



October decorates the steps of the Walker Memorial with wind-driven rows of bright leaves, and a pedestrian, wind-driven too, hurries up the steps to shelter.  
—Photo by Calvin Campbell

## UMOC Brings Strange Sights and Sounds

Strange sounds have joined the peculiar sights of the annual Ugliest Man on Campus (UMOC) competition sponsored by MIT's Alpha Chi chapter of the national Alpha Phi Omega (APO) service fraternity.

Pro-Musica Ugly, comprising one official contestant (William Ware) and several helpers, are plying the corridors playing "The Battle Hymn of the Republic," "Rudolf the Red-nosed Reindeer" and other well known songs on kazoo.

Pro-Musica Ugly is one of eight official candidates in this year's competition which will benefit MIT's own Community Service Fund. Others are:

—Graduate student Leo Harten of Ashdown House.

—Magenta—named for a character from the movie *Rocky Horror*—a three-woman entry from the Women's Independent Living Group composed of Karen Heller, Barbara Massey and Dianne Parry.

—Aqualung, who is Eric Sohn from East Campus.

—Robert Resnick, president of the Association of Student Activities.

—The Unknown Preppie, who is Brian Feldman of Baker House.

—The Beanie, also known as Bennett Baker of New House.

—Mighty Bovine Hunter, who is Andy Rallis.

According to Jerry Marks, president of APO this year, UMOC competitions are held on hundreds of college campuses each year, raising tens of thousands of dollars for charities. Each chapter selects the charity it will support.

"Most contestants at MIT," he said, "don't run for the prizes or even for the glory of winning, but because they are interested in helping the charity."

The Community Service Fund was selected this year because of the impact the APO contribution could make, Mr. Marks said. In previous years UMOC proceeds have been donated to major national charities such as the American Cancer Society or the Red Cross.

"A few thousand dollars to those

groups is really a drop in a bucket," he said, "but a few thousand dollars to the MIT Community Service Fund, which operates on about \$30,000 a year, is a major contribution."

UMOC will continue through Thursday, Oct. 26, at 5pm, when the usual last-minute rush of contributions is expected to cause bedlam in the Maclaurin Lobby. The winner will be announced after verification of amounts raised by each candidate.

Despite the altruism of the contestants, prizes will be awarded. First prize will be dinner for two at Felicia's. Other prizes have been donated by Joe Tecce, Deli House, Al Capone's and McDonalds.

## Pressman Award Established For Undergraduate Study

The Department of Political Science has announced the establishment of the Jeffrey L. Pressman Award for MIT undergraduates interested in American government and politics.

Professor Pressman served as a member of the department from 1972 to his death in 1977 at the age of 33. He was one of the Institute's most popular teachers and was widely regarded as one of the leading young scholars in the field of American politics.

The announcement of the award was made by Professor Alan A. Altshuler, head of the department, at a Faculty Club reception Friday (Oct. 20) marking the publication

## Logs, Chorallaries To Host Songfest

Wheaton Whims. The program will include pop, folk, barbershop, ballad and jazz music that is characteristic of the individual groups. The event is not considered to be competitive, but rather an opportunity for various college singing groups to get together for an evening of music and to share their enthusiasm with the public.

engineering from Menlo Park, Calif., chairman of the Student Committee on Educational Policy; Kathleen Mulrone, a junior in mechanical engineering from Weybridge, Surrey, England,

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## Undergraduate Leaders To Address Alumni Council

Seven undergraduates will address the MIT Alumni Council on "The Quality of Undergraduate Life at MIT: Problems and Prospects," at the Council's first meeting of the 1978-79 academic year.

The meeting has been scheduled at 5:30pm on Monday, October 30, at the MIT Faculty Club.

The students, who are leaders of major undergraduate activities and organizations, will present their views of different facets of undergraduate life, and take part in a forum dialogue with members of the council.

Students taking part in the meeting will be: Joseph W. Chapman, a senior in humanities from Lake Forrest, Ill., chairman of Interfraternity Conference; Michael B. Kowtko, a senior in mechanical

## Two Labor Leaders To Launch Forums

Two prominent American union leaders, both closely identified with the effort to shorten the work week, will be at MIT tomorrow (Thursday, Oct. 26) for the first in a series of lectures in which labor can speak directly to the Institute community about its view of the impact of technology on work.

"Technology and Work: The Workers' Perspective," the title of the forum that begins tomorrow, is one of three, all sponsored by the Technology and Culture Seminar, that will run concurrently through the academic year. The other forums will deal with problems of the finite earth as seen by its poor and with the threat of the arms race.

The labor leaders who will speak at MIT tomorrow are Frank Runnels and Frank Rosen, president and vice president, respectively, of the All-Unions' Committee to Shorten the Work Week, a coalition of 25 international unions. They will speak at 4:30pm in Rm. 9-150. Their lecture is entitled "Technology and Work: Who Decides?" Mr. Runnels and Mr. Rosen will share the platform, splitting the time allotted.

The forum on work is also sponsored by the School of Humanities and Social Science's Program in Science, Technology and Society. The activities involving the finite earth forum are being planned in the fall by the Seminar on International Students and Participation in Development. The focus for the spring activities of that forum will be a graduate seminar with a series of coordinated lectures.

In announcing the three forums as a continuation of the Technology and Culture Seminar, the MIT community members involved in their preparation said they also were looking forward to the 1979 Conference on Faith, Science and the Future, an activity of the World Council of Churches, scheduled to be held at MIT July 12-24, 1979.

The MIT community members,

in a letter to their colleagues, said the 1979 conference "provides a unique opportunity for broad discussions of the effects of scientific and technical development on the future of humanity. Although MIT is not an official participant or sponsor of the 1979 conference, the MIT community members involved in the Technology and Culture Seminar said that nothing stands in the way of participation by MIT people as individuals or groups.

The letter was sent by Professor Nicholas Ashford, Dean Donald Blackmer, Professor Julian Beinart, Dr. Nicholas Herman, Professor Henry Jacoby, Professor Willard Johnson, Professor Jonathan King, Ms. Amelia Leiss, Dr. Louis Menand, Jack Nunn, the Reverend Scott Paradise, Professor Lisa Peattie, Professor George Rathjens, Professor David Rose, Dr. Mary P. Rowe, Professor Thomas Sheridan, Professor Louis

(Continued on page 7)

## Report on Finances

The text of Chancellor Paul E. Gray's annual report to the Faculty on Institute finances appears on page 8. Faculty will be invited to discuss the report at the November meeting of the Faculty. That meeting is scheduled for 3:15pm, Wednesday, Nov. 15, in Huntington Hall, Rm. 10-250.

## Nobellist H.A. Simon To Speak

Herbert A. Simon, who was awarded the Nobel Prize in economics last week, will speak here Thursday, Nov. 2, on "Learning from Examples and Learning by Doing," at 3:30pm in Rm. 10-250.

Professor Simon is next in the Laboratory for Computer Science Distinguished Lecturer Series. The lecture is open to the public free of charge. Refreshments will be served during the half-hour preceding the lecture.

Professor Simon is presently a professor of computer science and a professor of psychology at Carnegie-Mellon University.

In the 1950s Professor Simon led a challenge to the classical economic theory that business executives always act to maximize their profits. Instead, he theorized that executives facing unknown risks and possessing incomplete information settle for what they regard as "satisfactory" results.

The Swedish Academy of Sciences praised his work for shedding light on market adjustment to competition, choosing investment portfolios and choosing a country for foreign investment.

The seventh American to be awarded the Nobel Prize in economics, Professor Simon is noted for his contributions in numerous fields. In addition to his work in economics, he has made significant contributions in the fields of science theory, applied mathematics, statistics, operations analysis and business administration.

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# INSTITUTE NOTICES

## Announcements

**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.

**Dramashop\*\***—Tryouts for Aristophanes' *The Frogs*, Oct 30, 7:30pm, Kresge Little Theatre.

**Former Marines of MIT community\*\***—Contact Capt. Palermo, x3-2991, concerning Marine Corps birthday celebration Nov. 9.

**Physical Education\*\***—Registration for classes for second quarter, 8:30-11am, du Pont Gymnasium.

**'79 R/O Coordinator\*\***—Office of Freshman Advising will soon select a student R/O Coordinator for 1979. Will coordinate activities such as freshman picnic, academic orientation, athletic and activities midways, orientation programs for special groups, tours—many others. Must be able to put in fair amount of time during academic year and a great deal of time during summer of '79. Will be paid \$1,000 and gain much experience. Info: come to meeting, 5pm, Nov 1, in Rm 7-105.

**Seniors\*\***—Seniors who wish to apply for graduate work in the Department of Electrical Engineering and Computer Science during 1979 are urged to apply by November 1. Applications available in Rooms 38-444 and 3-103.

**Tickets for Boston Ballet\*\***—Performances of Nov 9-12 may be ordered at TCA office, Student Center Rm 450, x3-4885, 11:15am-3:15pm. Student discounts available.

## Club Notes

**Actor's Workshop\*\***—Meeting Saturdays, 4:30pm, Little Theatre. Theatre games, improvisations, cold script readings. No experience necessary. Info: Albert Ruesga, dl5-7343 or x3-2908.

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

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

**Exotic Fish Society\*\***—Meeting, 8pm Tuesday, Oct 31, Student Center Basement.

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

**Graduate Student Council\*\***—Housing and Community Affairs Committee meeting, 5pm, Oct 31, Rm 50-110. Activities Committee meeting, 5pm, November 2, Rm 50-210.

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

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

**MIT Juggling Club\*\***—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 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.

**MIT Rugby Football Club\*\***—Practice Tuesdays and Thursdays, 5pm, Briggs Field. Games every Saturday. Beginners welcome. Info: Joel Lederman, 738-1662, Bruce Glaeser, x3-6733.

**Rune, MIT's Journal of Arts and Letters\*\***—Deadline for Rune 4 issue, Dec 1. Bring mss. to 14N305. Staff meetings, Thursdays, 5pm, Rm 14N-305. All people interested in editing, production and writing invited. Info: Abby Shevitz, dl5-7153, Leslie Chow, 262-6844.

**MIT Shotokan Karate Club\*\***—Rigorous training for self-defense and spiritual well-being. Practice Mondays and Thursdays, 7:20-8:30am; Tuesdays and Fridays, 6-7:30pm; Varsity Club Lounge. Beginners welcome. Info: Jim, x3-3283.

**MIT Soaring Association\*\***—General meeting, Thursday, Oct 19, 7:30pm, W20-407. Refreshments and movie.

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

**MIT Tai Chi Club\*\***—Meetings, Thursdays, 4:15pm to 6pm, the Dance Studio, Rm W31-225. Teacher, Prof Eugene Liu, encourages participation at all levels. Info: Janesh Vaidyanathan, x3-6813.

**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: dl5-8439.

**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, dl5-9640.

## Religious Activities

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

**Tech Catholic Community\*\***—Hallowe'en Liturgy, Tuesday, Oct 31, 5:05pm, MIT Chapel; Feast of All Saints, Wednesday, Nov 1, 8am, 12noon, MIT Chapel; Feast of All Souls, Thursday, Nov 2, 5:05pm, MIT 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, Sunday 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, 5pm, Chapel.

## Placement

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

Oct. 25—Center for Naval Analyses; Dow Chemical USA; BF Goodrich; GTE Laboratories, Inc.; Hewlett-Packard Company; Leviton Manufacturing Company; The Mead Corporation; Michelin Americas Research & Development Corp; New York University Graduate School of Business Administration; Owens-Corning Fiberglas Technical Center; Stein Associates; Varian Associates; Central Intelligence Agency; General Electric Company; The Standard Oil Company (OHIO).

Oct. 26—Atlantic Richfield/North American Producing Division; Computer Interactive Services, Inc.; Computer Sciences Corp.; Corning Glass Works; Chrysler Corporation; Intel Corporation; International Paper Company; Pfizer Inc./Chemicals Division; The Procter & Gamble Company; Schlumberger International Coordination; Watkins-Johnson Company.

Oct. 27—Aramco Services Company; Intel Corporation; Procter & Gamble Company; Watkins-Johnson Company.

Oct. 30—Bolt Beranek & Newman, Inc.; Goodyear Tire & Rubber Company; Chevron Companies.

Oct. 31—AT&T Long Lines; Chevron Companies; Exxon Corporation and USA Affiliates; Frito-Lay, Inc.; GenRad, Inc.; Griffiss Air Force Base; GTE Sylvania, Inc.; Electronic Systems Group; ICI Americas, Inc.; National Security Agency; Pugh-Roberts Associates, Inc.; Shell Development Company; The Shell Companies.

Nov. 1—AT&T Long Lines; Bell System; Chevron Companies; Caltex Petroleum Corporation; Continental Oil Company; Exxon Corporation and USA Affiliates; General Dynamics Corp.; The Institute of Paper Chemistry; Lawrence Livermore Laboratory; Microwave Research Corporation; MIT Lincoln Laboratory; The MITRE Corporation.

## 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.

**Effect of Cuticle Synthesis Inhibitors on the Nematode C. Elegans (BBRI)**

The soil nematode *C. elegans* is gaining popularity as an experimental model in studying neural pathways, development and aging. One of the handicaps in handling this organism arises from its tough cuticle. Recently, several inhibitors of chitin synthesis have been developed which may affect the structure and rigidity of the cuticle, and a student is invited to participate in a study of the effect of the inhibitors on the growth and development of the nematode, its sensitivity to osmotic shock and its microscopic appearance.

### Second Language Acquisition

Research on aural/oral and writing materials currently available in Spanish. Study of the problems of measuring second language acquisition in intermediate programs. Excellent knowledge of Spanish necessary. Contact Prof. Margery Resnick, 14N-207, x3-4771.

### Brain Receptors after Long-term Treatment with Neuroleptics

One or two students are invited to participate at McLean Hospital, Belmont, in research on schizophrenia which will involve the measurement of brain drug and hormone receptor characteristics (e.g., affinity and density) as an effect of treatment of rats with various neuroleptics. Behavioral effects will be compared with biomedical changes at the receptor level. A background in basic biochemical laboratory techniques is required.

### Civil Engineering

In many hydrological and ecological studies, it is necessary to determine the location of a water table over a time period of days, weeks or years. An electronic system is proposed, which would use low-cost standard logic and telemetry components and would acoustically sense, encode, and record in machine-compatible format the water table height at several unattended remote locations. A good electronics background and a strong interest in the actual construction of electronic equipment are necessary. Contact Prof. Harry Hemond, 48-429, x3-1637.

### Cambridge Multicultural Arts Center

This new community development corporation is dedicated to providing coordinated space, planning, programming, and other services to the different cultural organizations in the City of Cambridge. Students are invited to assist in planning the redevelopment of the Old Middlesex County Courthouse in East Cambridge to include community theaters, restaurants, studios, a multi-cultural library, and sufficient commercial development to carry a long-term mortgage.

### Blast Furnace Slags

A research opportunity exists for a student to aid in a research program that is directed to a study of the evolution of sulfur dioxide and hydrogen sulfide from furnace slags. Equipment to be used includes a high-temperature laboratory furnace, gas chromatograph, automatic recording microbalance and an automatic titration unit. Contact Prof. G.J. Yurek, 4-136, x3-3239.

### Electrodes

Fast electrical discharge phenomena, especially formation and statistical delay times in the nanosecond range, are to be investigated using a low-inductance Marx high voltage generator. Experimental studies of electrode shape and surface structure are to be made and the results compared to computer models of discharge development. Credit or pay available. Contact Chatham M. Cooke, High Voltage Research Laboratory, Bldg. N10, x3-2591.

### Dynatech R/D Company

Dynatech would like to meet students interested in area of biocompatible polymers. An ethical drug delivery system has been developed based on polymers which are slow to release the therapeutic agent. Delivery systems use implantable cartridges of a tissue compatible hydrolyzable polymer matrix in which the medicant is dispersed. As the polymer disintegrates through hydrolysis into metabolizable fragments, the physically entrapped drugs are released. Applications are to fertility control, treatment of narcotic patients and prevention of malaria. For credit only.

## Foreign Studies

**Social Science Research Council\*\***—Fellowships for doctoral dissertation research in the

2-3pm EPIDEMIOLOGICAL FIELD STUDIES: DEVELOPING A STANDARD OPERATING PROCEDURE. Professor John Gordon, Harvard School of Public Health  
4-6pm AMERICAN TELEVISION: A CULTURAL HISTORY. Repeat, 4-6pm, Wednesday, Oct. 25  
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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.

## Graduate Studies

**Essay Competition\*\***—On urban land policies in developing countries, open to MIT and Harvard graduate students, sponsored by Kennedy School of Government and Lincoln Institute of Land Policy. Deadline, Jan 31, 1979. Awards of \$500 each for best three essays. Info: S. Ramakrishnan, 495-3006, or John D. Montgomery, 495-1171.

**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 ES2-252D. 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 fellowship 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

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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.

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

**Lena Lake Forrest Fellowships\*\***—The Business and Professional Women's 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.

**Regents Physician Shortage Scholarships\*\***—Available to residents of New York State who agree to practice medicine in an area of New York State designated as having a shortage of physicians. Awards based on MCAT scores, provide \$1,000 to \$4,000 each year for four years of professional study. Applications available in Preprofessional Advising and Education Office, 10-186, x3-4158. Application deadline, Nov 1, 1978.

## Echoes

October 29 - November 2

### 50 Years Ago

Mary D. Hapgood, Socialist candidate for Governor of Massachusetts, will be the speaker at the Liberal Club tomorrow. Mrs. Hapgood is a prominent member of her party, outspoken on many state and national issues. During the Sacco-Vanzetti trials, Mrs. Hapgood was a member of the Defense Committee. Later, she fought for free speech in the coal regions of Pennsylvania and was active in mine relief work.

Professor Harry W. Tyler '84, head of the Department of Mathematics, will address students at the Freshman Camp Reunion. Motion pictures of the activities at the camp will be shown.

### 40 Years Ago

Jacky Ford and his dance orchestra are to provide music for the All-Technology Dance and Game Night. The proceeds of this affair will be donated to a fund for the maintenance of a hospital service for all employees of Technology.

### 25 Years Ago

The Tech's cross-country team won a slim victory over the University of New Hampshire last week in Franklin Park. Jack Farquhar '54, of Tech captured first place.

Prepared by Marcia Conroy, MIT Historical Collections, x4444.

## TECH TALK

Volume 23, Number 12  
October 25, 1978

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# Undergraduates Will Address Alumni Council

(Continued from page 1)

chairman of the Student Center Committee; Barry A. Newman, a senior in chemical engineering from Monsey, N.Y., Undergraduate Association President; Thomas J. Potter, a senior in civil engineering from Philadelphia, Pa., chairman of the Dormitory Committee; Thomas W. Smith, a senior in chemical engineering from Millville, N.J., president of the MIT Athletic Association; and Robert G. Resnick, a senior in electrical engineering and computer science from Farmington, Mich., chairman of the Student Activities Board.

The Alumni Council draws its membership from statutory officers of the alumni association, members of its board of directors and current alumni officers. Membership is limited to those within reasonable commuting distance from Cambridge to ensure a high level of attendance at meetings. Its purpose is to provide a link between interested alumni and the administration and faculty of MIT.

Marvin C. Grossman, '51, president of Marketing Electronics, Inc., of Auburndale, Mass., and chairman of the Alumni Council Program and Membership Committee, has announced five more monthly meetings for the academic year. On November 27, the subject for discussion will be entrepreneurship; January 29, meteorology at MIT; February 26, government and MIT; March 26, priorities in engineering; and April 27, science and government.

All meetings will be held at 5:30pm at the Faculty Club, beginning with cocktails and dinner to be followed by the scheduled speakers and forum dialogue between speaker(s) and Council members.



**SEAMANS APPOINTED**—Dean Robert C. Seamans, Jr., of the School of Engineering and Mrs. Seamans talk with Governor Dukakis shortly after the governor swore in Dean Seamans as a member of the board of governors of the Massachusetts Technical Development Corporation October 18. The ceremony was in Doric Hall at the State House. The corporation, successor organization to the Massachusetts Science and Technology Foundation, was established in July. Its mission: Assist the process of business formation and growth through the commercialization of technology, thereby expanding employment opportunities. Dean Seamans succeeds Dr. Jerome B. Wiesner as MIT's representative. Dr. Wiesner had been a member of the foundation since 1970. Others named to the corporation: Dr. Marvin Schorr, president, Technical Operations, Inc.; Warren Berg, president, Shawmut Bank of Boston; Charles A. Sanders, general director, Massachusetts General Hospital of Boston; Dr. John R. Ehrenfeld, vice president, Energy Resources Co.; Dr. Albert J. Kelley, president, Arthur D. Little Co., Inc.; and Joseph B. Wyatt, vice president-administration, Harvard.

## Concert to Feature Works By MIT Women Composers

The MIT Women's League will sponsor a program of new music by women composers on Sunday, Nov. 5, 3pm, at the President's House.

The program will feature seven works by composers Rose Mary Harbison, Ruth Lomon, Marjorie Merryman and Elizabeth Vercoe. Four of the works will be premiered.

The concert will open with *Pasticcio: Pattern and Imagery from Paul Klee* for cello and piano by Elizabeth Vercoe. Another piece by Ms. Vercoe, *Six Gracitudes for Piano*, written in homage to six 20th century composers, will be one of the premiered works.

Ms. Vercoe received a PhD in musical arts from Boston University where she studied with Gardner Read. In 1978 she won awards in composition from Wellesley College and Boston University.

Ruth Lomon's *CELEBRATIONS: Nimbus and the Sun God*, for two harps, will be another first performance work in the program.

The piece was written during the summer in Taos, N.M., with a composition grant from the Helene Wurlitzer Foundation. Ms. Lomon's *Dust Devils*, written for a harp/slide show in 1976, will also be performed.

Ms. Lomon teaches piano and composition in Lexington and plays in concert with Iris Graffman Wenglin as a duo piano team.

Marjorie Merryman's premiere of *Ariel*, for soprano, clarinet, cello and percussion, based on scenes from *The Tempest*, will be heard along with her *Three Pieces for Piano*.

Ms. Merryman received a Master of Fine Arts degree from Brandeis University. She won awards from Scripps College and Brandeis University and received a Composition Fellowship to Tanglewood in 1977.

The program will conclude with a jazz composition, *Improvisations and More*, by Rose Mary Harbison, featuring the composer on the piano.

Ms. Harbison is a lecturer in the MIT Music Section and is widely known to Boston audiences as a violinist. Active in her early career as a jazz pianist, she was composer for the dance departments of the Juilliard School and Douglass College.

Soloists in the concert will include Susan Allen, harp, David Evans, piano, Helen Harbison, cello, Rose Mary Harbison, piano, Diane Heffner, clarinet, Elizabeth McCrae, piano, Marjorie Merryman, soprano, Lynn Noells, cello, and Elizabeth Vercoe, piano.

A reception will follow the concert. For reservations, call Liba Mikic, 253-2858.

## The IAP Corner

# Mini Course to Elucidate Viticulture and Oenology

By MARY ENTERLINE  
Editor, IAP Guide

Although this is his first year at MIT, Brian McCay, an instructor in mathematics, did not have to be persuaded to offer an activity during Independent Activities Period. He's going to lead a course in wine appreciation—just as he has done four times at the experimental college at Oregon State University where he got his PhD.

Dr. McCay has a second reason to feel at home with IAP—it's being brought to his attention by a familiar face, that of Professor E. McSquared, the creation of one of his former mathematics professors, Howard Swann, of San Jose College.

Growing up in the San Jose area, Dr. McCay was just a mile from the Paul Masson vineyards winery, where he used to play (and, he admits, eat grapes). While he was in California, he says he learned to like wine, but he did not become "hooked" on it until he took a wine-tasting course at the experimental college at Oregon State.

"After I took the course, I joined a couple wine-tasting groups, and then I ended up teaching the course myself," Dr. McCay said.

During IAP he is planning to offer a six-session course, culminating in a dinner party—if participants agree to bring the food. The first five meetings will be on Mondays, Wednesdays and Fridays, January 22-31, from 6:30 to 9pm, with the last session to be arranged.

"At the first meeting we'll do component testing. I'll add things like acid and sugar to the wine, and people will have to tell which sample has more of what," Dr. McCay says.

The next two sessions will be on white wines and the following two on reds, with nine wines tasted each night. In addition to savoring the wines themselves, participants will listen to Dr. McCay discuss the selection, storing, and serving of wines as well as aspects of viticulture (the cultivation of grapes) and oenology (the science of making wine). Although a California native, Dr. McCay does not limit the course to his home state's products but will also lecture on and serve samples from France, Germany and Italy.

"It's a consumer-oriented course. People will learn how to read labels on wine bottles, what regions the best wines are from, what various characteristics are. They'll be able to go into a wine shop, read the labels on quite a few bottles, and discuss the wine with others," Dr. McCay said.

Most of the wines to be sampled will be in the \$15-a-bottle range. To cover the cost of the wine, and

bread and cheese to clear their palates, participants will have to pay \$40 each. They'll also each have to provide three glasses.

The fee will buy wine not only for the initial five sessions, but also for the finale which McCay hopes will be a dinner party. "If everyone brings a dish, they can taste some great wines with the meal."

Although he doesn't get paid to lead the course, Dr. McCay admits he gets something out of it. "I can keep my habit up. It's the way I can keep abreast of what's coming out, and find out what I want to put away."

By the end of the course, Dr. McCay hopes participants will also be able to recognize the components in a wine which indicate it will age into a nice wine. "The object is to buy some wine young, so you can enjoy it later when others have to pay \$100 for it."

## China Exchange Seeks Applicants

The MIT Center for International Studies is seeking applicants among graduate students and recent PhDs for a student exchange program between the United States and the People's Republic of China.

Up to 10 fellowships and research grants will be awarded to United States students for study in China beginning as early as January, 1979.

The deadline for applications is November 13. Applications and additional information can be obtained from the Center for International Studies, (atE38, 6th floor, 292 Main St., in Kendall Square, x8064).

Seven of the fellowships are for a one-year advanced training program in Chinese language.

In addition, there may be up to three awards to senior scholars for research projects in China.

The exchange program is being administered by the Committee on Scholarly Communication with the People's Republic of China. The committee is jointly sponsored by the National Academy of Sciences, the American Council of Learned Societies and the Social Science Research Council.

## Tennis Delay

Because of floor painting, the opening of the new J. B. Carr Indoor Tennis Center will be delayed one week. The new starting date will be Sunday, Nov. 5, with the season running through Saturday, April 7. Those who hold reservations for use of tennis courts are asked to inform all of their partners.

## CU Notice

The supervisory audit committee of the MIT Employees Federal Credit Union has verified members' share and loan balances as of September 30, 1978.

All members' statements have been mailed and should have been received. Members who have not received statements by now should notify J.M. Gallagher, CPA, 79 Greaton Rd., West Roxbury, MA 02132.

## Open Hearing for Graduate Students

An open hearing for graduate students will be the highlight of a special meeting of the Corporation Visiting Committee on Student Affairs to be held at MIT on Friday, Oct. 27.

Thursday evening, members whose schedules permit it, have been invited to visit after dinner at Ashdown House with Professor and Mrs. Robert I. Hulsizer and Ashdown graduate student residents.

Friday morning, 9am-noon, the committee will meet in the Emma Rogers Room (10-340) to hear presentations prepared by members of the Graduate Student Council on

several graduate student concerns, including financial aid, student counseling and other support services, housing, and special concerns of minorities, women, and foreign graduate students.

The Visiting Committee will return to the Emma Rogers Room 2-4pm on Friday for an open session of discussion on graduate student life to which all graduate students are invited.

Graduate students are welcome at both the morning and afternoon meetings of the Visiting Committee on Friday, but are particularly urged to attend the open session on Friday afternoon.

## Faculty Adopts Grade Descriptions

The MIT faculty has adopted specific descriptions for letter grades given in MIT subjects, but has turned down a proposal that the grade reports provided to students include grade distributions for the subjects they have taken.

The descriptions, proposed by the Ad Hoc Committee on Grading (and published as Motion 1 in the Committee's report that appeared in Tech Talk September 27) were adopted as amendments to the Rules and Regulations of the Fac-

ulty at the October meeting of the faculty October 18. The grade descriptions will appear on all transcripts.

A committee motion to add grade distributions to student grade reports lost. When that motion lost, Professor Zenon S. Zannetos, committee chairman, withdrew a third motion that would have directed the Registrar to develop a system for storing such grade distributions by subjects.

## Tax-Deferred Annuity Seminars

Insurance company representatives from Prudential and TIAA/CREF will again be conducting tax-deferred annuity seminars. The seminars will be held on campus Monday, October 30, and at Lincoln Lab on Tuesday, October 31. The schedule is as follows:

Campus— Vannevar Bush Room (10-105)  
Prudential: 9:00am, 12:00pm, 3:00pm  
TIAA/CREF: 10:30am, 1:30pm, 4:00pm  
Lincoln Lab—Conference Room (A-166)  
Prudential: 10:30am, 1:30pm, 4:00pm  
TIAA/CREF: 9:00am, 12:00pm, 3:00pm

Following each brief presentation, there will be an opportunity to obtain individual counselling from the insurance company representatives.

Although all are welcome to these seminars, the Benefits Office particularly urges participants who have made "special elections" in past years to seek the counsel of these representatives to ensure that their current allocations are proper.

## Pressman Award Established

(Continued from page 1)

interests in American government.

It will be given annually to an MIT junior for use during the summer, or to an MIT junior or senior for use during the January term, to undertake a special project in American government and poli-

tics. The project should focus on some legal, political, institutional, or policy issue and may include proposals for research, travel, interviews, internships, or some combination of these.

Students throughout the Institute may apply, or may be nominated by MIT faculty.

Applicants should submit a 500-word essay of their proposed project, submit a list of subjects taken while an undergraduate as well as additional activities undertaken as a student, if any, and give the names of two faculty members.

Application or nomination deadlines will be no later than Oct. 15 for January activities or Feb. 15 for summer activities. For the summer of 1979, the deadline for application will be Feb. 15 and the award will be \$1350.

An earlier fellowship in Professor Pressman's memory was established in 1977 by the MIT-Harvard Joint Center for Urban Studies.

## Events of Special Interest

**The Brass Rat Race\*** — Over 150 students in the Undergraduate Mechanical Engineering course will build devices which will outachieve their opponent's. Finals elimination will be Thurs, Oct 26, Noon, Rm 26-100.

**The ENIAC Calculations of 1950 and 1951: Gateway to Numerical Weather Predictions\*** — Dr. George Platzman, University of Chicago. Sponsored by the Department of Meteorology. The Victor Paul Starr Memorial Lecture. Fri, Oct 27, 3pm, Rm 10-250.

**Problems of the Upright Man on Earth and in Space\*\*** — Dr. Jerome Y. Lettvin, professor of electrical and bioengineering and of communications physiology; Maggie Lettvin, lecturer in the Department of Athletics; and Dr. Robert M. Rose, professor of materials science and engineering. Sponsored by the MIT Women's League. Wed, Nov 1, 5:30pm, Historical Collections. Wine and cheese served. Reservations required call x3-3656.

## Seminars and Lectures

### Wednesday, October 25

**The Effects of Secondary Flows on the Heat Transfer to Turbine Nozzle Endwall and Rotor Shroud\*** — Anthony C. Nebo, Doctoral Thesis Presentation, Mechanical Engineering, Noon, Rm 1-114.

**Post-Emergency India\*** — Prof Myron Weiner, Ford Professor of Political Science. Center for International Studies Seminar, Noon-2pm, Rm E38-615, everyone welcome, bring your own lunch.

**Adrift on the Air Ocean\*** — Secor D. Browne, Secor D. Browne Associates. Flight Transportation Laboratory, Aeronautics and Astronautics Seminar, 2pm, Rm 35-225.

**Dealing with Motion Sickness in Space Shuttle Operations\*** — Charles Oman, associate professor, aeronautics and astronautics. Aeronautics and Astronautics General Seminar, 3pm, Rm 37-252. Coffee served preceding seminar, Rm 33-222.

**Some Remarks on Fixed Bed Models\*** — Prof N.R. Amundson, University of Houston. Chemical Engineering Seminar, 3pm, Rm 66-110. Coffee served.

**Energy from Renewable Resources\*** — Prof James A. Fay, mechanical engineering. Thermodynamics Seminar, 4pm, Rm 1-114. Coffee 3:45pm.

**Innovations in Automated Braille Applications\*** — John M. Gill, Warwick Research Unit for the Blind Coventry, England. Technology and Human Rehabilitation Seminar, co-sponsored by the National Braille Press, Boston, and Harvard-MIT Rehabilitation Engineering Center/Harvard-MIT Program in Health Sciences and Technology, 4pm, Rm 3-133. Coffee served 3:30pm.

**Transient Effects in Turbulence Modeling\*** — D. Boyle, Doctoral Seminar, Nuclear Engineering, 4-5pm, Rm NW12-222.

**UROF Symposium: Undergraduate Research in Physics\*** — Bruce Allen, Measuring Statistics of the Cosmic Background, 4pm. Mark Finlay, Energy Level Crossing in Stark States of Lithium, 4:20pm. Craig Fuget, A Scanning Proton Microprobe, 4:40pm. Open Discussion: How to get Involved in UROF, 5pm, Rm 4-339. Refreshments served.

**Aircraft and Spacecraft Navigation\*** — Charles Stark Draper, Institute Professor Emeritus, Aeronautics and Astronautics. Aeronautics and Astronautics Lester D. Gardner Lecture, 5pm, Rm 9-150.

### Thursday, October 26

**Picosecond Pulses from CW Laser Diodes\*** — Prof Herman Haus, electrical engineering. Modern Optics and Spectroscopy Seminar, 11-Noon, Rm 66-110. Coffee served 10:30am.

**Photography of Nuclear Explosions\*** — Harold Edgerton, Institute Professor Emeritus, Noon, Rm 4-402.

**Preprofessional Advising and Education Office Seminar\*** — Prof Ronald Kennedy, Assistant Professor of Law, Northwestern University, Law School, 2-4pm, Rm 10-186. Information call x3-4158.

**Special Seminar on Modular Integrated Utility Systems\*** — Morris Nimmon, Special Projects Leader, Integrated Energy Systems National Bureau of Standards, 3pm, Rm 3-446.

**Turbulence and Speckle Effects on Heterodyne-Reception Optical Radars\*** — Prof J.H. Shapiro, electrical engineering and computer science. Electrical Engineering and Computer Science Optics Seminar, 3pm, Rm 36-428.

**An Instrument Company's Approach to Development of a Microprocessor-Controlled Atomic Absorption Spectrometer\*** — Dr. Stanley Smith, Instrumentation Laboratories, Inc. Analytical Chemistry Seminar, 4pm, Rm 8-205.

**The Mayer Lecture in the Life Sciences "Nutrition, Physical Capacity and Activity of Rural Workers in Developing Countries"\*** — Dr. Fernando E. Viteri, Chief, Biomedical Division, Institute of Nutrition of Center American and Panama, Guatemala. Nutrition and Food Sciences Seminar, 4pm, Rm 54-100.

**An Overview of Research at Tektronix\*** — Robert C.M. Li, Manager of Signal Processing Research, Tektronix Laboratories. Electrical Engineering and Computer Science Student-Faculty Committee Lecture, 4pm, Rm 37-212.

**Pions in Nuclei\*** — Ernest J. Moniz, associate professor, physics. Physics Colloquium, 4pm, Rm 26-100. Tea served 3:30pm, Rm 26-110.

**Technology and Work: Who Decides?\*** — Frank Runnels, President United Auto Workers (UAW), Local 22, Detroit, President of All-Unions Committee to Shorten the Work Week; Frank Rosen, District President, Chicago, United Electrical Workers (UEW), Vice-President, the All-Unions Committee to Shorten the Work Week. The Technology and Culture Seminar and the Program in Science, Technology and Society Present a Public Forum Series on "Technology and Work: The Workers' Perspective," 4:30pm, Rm 9-150.

**The Politics of Nuclear Energy in the Philippines — A Look at the Westinghouse Contract\*** — Michael Bedford, Friends of the Filipinos. Seminar on International Students, 5:30pm, Rm 14E-304.

**Laser Induced Energy Transfer: An Approach to the XUV Laser Problem\*** — Stephen Harris, Stanford University. Modern Optics and Spectroscopy Seminar, Joint with the Boston Chapter of IEEE Quantum Electronics and Applications Society. 7:30pm, Rm 66-110.

### Friday, October 27

**The UN System and Development\*** — C.V. Narasimhan, CIS Visiting Scholar and former United Nations Under-Secretary-General for Inter-Agency Affairs and Coordination. Center for International Studies Seminar, Noon-1:30pm, Rm E38-615, everyone welcome, bring your own lunch.

**Urban Transportation and Urban Revitalization in Small and Medium-sized Urban Areas\*** — Richard Bradley, Executive Director of Bridgeport, Connecticut Transit District. Center for Transportation Studies Luncheon Seminar, 12:45-2pm. Optional luncheon, Noon-12:45pm, Rm 1-150. Luncheon fee: \$1.25.

**Automotive Fuel Economy Improvements via Optimization of Engine Control\*** — Paul Blumberg, staff scientist, Ford Motor Company Research Laboratory, Dearborn, Michigan. Mechanical Engineering Seminar, 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

**Chemical Engineering Seminars\*** — John E. Nenniger, Kinetic Studies of Combustion in Jet Stirred-Plug Flow Reactors, 2pm. Guest Speaker: Prof N.R. Amundson, University of Houston, Single Particle Char Gasification, 3pm, Rm 66-110. Coffee served.

**Plasma Transport in Stochastic Magnetic Fields: Principles and Problems\*** — Dr. J.A. Krommes, Princeton Plasma Physics Laboratory. Plasma Fusion Center Seminar, 3pm, Rm NW16-212.

**Anomalous Fluctuation in the Parallax Phase\*** — Dr. Y. Yacoby, visiting scientist. Center for Material Science and Engineering. Colloquium, 4pm, Rm 9-150. Coffee at 3:30pm.

**Crossroads of Limbic System and Corpus Striatum\*** — Prof Walle J.H. Nauta, Institute Professor, psychology. Psychology Colloquium, 4:30pm, Rm E10-013. Coffee at 4:15pm.

### Monday, October 30

**Cultural Determinants of Infant Feeding in Traditional and Transitional Communities\*** — Julie Glavis, Coordination of Health Education, Project on Fecal Contamination of the Home Environment, Program of Nutrition and Gastrointestinal Function, Institute of Nutrition of Central American and Panama. International Nutrition Program Seminar, Noon, Rm 20A-214.

**Commercial Air Transportation: From Today's Dilemma to Tomorrow's Challenge and Opportunity\*** — John E. Steiner, Vice President, Corporate Product Development, The Boeing Company. Flight Transportation Laboratory, Aeronautics and Astronautics Seminar, 2pm, Rm 35-225.

**Analytical Issues in Diversifying Food Policy\*** — Dr. C. Peter Timmer, Harvard School of Public Health. MIT-Harvard International Food and Nutrition Program Seminar, 4pm, Rm 16-310.

**Contingency Planning and Management for Community Water Supply Shortage\*** — Prof John J. Boland, Department of Geography and Environmental Engineering, The Johns Hopkins University. Water Resources and Environmental Engineering Seminar, 4-5pm, Rm 48-316. Coffee at 5pm, Rm 48-410.

**Critical Layer Instability of Compliant Tubes\*** — Seth Lichter, Fluid Mechanics Seminar, 4-5pm, Rm 5-234. Coffee at 3:55pm.

**The Development of an Operational Game for the US Domestic Airline Industry\*** — Antonio L. Elias, department of aeronautics and astronautics. Doctoral Thesis Seminar, 4pm, Rm 35-225.

**Forecasting the Supply of Petroleum: A Stochastic Control Model\*** — Esteban Hnyilicza, Energy Laboratory. Laboratory for Information and Decision Systems Colloquium, 4pm, Rm 37-212.

**Internal Gravity Wave Packets in a Shear Flow\*** — Dr. Roger Grimshaw, University of Melbourne, Department of Mathematics, Melbourne, Australia. Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served at 3:30pm, Rm 2-349.

### Tuesday, October 31

**Time Evolution of Bulk Flows in Low Collisionality Tokamaks\*** — Kenneth Rubenstein, Doctoral Seminars — Fusion, Noon, Rm 38-166.

**Informal Discussion with Urban Studies and Planning\*** — Prof Lisa Peattie, urban studies and planning. Urban Studies and Planning Luncheon Seminar, 12:30-2pm, Rm 7-335.

**Grazing Incidence of Short Elastic Waves on a Slender Cavity\*** — Chiang C. Mei, Professor of Civil Engineering. Applied Mechanics Seminar Series, 3pm, Rm 3-270. Coffee served Rm 1-114.

**Computational Transonic Flows in Rotating Machinery\*** — William T. Thompkins, Jr., research associate, aeronautics and astronautics. Aeronautics and Astronautics Seminars on Computational Fluid Dynamics, 3:30pm, Rm 9-150. Coffee at 3pm.

**The Korteweg-deVries Equation as a Model of Shallow Water Wave Propagation\*** — Timothy E. Johnson, associate professor, electrical engineering and computer science. Seminar Series in Mathematical Methods for Nonlinear Problems, 4pm, Rm 26-217.

**Recent Developments in High Strength Low Alloy Steels\*** — Prof Walter Owen, material science and engineering. Material Science and Engineering Colloquium, 4pm, Rm 4-270. Refreshments at 3:30pm.

**Unilaterally defined Processes on Two-Dimensional Square Lattices\*** — David K. Pickard, Statistics Department, Harvard University. Statistics Seminar, 4pm, Rm 2-338. Tea and coffee 3:30pm, Rm 2-349.

**The Origin of Galaxy Clustering\*** — Prof P.J.E. Peebles, Princeton University. Astrophysics Colloquium, 4:15pm, Rm 37-252. Coffee 3:45pm.

**The Neurobiology of Homeotic Mutants of Drosophila\*** — Dr. John Palka, Department of Zoology, University of Washington. Biology Colloquium, 4:30pm, Rm 6-120. Coffee served at 4pm, Vestibule 5th Floor, Bldg 56.

**Unusual Molecular Rearrangements, Configurations, and Bonding Established by X-Ray Diffraction Analysis of Single Crystals\*** — Isabella L. Karle, Head, X-Ray Analytical Section, United States Naval Research Laboratories, Washington, DC. Abby Rockefeller Mauze Visiting Lecturer. Sponsored by the Department of Chemistry, 4:30pm, Rm 2-390.

## Wednesday, November 1

**COGNAC: Building the World's Tallest Offshore Platform\*\*** — F.J. Fischer, Shell Oil Company. Ocean Engineering Seminar, 4pm, Rm 3-133.

**Flow mixing in Saved-Wire LMFBR Blanket Bundle\*** — S. Wang, Doctoral Seminar, Nuclear Engineering, 4-4:30pm, Rm NW12-222.

**Interplanetary Plasma Electrons — How They Defy the Maxims of Traditional Thermodynamics\*** — Prof Stanislaw Olbert, physics. Undergraduate Physics Colloquium, 4:15pm, Rm 4-339. Social Hour Follows.

**Conformations of Oligopeptides in the Crystalline State\*** — Isabella L. Karle, Head, X-Ray Analytical Section, United States Naval Research Laboratories, Washington, DC. Abby Rockefeller Mauze Visiting Lecturer. Sponsored by the Department of Chemistry, 4:30pm, Rm 2-390.

**Thermal Hydraulic Analysis of a Pressurized Water Reactor Due to Total Loss of Electrical Power Accident\*** — F. Bamdad, Doctoral Seminar, Nuclear Engineering Department, 4:30-5pm, Rm NW12-222.

**Wednesday Afternoon Photography Lecture Series\*** — Peter Anderson, photographer, (LIFE, Time, Esquire, London Times, New York Times, etc.), will lecture on "Let Us Consider the Most Rewarding, Complex and Meaningful Branch of Photography: Photojournalism." Made possible by a grant from the Minolta Corporation. Creative Photography Gallery, 120 Mass Ave, Cambridge, 4:30pm. For information call x3-4424.

## Thursday, November 2

**Boulder Laser Cooling of Atoms\*** — David Wineland, National Bureau of Standards. Modern Optics and Spectroscopy, Spectroscopy Laboratory and Research Laboratory of Electronics Seminar, 11-Noon, Rm 66-110. Coffee served at 10:30am.

**The Discovery of the Britannic, the USS Monitor, and Vineyard Lightship by Sonar\*** — Harold E. Edgerton, Professor Emeritus, Noon, Rm 4-402.

**Solar Neutrino Experiments\*** — Prof John Bahcall, Princeton University, Physics Colloquium, 4pm, Rm 26-100. Tea served 3:30pm, Rm 26-110.

**The Puerto Rican Status Question: A Lecture Series\*** — Lic. Ruben Berrios, President, Puerto Rican Independence Party. Sponsored by the Club Latino. Conference and discussion on the alternative of Puerto Rico as a new republic, 8pm, Rm 10-250. Refreshments served. Information call Juan Fernandez 494-0330 or Jesus Alvarez 494-9039 or x5-8327 Dorm.

## Friday, November 3

**Chemical Engineering Seminar\*** — Selahattin Gultekin, Kinetics of Hydrodenitrogenation of Quilonliiy, 2pm. Prof A. Acrivos, Stanford University, Enhanced Sedimentation, 3pm, Rm 66-110 Coffee served.

**Railroad Technology — A Comparison of US and USSR Approaches\*** — Bill Harris, Vice President of Research and Testing, Association of American Railroads, Washington, DC. Mechanical Engineering Seminar, 3pm, Rm 3-133. Coffee at 4pm, Rm 1-114.

## Community Meetings

**Wives' Group\*\*** — Wed, Oct 25, Alison McKay, Wives' Group member, will show slides and discuss "Living in an Australian 'Top End' Aboriginal Community," 3-5pm; Mezzanine Lounge, Student Center. Babysitting provided.

**Technology Wives Organization International Cooking Group\*\*** — Cook Debbie Kreischer will demonstrate a selection of chinese dishes. Participants will observe and sample results. Wed, Oct 25, 8pm, Emma Rogers Room, Rm 10-340. Members 50¢, non-members \$1. For information call Debbie Kreischer 494-8296.

**Tour of Honeywell\*\*** — Sponsored by the Electrical Engineering and Computer Science Student-Faculty Committee. Tour of Honeywell Electro-Optics Division, to see facilities, products, talk to engineers. Thurs, Oct 26, 1pm, Lobby Bldg 39. Ticket info: EECS Undergraduate Office, Rm 38-476.

**Technology Wives Organization Halloween Party\*\*\*** — Sat, Oct 28, 8:30pm, Eastgate Roof Lounge. Costumes preferred, games, prizes, refreshments. Admission: 50¢ per person, adults only. For information call Shelley Dynys 648-0360.

**Wives' Group\*\*** — Wed, Nov 1, Elizabeth Soenarjati, member of the Wives' Group from the Netherlands and Indonesia, will demonstrate "The Relation Between Shadow Puppets and Batik," 3-5pm, Mezzanine Lounge, Student Center.

**Relaxation and Breathing\*** — Cynthia Friedman, relaxation and breathing through Yoga techniques. Fri, Nov 3, 7-9pm. Register in advance, contact Cynthia Friedman for details, 661-2648 or x3-7101.

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

## Lobby 7 Events

**United States Air Force Art Exhibit\*** — On view daily Thurs, Oct 26 through Sat, Oct 28, 9am-5pm.

**Folk and Country Music\*** — Tues, Oct 31, Roger Rosen, 1pm to 2pm.

## Wellesley

**Wellesley College Museum Exhibitions\*** — Homage to John McAndrew, an exhibition honoring the memory of Professor McAndrew who taught at Wellesley from 1944 through 1968 and was director of the museum from 1947-1959, on view through Feb 13. The Inclusive Image: Density and Complexity in Late 20th Century Photography, on view through Nov 26. Jewett Arts Center, Wellesley College campus, Mon-Fri, 8:30am to 5pm; Sat, 8:30am to Noon & 1 to 5pm; Sun, 2 to 5pm. Gallery talks Sun, 3pm. Free.

## Social Events

**Prime Rib Night\*\*** — Includes Salad bar, dessert cart, Thurs, Oct 26. Faculty Club, \$7.50 incl tax. For reservations call x3-4896.

**The Mezz\*\*** — Sponsored by the SCC. Coffeehouse performers in a relaxed atmosphere, refreshments available. Fri, Oct 27, 9pm-Midnight, Mezzanine Lounge, 3rd Floor, Student Center. Free.

**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

**Negative From Fear\*\*** — Sponsored by the Department of Humanities. Wed, Oct 25, 3pm, Rm 14E-304. Free.

**Perseus\*\*** — French with English subtitles. Sponsored by the Department of Humanities. Wed, Oct 25, 7pm, Rm 66-110.

**Program of Fluid Mechanics Films\*** — Vorticity. Thurs, Oct 26, 4-5pm, Rm 3-270. Last 44 minutes.

**Samlet\*\*** — Sponsored by the Department of Humanities. Thurs, Oct 26, 7pm, Rm 66-110. Free.

**Death\*\*** — LSC movie. Fri, Oct 27, 7 & 10pm, Rm 26-100. Admission: 75¢ w/MIT or Wellesley ID.

**Holiday\*\*** — LSC Classic Film. Starring Katherine Hepburn and Cary Grant. Fri, Oct 27, 7:30pm, Rm 10-250. Admission: 75¢ w/MIT or Wellesley ID.

**Vincent Price Double Feature\*\*** — LSC movie. Sat, Oct 28, The Raven, 6:30pm; Comedy of Terrors, 7:40 & 11pm, Rm 26-100. Admission: 75¢ w/MIT or Wellesley ID.

**Psycho\*\*** — SCC Midnite movie. Directed by Alfred Hitchcock. Sat, Oct 28, Midnight, Sala de Puerto Rico, Student Center. Free. Bring your blankets and sit on the floor.

**The King and I\*\*** — LSC movie. Sun, Oct 29, 6:30 & 9:30pm, Rm 10-250. Admission: 75¢ w/MIT or Wellesley ID.

**Vincent\*\*** — In French with English subtitles. Sponsored by the Department of Humanities. Tues, Oct 31, 7:30, Rm 66-110. Free.

**Butte-1\*\*** — Sponsored by the Department of Humanities. Thurs, Nov 2, 7pm, Rm 66-310. Free.

**Program of Fluid Mechanics Films\*** — Low Reynolds Number Flows An Interview With G.I. Taylor. Thurs, Nov 2, 4-5pm, Rm 3-270. Lasts 33 minutes.

**La Grande Illusion\*\*** — In French with English subtitles. Sponsored by the Department of Humanities. Thurs, Nov 2, 7pm, Rm 66-110. Free.

**Cardon Mon Affaire\*\*** — LSC movie. Fri, Nov 3, 7 & 9:30pm, Rm 26-100. Admission: 75¢ w/MIT or Wellesley ID.

**High Noon\*\*** — LSC classic film. Fri, Nov 3, 7:30pm, Rm 10-250. Admission: 75¢ w/MIT or Wellesley ID.

**Cartoon Festival\*\*** — LSC movie. Sat, Nov 4, 7 & 9:30pm, Rm 26-100. Admission: 75¢ w/MIT or Wellesley ID.

**The Mouse that Roared\*\*** — LSC movie. Sun, Nov 5, 6:30 & 9pm, Rm 10-250. Admission: 75¢ w/MIT or Wellesley ID.

# Music

**Noon Hour Chapel Concert\*** — Elain Funaio, Thurs, Oct 26, Noon-1pm.

**Chorallaries\*** — Second Annual Greater Boston Invitational Songfest. Participating with the Chorallaries will be the Logarithms, the Wellesley Widows, the Tufts Beelzebubs and the Wheaton Whims. Sat, Oct 28, 3:30pm, Kresge Auditorium. Free.

# Exhibits

**Department of Architecture Fourth Floor Exhibition Program\*** — Last Year's Studio Projects. On view daily through Nov 2, Bldg 7.

**Carol Beckwith, Photographs\*** — Sponsored by the Committee on the Visual Arts. On view 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 (icons, reliquaries and monstrosities); Ivan Majdrakoff (box-like totemic environments filled with artifacts of the 50s and 60s); Ursula Schneider (life-size masks of invented physiognomies); Elin Elisofpm (fetish objects). On view through Nov 3, daily, 10-4pm; Wed 6-9pm. 160 Memorial Drive, Camb, MA.

**Facades\*** — A group show including works by photographers Neal Rantoul, Roswell Angier, Robyn Wessner, Lewis Baltz, Robert Adams, Joe Cameron, and Philip Trager. On view through Nov 8, Mon-Fri, 9am-10pm; Sat, 10am-6pm; Sun, Noon-8pm, Creative Photography Laboratory, 120 Mass Ave, Camb, MA. For information call 253-4424.

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

**Faust and Music\*** — Music Library, Rm 14E-109. Musical and pictorial representations of the Faust legend.

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

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

**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.

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

**MIT Historical Collections\*** — Permanent exhibition Mon-Fri, 9am-5pm, Bldg N52, 2nd floor. **Katharine Dexter McCormick, '04; Vannevar Bush, '16;** 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**, Rogers Building Exhibit, Bldg 4.

# Athletics

**Fall Sports Home Schedule\*** — **Field Hockey:** Tues, Oct 31, Endicott, 3:30pm. **Varsity M Sailing:** Sat, Oct 28 & 29, NEISA Fall Intersectional, Schell Trophy, 9:30am. **JV/Frosh Soccer:** Sat, Oct 28, Emerson, 10am. **W Volleyball:** Sat, Oct 28, SMU & Kenne, 1pm. **Fall Women's Tennis:** Thurs, Oct 26, Boston State, 4pm.

# Theater

**Death of a Salesman\*** — Community Players will perform on Oct 26, 27 and 28, 8pm; Sat, Oct 28, 3pm, Kresge Little Theater. Tickets: \$3 if bought in advance Lobby 10 or w/MIT ID; \$3.50 at the door. For information call x3-4720.

**Much Ado About Nothing\*** — Presented by the Shakespeare Ensemble. Thurs, Oct 26, 28 and 30, with musical prelude by the Early Music Society, 7:45pm Sala de Puerto Rico, Student Center. Tickets: Thursdays \$2; for seats on Fri, and Sat, \$3.50 and \$4 with student and group discounts available. Tickets are on sale in Lobby 10 or by calling x3-2903 for reservations.

**Latin American Theater Festival\*** — Thurs, Oct 26, Galaxy presents "La Noche De Los Asesinos" de Jose Triana, (Spanish) 8pm. Fri, Oct 27, Just Around the Corner and the Hispanic Theater Companies present "Cuentos Antillanos," Bilingual Children's Theater, (Spanish & English), 10am. Gala, Inc. Teatro Hispano/Hispanic Theater presents "Negritude," Hispanic Poetry of Black Roots (Spanish), 8pm, Kresge Auditorium. Tickets: \$3.50, students, senior citizens and group rates over ten, \$2.

**Romeo and Juliet\*** — Presented by the Shakespeare Ensemble. Fri, Oct 27, 29, and 31, with musical prelude by the Early Music Society, 7:45pm, Sala de Puerto Rico, Student Center. Tickets: Mondays \$2; \$3.50 and \$4 for seats on Fri and Sat, with student and group discounts available. Tickets are on sale in Lobby 10 or by calling x3-2903 for reservations.

# Dance

**Rhumba-Merengue Workshop\*** — Sponsored by the Ballroom Dance Club. Learn to Rhumba and Merengue, beginners welcome, no partner necessary. Sun, Oct 29, 2-4pm, Burton Dining Hall. Admission: 50¢. For information call Kelly Gamble x5-7336 Dorm or Theresa Weston x5-8514 Dorm.

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

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

**\*Open to the public**  
**\*\*Open to the MIT community only**  
**\*\*\*Open to members only**  
**Send notices for November 1 through November 12 to Calendar Editor, Rm 5-113, x3-3270, before Noon, Friday October 27.**

## Fall Blood Drive Opens Monday, Donors Needed

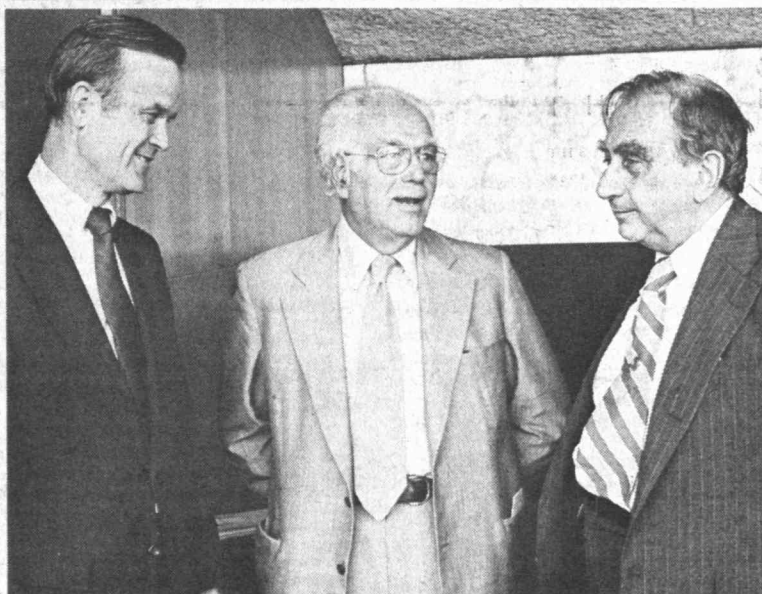
Posters reminiscent of the old days in Transylvania line the hallways, and three beer contests have been planned, all for the purpose of calling from the MIT community its generosity in responding to the MIT-Red Cross Fall Blood Drive.

The Red Cross seeks to collect 1,700 pints of blood during the fall drive, which will be open Wednesday, Nov. 1, through Friday, Nov. 3, and Monday, Nov. 6, through Friday, Nov. 10, in the Sala de Puerto Rico.

Three beer contests have been planned to reward participation in the drive. A keg of beer will go to each of the three fraternities with the highest percentage of donors, and a fourth to the one showing greatest improvement in number of donors over last year's drive. Dormitories, divided by floor and entry, will also be in contention with each other under the same rules.

A third contest, new this year, is the faculty beer contest. The department with the greatest percentage of faculty participation in the drive will win a keg of beer. Paul Hoffman, a senior in chemistry from Santa Monica, Calif., who initiated it, feels that the faculty beer contest will not only bring in more donors, but that it provides a good vehicle for student-faculty interaction as thirsty students urge their department's faculty members to give blood.

Though the drive does not begin until next Monday, the Technology Community Association (TCA), which sponsors the drive, had received 234 appointment forms before Monday of this week. Donors are urged to send in forms, which are available at the TCA office, Rm. W20-450. Walk-ins are, of course, welcome, but the donation process is more pleasant and more efficiently run if Red Cross workers know in advance how many donors to expect at any given time.



**KANTROWITZ HONORED**—Dr. Arthur R. Kantrowitz, center, Institute Professor (Visiting) at MIT, talks with Charles A. Sanders, left, general director of Massachusetts General Hospital, and Edward Teller, the physicist, at a symposium in his honor held Oct. 18 at MIT. Mr. Kantrowitz was honored on his retirement (effective Nov. 1) as chairman and chief executive officer of AVCO Everett Research Laboratory, Inc. Other speakers at the symposium, titled "Looking to the Future," were Dr. Jerome B. Wiesner; Edward T. Gerry, president, W.J. Schaefer Associates, Inc.; Hans A. Bethe, professor emeritus, Cornell; Richard J. Rosa, professor of mechanical engineering, Montana University; Robert T. Jones, senior scientist, NASA Ames Research Center; and Professor James C. Keck, MIT Department of Mechanical Engineering.

## Report on Negotiations

(The following report was prepared by the MIT Office of Labor Relations.)

James Fandel, Manager of Labor Relations, reports that there have been no meetings with the Research, Development and Technical Employees' Union since the last issue of *Tech Talk*. None were scheduled.

On Oct. 17 the Institute sent a letter to the RDTEU President requesting a meeting with the Union's negotiation committee to make a new offer on wages, benefits and all other outstanding issues. The Institute further stated that if the Union officials did not agree to a meeting for this purpose then the Institute would have to consider that the Union had no intention of bargaining in good faith and, therefore, would have no alternative except to take the matter up with the National Labor

Relations Board.

The Union President's reply on Oct. 20 did not indicate agreement to meet face to face with the Institute to hear its offer. The Union officials' unwillingness to meet to receive the MIT offer, prevailing throughout five mediation meetings, has given the Institute no choice but to file an Unfair Labor Practice Charge with the National Labor Relations Board. This charge was filed on Oct. 23.

There are no further meetings scheduled between the parties either within or outside of mediation. The Institute is still willing to meet with the Union at a mutually agreeable time and place for the purpose of the Union receiving and discussing the Institute's new offer.

Further reports will be made as developments occur.

## CEP Summary & Agenda

Summary of CEP Meeting actions of October 19, 1978

The CEP discussed a proposal to revise the name of the Staff-Administration Committee to the Faculty-Administration Committee. This proposal was made in order to make it more clear that the Committee is charged with considering issues involving relationships between the faculty and administration—a charge which is no longer obvious given the current interpretation of "staff" to mean administrative and research staff rather than teaching staff. After discussion of the composition of the committee's membership, Professor Hulsizer agreed to bring a revised proposal back to the committee for discussion next week.

The CEP also discussed the ongoing reviews of the advising system and the role of the faculty in relation to the Office of the Dean for Student Affairs. Given the interests of various groups in these issues (the Ad Hoc Committee on

Advising, the Committee on Student Environment, the Student Committee on Educational Policy, and the current review of Dean's Office role and functions), it was agreed that there should be better coordination among the groups and perhaps specific charges and agreement on the kinds of information needed and how best to obtain it. A number of suggestions were made with regard to developing a more specific charge for the Committee on Student Environment and of exploring ways in which the faculty might have a more direct connection (perhaps through a committee) with the Dean for Student Affairs Office.

CEP Agenda for October 26, 1978

1. Continued discussion of title and charge of the Staff-Administration Committee.
2. Continued discussion of the Advising Review and the role of the faculty in relation to the Office of the Dean for Student Affairs.

## Viteri to Give Mayer Lecture

Dr. Fernando E. Viteri, chief of the Biomedical Division, Institute of Nutrition of Central America and Panama (INCAP), will give the Mayer Lecture in the Life Sciences at MIT Thursday (Oct. 26) under the sponsorship of the MIT Department of Nutrition and Food Science.

"Nutrition, Physical Capacity and Activity of Rural Workers in Developing Countries" will be the topic of Dr. Viteri's lecture, which will be given at 4pm in Rm. 54-100. The presentation is open to the public at no admission charge.

The Mayer Lectureship in Life Sciences is held once a year and is hosted in rotation by MIT's Department of Biology, MIT's Department of Nutrition and Food Science, and Wellesley College. The lecture series is sponsored by Malvin and Eleanor Mayer of Washington, Maine. Before his retirement Mr. Mayer worked in the

biochemical product industry. Mr. Mayer is an alumnus of MIT and Mrs. Mayer is an alumna of Wellesley College.

Dr. Viteri received his MD from the University of San Carlos, Guatemala, in 1955, and his DSc from the University of Cincinnati in 1965. He is well known for his work on the influence of diet on working capacity and its social and economic consequences for persons in low income groups in the developing countries. He has demonstrated through quantitative measurements the improvement in work capacity and performance with an increase in dietary calories. Dr. Viteri's current work on the iron fortification of sugar and the benefits to be derived from this measure has received widespread attention.



set up and operate commonly used machine tools. At least 3 years of applicable experience is required. 40 hrs./wk. H78-167 (10/25)

**Hourly, Technician B**, in the Laboratory for Nuclear Science to assist in lab or research work and operate experimental and technical equipment. Graduation from a 2 year day technical school or its equivalent in applicable experience required. Ability to neatly construct circuitry (including solid state components) from schematics and use shop tools also required. Position is based at Middleton, MA. 40 hrs./wk. H78-168 (10/25)

**Hourly, Driver/Utility** in the Research Laboratory of Electronics to drive, pick up and deliver items; transport people and deliver mail; clean and care for work area and assigned equipment. A high school graduate, unrestricted Mass. license, class 1 or 2, a good driving record and 3 years commercial driving experience required. Applicants must be able to pass special medical exam for drivers. 40 hrs./wk. (10/25)

**Hourly, Waiter/Waitress, part-time**, in the Faculty Club to take members' orders, pick up food and serve; clear and reset tables; perform other tasks related to service. Must be 18 years of age and able to read and speak English. Experience helpful, but not required. 20 hrs./wk., 11 am - 3 pm, M-F. H78-169 (10/18)

**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), H78-174 (10/25).

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, Admin. Staff, Systems Programmer, Information Processing Services (2/16)  
A77-86, Admin. Staff, Systems Programmer, Information Processing Services (1/11)  
A78-14, Admin. Staff, Asst. Dir., MIT Associates Program (4/12)  
A78-20, Admin. Staff, Alumni Association (5/3)  
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)  
A78-60, Admin. Staff, Asst. to the Dean, Dean for Student Affairs (9/6)  
A78-66, Admin. Staff, Real Estate Property Mng., Treasurer's Office (9/27)  
A78-67, Admin. Staff, Director of Systems Planning and Development, Information Processing Services (10/4)  
A78-69, Admin. Staff, Fiscal Officer, School of Engineering (10/11)  
Asst. Director, Consortium on Financing Higher Education (10/18)

#### BIWEEKLY:

B78-4, Sec. IV, Civil Engineering (10/11)  
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)  
B78-167, Sec. III/IV, Mechanical Engineering (4/26)  
B78-178, Sec. IV, Provost's Office, Upward Bound Program (10/11)  
B78-185, Account Rep. V, Administrative Computer Serv. (4/26)  
B78-275, Sec. IV, Harvard-MIT Division of Health Sciences & Technology (6/7)  
B78-306, Sec. IV, Research Lab. of Electronics (7/12)  
B78-329, Sec. IV, part-time, Medical Dept. (10/4)  
B78-343, Sec. IV, Energy Lab (7/26)  
B78-387, Sec. IV, Material Science & Engineering (8/16)  
B78-392, Sec. IV, Division for Study & Research in Education (8/16)  
B78-436, Sec./Receptionist III, Math Headquarters (8/30)  
B78-453, Sec. IV, Nutrition & Food Sciences (8/30)  
B78-454, Clerk III, Resource Planning & Development (10/18)  
B78-457, Sec. IV, Lab for Computer Science (9/6)  
B78-463, Sec. IV, Sloan School (9/6)  
B78-488, Sec. III/IV, Arteriosclerosis Center (9/6)  
B78-494, Sec. IV, Patent & Copyright Office (8/30)  
B78-503, Sec. III/IV, Chemical Engineering (9/6)  
B78-511, Sec. IV, Sloan School (9/13)  
B78-515, Sec. IV, Center for Advanced Engineering Studies (9/13)  
B78-517, Sec. IV, Economics (9/13)  
B78-518, Tech. Typist IV/MagCard Operator, Economics (9/13)  
B78-523, Tech. Asst. V, Alumni Association (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)  
B78-541, Sec. IV, Office Chairman (10/18)  
B78-542, Sec. IV, Program in Science, Technology & Society (9/20)  
B78-545, Sec. IV, Center for Space Research (10/4)  
B78-547, Sec. V, temporary, Psychology (9/20)  
B78-549, Sec. III/IV, Mechanical Engineering (9/27)  
B78-561, Sec. IV, Research Lab. of Electronics (9/27)  
B78-563, Sec. IV, Sea Grant College Program (9/27)  
B78-562, Sec. IV, Energy Lab. (9/27)  
B78-563, Sec. IV, Sea Grant College Program (9/27)  
B78-570, Sec. IV, Civil Engineering (9/27)  
B78-571, Sec. III, Materials Science & Engineering (9/27)  
B78-573, Editorial Sec. V, Materials Science & Engineering (9/27)  
B78-576, Sec. III, Medical Department (9/27)  
B78-578, Sec. IV, Alumni Association (9/27)  
B78-579, Sec. V, Plasma Fusion Center (9/27)  
B78-582, Clerk Typist III, part-time, Graduate School Office (10/4)  
B78-589, Sec. IV, Earth & Planetary Science (10/4)  
B78-598, Sec. IV, Research Lab of Electronics (10/4)  
B78-604, Sec. III/IV, part-time, Mechanical Engineering (10/11)  
B78-605, Sec. IV, Library/Archives (10/11)  
B78-606, Sec. III/IV, Audit Division (10/11)  
B78-610, Sec. III/IV, Material Science and Engineering (10/11)  
B78-613, Sec. III, Career Planning & Placement (10/11)  
Secretary, Consortium on Financing Higher Education (10/18)  
B78-621, Clerk Typist III, Energy Lab (10/18)  
B78-622, Sr. Clerk III, Nuclear Reactor Lab (10/18)  
B78-625, Sec. IV, Linguistics & Philosophy (10/18)  
B78-626, Sr. Clerk IV, part-time, temporary, Libraries, NASIC Service (10/18)  
B78-627, Sr. Lib. Asst. IV, Libraries (10/18)  
B78-631, Sec. IV, Off. of Chancellor (10/18)  
B78-632, Clerk IV/V, Documentation Librarian, Admin. Computing Services (10/18)  
B78-634, Sec. IV, Center for Policy Alternatives (10/18)

B78-635, Sec. IV, Center for Policy Alternatives (10/18)  
B78-636, Sec. IV, Urban Planning & Resource Development (10/18)

#### ACADEMIC STAFF:

C78-6, Acad. Staff, Asst. Eng. Librarian, Engineering Library (4/5)  
C78-17, Acad. Staff, Research Associate (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)  
C78-27, Acad. Staff, Coordinator for Health Information and Education, Medical Dept. (10/4)  
C78-29, Acad. Staff, Applications Programmer, Electrical Engineering (10/11)  
EXEMPT STAFF:  
E77-56, Exempt, Estimator/Scheduler, Physical Plant (11/9)  
E78-35, Exempt, Tech. Supervisor, Physical Plant/Telecommunications (8/16)  
E78-36, Exempt, Principal Operator, Physical Plant (8/16)  
E78-55, Exempt, Accounting Supervisor, Libraries (10/18)  
HOURLY:  
H77-89, HVAC Designer/Draftsperson, Physical Plant (10/5)  
H78-23, Machinist A, Nutrition & Food Science (3/8)  
H78-95, Sr. Technician, Aeronautics & Astronautics (10/11)  
H78-106, Sr. Technician, (Electronic), National Magnet Lab (8/16)  
H78-137, Technician B, Center for Advanced Engineering Studies (9/6)  
H78-152, Mechanic B, Lab for Nuclear Science (9/27)  
H78-161, Technician B, Chemistry (10/18)

#### SPONSORED RESEARCH STAFF:

R77-53, Spons. Res. Staff, Res. Lab. of Electronics (4/12)  
R77-91, Spons. Res. Staff, Sr. Accelerator Physicist, Lab. for Nuclear Science (5/18)  
R77-97, Spons. Res. Staff, Chemical Engineer, Energy Lab. (6/1)  
R77-137, Spons. Res. Staff, Experimental Physicist, Bates Linear Accelerator (8/31)  
R77-161, Spons. Res. Staff, Elec. Engineer, Mechanical Engineering (9/7)  
R77-201, Spons. Res. Staff, Prog./Data Analyst, Earth & Planetary Science (10/26)  
R77-209, Spons. Res. Staff, Res. Scientist, Energy Lab. (11/30)  
R77-211, Spons. Res. Staff, Computer Systems Design, Lab. for Computer Science (12/7)  
R77-212, Spons. Res. Staff, Prog. Language Design, Lab. for Computer Science (12/7)  
R77-213, Spons. Res. Staff, Computer Software Design, Lab. for Computer Science (12/7)  
R77-228, Spons. Res. Staff, Plasma Physicist, Res. Lab. of Electronics (1/4)  
R77-230, Spons. Res. Staff, Computer Software Designer, Lab. for Computer Science (1/11)  
R78-55, Spons. Res. Staff, Staff Scientist, Arteriosclerosis Center (4/5)  
R78-58, Spons. Res. Staff, National Magnet Lab. (4/12)  
R78-60, Spons. Res. Staff, Combustion Engineer, Energy Lab. (4/12)  
R78-64, Spons. Res. Staff, Earth & Planetary Science (4/12)  
R78-70, Spons. Res. Staff, Energy Analyst, Energy Lab. (4/12)  
R78-73, Spons. Res. Staff, Computer Programmer, Energy Lab. (5/10)  
R78-81, 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, Spons. Res. Staff, Technical Asst., Nutrition & Food Science (4/19)  
R78-93, Spons. Res. Staff, Res. Engineer, Civil Engineering (5/10)  
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, Seagrant 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)  
R78-125, Spons. Res. Staff, Electrical Systems Laboratory (7/12)  
R78-133, Spons. Res. Staff, Sr. Microwave Systems Engineer, Natl. Magnet Lab. (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 Lab. (8/16)  
R78-154, Spons. Res. Staff, Program Director, Neurosciences Research Program (8/30)  
R78-160, Spons. Res. Staff, Programmer, Center for Space Research (8/30)  
R78-162, Spons. Res. Staff, Systems/Scientific Programmer, National Magnet 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)  
R78-184, 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)  
R78-194, 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)  
R78-197, Spons. Res. Staff, Research Engineer, Energy Laboratory (9/13)  
R78-199, Spons. Res. Staff, Postdoctoral Scientist, Nutrition & Food Science (9/20)  
R78-201, Spons. Res. Staff, Earth & Planetary Science (9/20)  
R78-206, Spons. Res. Staff, Tech. Asst., Arteriosclerosis Center (9/27)  
R78-207, Spons. Res. Staff, Applied Magnetism Research, National Magnet Lab. (9/27)  
R78-208, Spons. Res. Staff, Postdoctoral Research, Nuclear Materials, Nuclear Reactor (9/27)  
R78-209, Spons. Res. Staff, Postdoctoral Research, Nuclear Materials, Nuclear Reactor (9/27)  
R78-210, Spons. Res. Staff, Minicomputer Programmer, Material Science & Engineering (9/27)  
R78-211, Spons. Res. Staff, Postdoctoral Scientist, Physics, Center for Space Research (10/4)  
R78-212, Spons. Res. Staff, Postdoctoral Scientist, Physics, Center for Space Research (10/4)  
R78-217, Spons. Res. Staff, Research Associate, Civil Engineering (10/18)

# Shakespeare in Repertory to Play in Sala

The MIT Shakespeare Ensemble will present two plays in repertory this week in the Sala de Puerto Rico of the MIT Student Center.

The Ensemble will perform *Much Ado About Nothing* on the evenings of October 26, 28 and 30 and *Romeo and Juliet* on October 27, 29 and 31.

All performances will begin at

7:45pm with a musical prelude by the MIT Early Music Society, conducted by Timothy Aarset of the Music Section, and Renaissance dances by Ingrid Brainard and the Cambridge Court Dancers.

*Romeo and Juliet* will be directed by Ensemble director Murray Biggs, a visiting lecturer in Shakespeare Acting at Yale Uni-

versity. The play will be revived from last spring's performance here with only one change in cast—Bill Windsor '79 will replace Daniel Kim '78 as the Friar. The production will also be produced at Phillips Exeter Academy, Exeter, N.H., on November 4 and in Jewett Auditorium of Wellesley College on November 5, 8pm.

*Much Ado About Nothing* will be directed by Jonathan Ivester, an MIT spring '78 graduate with degrees in chemistry and literature. Mr. Ivester has been assistant director of past Ensemble productions and has played leading roles in *Love's Labours Lost*, *The Taming of the Shrew* and *Othello*.

Sets and lighting for these productions are designed by Leon Shiman, fellow in the MIT Department of Mathematics; costumes are by Lita Wright and Theresa Mullin; fencing is choreographed by Eric Sollee, MIT fencing master; Renaissance dances are designed and directed by Ingrid Brainard; and songs are composed by John Cook, Institute organist.

Tickets for this weekend's productions are now on sale in the Building 10 lobby and will also be on sale at the door. Tickets are \$2 on October 26, 29, 30 and 31 and \$3.50-\$4 on October 27 and 28 with a \$1 discount for students. Call x3-2903 for reservations.

# United Way/BBUF Drives Extended to November 22

The fund drives for the United Way and the Boston Black United Fund at MIT have been extended to November 22.

On Monday, Oct. 23, 955 people at the Institute had given a total of \$52,091.30, far short of the goal of \$140,000. Gifts to the Boston Black United Fund stood at \$8,424.50 from 331 contributors.

The United Way drive is in its fifth week at MIT, and it is time to take a look at the agencies the fund supports. Where, in fact, do your contributions go?

The United Way slogan, "The one out of four that you help could be you," matches up almost perfectly with MIT's population. Last year, 27 per cent of the people at MIT benefitted from the work of one United Way agency or another. Some were in emergency situations. To some, continuing services of a United Way agency is essential to their ability to work and maintain their families. Some use United Way agencies almost unthinkingly, as an enrichment to family life.

Three MIT families lost their homes to fire last year. Without the immediate help of the Red Cross, these people, having jobs with many fringe benefits, would have been hard pressed to get their homes and lives in order. The Red Cross provided temporary shelter, food, and furnishings replacement down to the pots and pans.

In lesser emergencies, people have turned to their local Home-maker-Home Health Aide agencies which provide a trained homemaker to step in when the person responsible for running a household and caring for the children is temporarily disabled or called away.

Day care, provided by the Associated Day Care Services of Greater Boston at charges scaled to salary, has enabled some parents working at MIT to hold the full-time jobs essential to maintaining their family's life style.

In the city of Cambridge, Cambridge Camping Association, Inc., has made it possible for the chil-

dren of MIT families to enjoy summer camp experiences through a program of placement and financial aid.

Do you have a Girl Scout in your family? A Boy Scout? A Campfire Girl? Perhaps you belong to the YWCA or YMCA. All these are supported by the United Way.

Though the United Way supports many nonsectarian agencies, it also helps fund the Combined Jewish Philanthropies and the Catholic Charitable Bureaus of Boston and of Cambridge-Somerville. Agencies supported by this fund drive stand ready in emergencies and to give enrichment to our daily lives.

If you have hesitated to give to the United Way because you have a favorite charity, check with your United Way solicitor. It may be a United Way agency.

# Two Labor Leaders To Launch Forums

(Continued from page 1)

Smullin, Professor Leon Trilling, Professor Victor Weisskopf and Professor Joseph Wizenbaum.

The first activity in the arms control seminar—titled "The Threat of the Arms Race"—will be a November 9 lecture on the dangers of the nuclear arms race by Dr. Bernard Feld of the MIT Department of Physics. Dr. Michael Mandelbaum, professor at the Kennedy School of Government, Harvard, will be the respondent. The discussion will be at 4:30pm in Rm. 9-150.

Other activities currently scheduled for the arms seminar are: December 7—"Alternative Views of US Force Requirements", Dr. Scott Thompson, professor at the Fletcher School of Law and Diplomacy, Tufts, and Dr. Philip Morrison, Institute Professor and professor of physics at MIT; April 26—"The War Economy as Prime Cause of Inflation and Unemployment," Dr. Seymour Melman, professor in the Department of Industrial Engineering and Operations Research, Columbia University.

The next event in the finite earth forum will be a November 14 lecture by Irene Gendzier, professor of history at Boston University. She will discuss "Concepts of Political Modernization."

On December 5, Tony Jackson of Oxfam, a consultant to the Agency for International Development, will discuss "The Politics of Food and Relief: A Case Study of Guatemala."

The public forum series that begins tomorrow with lectures by Mr. Runnels and Mr. Rosen will address the following questions:

The public forum series that begins tomorrow with lectures by Mr. Runnels and Mr. Rosen will address the following questions: 1) The general situation now faced by the US labor movement; 2) The significance of technological change in this situation, particularly the role of industrial automation; and 3) The role of labor in technological development and the relationship between places such as MIT and labor unions or engineers and labor in general.

Mr. Runnels is president of Local 22 (the Cadillac plant in Detroit) of the United Auto Workers, but as president of the All-Unions' Committee to Shorten the Work Week he will be speaking from a base far broader than a single local. Mr. Rosen, district president (Chicago) of the United Electrical

Workers, is an engineer and an expert on industrial technology. He also represents a broad cross-section of American trade unions as vice president of the All-Unions' Committee to Shorten the Work Week.

The 25 international unions making up the committee include the AFL-CIO, the United Auto Workers, the United Mine Workers, the United Electrical Workers, Longshoremen, Steelworkers, Teamsters and the American Federation of State, County and Municipal Employees.

Seven other events are currently scheduled for the work forum. On November 27 David Montgomery, professor of labor history at the University of Pittsburgh, will discuss "Workers' Control in the US: Past, Present and Future."

Caesar Chavez, president of the United Farm Workers, is tentatively scheduled to deliver a lecture January 11 on "Mechanization and the Farm Workers." On January 25 Joan Tighe of Nine to Five, a union of office workers, will lecture on "Office Automation and the Clerical Worker."

Dr. Irving Selikoff, director of the Mt. Sinai Medical School of the City University of New York's Environmental Sciences Laboratory, will discuss "Disease, Death and Other Occupational Hazards" in February.

In March, Kristen Nygaard of the Iron and Metalworkers Union Project, Norwegian Computing Center, Oslo, Norway, will discuss "Trade-Union Participation in the Design of the Technology of Work: Computer-Based Manufacturing Systems."

In April, Michael Sidell, president of Local 149 (Lynn, Mass., General Electric plant) of the International Federation of Professional and Technical Engineers, will discuss "Automating the Automaters: The Impact of Computer-Aided Manufacturing Technology on Engineers and Technical Workers."

In May, Eula Bingham, director of the US Occupational Safety and Health Administration (OSHA) will deliver a lecture on "Designing for Health and Safety."

The planning committee for the Technology and Culture Seminar will distribute posters frequently during the academic year calling attention to the concurrent forums as dates and locations of individual lectures become firm.

The following positions are on hold pending further decision:  
E78-645 Sr. Payroll Clerk  
E78-53 Exempt  
E78-46 Exempt  
E78-633 Sec. III/IV  
E78-607 Sec. IV

# Chancellor Reports on Financial Outlook

This report follows, in content and spirit, our practice of reporting each fall to the faculty on the financial situation of the Institute. In this report, our eighth to you, I will comment on the outcomes of the fiscal year that ended in June, on our budget projections for the current year, and on the issues and problems which affect financial planning for future years.

## OUTCOMES FOR 1977-1978

In our report to you of last October, I said that the financial operations of the Institute would again be in balance, but described that balanced state as unsatisfactory and precarious. Both the prediction of balance and its characterization were confirmed when the books of the Institute were closed this summer.

During the 1977-1978 year the Institute expended \$319 million for operating purposes. This was the first time our expenses exceeded \$300 million. These expenses were met by applying operating revenues from all sources and augmenting them by patent revenues, the use of facilities allowances from research sponsors, and unrestricted gifts and bequests. The total income from all of these sources exceeded the total expenses by \$68 thousand. This is good news. But we should remember that this surplus approximates 0.02% of operating expenses—perhaps a cause for good cheer but not for jubilation.

That this balance was precarious requires no explanation. It was unsatisfactory because it required that nearly all of the annual receipts of unrestricted funds be committed to current operating expenses. If we are to provide for future needs as well as for current needs, we should be setting aside each year some significant fraction of the current receipts of unrestricted funds for capital purposes, including particularly for additions to the principal of unrestricted endowment.

Nevertheless, we take some satisfaction in the fact that the Institute has now operated for two years with the operating budget substantially in balance. You will recall that each of the three previous years (1973-74 through 1975-76) closed with significant operating deficits—deficits which required the expenditure of approximately \$13 million of non-recurring fund balances, reserves, and the principal of funds functioning as endowment.

Mr. Micawber was right in his advice to David Copperfield: insignificant surpluses beat all the other possibilities—hands down.

One other aspect of Institute finances for the year deserves mention. Investment income increased over the previous year by nearly 14%. This increase was the result primarily of improvements in the revenue generated by the Institute's investment real estate, higher short-term interest rates, and increases in dividends paid by corporations in which MIT is a shareholder. While some portion of this increase was paid out to holders of endowed and other invested funds in accordance with a planned rate of growth of distributed investment income, the largest portion of the increase—approximately \$1.1 million—was added to the reserve of undistributed investment income. This addition to the reserve, combined with a smaller addition made last year, puts back into that reserve

nearly two-thirds of the amount taken out in the previous two years when the recession in the US economy caused earned investment income to fall below the amounts paid out to fund holders. It is our intention, supported fully by the Treasurer and the Investment Committee of the Corporation, to increase this reserve a bit each year. The objective is to preserve the relationship of this reserve to the annual flow of investment income, thereby enabling the reserve to function as a "flywheel" which can smooth the consequences of short-term fluctuations in the economy.

## THE CURRENT YEAR

The operating budget for this year projects an increase in expenditures to \$341 million, and reflects an assumption of continued real growth in sponsored research.

On the revenue side, we have projected further strong increases in net receipts from the Industrial Liaison Program and in current unrestricted gift receipts. Nevertheless, the operating budget for the year anticipates a deficit, after application of all unrestricted funds from all sources, of approximately \$600 thousand.

This anticipated swing back into the realm of red ink is the result of many forces which affect the Institute's expenditures for operations. While it may be misleading to single out a few factors as causes of the projected deficit, the following factors deserve special mention either because of their size or their timing:

—Last winter, as we reviewed the academic budgets, we increased the allocation of general funds to the School of Engineering by nearly \$700 thousand. This was done in an effort to accommodate the recent increase in the number of undergraduate students enrolled in the School of Engineering. Over the past five years the fraction of the undergraduate student body majoring in engineering increased from 40% to 63%. While this increased allocation seemed mandatory to us—indeed the School had argued persuasively for an increase nearly twice as large—it could not be offset by reductions in other academic budgets because of the general tightness which has resulted from a decade of belt-tightening.

—The large increases in Social Security taxes voted last year by the Congress begin to affect our benefits costs this year.

—We have embarked on a major program of renovating research space and improving research facilities. While many of these improvements are related to requirements associated with the use of laboratory animals, and to our growing efforts in energy-related research, others support the general expansion of the entire research effort of the MIT community. Even though a large part of these costs are recoverable through indirect costs assessed to research sponsors, the residue of these costs adds to the operating deficit this year, and will do so for the next two or three years.

There is little that can be done in the next nine months to reduce the anticipated deficit. Most of the factors that influence both expenses and revenues, including salary levels, the tuition rate, the student population, and research

volume, are not subject to change during the year. We shall continue to press hard where improvements in revenue can be made, including the Industrial Liaison Program and the Leadership Campaign, particularly as it bears on current operations. Of course, close attention to expenditures by all who oversee the management of money at the Institute will help, for every dollar of unexpended funds in the general account in each academic department reduces the year-end deficit by a dollar. Even in those areas of activity where expenses are reimbursed in whole or in part through the indirect cost rate, savings in expenditures will have a favorable effect on this rate, if not on the deficit as well.

It should go almost without saying that we will require very convincing arguments for any budget changes during the year which would have the effect of increasing the deficit.

## CONSIDERATIONS FOR THE FUTURE

We are about to begin the preparation of budgets and financial plans for the 1979-1980 fiscal year, which begins in July. The dynamics of MIT finances are such that if all academic programs at the Institute were unchanged in size or character, if wages and salaries were increased only by an amount intended to offset inflation, and if the tuition fee were similarly increased by an amount just sufficient to offset inflation, operating expenses would still grow more than operating revenues by about \$500 thousand. This problem of an imbalance in the rates at which expenses and revenues grow results from the failure of investment income to grow, over a period of several years, at a rate which matches the inflation rate, and from the inevitable incremental shift of activities from so-called "soft money" to general funds. This phenomenon of the year-to-year trend toward operating deficit has been discussed in previous reports of this kind and in the detailed financial report published in *Tech Talk* in November, 1976 (MIT Finances: Recent Trends and Future Outlook).

As a result of the forces embodied in this year-to-year growth in the deficit, we begin the budget process under the shadow of a deficit of about \$1 million, and we must take actions which will reduce this figure to zero. It is evident that these actions must include the following:

—An increase in the tuition fee of 8% to 10%. An increase of this size will exceed by one to two percentage points the likely rate of inflation.

—Efforts to increase beyond "normal rates" the growth in distributed investment income and in other controllable revenue streams.

—Expense reductions in essentially all areas of operations. While we do not underestimate the difficulty of achieving significant new reductions after 10 years of such efforts, there is no alternative but to try, for some fraction of the \$1 million gap must be accomplished by reducing expenses.

As we look beyond the 1980 fiscal year there are apparent both an important uncertainty and several areas of new financial needs.

The uncertainty relates to the possibility of changes in the Federal rules which govern the reimbursement to universities for the indirect costs of performing sponsored research. These regulations have been under review by the Department of Health, Education and Welfare, and the Office of Management and Budget for about two years. Several proposed revisions would have arbitrarily and unilaterally reduced reimbursement for real and necessary costs of research. The cost to MIT of one set of proposed regulations would have totalled \$2.2 million per year.

We have argued against these revisions with all the forces at our command and have taken the position that existing regulations fall short of reimbursing us for the full cost of research. What is needed is

not the arbitrary disallowance of existing bases for reimbursement and the unreasonable imposition of uniformity for uniformity's sake, but acknowledgement that the continued vitality of university-based research requires no less than recognition by the government of the full cost of research, including those essential costs ignored by the existing regulations.

At present the ball is in OMB's court, and some new form of revised regulations is anticipated. While there will undoubtedly be some additional period for university comment, and while we shall continue to press our view of the desirable outcomes, it is not possible to estimate the cost to the Institute of the final rules that will emerge from this process. It does seem clear that the changes could affect us as early as the fiscal year that begins in July, 1979. If there is an effect and if it is substantial, we will, of necessity, have to absorb the resulting incremental deficits for at least a year while we devise strategies for ameliorating the impact in future years.

The Institute must also come to terms in the next few years with some emerging financial needs. These include:

—The need for funds to support junior faculty during the period of reduced faculty retirements as a consequence of the increase to 70 in the minimum age for mandatory retirement.

—Funds to support the renewal and modernization of teaching facilities, including space renewal in those departments which do not have a large base of sponsored research support.

—Increased funds for equipment renewal in the teaching laboratories.

—Funds for financial aid for graduate students in those de-

partments which are hard hit by competition for the ablest graduate applicants.

—Funds to support the expansion and renewal of undergraduate housing resources.

—Increased funds for the support of undergraduate financial aid, including both loan funds and endowment for scholarships.

—Funds for the support of faculty salaries. The urgency of this need is increased by recent federal initiatives which limit salary reimbursement for some research contracts and grants.

While we have not yet attempted to define these needs precisely, it seems clear that the total cost could easily fall in the range of \$5 to \$10 million per year over a period of many years.

After recitation of this list of important needs with such a sobering total impact, it may seem that we are ready for some variation of that conversation in which the optimist says, "This is the best of all possible worlds," and the pessimist responds, "Aha, I knew it all the time."

While financial considerations are indeed an essential element in our planning for the future, and although finding new resources to tackle the problems and needs I have identified will require ingenuity, conviction, and dedication, I remain optimistic for the Institute in the years just ahead. MIT has, in Vannevar Bush's memorable phrase, "the habit of success."

Past successes have drawn heavily on the community spirit and the sense of fellowship which characterize Tech. If we maintain that spirit—caring both for the Institute's intellectual purpose and for each other—I have faith that MIT will be successful in the future.



At the end of her four-day passage under sail from Cambridge, Md., the crew of the *Maryland Dove* begins to furl sails as the *Dove* approaches the St. Mary's River. Designed by William A. Baker, curator of the Hart Nautical Museum at MIT, the *Dove* is a reconstruction of a 17th century pinnace which will be part of the Outdoor Museum in St. Mary's City, Md.

## William A. Baker Reconstructs Seventeenth Century Pinnace

To spectators on Chesapeake Bay on Sunday, Oct. 8, a vital part of the history of the area came to life as the *Maryland Dove* sailed on the final leg of her passage from her builder's yard in Cambridge, Md., on the bay, up the St. Mary's River to St. Mary's City, which will be her permanent home.

The *Dove* is a reconstruction of a 17th century three-masted pinnace designed by William A. Baker, curator of the Hart Nautical Museum at MIT, who over the past 30 years has seen almost a dozen of his 17th and 18th century designs sailing on the east coast. Mr. Baker was on board the *Dove* on Oct. 8 and was pleased with her performance in the gusty autumn wind.

Mr. Baker has been active in the design of wooden ships since the 1940s when he made the plans for restoration of *Gjøa*, Amundsen's vessel, which was the first to make the Northwest Passage. His second project, and the one for which he is best known, was the design of the *Mayflower II*, which was built in England, and sailed across the Atlantic to the United States in 1957. Since then he has designed 15 reconstructions of 17th and 18th century wooden vessels, as well as a modern cruising boat based on a 17th century shallop.

The *Maryland Dove*, which was launched in August, will be one of the major exhibits at the Outdoor Museum in St. Mary's City.

## Air Force Art Exhibit

The United States Air Force ROTC will sponsor an exhibit of America's leading artists in Lobby 7, October 26-28.

The USAF Art Exhibit includes 38 original paintings selected from more than 4,300 paintings in the official Air Force Art Collection.

Begun in 1950, the collection depicts various Air Force activities around the world, from the First World War to the Space Age. Some 100 new paintings are donated to the collection annually by members of the Society of Illustrators of New York, Los Angeles, San Francisco, the National Academy of Design, etc.

Air Force personnel will be present in Lobby 7 to assist the public and answer questions about the exhibit, 9am-5pm.