969, Ms. Beckwith studied Zen brush painting and calligraphy in Japan, filmed dance and music rituals in New Guinea, and restored an 18th century Swahili house on the Island of Lamu, Kenya.

During her first visit to Africa in 1974, she executed a series of watercolors that reflect her continuing interest in and sensitivity to the rhythms of African speech, music and image.

Creative Photo Lecture Series

The MIT Creative Photography Lecture Series opens its season on Wednesday, Oct. 4, at 4:30pm, with a presentation by Linda Connor, a visiting artist/teacher at the Boston Museum School.

Ms. Connor will discuss her recent work on a monograph of her photographs which she plans to publish by the year's end. A 1976 National Endowment for the Arts grant recipient, she has been featured in one-woman shows at the de Young Museum in San Francisco and Light Gallery in New York City. She comes to Boston from the San Francisco Art Institute, where she has been teaching since 1967.

Made possible by a grant from the Minolta Corporation, the Creative Photography Lecture Series is free to the public, bi-weekly, at the Creative Photography Laboratory, 100 Massachusetts Ave., Cambridge. For more information, call x3-4424.

Understanding Taste Seen Key to Nutrition

(Continued from page 1)

the first dean of science at MIT.

In the 1890s those two men collaborated at MIT and their research into why canned food sometimes spoiled led to the establishment of the basic time and temperature tables and food sterilization techniques that established the scientific basis of the canning industry as we know it today.

Dr. Kare said, "Taste and smell have an enormous impact on the food we eat. After you swallow the food you don't remember the taste, but if something doesn't taste good it won't be eaten. It doesn't matter how much we improve the nutrition, for example in the school lunch program, if the kids won't eat it."

His comments were echoed by Mr. Sjöström, who said that the food industry is obligated to provide nutritious and convenient food that is economical and easy to use. He said it must be flavorful so people will eat it. He added that the food industry has an important task and a lot of work to do because it is faced with consumer advocates who "talk down certain things," and with restrictive federal government regulations. He pointed out that the taste of many foods, such as chocolate, is universally acceptable only after it is processed. Chocolate in its natural state is bitter and impossible to eat, he said.

Dr. Mrak, who received the Underwood-Prescott Award in 1964, said that today's consumers very often make decisions without adequate knowledge and he called for an educational program to correct that.

"Unfortunately, some consumers and especially urban consumers, have developed a mistrust of many of today's foods," he said. "Without doubt, this is largely the result of a lack of knowledge of food production, food processing, distribution, nutritional value, and safety of present day foods."

"But there is more to it than that. While processed foods have improved our lifestyle, they have also increased our leisure time and this has afforded us the luxury of being concerned with, and thinking about, our foods, their safety, the price, and so on. Our increased affluence, time on our hands, and the lack of knowledge, therefore, have enabled consumer activists, though relatively few, to become vocal and to be heard."

"We need education on a much broader scale with respect to foods. We not only need to teach about the nutritive values of foods, but factors involved in production, processing, distribution and consumption. Consumers need an understanding of what is meant by safety, how additives are tested for safety, and about the factors of acceptability, convenience, stability and nutritional value."

"This should be done at all levels of education, from grammar school, high school and universities to medical schools. It is ironic that we require in our primary and secondary schools driver education so we will be safe on the streets; English, so we can speak well; physical education, so we will have healthy bodies, and so on and so on. But there is not an iota of information about the thing we do three or more times a day, eating food. Yet this is so important to our health."

He continued, "We need an educational program for the consumers who do have the advantage of education in the school system. Perhaps this can be done in part, at least, by the industry, by public organizations such as the Nutrition Foundation, public broadcasting systems, and university extension courses. People must be informed, and I consider this an urgent matter."

Dr. Kare said that research into

taste will lead to techniques to make food more acceptable to people and thus could help to solve the much-predicted world food crisis. He said, "The world is currently facing a burgeoning population, a problem with which we have thus far not been able to cope successfully; population stabilization has been effective in only a very few nations. Obviously, if we are unable to provide the essential foods for all the world's population, there will be a gradual erosion of the social scene."

"Thus, there is a crying need to increase the efficiency of food production for the increasing numbers of people who will need to be fed in the near future. Research in progress on the chemical senses may prove to be extraordinarily valuable in obtaining these goals."

The symposium was hosted by Dr. Jerome B. Wiesner, president of MIT; Provost Rosenblith; and George C. Seybolt, chairman and chief executive officer of the Wm. Underwood Co. More than 350 food scientists were in attendance.

The symposium is hosted annually to recognize an individual who, in the opinion of his peers, has made a substantial contribution to food technology in the previous year. The awardees were chosen by an MIT committee chaired by Dr. Samuel A. Goldblith, vice president for resource development and Underwood-Prescott Professor of Food Science; Dr. Marcus Karel, professor of food engineering and associate head of the Department of Nutrition and Food Science; and Dr. Sanford A. Miller, professor of nutritional biochemistry who now is on leave from MIT as head of the Bureau of Foods of the Federal Food and Drug Administration.

The three food scientists participated in the symposium entitled, "Food and Its Effect on the Quality of Life," which was held in Kresge Auditorium, following a luncheon in the Sala de Puerto Rico.

The collaborative research conducted by Underwood and Prescott was one of the first industry-university partnerships, and came at a time when the canning industry, although almost three-quarters of a century old, was faced with the continuing problem of spoilage in canned foods. Their research is universally recognized as establishing the scientific basis of the modern canning industry.

Dr. Kare is a public trustee of the Nutrition Foundation, Inc., and was general chairman of the International Conference on the Chemical Senses and Nutrition in 1976; and vice president of the International Conference on Taste and Olfaction in 1970. He is a member of the American Institute of Nutrition, the Society for Neuroscience, the Society for Experimental Biology and Medicine, the American Physiological Society, and the Canadian Physiological Society.

Dr. Mrak is also professor emeritus of food technology in the College of Agricultural and Environmental Sciences at the University of California. His honors include the Atwater Memorial Lecture Award of the US Department of Agriculture in 1976; the Distinguished Food Scientist of the Year Award from the New York section of the Institute of Food Technologists in 1970; and the Nicholas Appert Medal in 1957.

Mr. Sjöström has had extensive experience in food technology, nutrition, product development, and management of research and development. At Arthur D. Little, he established the Flavor Laboratory in 1947, and in 1949 was co-developer of the Flavor Profile Method of odor and flavor analysis, which is widely used in the food industry. He is a member of the American Chemical Society, including the Society's Agricultural and Food Chemistry and Flavor Subdivisions; the American Institute of Chemists, of which he is a Fellow; the Institute of Food Technologists; and numerous other organizations.



FOOD SCIENTISTS GATHER AT MIT—The 16th annual Underwood-Prescott Memorial Award Presentation and Symposium, devoted this year to the effects of food on the quality of life, was held Tuesday, Sept. 26, at MIT. Among those participating in the symposium were (left to right): Dr. Emil M. Mrak, Chancellor Emeritus of the University of California at Davis; Dr. Samuel A. Goldblith, Underwood-Prescott Professor of Food Science at MIT; Dr.

Morley R. Kare, professor of physiology at the University of Pennsylvania and director of the university's Monell Chemical Senses Center; and Loren B. Sjöström, retired vice president of Arthur D. Little, Inc., Cambridge. Dr. Kare received MIT's 1978 Underwood-Prescott Award for his studies into the relationships between food, nutrition and the sense of taste.

MIT Model Rocketeers Win World Title

(The following story by Robert Cooke appeared in the Boston Sunday Globe on September 17, and is reprinted here by permission.)

Brimming with enthusiasm born of success, Harold "Guppy" Youngern, MIT's new world champion rocketeer, exulted that "we're riding right on the hairy edge of technology."

That technology—model rocketry—sent Youngern and 12 other American modelers into tough international competition early this month in Bulgaria, where he earned the first world rocketry championship ever garnered by an American.

"At the end of three rounds we had a very exciting fly-off" for the championship, Youngern explained. His rocket-powered, radio-controlled glider had flown to a tie against a Bulgarian's flying

machine.

Then, in an open field, the final flights were made. Youngern, an MIT student studying aeronautics, said the Bulgarian coach made the wrong choice, ordered the launch in the wrong place and caught a downdraft. It was a short flight.

"We tried not to make the same mistake," Youngern said. So he launched, and his craft, too, hit a downdraft. But the flight lasted slightly longer than the Bulgarian's, and Youngern won the laurels.

"Traditionally," said another member of the team, Bernard Biales, "the Czechs have been the winners." But since the contest was held in Jambol, Bulgaria, the Bulgarians went all out to win.

In the end, the United States team had taken first, fourth and sixth places, while the Bulgarians held second, third and fifth.

Most of the members of the US team were from MIT, or had some former affiliation with MIT. Youngern added that the model rocketry club at MIT "tends to have some pretty intense people."

The commitment to perfection is evident in some of the rockets and planes flown in Bulgaria. The team entered nearly exact scale models of the famous X-2 rocket plane built in the mid-1950s for high speed flight experiments, and an American sounding rocket that was complete even down to tiny rivets.

The X-2 model was made and flown by MIT student Bob Parks, and the near-perfect sounding rocket model was made by John Langford. The other MIT member of the US team was Geoffrey Landis.

The MIT participants—who paid most of their own expenses on the trip to Bulgaria—said that the Bulgarians really rolled out the red carpet, with ceremonies, a parade, and a concert and folk dancers.

The team came back with four Bulgarian medals for their winnings in the competition, and also with a tall crystal vase signifying the world championship.

Cheryl Prejean to Advise MIT on Affirmative Action

Cheryl Prejean, a staff adviser in the policy division of the Office of Federal Contract Compliance, Department of Labor, has joined MIT temporarily as affirmative action advisor while Patricia Garrison



Ms. Prejean

spends this year as a Sloan Fellow. Ms. Prejean was one of several compliance officers interviewed by Ms. Garrison for this interim arrangement, and she is at MIT on loan from the federal government.

"It was Pat's idea that it would be helpful to MIT and useful to the government for an equal opportunity specialist from one of the compliance agencies to spend a year here," said John M. Wynne, vice president for administration and personnel and MIT's Equal Employment Opportunity officer.

Ms. Prejean agrees that this "innovative approach," as she calls it, is a good idea.

"We in Washington often have no idea what one line in a regulation can mean to an employer," she said. "Spending a year here will give me an opportunity to see the effects of policies and their impact on an institution."

Ms. Prejean, who was a compliance officer in Houston for six

years before going to Washington in 1977, said that most employers "comply reluctantly" with affirmative action plans and regard them as a necessary evil.

"MIT's initiative in seeking me out may be an indication of its willingness to comply."

"When President Kennedy said we would go to the moon in this decade [the 1960s], this country geared up and we did it," she said. "Social problems like equal employment opportunity are much more difficult, but setting goals and working to meet them are necessary in reaching a solution."

"I hope we can reach a time when cumbersome regulations and compliance reviews are no longer needed," she said.

A native of Houston, Texas, Ms. Prejean is a magna cum laude graduate of Texas Southern University and the University of Texas where she received the MA degree in political science. She held a Ford Foundation scholarship as an undergraduate and earned her way as a teaching assistant in graduate school.

"I am a product of the ghetto," Ms. Prejean said, "and an example of what motivation and the right opportunities can do. When my friends dropped out of school and got jobs and had nice clothes and cars, my mother encouraged me to stay in school for a better future. I'm glad I did. Now I can help others along the way."

Obituaries

L. Ernest Roberts

A private burial service was held Friday, Sept. 15, in Alton, N.H., for L. Ernest Roberts, 88, who died September 14.

Mr. Roberts was a heating and ventilation technician at MIT from 1910 until his retirement in 1950. Mr. Roberts is survived by his widow, Christina Forbes Roberts, who also worked at MIT; two sons, Chester E. of Gilmanton Iron Works, N.H., Arthur J. of Salem, N.H.; two daughters, Mrs. Marion R. Strickland of Andover, and Mrs. Mildred R. Swett of New Durham, N.H.; 13 grandchildren and 13 great-grandchildren.

Rush Arnwine, Jr.

Rush H. Arnwine, Jr., 46, a security courier at Lincoln Laboratory since 1971, died Sunday, Sept. 17.

Mr. Arnwine is survived by his widow, Eleanor Hickman Arnwine, of Billerica; two sons, L/Cpl Joel Arnwine of Quantico, Va., and James of Billerica; two daughters, Janice and Vivian of Billerica, and his parents, Rush, Sr., of Rockdale, Texas, and Mary Reid Arnwine of Guilford, Ct.

(Continued from page 1)

hopefuls to write their first three choices on a card so that taste and object could be matched. Next to this was another sign explaining various print-making techniques. A serigraph, we read, was "a print made by pressing ink or paint through a screen or cloth . . . to which a stencil had been adhered." There were a lot of serigraphs, we discovered as we toured the Gallery. Robert Indiana's "Love" poster was a serigraph. We hadn't known that. Nor had we ever realized from seeing that many reproductions of that famous work that red, the color of the letters, was the background, with blue and green appearing to be over it; now, seeing the real thing, we realized that having love as a background was a comforting idea. The Great Neck poster was a serigraph, too. It was done by Alfred Jensen in 1964, and expressed noble thoughts: "150 Years of Growth, Great Neck Public Schools" it said at the top; "Faith in the future as we have had in the past" it said at the bottom.

There were about a dozen people in the Gallery, most standing in front of prints filling out small entry cards. A stark black, white and gray flight of curving stairs by Lowell Nesbitt proclaiming the City Center Drama Company was getting a lot of business. So was a serigraph in luminous, glowing pastels called "The Homage to The Homage to the Square" by Karl Gerstner. Our own favorite was a silkscreen from the List Program done by Allan D'Arcangelo in 1977. Titled "Williamsville," it showed a bright six-colored rainbow (ranging from deep orange to violet) curving over a curving stretch of black-top road that vanished at the horizon. In the distance a blue road sign announced Williamsville with a small white arrow. In the foreground a yellow sign indicated a twisting roadway. It was sharp, colorful, ambiguous and we liked it a lot. If we'd been lucky enough

Indigo Is Not A Spectral Color

to be a full-time MIT student that would have been our first choice. Wine, cheese and a crowd greeted our eyes when we went back to Hayden at five that evening to see how the lottery came out. We worked through the throng to find Kathy Halbreich, Project Director of the Exhibition Office, standing just inside the Gallery entrance. She was chatting with Gary Garrels, also of the Exhibition staff, and keeping a watchful eye on the proceedings. A young woman of considerable presence with delicate features and intense eyes, Miss Halbreich speaks in pleasant, almost husky, tones that combine charm and energy. "Great!" she said enthusiastically when we asked her how the lottery had gone. "We had 750 students sign up for the 121 prints we have to lend. Do you know how many came in just this morning? There's a great deal of interest. A lot of people have signed up for Artfacts, too. That's a new discussion group the Committee on the Visual Arts is starting this fall. Actually, it was an idea of Boris'. He's our new chairman. We hope to find ways of talking with the students about art, about sitting art at MIT, about gaining a clearer picture of the role of art in the world today. We thought Artfacts would be a small seminar meeting once a month. But more than 80 students have signed up and it looks as if we'll have to get a hall. Gerstner was one of the most popular choices in the lottery. We have several more Gerstner's in the Corridor Gallery, but we can't lend them because they aren't framed. One of the purposes of the List and Stratton collections is to introduce students to living with a work of art. They take very good care of them on the whole. When we called last year's loans in, for example, not one was lost or damaged. Of course, we tell people how to care for their art when they pick it up

in the fall. Last year, we had several students asking how to go about buying prints from galleries. Living with art is catching. We think having the pre-lottery exhibition here in Hayden is a good thing because it may start students in the habit of coming by for the regular shows. We have a terrific show of four California artists coming up next—totems, masks, very mysterious. MIT students have a marvelous asset here. You know, the Institute's is the only program like this that gives the students a chance to live with art free. Harvard charges \$10, for example. That covers their costs, but I prefer the MIT way."

We asked Gary Garrels how the lottery had been conducted. "Next year Kathy wants an MIT student to design a computer program for the lottery," he said. "This year we just dumped all 750 cards in a plastic garbage bag, shook them around, and took them out one by one. Oddly enough, D'Arcangelo's "Williamsville" was the very first one drawn. Of course it was one of the most popular. The other leaders, I suppose, were the Nesbitt stairs, the Gerstner, and the Calders, at least collectively. We have several Calders. The Lichtenstein reproduced in Tech Talk had a lot of would-be takers, too. It's a strong work anyway. We matched the prints one for one with the cards drawn. If someone's first choice was still available, he'd get that one; if not, then his second choice. If all three choices were already gone, we set the card aside to give out leftovers in that order. There are five prints we have left, several duplicates, and one that no one signed up for. I don't recall the name of the person who won the D'Arcangelo. You might look on the sheet of winners posted on the wall." We made our way through the crush of students peering at a long list matching names of win-

ners beside the prints they'd won.

We couldn't get near enough to read the names and started talking instead with a young man who was threading his way out of the pack. "Dynamite," he exclaimed. "I won 'Soft Scizzors.' That was my second choice. My first was the Rauschenberg. I'm not sure what I like about contemporary art, but I do know that I can get along with an Oldenberg for a year. What I want is the chance to develop some experience. I don't understand it, but I'd like to. My ability to make an esthetic judgment stops about with the Impressionists. I don't think there's a way of accounting for it, but I do think one develops taste if you look long enough. There's been no sifting out of the junk from the art in the contemporary period yet.

"My name is Charlie Epstein. I hope to get my PhD in math. I'm Jerry Lettvin's graduate student. I don't mean his personal graduate student. I guess I'm his mathematical graduate student. I have a teaching assistantship in Concourse, which he runs, and I've been working on the Eleusinian mystery cults for a course in Greek tragedy we're teaching. Fantastic stuff. The cult lasted from roughly 1500 BC to 500 AD. Priests, temples, and everything. And no one knows anything about what they did. It must be the best kept secret of all time."

We asked Mr. Epstein if he could enlighten us about Roy G. Biv. "Well," he said. "I'm not sure. Red is the shortest wavelength. I don't know if it's on the inside or outside of the curvature. I could probably figure it out. I do know that there are only six colors. Indigo is not a spectral color. Six colors was good enough for Isaac Newton, after all. I think red ought to be on the outside. I'll have to look."

We spotted Boris Magasanik, Jacques Monod Professor of Microbiology and the CVA's new

chairman, talking with several students. One of them was saying he thought this was a very good way for the CVA to be of direct benefit to the students. "Yes, of course," Professor Magasanik replied. "We are very happy with that aspect of the lottery. Of course, seven to one is not a very good ratio. We ought to be finding ways to augment the Stratton and List collections so there won't be disappointment for so many students. And we need to find some small sums for maintaining the collections, too. It wouldn't take very much. But the works do need to be looked after. We need money for framing, too. We really need to have more works, though, because at this point we simply can't do more than barely begin to meet the demand."

The crowd around the winners' sheet was beginning to thin out, and Professor Magasanik's thoughts were echoed by a young woman who stopped at the desk to ask if there would be another lottery for those who hadn't won. "Not until next fall," Miss Halbreich said sympathetically. "Seven to one isn't very good odds," the student replied in an aggrieved tone. "Well, maybe my roommate won something." She went back to the list to check. A young man standing nearby said: "We had three people in our room, so we figured our odds were almost one in two. My name is Livingstone. I'm in the Masters in Architecture program. I don't know if I won anything yet because I haven't been able to get close to the list." He went off then and returned in a minute. "I won a Noe, Untitled, it says. How about that."

As we were making our way out, the phone rang. Miss Halbreich told the caller: "I don't know. I'll go and look at the list. I'll put you on hold for a minute, so don't get freaked out." She came back and picked up the phone. "Yes, you did. You won a Jensen. You can come pick it up tomorrow. Yes, indeed. You're welcome."

Federal Monetary Policy Effect Questioned in Study

(Continued from page 1)

and the expansion of the secondary mortgage market have relieved the problem somewhat, the report states, residential construction still remains the "roller coaster" of the economy.

The study by Dr. Carol Corrado and Dr. Thomas Cooley, research associates at the Joint Center, casts serious doubt on the commonly held view that stable housing and a stable economy are incompatible.

According to Professor Solomon, it is the Corrado-Cooley study that formed the basis for the testimony that Patricia Roberts Harris, Secretary of the Department of Housing and Urban Development, was to have given in August before the House Banking Committee.

The New York Times reported at that time that Secretary Harris had cancelled her appearance after the White House had refused to approve her statement. In it, Professor Solomon said, she had planned to urge a comprehensive review of the monetary policies of past years and to recommend that the HUD Secretary join with the Federal Reserve Board and other federal financial institutions in helping to set national monetary policy.

Researchers Corrado and Cooley report that their study, which investigated both the 1969-70 and the 1973-74 housing recessions, points overwhelmingly to the view that the entire economy would have benefited substantially in those periods from a monetary policy that was more accommodating to the housing sector.

They found that a less restrictive monetary policy, particularly in the earlier period, would have stimulated the utilization of existing resources in the economy rather than exacerbating price inflation.

Their study of the even more complex 1973-74 recession showed

that again there appeared to be little support for the contention that stable housing and a stable economy are competing objectives.

It would appear, they said, that excessive monetary stringency over the 1973-74 period, while not "causing" the economy's decline, actually cost it dearly in terms of real economic growth (GNP) and employment—the opposite effects of what was intended.

Drs. Corrado and Cooley conducted their analysis using a large-scale econometric model developed by MIT, the University of Pennsylvania and the Social Science Research Council. They caution that their conclusions are tentative, and that the results of their work are conditioned by the properties of the computer model they used, the periods under study and the duration of the experiment.

Nevertheless, their research points overwhelmingly to several conclusions:

—There is no evidence that the goal of a stable or growing housing sector is in conflict with other economic stabilization goals.

—Monetary policy in recent periods of economic decline has tended to exacerbate the economic downturns—particularly with respect to GNP and the unemployment rate—with little or no dampening of the rate of inflation.

—To promote recovery in periods of considerable slack in the economy, a mix of easy money and relatively tight government spending is more likely to promote economic growth with fewer attendant costs, rather than the reverse.

—Thus, economic policy should take the form of an easy money/tight fiscal policy—the opposite of the posture taken for the periods under study and inconsistent with what appears to be in store for the near future.



THE SCHELL ROOM has a new look thanks to a rug-dyeing process only recently available in the Boston area. The conversion of the 11-year-old beige carpet to rusty brown was accomplished by Carpet Color Systems of Metro Boston, Inc., last week. It is hoped that the dye job will prolong the life of the carpet by a

half-dozen years, according to Theodore M. Doan, Jr., Physical Plant manager of building services, who was enthusiastic about the process. Dyeing the carpet, he said, cost very little more than professionally shampooing it and only about one-tenth of what it would cost for replacement.

Doan Authors Training Article

Theodore M. Doan, Jr., manager of building services, is the author of a cover article on producing in-house training films in the August issue of "Cleaning Management" magazine, a national publication.

Mr. Doan details the evolution of production of audio-visual material by the building services staff and employees for use in the custodial training program. The program, according to William R. Dickson, director of Physical Plant, is considered one of the finest around.

MIT has been producing its own training materials for several years and has developed techniques that make the finished films

highly professional in quality. At the same time, by using MIT backgrounds and employees, the films retain a "homey" touch, according to Mr. Doan.

Featured on the cover of the magazine are pictures of eight building service employees demonstrating the machines and techniques they use in maintaining the Institute. They are: Anna Marie Rich, Paul Crowley, Fernando de Limo, Maria Costa, Edward Dimond, Paul Defranzo, Custodio Cabrita and Joseph Clark.

Also shown on the cover is George Pesaturo, Jr., supervisor of building services, leading a class in the training room.



CLASSIFIED ADS X3-3270

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.**

For Sale, Etc.

Bridal hoop petticoat for sale, polished wh cotton, 6 tiers, lace, used only as costume \$15. Call Lisa x3-1623.

T square; 2 desk tray sears, odd dishes, set of Melmac dinnerware, pots, pans, glassware, stainless stl s/ware, 10 cup percolator, clocks & radios, hand tools, drill press w/1/2" drill atch, also 1/4" drill. Call 782-2373.

Scopes: HP 120A w/man \$100; Dumont 411R dubeam \$150; Heath IM25 FET VOM w/HV probe \$50. Call 876-0390.

30" Glenwood elect range, coppertone, \$125. Call x5420 Lincl.

DR set: cherrywood tble & 6 chrs, \$95; grn sofa & 2 match easy chrs, gd cond, \$75. Call 646-2120.

Foam beads for bean bag chr, 10 lbs. \$12 nego. Call x3-9794.

Oriental carpets, fine quality Iranian mostly Belouchi, geometric patterns, scatter to med sz 1x1 to 7x11. For appointment call 489-2298.

W ski suit sz 8, deep grn, exc cond, worn 1 season, \$35; lthr Trappeur ski boots, W sz 6, \$10; stainless steel flatware for 8, nvr use \$10. Call x3-4044.

M sz 8 1/2 ski boots, exc cond, \$25; G sz 10, white hyde figure skates \$10. Call Heather x3-3525.

Draw-type 10'x10' spc tent, \$225 nw, w/ sell for \$125. Call Diane x3-5124.

Corning pH meter, mod 125; HACH DR2 spectolab, water analysis, together, \$100, best, lv number 729-3351, warranties.

Wall shivs 2" solid pine; 4 shivs & brackets, 1 @ 8", 1 @ 5", & 2 @ 3" \$1.25. Call Mike x3-4462 or 494-0360.

Blue & grn floral bedspread \$8; grn ruffle curtains \$5; pr stereo desgn spkrs, ls than yr old, vg gd cond, \$180 or best. Call x5-8658 Dorm.

Canon, AEI bdy, power winder \$275, brnd nw cond, in box. Call Mike x7595 Line.

Trombone, vy old, EG Conn, case & all part \$60; old RCA tube radio, tble mod, slide dial \$20; GE refrig, white, gd cond, snl dr, frzr top, \$40. Call 395-8751.

M Xlg down jacket, hood & stuff bag \$45; L sz 12 down jacket w/60/40 cover \$30; 2 ski boot trees, \$4 ea. Call Jim x3-1755.

Flying Club membership w/Executive Flyers, Hanscom Field, Bedford, MA, cost \$85, make reasl of fer. Call John x8-3116 Draper.

Bike, Windsor 19" frme, nds seat, brke lever & cable, \$40 or best. Call Dick x3-6472.

M bowling shoes, sz 8 1/2 D, \$5. Call Frank x8-3632 Draper.

Sm rush bottom antique rocker \$10; instamatic camera \$8; lg mirror \$25. Call x3-6824.

IBM Elect typewrtr w/greek symbols, best over \$175; GE upright vacuum clean w/access \$30. Call Bill x3-5012.

Textbook used in Mechanical Drafting I course + compass, templates, etc, complete \$35. Call Janet May x8-2843.

Craftsman snow thrower, 6HP, 24", snl stage, \$200. Call Ira x7092 Lincl or 369-9278.

Leather coat, sz 10, gd for 5'4". Call Linda x3-7023.

Pr Patriots-Eagles tickets, \$10 ea; Oct 8. Call Eric x3-3868.

Bar stereo, 2 yrs old, gd cond. \$200. Call Juanita 9-5 x3-5610 or Mark 436-9495 aft 5pm.

Handsome brwn fabric couch, \$25. Call 661-4762 kp try eve.

Sony reel to reel tapedck TC500, old mod but gd cond, \$100. Call Kathy x5-8316 Dorm.

Upholstered wing back chr, \$20; snl matt & box sprng \$30; snl bed frme, cherry wood \$30. Call Cheryl 523-1719.

Colonial sofa & love seat, brwn plaid, exc cond, org \$550, ask \$250. Call Jack x3-2772.

Canon AE-1 bdy, 6 mos old, exc cond, ask \$180. Call Stan x5-7427 Dorm or 494-0284.

Black vnyl chr w/stool, \$90; 2 end tbles \$40. Call 643-4276.

Typewriter, Smith Corona elec port, replch type, sci, eng, greek & foreign languages, \$75. Call Chuck x3-2401.

Dual 1218 trntrble w/base, dustcovr & Shure M95ED cart \$75. Call 275-0550.

2 VW Superbeetle whls & nw jack. Call Dick x5548 Lincl.

1916 Potter Proof Press letterpress, type-high, movbl bed, mostly restord, nw bearings, best. Call Karen x3-6247.

Electronic equip, lots of misc, incl 19" racks cross-point switches, relays, solenoids, geiger counters, also linen sheets, blankets, towel, cheap. Call 494-8888.

Hoover apt sz mini-washer, vy gd cond, \$75. Call Donna 599-9272 aft 6pm.

Dark ranch mink stroller wraparound sz 7/8 coat sz 10-12 per cond; Tourmaline mink short stole w/sleeves, camels hair coat fox collar & round botom sz 10; assortd suede jackets, etc. all exc cond, reas prc. Call 696-6295 aft 6pm.

Lafayette stereo sys, Garrard trntrble, 8 trck, AM/FM rcvr, 2 spkrs, all in exc cond, nw \$250, ask \$165; 2 burnr hotplate, \$15. Call Gail x3-1827 or Bruce x3-1866.

Tu bed maple w/sturdy sprng support & matt, \$50 or best, crib mod walnut w/support & nw matt \$40 or best, high chr \$10; baby scale \$5. Call Tom x8-2810 Draper or 321-0509 aft 5:30pm.

Butcher block tble base; ornate trestle, 3'L suitable for tble top up to 6'L, \$40 or best. Call Judy x3-6147.

Quilted kg sz bedspnd, nvr used, \$35; 7 match glasses, \$3.50; Farberware elect coffee pot, perfect cond, hrly used, \$10. Call 665-6236 aft 6pm.

Drake TR4C Amateur Transcvr & AC4 power supply, exc cond, runs 300W PEP on sideband 270W on phone, \$600. Call 327-7249 eves.

2 beds 40"x76", matt & box sprng on bedfrms, \$50 ea both for \$95. Call 734-4816.

Lounge chr, brnd nw, \$65. Call x3-7521.

Hoover upright vacuum cleanr, 3 mos old w/at-tach, bought nw \$150; w/ sell \$75. Call Doug x7866 Lincl.

2 tennis racquets: Wilson T-2000, 4 3/8 grip, light weight ask \$25; Wilson T-3000, 4 1/2 grip, med wt, ask \$30. Call Mike x5-4228 Dorm.

Lg & sm foliage hse plants. Call 232-0484.

W bike Schwinn Collge, 5 spd, \$65; Delta Super Suretrack snows on rims, sz C78-14, vy few mi, \$50 pr. Call x3-3852.

Dble sz matt \$20 or best; 2 gal cans of Preference semi-gloss bone white paint, unopened, \$6 ea. Call 661-3124 eve.

Metal fire escape ladder, \$20; electric coffee pot, \$5; Clairol hair dryer \$5; Lady Schick hair dry \$5; Juliette tape recrd \$20; Underwood adding mach \$20; 4 prs wood fabric stretchrs \$1/pr; Litronix calculator w/adaptor \$10. Call Mary x3-3855.

Fabrications wall hang, 48"Wx32"H, \$10; Salton lg hot-tray \$10; radiator cover 23" W x 40" H \$10. Call Willie x5536 Lincl, kp try.

Sony SL7200 Videocassette recrd, exc cond, used approx 250 hrs, incl all cab, org carton, serv manual & 53 1 hr tapes, keep the tapes as they are or erase & recrd your own programs, tapes alone are worth the prc of whole packge \$875. Call Bob x7288 Lincl.

Bicent Comm Plates; Gold Inlaid SS; Boston Tea Party '73 thru Molly Pitcher '78; Danbury mint serially numbered limited edition, incl rights for future plates if minted. Call Lee x485 Lincl.

Perfect winter coat for tall, thin, slightly Bohemian M or F, extremely warm, \$100 nego. Call Terry x3-5788.

4 Snows L78-15, on 15" 6 bolt Chevy whls, 1 nw, 2 gd, disc brks, chrome gas cap & chrome window shades for Chevy pickups, vans. Call Paul x3-2164.

Pr Sears Racquetball racquets & balls, nvr used, \$20; wgt, nvr use \$5; wood breadbox \$5. Call Cindy x3-5365.

Lg sofa \$95; baby dress, \$15; rm divider \$18; arm chr \$7; ceiling lamp, \$10. Call Mike x8-2884 Draper.

Pr VW 15" snows, used only 2 mos \$40; pr VW rims for 15" tires, \$10. Call Ed 354-2799 aft 6pm.

Color TV 25" RCA console nw pic tube, satisfaction gtry, \$200 or best. Call 484-0176.

Pr rads snows, used 1 winter, sz 13x165, \$40 ea or best. Call x3-6337 or 734-5138.

SAE 1800 parametric equalizer, nvr used \$250 or best; Sanyo quad compact stereo, incl trntrbl, 8 trck 45pkrs, \$125 or best. Call Craig x5-8223 Dorm aft 4 kp try.

Pr xcountry skis, KARHU, Neswood hd base, fiberglass 210s made in Finland \$25. Call Beverly x3-1530.

Harv bedfrme, \$10; usd dbl box sprng, vy gd cond, \$25; M fisherman sweater, lg & W sz 14 offwhite cotton cardigan w/hood, both exc cond, pr 24" candles, nego. Call x3-4366 or 354-4241 Margie.

Westinghse dish wash, \$35. Call Doug x3-7850.

Bell & Howell, mod 385 16mm, sound projector w/zoom lens, exc cond, \$315. Call x3-2032.

Pr snows, BR78-13. Call Curtis x5-9368 Dorm.

Partner needed on bargain Eastern Airlines 2 person 1 way ticket to Los Angeles, CA, lv Oct 5, 2pm from Providence, RI, arriving LA 7:13pm, 1 am offering this ticket for \$100; reg 1 way \$229. Pls call Mr. Tsang x3-3169 or 367-1656.

Snows, glass beltd, stud, Delta H78-15, whitewall, mntd, balanced, on Ford/Mercury whls; 2 ply poly sidewalls + 2 glass belts, 3/8" remaining, little used. Call Richardson x56-202 Lincl.

Technics SL-20 trntrble \$40; Technics SA-5060 rcvr \$115; cherry twin platform bed w/matt \$60; blender \$7. Call x3-6898.

Vehicles

'63 Rambler Classic, 4 dr sedan, 94K, fly operational except gas gage fall inspect sticker, vy little rust, 4 gd tires a bargain \$250. Call Dave x5893 Lincl.

'64 Chevelle Malibu, 4 dr, sound 283V8, auto, & drv train, cracked windshield, leaky mflr, fading brks, gd for parts car, drv away for \$150 or best; gd stud snows, \$20. Call x3-1621.

'66 Triumph TR4A, IRS. Call 662-7780 aft 6:30pm.

'68 Buick Le Sabre, gd run cond, best over \$400. Call Paula x381 Lincl.

'68 Chevy Caprice, PS & PB, exc cond, snows, some bdy rust, \$500 or best. Call x3-3824 or 494-8425.

'68 Chevy Impala, st wg, 80K, snows, eng runs exc, bdy ok, \$400. Call x3-3222 or 367-8441 eves.

'69 Corvette 427 Coupe, PS & PB, PW, tilt-telescope whl, AM/FM stereo, sidepipes, 4 spd, nw 60 series rad T/A's \$5,700 or best. Call 887-8753 ask for Steve.

'70 Buick Skylark, PS, auto, exc cond, theft device, mst sell, \$750. Call x3-5567.

'70 Chevy Nova, gd tires, runs wl, 91K, \$550. Call Dave x3-2173.

'70 Ford Falcon wg, shabby but faithful, \$200. Call x3-2243 or 969-2196.

'70 VW Bug, vy gd cond, 80K, AM/FM, gd tires & pr mnt snws, fall inspect sticker & ski rack, ask \$800. Call 494-8486 eves.

'71 VW Bug, rust & bumps, but vy gd mech cond, \$550 or best. Call 876-1456 eves.

'72 Datsun 510, 4 drs, gd bdy & mech, nw mflr, snows, always maint, gd cond, \$950 or best. Call 494-8208 eves.

'72 Dodge Polara, 73K, little rust, A/C, \$800 or best. Call Bob x3-1470.

'72 Ford Torino, 2 dr, blue, 6 cyl, std shift, trailr hitch, snows, 86K, nds some upkeep but vy operational, \$675. Call Bill x8-1811 Draper.

'72 Norton Commando Roadster, 3,600 mi, org own, combat eng 65 hp, blck lacker paint, \$1200 or best. Call 356-7634 aft 6pm.

'72 Pontiac Lemans, PS & PB, 78K, \$200 or best. Call Charlene x3-3572.

'72 Renault R-10, 4 dr, 4 spd, recl seats, ski rack, AM, rads, wl cared for, runs wl, gd city & snow car, 100K, \$400. Call x3-1746 or 926-2232 eves. Doug.

'73 Capri, 4 cyl w/radio/defrost, lux inter, stand, no wrntry, \$1650. Call 869-6393 or 924-0264.

'73 Chevy Malibu wg, V8, PS & PB, gd cond, \$1200 or best. Call Rolf x3-7309 or 924-5625.

'73 Chevy stat wg, 8 cyl, 83K, brnd nw eng w/guarantee, \$1200. Call Pete x8-4539 Draper.

'73 Ford Squire Wg, 55K A/C, PS & PB, nw rubber, exh, brks, gd cond, \$2000 or best. Call Bob x3-7245.

'73 Vega, hatchback, auto, 50K, gd cond, snows \$900. Call 484-0082 eves.

'74 Ford Mustang II, 4 spd, rads & snows, FM, 58K, fair cond, \$1500 or nego, mst sell, immed. Call Tatsu x3-8026 or 734-8072.

'74 Mustang II, exc cond, 4 spd stand, 4 cyl, nw tires, exc servc recd, bronze w/tan inter. Call 426-7769.

'74 Saab wg back 55K, cruise control, 4 spd, new clutch, hydraulics, exh sys, gd rubber, \$3000 or best. Call Bob x3-7245.

'74 Vega, 58K, bdy exc cond, standrd, A/C, gd rads tires, \$1600. Call 267-2199.

'75 AMC Pacer, 6 cyl, gd tires, exc run cond, \$2400. Call Ron x8-2818 Draper.

'77 Ford Granada, silvr w/red vinyl interior, PS & PB, auto, 6 cyl, only 18K, ask \$3,750. Call x3-2772.

Roads 41 Yawl, Bel Person, diesel, all Hood sails, roller Fuller, lg inventory of sails & electronics, boat in exc cond. Call 862-9462.

Sailboat, '77 18 1/2' Cape Dory Typhoon, Hull #1401, exc cond, main, genoa, jib, omni compass, fire exting, bronze bella, 4 hp Evinrude running lights, cushions porta-potty & cradle, Joe Gloucester harbor, \$5500 or best. Call Helen x5826 Lincl.

Housing

Acton, older 3 BR w/frpl, eat-in K, DR, conv to train and stores, \$44,900. Call Norm Veenstra 263-5300.

Beacon Hill, 3 BR, lg K & LR furn, \$475/mo ht incl, nr T. Call 227-6174 kp try.

Brkline/Brighton line, 2 apt, lg old 4 fmly hse, vy gd loc, 1/2 block off Beacon T, both incl ht, park, access to r/patio; 2nd fl \$450/mo, 2 B, 2 BR, eat-in K, lg rms, lg windows, lg closet, parquet flrs; bsmt apt \$350/mo. Call 738-1472.

Brkline, prv rm, B, K on T. \$30/wk. Call aft 6pm, 738-4685.

Jamaica Plain apt 7 big bright rms, 1st fl, gar, yard, bsmt, hdwd flr, eat-in K, mod bathd avail Nov. 1, \$320/mo unht. Call x3-3407.

Martha's Vineyard Chilmark, 3 acre wooded lot on dirt rd, \$25,000 by owner. Call x3-7153 or 242-0162.

Enjoy the fall foliage in the 2 BR, 2 B condo, overlooking Lake Winnepesaukee & just 9 mi from Gunstock Mountain & the Alpine slide, \$75/wkend, \$150/wk, ski season also avail \$1500. Call x3-6169.

By ownr, lg A frme hse, VT ski country, LR w/view cathedral ceil & frpl, K, B, 2BR, full cellar, furn & furnish incl, accom 10 adults, gas ht, adj to Rte 89, Royalton, VT, conv to Sugarbush, Stowe, Killington, \$24,500. Call Carol x3-1864.

Watertwn, The Village Condo, lg 6 rm, 2 B, central A/C's, vacuum, encls deck, hdwd flrs, gd closet spc, pool, club hse, off st park, \$61,900. Call x5721 Lincl.

6 rm hse in Winchester in exch for 40 hrs/wk child care for yr old. Call Bob x3-1910.

Woburn, 7 rm. Call for details 933-7427.

Animals

Lovly cat nd lgr hme, yard if poss & more company, silv gry, spayed, A F cat. Call Lisa x3-1623.

Free to gd homes, 4 healthy kittens, 2 M or 2 F, 6 wks old. Call Rita x3-4971.

Free to gd home, yg F black cat, hse trairnd. Call x5-9623 Dorm.

Lost and Found

Lost: 9/13 blue corduroy shirt handmade, in or around 5-216 or Rotch Libry. Pls call Phil 661-9775 or return to Campus Patrol.

Found: 1 brown suede child's shoe on 9/18 in front of Kresge Aud, claim at Campus Patrol.

Wanted

Person to care for 2 children ages 9 & 11, Mon-Fri, afternoons, Lex hme. Call David x3-6606.

Tutor needed for experimental Psych course, strong stat background necessary, fee nego. Call Laura 369-4436.

Reliable married couple, MIT employees, avail to hse for up to 1 yr. Call x3-1647.

Desire to buy hse in Runkle Sch area of Brkline or in Weston, for settlement in Spring, \$70's-\$90's, principals only. Call 831-6838.

Nd 2BR apt, Camb or Bos, \$300 range, htd, clean. Call x3-7129.

Prof, famly sk 2-3BR, furn hse/apt, yard, general Boston area, from Jan-Aug '79; exchange poss. Call collect (919)682-5331 Duren NH.

HR78-15 tires, old Singer Sew mach elect motor, that works. Call x7500 Lincl.

AC Adapter for HP-35 calculator, pc nego. Call Sherman x3-7264.

Sm sz desk, 48" or under. Call Ed x3-5778.

Firewood oak or maple pref. Call x3-4288.

Gar park for 1 car in Newton area. Call Judy x3-8020.

Vry inexpnsv port manual typewrtr. Call x3-3224.

A non-auto camera, preferably SLR w/normal lens, gd work order. Please contact Ravi Oswal x5-9667 Dorm eves.

Hewlett-Packard HP-45 calculator, no substitutes. Call Frank x3-7530.

Chess opponent for serious lunch time games, preferably someone in class A-C or a strong non-tournament player. Call x3-6330.

M 3 spd bike, fender & brakes, \$25 or \$30 range. Call Chris x3-6554.

Lincl, shr miles of adj conserv land, 20 min from Camb, sk resposbl P over 25 for warm peaceful coping living, \$200/mo, sorry no pets. Call 259-0959 Esther or William.

Frmmate wntd for 2 BR, unfurn apt, \$138/mo, incl ht & hw, avail immed. Call 876-0159 eve.

Carpools

Driving to Wash DC via Atlantic Cty on Oct 7-9, return directly to Bos on Oct 12, can take riders 1 way or round trip. Call Marilyn x5724 Lincl.

Rd nd from Corner of High St & Syprss St, Brkline, to & from MIT 9-5pm. Call Cheryl x3-7716.

People wanted from Framingham, Southboro or Westboro to MIT, Mon-Fri, 9-5pm or flexo. Call Eric x3-1732.

Nd ride Dedham to MIT & back, 9-5 or 8:30-4:30, w/ share expns. Call Kathy x3-2691.

Parking Stickers

W/ trade my Windsor sticker for East, Albany, Dock Sq or Sloan. Call Paul x3-7287.

W/ trade Westgate sticker & big bucks for East or West Gar. Call Saleh x3-4431 or 354-5433.

Miscellaneous

Heating, A/Cing, ventiltion, insulation work to be done. Call Arthur DuBois 893-5174 anyx.

Be kind to your piano, quality tuning, repr, regulation, est, maintenance, reasbl rates. Call Margie 354-4241.

Sewing lessons: learn the basics or the help you nd for that special project, sm groups, indiv instrctns 8 2 1/2 hr lessons, \$40. Call Elaine 658-3471 Wilmington.

W/ type theses & reports, IBM Correct Select. Call Gloria x3-7420.

Exp typist w/ type theses, MS, reports, fast & accur. Call x3-452

duties: make appointments; type; file; work with clinical sociologist in coordinating Institute wide activities for members of international community (students, faculty, staff and their families). Will arrange weekly meetings; prepare and distribute notices; supervise volunteers. Good general secretarial skills are necessary in addition to an interest in orienting new-comers from abroad to the MIT community. Familiarity with MIT and knowledge of a foreign language is helpful. Non-smoking office. 37.5 hrs./wk. B78-599 (9/27)

Secretary IV to a faculty and staff research group in Earth and Planetary Sciences to type and edit manuscripts, reports which include technical content; maintain calendars; handle all general office routines as necessary. Excellent typing skill including ability to type technical material required. Command of English grammar and editorial skills also necessary. Position includes occasional overtime. B78-589 (9/27)

Secretary IV, part-time, in Nutrition and Food Science to assist a faculty member involved in teaching and research on nutritional biochemistry and metabolism. Will type manuscripts, correspondence; answer phones; xerox and handle all other general secretarial duties. Excellent secretarial skills and secretarial experience required. Knowledge of scientific terminology helpful. 20 hrs./wk. B78-588 (9/27)

Secretary IV to two Industrial Liaison Officers to type correspondence; answer telephones; handle requests from Program members (representatives of private industry) for information and materials; arrange for members' visits to MIT; maintain statistics; type reports. Excellent typing, machine transcription skills and ability to work independently required. B78-596 (9/27)

Secretary IV, part-time, at the MIT Press to perform general secretarial duties for the editorial office of the MIT Press journal, *Cell*. Will type; maintain files; screen phone calls; prepare and distribute invoices; act as liaison between authors/reviewers and the editorial office. Excellent typing and organization skill ability to set priorities and work independently required. 21 hrs./wk. (Mon., Tues., and Fri.). B78-592 (9/27)

Secretary IV to several Mathematics Dept. faculty members: to compose and/or type correspondence; maintain records and files; arrange weekly seminars; answer phones; perform a variety of other secretarial duties as necessary. Position requires excellent secretarial skills including the ability to type technical/statistical material, or willingness to learn. Applicants must be able to manage own work load and have at least 3 years' secretarial experience. B78-594 (9/27)

Secretary IV, part-time, to two faculty members in the History of Architecture section, Architecture Dept. to answer phones; file; type manuscripts; do occasional bibliographic checking. Typing skill, ability to organize required. 17.5 hrs./wk. B78-564 (9/27)

Secretary IV in the Institute Archives to handle a full range of clerical and administrative duties: compose and type routine correspondence; answer or refer telephone inquiries; type reports; prepare payroll reports; maintain supplies, and arrange for maintenance and repairs; compose statistics. Ability to coordinate a variety of duties as well as secretarial skill required. MIT experience is desirable. B78-591 (9/27)

Secretary IV to 3 or 4 faculty members in the Ocean Engineering Dept. to type correspondence, technical reports, class material from hand written draft and tape; maintain files; monitor account expenditures; maintain petty cash; prepare travel vouchers; arrange travel; schedule appointments; xerox; perform occasional library work. Good secretarial skills, ability to transcribe from tapes required. Technical typing skill and knowledge of MIT procedures helpful. B78-489 (8/30)

Secretary IV to 3 Economics Dept. faculty members to type and distribute correspondence, manuscripts, including technical content and other material; maintain files; arrange travel; check library references. Applicants should be able to handle several projects simultaneously, have good secretarial skills and formal secretarial training or experience. Shorthand helpful. B78-517 (9/6)

Secretary IV to 4 faculty members in the Sloan School to assist in preparing course materials; maintain course records; type general correspondence as well as technical reports; arrange travel. Typing skill, ability to exercise initiative required. Experience in technical typing desirable. B78-559 (9/20)

Secretary IV to 3 faculty members in the Research Laboratory of Electronics to perform general secretarial and clerical duties including typing of technical manuscripts. Applicants should be high school graduates, or equivalent, and have 3 years' secretarial experience. Equivalent combination of education and experience will be considered. B78-561 (9/20)

Secretary IV to Manager of Sloan Automotive Engine Laboratory (Energy Laboratory) to type course material, technical reports from machine dictation and handwritten draft; order and maintain supplies; schedule appointments. Position involves substantial student, faculty and staff contact. Excellent technical typing skills, ability to set priorities required. M.I.T. experience helpful. B78-562 (9/20)

Secretary IV to assist with communication and information functions in the MIT Sea Grant College program: will type and proofread reports; respond to inquiries from students, staff, and others; take meeting minutes; arrange meetings and seminars; fill publication orders; maintain various files. Organizational skills, some familiarity with scientific terminology required in addition to general secretarial skills. At least 3 years' applicable experience is preferred. B78-563 (9/20)

Secretary IV, in Civil Engineering to a Civil Engineering research group in the Transportation Systems Division to handle varied duties including typing, some editing; maintaining files and other clerical and secretarial functions. Applicants should have excellent organization and secretarial skills, a command of English grammar, and ability to exercise initiative. Ability to type technical/mathematical material also necessary. B78-570 (9/20)

Secretary IV in the Alumni Assn. to answer phones; type correspondence and other materials from draft or dictation; organize and maintain files; maintain supplies; operate word processing equipment. Organization and general secretarial skills required. Applicants must be able to handle several projects simultaneously. B78-578 (9/20)

Secretary V to Director, Plasma Fusion Center to perform a full range of secretarial tasks: edit and type reports; arrange conferences, luncheons, dinners; supervise clerical operation for the center; compose correspondence from verbal instruction. Excellent typing and editing skills, high school graduation and 5 years experience or equivalent required. Shorthand helpful. 40 hrs./wk. B78-579 (9/20)

Secretary IV in the Admissions Office to type letters and forms; provide information about Institute and immigration procedures; handle special projects; assist with office overload; answer phones. Excellent typing and secretarial skills, ability to compose or edit letters and to operate dictaphone required, as well as ability to work under pressure. B78-574 (9/20)

Secretary III/IV, part-time, to Chemical Engineering faculty member to transcribe machine dictation of correspondence, manuscripts; arrange travel and appointments; maintain files. Good organization and typing skills required. Knowledge of MIT helpful. 20 hrs./wk. Non smoking office. B78-531 (9/13)

Secretary III/IV to two Nuclear Engineering Faculty members to type technical reports,

proposals, materials and correspondence; perform a variety of other general secretarial duties. Good typing skill, familiarity with office procedures and ability to work independently required. Technical typing skill helpful. B78-595 (9/27)

Secretary III/IV in the Student Financial Aid Office to type correspondence and reports; maintain files; handle mail; compile and compare statistics; process forms and records; assume receptionist's duties in absence of regular receptionist. Excellent typing skills required. B78-166

Secretary III/IV to Benefits Officers, Office of Personnel Relations (Benefits) to perform general secretarial duties; provide benefits information to employees in person and on phone; prepare record cards; process applications. Will assist in varied projects as necessary. Excellent general secretarial skills, poise in dealing tactfully with people, and ability to set priorities required. Benefits experience helpful. B78-560 (9/20)

Secretary III/IV to faculty member in the Lab. for Computer Science, will handle general secretarial duties including manuscript typing, arranging travel and appointments. Will also handle some secretarial duties for other faculty and research group members. Good general secretarial skills required. Selected applicant will be trained in computer text editing. College training and/or MIT experience desirable. B78-580 (9/20)

Secretary III-IV, to several faculty members in the Mechanical Engineering Dept. to type correspondence; schedule appointments; arrange travel. Excellent typing skill, including technical typing, shorthand/machine transcription ability and knowledge of basic bookkeeping required. High school graduation with formal secretarial training or equivalent education and experience required. B78-167, B78-549, B78-550 (9/20)

Secretary III in Materials Science and Engineering Academic Office to handle varied duties related to administration of Department's academic program. Major responsibility will be for graduate admissions procedures: correspond with prospective students; arrange faculty committee luncheon meetings; maintain student records. Accurate typing and organization skills, ability to handle detailed work with accuracy required. Position involves student contact. B78-571 (9/20)

Secretary III, Department Floater, in the Medical Dept., to be responsible for relieving secretarial offices when necessary and assisting other secretaries in heavy work loads: type correspondence, reports; prepare mailings; file; transcribe reports; perform general clerical tasks; perform reception duties occasionally. Excellent typing skills and flexibility required. Previous secretarial experience required, preferably in a medical setting. 37.5 hrs./wk. B78-576 (9/20)

Secretary III in the National Magnet Laboratory to perform general secretarial duties: type and file correspondence; file accounting statements; answer phones. High school training and at least 1 year's secretarial experience required. Facility with figures also necessary. B78-581 (9/20)

Sr. Clerk III in the Space Systems Laboratory, Aeronautics and Astronautics to type and xerox reports; do library research; organize reference material; schedule meetings; arrange travel; perform varied other duties as required. Clerical skill including typing, familiarity with technical writing required. Some college preferred. B78-583 (9/27)

Clerk/Typist III, part-time, in the Graduate School Office to perform general clerical duties: type; prepare mass mailings; answer phones; arrange meetings; assist secretarial staff as necessary. High school graduation, or equivalent, typing skill, some applicable working experience required. 20 hrs./wk. B78-582 (9/27)

Receptionist-Clerk III in the Student Accounts to assist Counselors in providing finance-related services to students; answer student questions; open mail; answer phones; type and mail letters; assist in reviewing accounts and statements; maintain files. Ability to understand and apply complex procedures, typing and communications skills required. B78-593 (9/27)

Sr. Clerk III in the Comptrollers Accounting Office, Travel Section to type checks; check and proofread transfer of data from forms to computer formats; review charges against accounts to assure they comply with policy and regulation; answer phone inquiries for information about travel expense matters. Typing skill, ability to communicate on telephone required. B78-587 (9/27)

Cashier III, Comptrollers Accounting Office to receive and disburse cash; prepare receipts; log mail receipts; cash personal checks; prepare checks for deposit; prove cash fund. Ability to handle a volume of cash transactions accurately, to work well with others and to operate a calculator required. B78-590 (9/27)

Sr. Clerk III in the Accounting Office, Faculty Club, to file and control records; answer telephones; respond to correspondence; update account files; maintain accurate receivable records by processing log sheets for computer input. Interest in detail and ability to handle routine clerical duties required. B78-600 (9/27)

Sr. Clerk III in the Libraries Microreproduction Center to process requests for microfilm and photocopies; type invoices, work orders; answer phones; prepare billing statements; discuss services with users. Typing skill, command of English language, accuracy with figures required. B78-567 (9/20)

Hourly, Shop Helper A (or B) in the Nuclear Reactor Laboratory to assist Project Mechanic in maintenance, repair and installation of mechanical equipment for reactor. Applicants must be at least 18 years of age, and technical high school graduates, or equivalent. Shop experience in mechanical drawing helpful. H78-144 (9/20)

Hourly, Machinist A, in the Laboratory for Nuclear Science to set up, operate machine tools working to close tolerances from blue prints, specifications, verbal instructions or sketches. Will make such tools, dies, jigs and fixtures as are necessary. A minimum of 5 years' applicable experience as machinist required. 40 hrs./wk. H78-151 (9/20)

Hourly, Mechanic 'B' (Maintenance) in the Laboratory for Nuclear Science to perform a variety of duties related to servicing, maintenance, repair and renovating buildings and associated plant equipment. Must be experienced in use of all common hand tools and power tools and have at least 3 years' applicable experience. Must also have formal training or experience in air conditioning/refrigeration and air handling equipment necessary as well as ability to climb a 100ft. water tower to perform necessary maintenance. Position is based at Middleton, Mass. H78-152 (9/20)

Hourly, Tech. B., at the Haystack Observatory, Westford, Ma. to work on maintenance and upgrading of low-level analog and digital components associated with high power radar. Applicants should be graduates of 2-year day technical school, or equivalent. Familiarity with current construction practice in low power level RF and IF amplifiers, as well as discrete wideband analog circuits also required. Proficiency in use of standard electronic test equipment such as oscilloscopes, signal generators, counters also required as well as familiarity with use of standard shop tools for mechanical assembly work. H78-140 (9/20)

Hourly, Waiter/Waitress in the Faculty Club to take members' orders; pick up food in kitchen and serve to members; clear and reset tables and perform other duties relating to dining room service. Applicants must be at least 18 years of age, and able to speak and read English. 20 hrs./wk., 11 AM-3PM. Non-Fri. with some weekend shifts possible. H78-157 (9/27)

The following positions were still available at *Tech Talk* 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, Systems Programmer, Information Processing Serv. (2/16)
A77-86, Systems Programmer, Information Processing Serv. (1/11)
A78-14, Asst. Dir., MIT Associates Program (4/12)
A78-20, Admin. Staff, Alumni Association (5/3)
A78-27, Admin. Staff, Auditor, Audit Division (6/7)
A78-30, Admin. Staff, Design Manager, MIT Press (6/7)
A78-38, Admin. Staff, Systems Programmer, Information Processing Services (8/30)
A78-44, Admin. Staff, Industrial Liaison Officer (8/30)
A78-49, Admin. Staff, Financial Aid Officer (8/30)
A78-51, Admin. Staff, Sr. Consultant-Trainer, Personnel Development (8/30)
A78-53, Admin. Staff, Director of Video Operations & Educational Video, Office of the Provost (8/30)
A78-55, Admin. Staff, Admin. Officer, Lab. of Architecture & Planning (9/6)
A78-56, Admin. Staff, Asst. Director, Resource Planning (9/6)
A78-57, Admin. Staff, Property Auditor, Supervisor, Office of Facilities Management Systems (9/6)
A78-58, Admin. Staff, Property Administrator, Office of Facilities Management Systems (9/6)
A78-59, Admin. Staff, Data Base Manager, Office of Facilities Management Systems (9/6)
A78-60, Admin. Staff, Asst. to the Dean, Dean for Student Affairs Office (9/6)

BIWEEKLY:
B77-655, Sec. IV, Chemical Engineering (11/16)
B78-129, Sec. IV, Biology (4/12)
B78-154, Sec. III/IV, Lab for Nuclear Science (7/26)
B78-160, Sec. IV, Center for Policy Alternatives (4/19)
B78-165, Sr. Accg. Clerk IV, Sloan School (7/26)
B78-167, Sec. III/IV, Mechanical Engineering (4/26)
B78-178, Sec. IV, Provost's Office (4/26)
B78-185, Account Rep. V, Administrative Computer Serv. (4/26)
B78-275, Sec. IV, Harvard-MIT Division of Health Sciences & Technology (6/7)
B78-302, Sec. IV, Resource Development (7/12)
B78-306, Sec. IV, Research Laboratory of Electronics (7/12)
B78-314, Sec. IV, Libraries (7/12)
B78-318, Sec. IV, Mechanical Engineering (9/13)
B78-328, Sec. IV, Humanities (8/16)
B78-329, Sec. IV, part-time, Medical Dept. (7/26)
B78-343, Secretary IV, Energy Lab (7/26)
B78-549, Editorial Asst. IV, Center for Transportation Studies (7/26)
B78-380, Tech. Asst. V, Division of Lab. Animal Medicine (8/16)
B78-387, Sec. IV, Material Science & Engineering (8/16)
B78-392, Sec. IV, Division for Study & Research in Education (8/16)
B78-407, Sec. IV, Lab. of Architecture & Planning (8/30)
B78-408, Sec. IV, Sloan School (8/30)
B78-414, Sr. Clerk/Keypunch Operator III, temporary, Office of Personnel Services (8/30)
B78-423, Sec. III, Sloan School (8/30)
B78-431, Sec. IV, Division of Health Sciences & Technology (8/30)
B78-432, Sr. Clerk IV, Medical Dept. (8/30)
B78-436, Sec./Receptionist III, Math Headquarters (8/30)
B78-445, Sec. IV, Center for Space Research (8/30)
B78-453, Sec. IV, Nutrition & Food Sciences (8/30)
B78-454, Clerk III, Resource Planning & Development Office (8/30)
B78-457, Sec. IV, Lab. for Computer Science (9/6)
B78-463, Sec. IV, Sloan School (9/6)
B78-468, Sec. V, Psychology (9/6)
B78-472, Sec. III, Office of Facilities Management Systems (9/6)
B78-474, Clerk Typist IV, Resource Planning & Development (9/6)
B78-483, Sec. IV, Lab. for Computer Science (9/6)
B78-484, Sec. IV, Civil Engineering (9/6)
B78-485, Sec. III-IV, Ocean Engineering (9/6)
B78-488, Sec. III-IV, Arteriosclerosis Center (9/6)
B78-489, Sec. IV, Ocean Engineering (9/6)
B78-490, Sec. III-IV, Ocean Engineering (9/6)
B78-493, Sec. IV, Medical Dept. (9/6)
B78-494, Sec. IV, Patent & Copyright Office (8/30)
B78-495, Sec. III, Office of Dean, School of Architecture (9/6)
B78-496, Serv. Asst. III, Sloan School (9/6)
B78-498, Asst. Computer Operator III, Administrative Computing Services (9/6)
B78-500, Acctg. Asst. V, Medical (9/13)
B78-501, Sec. IV, Career Planning & Placement (9/6)
B78-503, Sec. III-IV, Chemical Engineering (9/6)
B78-508, Acctg. Asst. V, Comptroller's Acctg. Office (9/13)
B78-509, Sec. IV, part-time, Center for International Studies (9/13)
B78-511, Sec. IV, Sloan School (9/13)
B78-515, Sec. IV, Center for Advanced Engineering Studies (9/13)
B78-518, Tech. Typist IV/Mag Card Operator, Economics (9/13)
B78-519, Sec. IV, Lab. of Architecture & Planning (9/13)
B78-521, Sec. IV, part-time, Architecture, (9/13)
B78-523, Tech. Asst. V, Medical Dept. (9/13)
B78-525, Sec. IV-V, Office of the President & Chancellor (9/13)
B78-528, Sec. IV, Earth & Planetary Science (9/20)
B78-529, Sec. III-IV, Meteorology (9/20)
B78-530, Sec. IV, Center for Advanced Engineering Studies (9/20)
B78-532, Clerk III, part-time, Department of Architecture (9/20)
B78-533, Admin. Asst. V., Earth & Planetary Science (9/20)
B78-535, Sec. III, part-time, Earth & Planetary Science (9/20)
B78-536, Sec. III-IV, MIT Associates (9/20)
B78-540, Sec. IV, part-time, Committee on Use of Humans as Experimental Subjects (9/20)
B78-541, Sec. IV, Office of the Chairman (9/20)
B78-542, Sec. IV, Program in Science, Technology & Society (9/20)
B78-545, Keypuncher III, Medical Dept. (9/20)
B78-547, Sec. V, temp., Psychology (9/20)

ACADEMIC STAFF:
C78-6, Acad. Staff, Asst. Eng. Librarian, Engineering Library (4/5)
C78-9, Acad. Staff, Asst. Science Librarian, Libraries (4/19)
C78-12, Acad. Staff, Technical Instructor, Mechanical Engineering (6/7)
C78-17, Acad. Staff, Research Associate (7/12)
C78-18, Acad. Staff, Nurse Practitioner/Physician Asst. (7/12)
C78-19, Acad. Staff, Archival/Manuscript Specialist, Libraries (7/12)
C78-20, Acad. Staff, Archival/Manuscript Specialist, Libraries (7/12)
C78-21, Acad. Staff, Archival/Manuscript Specialist, Libraries (7/12)
C78-22, Acad. Staff, Asst. Librarian, Libraries (8/16)
C78-23, Acad. Staff, Marketing Representative, Medical Dept. (8/30)
C78-26, Librarian, Head, OCLC/LC Cataloging Section, Libraries (9/20)

EXEMPT:
E77-54, Exempt, Eng. Asst., Center for Material Science (7/12)
E77-56, Estimator/Scheduler, Physical Plant (11/9)
E78-24, Exempt, Food Production Supervisor, Food Service (6/7)
E78-27, Exempt, Admin. Asst., Libraries, Microreproduction Lab (6/14)
E78-35, Exempt, Tech. Supervisor, Physical Plant/Telecommunications Dept. (8/16)
E78-36, Exempt, Principal Operator, Physical Plant (8/16)
E78-42, Exempt, Dental Hygienist, Medical Dept. (9/6)
E78-46, Exempt, Admin. Asst., Clinical Research Center (9/6)
E78-47, Exempt, Asst. Accountant, MIT Press (9/6)

HOURLY:
H77-89, HVAC, Designer/Draftsperson, Physical Plant (10/5)
H78-23, Machinist A, Nutrition & Food Science (3/8)
H78-64, Sr. Technician, National Magnet Laboratory (5/31)
H78-95, Tech. A, Aeronautics & Astronautics (9/6)
H78-99, Sheet Metal Worker, Physical Plant (7/26)
H78-100, Painter, Physical Plant (7/26)
H78-106, Sr. Technician, (Elec.), National Magnet Lab (8/16)
H78-115, Audio Visual Operator B, Graphic Arts (8/30)
H78-137, Technician B, Center for Advanced Engineering Studies (9/6)
H78-148, Bus Person, Faculty Club (9/20)

SPONSORED RESEARCH STAFF:
R77-53, Spons. Res. Staff, Res. Lab. of Electronics (4/12)
R77-79, Postdoc. Res., Physics, Lab. for Nuclear Science (5/4)
R77-91, Sr. Accelerator Physicist, Lab. for Nuclear Science (5/18)
R77-97, Chemical Engineer, Energy Laboratory (6/1)
R77-137, Experimental Physicist, Bates Linear Accelerator (8/31)
R77-161, Elec. Engineer, Mechanical Engineering (9/7)
R77-201, Prog./Data Analyst, Earth & Planetary Science (10/26)
R77-209, Res. Scientist, Energy Laboratory (11/30)
R77-211, Computer Systems Design, Lab. for Computer Science (12/7)
R77-212, Prog. Language Design, Lab. for Computer Science (12/7)
R77-213, Computer Software Design, Lab. for Computer Science (12/7)
R77-228, Plasma Physicist, Res. Lab. of Electronics (1/4)
R77-230, Computer Software Designer, Lab. for Computer Science (1/11)
R78-55, Staff Scientist, Arteriosclerosis Center (4/5)
R78-58, Spons. Res. Staff, National Magnet Laboratory (4/12)
R78-60, Combustion Engineer, Energy Lab. (4/12)
R78-64, Spons. Res. Staff, Earth & Planetary Science (4/12)
R78-70, Energy Analyst, Energy Laboratory (4/12)
R78-73, Computer Programmer, Energy Laboratory (5/10)
R78-79, Spons. Res. Staff, Mechanical Engineer (4/19)
R78-81, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
R78-82, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
R78-83, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
R78-84, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
R78-85, Technical Asst., Nutrition & Food Science (4/19)
R78-93, Res. Engineer, Civil Engineering Dept. (5/10)
R78-101, Spons. Res. Staff, Lab. for Nuclear Science (5/31)
R78-102, Spons. Res. Staff, Lab. for Nuclear Science (5/31)
R78-103, Spons. Res. Staff, Lab. for Nuclear Science (5/31)
R78-104, Physicist, Temp., Lab. for Nuclear Science (6/7)
R78-105, Physicist, Temp., Lab. for Nuclear Science (5/31)
R78-108, Programmer, Temp., Res. Lab. of Electronics (5/31)
R78-110, Spons. Res. Staff, Part-Time, Sea-Grant College Program (5/31)
R78-113, Spons. Res. Staff, Sloan School of Management (7/12)
R78-117, Spons. Res. Staff, Temp., Economics Dept. (7/12)
R78-119, Theoretical Plasma Physicist, National Magnet Laboratory (7/12)
R78-120, Spons. Res. Staff, National Magnet Laboratory (7/12)
R78-125, Spons. Res. Staff, Electrical Systems Laboratory (7/12)
R78-133, Spons. Res. Staff, Sr. Microwave Systems Engineer, Natl. Magnet Lab. (7/26)
R78-134, Spons. Res. Staff, Research Lab. of Electronics (7/26)
R78-135, Spons. Res. Staff, Research Lab. of Electronics (7/26)
R78-136, Spons. Res. Staff, Lab. for Computer Science (8/16)
R78-145, Spons. Res. Staff, Electronics Engineer, Lab. for Nuclear Science (8/16)
R78-146, Spons. Res. Staff, Electrical Engineer, Bates Linear Accelerator (8/16)
R78-147, Spons. Res. Staff, Systems Programmer, Lab. for Nuclear Science (8/16)
R78-148, Spons. Res. Staff, Organic Chemist, National Magnet Laboratory (8/16)
R78-154, Spons. Res. Staff, Program Director, Neurosciences Research Program (8/30)
R78-157, Spons. Res. Staff, Organic Chemist, National Magnet Lab. (8/30)
R78-158, Spons. Res. Staff, Experimental Physicist/Electrical Engineer, National Magnet Lab. (8/30)
R78-160, Spons. Res. Staff, Programmer, Center for Space Research (8/30)
R78-162, Spons. Res. Staff, Systems/Scientific Programmer, National Magnet Lab. (8/30)
R78-163, Spons. Res. Staff, Systems Analyst, temp. Energy Lab. (8/30)
R78-166, Spons. Res. Staff, Research Analyst, Center for Policy Alternatives (8/30)
R78-168, Spons. Res. Staff, Programmer, Center for Space Research (8/30)
R78-170, Spons. Res. Staff, Programmer, Center for Space Research (8/30)
R78-171, Spons. Res. Staff, Center for Space Research (8/30)
R78-184, Research Engineer, Artificial Intelligence Lab. (9/6)
R78-185, Medical Technologist, Clinical Research Center Lab. (9/6)
R78-187, Spons. Res. Staff, Asst. Manager, Sea Grant Program (9/13)
R78-189, Spons. Res. Staff, Radiochemist, Nuclear Reactor Lab. (9/13)
R78-191, Spons. Res. Staff, Tech. Asst., Biology (9/13)
R78-192, Spons. Res. Staff, Computer Programmer, Energy Lab. (9/13)
R78-193, Spons. Res. Staff, Computer Programmer, Energy Lab. (9/13)
R78-194, Spons. Res. Staff, Research Specialist/Research Asst., Center for Policy Alternatives (9/13)
R78-195, Spons. Res. Staff, Project Manager, Center for Transportation Studies (9/13)
R78-196, Spons. Res. Staff, Project Manager, Center for Transportation Studies (9/13)
R78-197, Spons. Res. Staff, Research Engineer, Energy Laboratory (9/13)
R78-198, Spons. Res. Staff, Postdoctoral Scien-

Conference Aides Sought

Volunteers are needed to help plan, organize and support a world student conference on faith, science and the future that will be held July 6-11 in the Boston area under auspices of the World Council of Churches.

Anyone interested in helping is invited to attend a meeting at 9am Monday, Oct. 2, in the basement of the MIT chaplaincy building at 312 Memorial Dr.

Advance information may be obtained by calling Joseph Egan at 738-0897. Mr. Egan, a graduate student from Melrose, Minn., along with Harold Clark, a graduate student from Rolla, Mo., Jessica Crist, a Harvard Divinity School student and chaplain to Lutheran students at MIT, and Najwa Makhoul, a graduate student from Galilee, Israel, took part in a preliminary planning meeting for the student conference in England this summer. They form the nucleus of a local steering committee to support the student conference.

Mr. Egan said the student conference will be attended by 80 official delegates elected from countries throughout the world and will be a prelude to a larger World Conference of Churches conference on faith, science and technology that will be attended by some 500 delegates at MIT a week later, July 12-24.

"One purpose of the student conference will be to address questions not raised during the main conference," Egan said. "The students also hope to bring a different perspective to the questions which will be raised in the main conference and to have an opportunity for sharing and fellowship among themselves."

Student delegates will remain in Boston following their conference to participate in the main conference.

Topics scheduled for discussion during the student conference include: faith, science and ethics, production of technical knowledge and technical and scientific education, and debates on the quality of life. Results of the student meetings and discussions will be presented to the main conference.

Students of science and theology from around the world will be chosen to participate in the conference. Those students selected will have their transportation, lodging, translation and other costs paid for by the WCC.

tist, Center for Space Research (9/20)
R78-199, Spons. Res. Staff, Postdoctoral Scientist, Nutrition & Food Science (9/20)
R78-201, Spons. Res. Staff, Earth & Planetary Science (9/20)

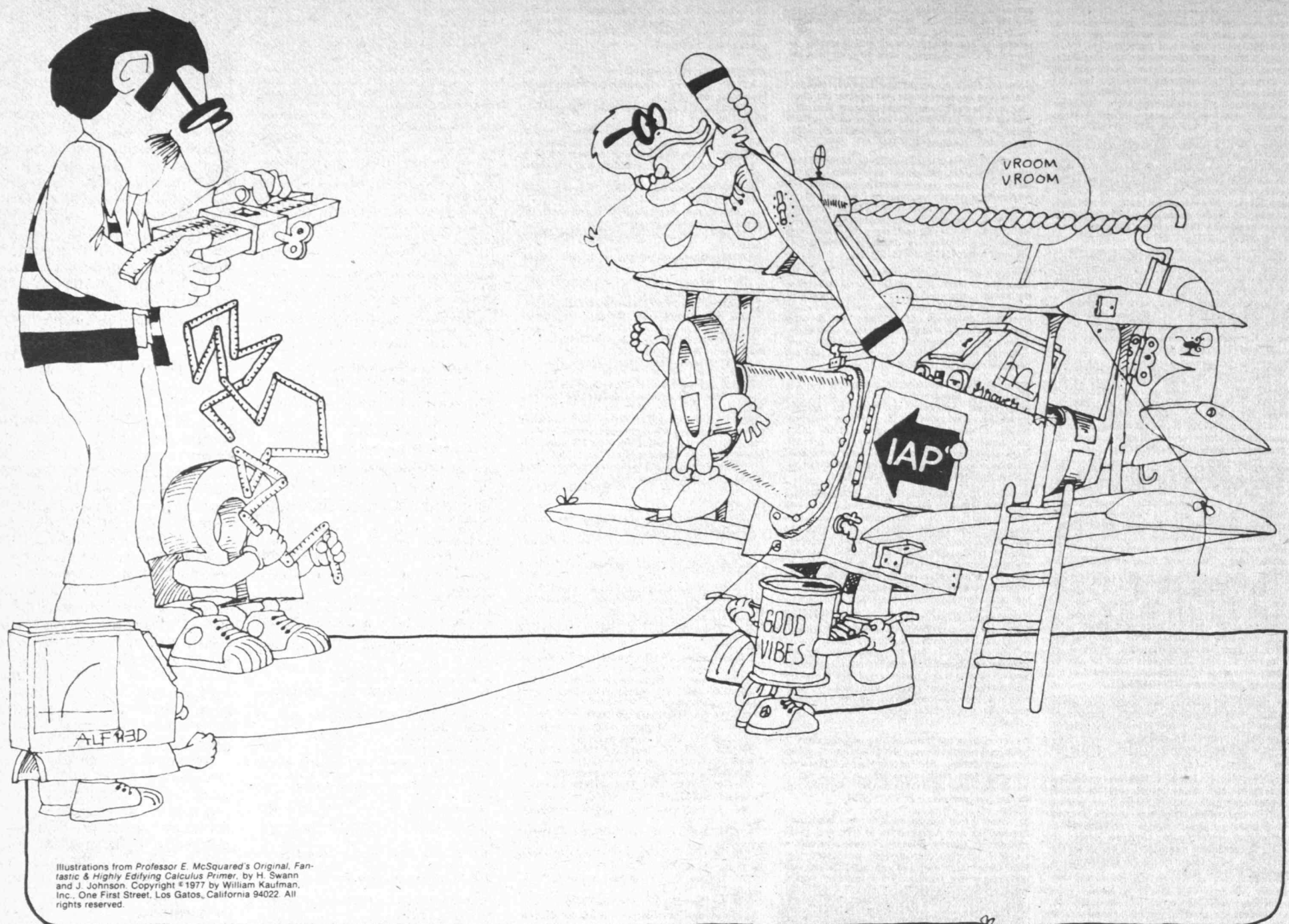
OTHER:
Z78-2, Gallery Attendant/Guard, Committee on the Visual Arts (9/20)

The following positions have been FILLED since the last issue of *Tech Talk*:

B78-429	Sec. IV
B78-428	Sec. III/IV
B78-506	Sec. IV
B78-440	Sr. Clerk IV
B78-470	Sec. IV
H78-149	Waiter/Waitress
B78-514	Sr. Lib. Asst. V
B78-389	Sec. V
B78-480	Sec. IV/V
B78-552	Sec. III
B78-464	Clerk III
B78-473	Sec. III
B78-462	Clerk III
H78-136	Hourly
B78-465	Sec. IV
R78-28	Spon. Res. Staff
A78-22	Admin. Staff
H78-138	Hourly
H78-146	Hourly
B78-569	Sec. V
E78-42	Exempt
B78-408	Sec. IV
B78-442	Section Head V
B78-512	Sr. Clerk IV
B78-459	Sec. III
B78-435	Lib. Gen. Asst. III
B78-491	Diet Aid II
B78-476	Sec. IV
B78-575	Sr. Clerk III
B78-507	Lib. Asst. III
B78-572	Lib. Asst. III
B78-293	Sec. IV
R78-202	Spon. Res. Staff
E78-50	Exempt
B78-551	Secretary IV
B78-357	Secretary IV
B78-139	Secretary IV

The following positions have been placed on HOLD pending final decision:

B78-502	Tech. Asst. IV
B78-177	Spons. Res. Staff
H78-534	Lib. Gen. Asst. III
B78-568	Sec. IV
A78-54	Career Pl. & Place.
H78-127	Hourly



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Planning for January IAP Begins in September

IAP '79 Announcements have been distributed in the hallways of MIT and a meeting of IAP departmental coordinators will be held at noon today (Wednesday, Sept. 27), signalling the first steps in planning for the freewheeling, mid-winter Independent Activities Period, scheduled for January 8 through 31, 1979.

The announcement contains general information about IAP and an Activities Listing Form for those who wish to schedule a course for IAP. Anyone may give a course in almost any subject, the only constraint being that it does not violate the normal safety, legal and health codes of the Institute.

The luncheon meeting of IAP Coordinators, to be held in the Student Center Mezzanine Lounge, will inform coordinators of their roles and the support they can

expect from IAP staff. Presentations will be made by Joel Orlen, chairman of the IAP Planning Committee; Robert I. Hulsizer, chairman of the faculty; Woodie C. Flowers, associate professor of mechanical engineering and chairman of the IAP Policy Committee; Richard J. Caloggero, chairman of the IAP Administrative Committee; and by Jane Sauer and Mary Enterline of the IAP staff. Past coordinators and activity leaders will also speak.

IAP, initiated in January, 1971, as a time of flexibility and freedom for students and faculty, provides a chance for everyone at MIT—students, faculty, employees and their families—to take advantage of the educational resources of the Institute. Last year more than 500 activities from Acting to Zen were offered during IAP.

New to IAP this year are an IAP Calendar and a Classified section.

The Calendar will list activities in chronological order, based on information given by activities organizers when they fill out the listing form for the IAP Guide. Changes in schedules, cancellations or new listings made after the Calendar deadline in early December will be posted in Lobby 7.

The Classified section of the First and Final Guides can be used to find others interested in the activity you want to pursue, to find an instructor for an activity and to test interest in an activity you would like to offer. A Classified Form is included in the IAP Announcement.

The First and Final Guides to IAP are tabloid size catalogs of the activities offered by the departments and by individuals, sched-

uled for publication in November and December. Deadlines for submission of activities listings to the First Guide is Wednesday, October 18, and to the Final Guide, Monday, November 20. Activities organized too late for inclusion in the Final Guide will be advertised on the cable TV network and in the IAP section of the Institute Calendar in Tech Talk and on the IAP bulletin board in Lobby 7.

Limited financial support is available for IAP activities ineligible for departmental or laboratory funding. The IAP Activities Fund Committee has \$15,000 for subsidizing activities. Special consideration for funding will be given to activities offered for the first time and to those initiated by students. Applications for funding are available from the IAP office and from departmental coordinators.

The committee is chaired by William Wescott, administrative officer of the Department of Mechanical Engineering.

Regulations governing IAP were established by the faculty and are supervised by the IAP Policy Committee chaired by Woodie C. Flowers, associate professor of mechanical engineering.

Operational details of IAP are carried out by the IAP Administrative Committee chaired by Richard Caloggero, administrative officer of the Department of Electrical Engineering and Computer Science.

Those organizing IAP activities are responsible for scheduling their own meeting places through the Schedules Office, Rm. E19-338, x3-4788.

Solar Activity May Alter Atmospheric Electricity

An MIT meteorologist says variable solar activity—most commonly associated with sunspots—may affect weather by redistributing electricity in the atmosphere, possibly altering the frequency and intensity of thunderstorms.

Dr. Ralph Markson, a research associate in the Measurement Systems Laboratory of the MIT Department of Aeronautics and Astronautics, has suggested a testable mechanism to explain how solar activity should affect atmospheric electricity and thus, possibly, the weather.

His theory, presented in a recent issue of *Nature*, explains how solar flares—which are associated with sunspots and produce great bursts of ionizing radiation—alter electrical conductivity in the stratosphere, and electrical field intensities throughout the atmosphere. The changes in field intensity may modulate thunderstorm activity, although that connection is not yet clearly understood.

Dr. Markson first suggested his theory at a symposium at the Goddard Space Flight Center,

Greenbelt, Md., in 1973.

Thunderstorms are among the most powerful natural phenomena known—each releases roughly 100 million kilowatt-hours of energy, enough to supply 11,000 homes with electricity for a year. The heat released when water vapor condenses in thunderstorms is a major driving force of atmospheric circulation, so a significant change in thunderstorm activity could alter the entire weather picture.

This is crucial to Dr. Markson's theory—solar-controlled electrical variations, by triggering thunderstorms, release energy already stored in the atmosphere. Hundreds of correlations between solar activity and weather have been found over the years, but attempts to explain them have failed largely because they relied on the sun's energy as the driving mechanism. But the energy released by the sun—mainly heat—varies by no more than one per cent over periods up to a few centuries, making it difficult to see how it could account for these correlations.

According to the classical picture of atmospheric electricity upon which Dr. Markson's theory rests, thunderstorms are part of a

global electrical circuit involving the earth and the atmosphere. Both the earth and the upper part of the atmosphere, above 35 miles, conduct electricity. The lower atmosphere, sandwiched between these two conductors, is a relatively poor conductor of electricity. (The upper atmosphere is called the ionosphere because it is highly ionized. That is why it conducts electricity.)

Thunderstorms, which are occurring somewhere on the earth at all times, cause positive charges to flow upward over them to the ionosphere. This charge rapidly spreads through the entire ionosphere, maintaining a uniform electric field over fair weather areas.

All the thunderstorms in the world at any given moment, taken together, form a collective thunderstorm "generator," which maintains the ionosphere at a positive potential of about 250,000 volts relative to earth. In areas of the world where thunderstorms are not occurring, the charge gradually leaks back to the earth through the atmosphere. (If worldwide thunderstorm activity stopped, the earth's electric field would dissipate in about one hour.)

There is one limiting factor on this flow of positive charge up to the ionosphere over thunderstorms and back down to earth in non-thunderstorm areas. Thunderstorms do not extend all the way up to the ionosphere. There is a layer of weakly-conducting air in the lower stratosphere—between the cloud tops, at an altitude of 8-10 miles, and the bottom of the ionosphere, at an altitude of 35 miles.

According to Dr. Markson's theory, solar activity can alter the conductivity of this layer of air, producing changes in atmospheric electricity. Columns of air extending through this layer from the tops of thunderclouds to the ionosphere act as valves, regulating the flow of charge through the global circuit in response to solar-induced changes in conductivity.

There are two ways the sun can change the conductivity of this air column. Ionizing radiation released by the solar flares can affect the conductivity directly. Solar particles in the interplanetary magnetic field can also limit the amount of galactic cosmic radiation reaching the atmosphere.

How do changes in the conductivity of this layer of air affect thunderstorms? There is reason to believe that increases in its conductivity will cause more current to flow over thunderclouds, thus enhancing the earth's fair weather electric field. This may result in a higher frequency and intensity of thunderstorms, and possibly increase the growth rate of raindrops.

There is much to be learned about the relationship between atmospheric electricity and weather, but an understanding of this relationship may be important in the development of long-range weather forecasting.

Dr. Markson's theory also suggests ways that man might alter the weather. Nuclear explosions and charged particles from the magnetosphere dumped into the atmosphere by very low frequency radio waves are both capable of changing the conductivity of parts of the atmosphere. Once the connection between atmospheric electricity and weather is fully understood, nuclear devices and beams of radio waves might be used to increase or diminish the likelihood of thunderstorms.