



A LONE STUDENT finds a place in the sun to snooze as afternoon shadows stretch across Killian Court.
—Photo by Calvin Campbell

USMA to Honor Dr. Killian With Sylvanus Thayer Award

The United States Military Academy's prestigious Sylvanus Thayer Award will be presented to Dr. James R. Killian, Jr., of MIT, tomorrow (Oct. 12) at West Point.

The ceremonies will include a review of the Corps of Cadets by Dr. Killian.

The Thayer Award, named for the academy's fifth superintendent, is presented each year by the Association of Graduates of the United States Military Academy for outstanding public service and achievement. Gen. Thayer was also the founder of Thayer Academy in Braintree and of the Thayer School at Dartmouth College.

Some past recipients have been Dr. Ernest O. Lawrence, noted physicist from the University of California at Berkeley, former President Dwight D. Eisenhower, General Douglas MacArthur, Dr. James B. Conant, former Harvard president; Francis Cardinal Spell-

man, comedian Bob Hope, and former Secretaries of State John Foster Dulles and Dean Rusk.

Dr. Killian, former MIT president and honorary chairman of the MIT Corporation, is being honored, the award citation notes, for more than 40 years of public service.

In that time, it said, he has made "highly significant contributions to the preeminence of the United States in the field of space science and technology and to the development of our nation's school and college curricula." Throughout his lifetime, it adds, his "selflessness and devotion to the service of his country have exemplified the principles expressed in the motto of the Military Academy—'Duty, Honor, Country.'"

Dr. Killian served as Special Assistant for Science and Technology to President Eisenhower in 1957-59. Earlier, in 1954, President Eisenhower had asked Dr. Killian to

(Continued on page 5)



Nuclear Engineering Plans 'Seabrook Week' for IAP

By MARY ENTERLINE
Editor, IAP Guide

The first week of Independent Activities Period '79 has been designated "Seabrook Week" by the Department of Nuclear Engineering. A series of speakers, films, panel discussions, and a tour of the Seabrook nuclear power plant have all been scheduled for January 8-12.

"Seabrook Week" is the inspiration of Donald Dube, a graduate student in nuclear engineering and one of the department's IAP coordinators. He has designed the pro-

gram with two goals in mind—to give the layman a clearer understanding of nuclear power and to provide its proponents and opponents with opportunities for discussion.

Professor Neil E. Todreas of nuclear engineering will launch "Seabrook Week" Monday morning with a 40-minute introductory talk on how a nuclear plant works. Then the nuclear power plant in Seabrook, N.H., will be described by Norman Cullerot of the Public Service Company of New Hamp-

shire.

"I've heard him talk before," says Dube. "Although he is from the power company, he tells it like it is. He'll discuss the power plant, its trials and tribulations, the regulatory process and how it turns construction on and off, how the plant is financed, and when it will come on line."

The next day, Tuesday, will be film day with three films, one from New England Utilities, one from the Clamshell Alliance, and one from the US Department of

Construction Begins On Huge Generator

Engineers at MIT have begun designing and building a \$4.6 million 10-megawatt electric power generator to see if a new idea to improve generator performance can be demonstrated in a laboratory-size machine.

The idea is a superconducting generator, one in which the rotor is formed from an alloy of niobium and titanium that loses all resistance to electricity at super cold temperatures. Mounted in a spinning vacuum chamber, the superconducting rotor is kept at -450 degrees F by being flooded with an internal circulation of liquid helium.

Work already has started on a 50x70 foot pre-engineered building 30 feet high on a site (at 68 Albany St.) along the north edge of the MIT Cambridge campus where the test machine will be housed.

A used jet engine modified to burn ordinary No. 2 fuel oil will be housed in a small but contiguous

building immediately to the east. The hot, high velocity exhaust gas, passing through a "free spool" turbine, will provide power to spin the rotor at 3,600 revolutions per minute.

Both the fuel burned and the free spool turbine are common to the public utility industry and their use with the test machine is in keeping with efforts of engineers to duplicate actual industrial conditions.

Construction, fabrication and assembly is expected to take several years. After that, the MIT engineers will spend another year or two testing the machine under such adverse conditions as loss of superconductivity, intentional short circuits and overloads.

Ultimately, perhaps in 1981 or 1982, the generator will be tested with MIT itself as the guinea pig. For 30 consecutive days, MIT will be switched over to draw most of

(Continued on page 8)

Magnet Laboratory to Host MHD Design Conference

MIT's Francis Bitter National Magnet Laboratory, project manager for the Magnetohydrodynamic (MHD) Magnet Technology Development Program for the US Department of Energy, will sponsor an MHD Magnet Design Conference Wednesday and Thursday, Oct. 18 and 19, at MIT.

The conference will provide a forum for 150 representatives of government, industry and laboratories, both national and university, to meet and discuss the problems involved in the design and manufacture of superconducting magnets to be used for electric power generation.

Guest speaker at the conference will be Paul E. Tsongas, US Congressional Representative from the Massachusetts Fifth Congressional District and the Democratic candidate for the US Senate. Rep. Tsongas is a member of the US House of Representatives Ad Hoc Energy Committee and is author of seven amendments to President Carter's Energy Bill, all of which

passed. Rep. Tsongas will speak following a luncheon on Wednesday, Oct. 18. He will discuss national energy policy.

The second guest speaker, Peter Hunt, director of research and analysis of the US House of Representatives Subcommittee on Power and Energy, will speak following dinner Wednesday, Oct. 18. Mr. Hunt, who drafts legislation on regulation of public utilities and is involved in the commercialization of advanced energy technologies, will speak about the relationship between energy research and society.

Dr. Richard V. Shanklin, director of the US Department of Energy MHD Division, will address the conference during the

(Continued on page 8)

AARP to Hear Energy Lecture

Kenneth J. Button, senior scientist at the Francis Bitter National Magnet Laboratory, will give an illustrated talk, "What to Expect During the Energy Crisis," at the next meeting of the MIT-Cambridge Chapter of AARP, Tuesday, Oct. 24, at 5pm in the Mezzanine Lounge.

Following the talk, Mr. Button will answer questions about retiring in the Sunbelt, both as a property owner in that area and as an expert on energy problems.

Prospective members of the chapter are welcome to attend. Refreshments will be served at 4:30pm.

Interpreters For Deaf Sought

In conjunction with the Institute's Affirmative Action Program, the Office of Personnel Services is organizing a volunteer pool of community members trained in sign language. These persons would be called upon occasionally to serve as interpreters for deaf applicants during the interviewing process.

Those interested and qualified are asked to call Peggy O'Brien, x3-4250, to sign up.

LIDS Launched

"LIDS" they call it, for Library Institute Delivery Service.

It's a new service whereby library users may call the Institute Library Catalogue, x3-5681, or visit any library reference desk to request that four-week loanable material in one library be delivered to another for more convenient pick-up. If the material is available for loan, it will be delivered to the pick-up library within 48 hours.

(Continued on page 8)

INSTITUTE NOTICES

Announcements

ASA Recognized Activities**—Must update officer listing on file with the ASA for this term immediately. Forms available at ASA office, W20-401, and should be returned to the office.

Add Date**—October 13, 1978. Last day to add subjects to registration.

Juniors and Seniors***—October 13 is the last day to change an elective to or from pass-fail grading.

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.

Danforth Foundation Fellowships**—Offered to college seniors who wish to pursue graduate study leading to careers in college or university teaching. MIT is permitted to nominate up to 3 students for award beginning September 1979. Seniors who wish to apply should submit a brief (1-2 page) account of their plans for graduate study and academic career in university teaching to Jean Richard, Associate Dean of the Graduate School, Rm 3-136, by Oct 20, 1978. On the basis of these essays, applicants will be scheduled for personal interviews with the MIT Danforth Fellowship Committee on Oct 28, 1978.

Off-Campus College Work Study Program**—For undergraduate and graduate students for 1978-79 academic year. Off-campus public and nonprofit organizations are eligible for CWSP participation. Needy students can receive 80% of their wages from CWSP with matching of 20% from the off-campus organization. Nelson Armstrong at Student Employment, Rm 5-119, x3-4973, will accept applications from students on a first come, first served basis until funds run out.

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.

Sophomores***—Applications now being accepted for the annual Harry S. Truman Scholarships, awarded on basis of merit to current sophomores preparing for a career in public service and possessing outstanding potential for leadership in government. Students in history, political science, public administration, economics and finance, and international relations are especially urged to apply. The awards are made on one student from each state and cover tuition, fees, books, and room and board to maximum of \$5,000, are renewable for the senior year and up to 2 years of graduate study. To be considered contact Dr. Louis Menand, Rm 4-246, x3-7752, before Oct 20.

Club Notes

ACM Student Chapter Meeting**—Final plans for lectures, discussion of joint activities with other area chapters, Wednesday, Oct 18, 4pm, Rm 8-314. Info: Bill Wehl, d15-7546.

MIT Baha'i Association**—Discussion Series. October 17, 7:30pm, Student Center West Lounge, "Equality of Men and Women." Info: Laura, x3-3521.

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

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

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

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

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

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

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 Nautical Association***—General meeting, Tuesday, Oct 17, 6pm, in Shore School at Sailing Pavilion. All card holders urged to attend to help make some important decisions.

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.

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 Tae Kwon-Do Club**—General meeting, Tuesdays, 8-10pm, Saturdays, 3-5pm, T-Club Lounge.

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

Undergraduate Math Club**—Meets Sundays, 4:30pm, Rm 4-182. All undergraduates welcome. Info: d15-8439.

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

Wu-Tang, MIT Chinese Martial Art Club**—meets Monday, 8-10pm, W20-407, Wednesday, 8-10pm, W20-491, and Saturday, 1-3pm, W20-491. Learn physical and mental discipline through practice of Kung-fu, also Northern Praying Mantis and Tai Chi. Beginners welcome. Info: Chen-dao Lin, d15-9640.

Religious Activities

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

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

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

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

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

Jewish Religious Services**—Traditional services, daily 8am Rm 7-102. Friday night, Sundown Koshers Kitchen, 50-005. Saturday, 9am, Bush Room 10-105. Mincha and Seudah Shishit, 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.

Jewish High Holiday Services**—*Yom Kippur Services*: Traditional—Wed, Oct 11, beginning 8:30am in the Mezzanine Lounge of the Student Center; Mincha and Neila, Oct 11, beginning 4:30pm in the Mezzanine Lounge of the Student Center; Conservative: Wed, Oct 11, beginning 8:30am in the Sala de Puerto Rico in the Student Center; Mincha and Neila, Oct 11, beginning 4:30pm in the Sala de Puerto Rico in the Student Center; Reform—Wed, Oct 11, beginning 9:00am in the MIT 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. 11—ACTION/Peace Corps/VISTA; University of Chicago/Graduate School of Business; Ford Motor Company; Intersil, Inc.; Jet Propulsion Laboratory; J. Ray McDermott and Co., Inc.; Northern Research and Engineering Corp.; The Quaker Oats Company.

Oct. 12—Analog Devices Semiconductor; Data General Corporation; Gould, Inc.; Harvard University Graduate School of Business Administration; Honeywell, Inc.; United Engineers & Constructors, Inc..

Oct. 12, 13—General Atomic Company; Hughes Aircraft Company; 3M Company; Petro-Marine Engineering, Inc.; Union Carbide Corporation/Ph.D.

Oct. 13—General Atomic Company; The Department of Health Care Administration-City of N.Y.; Hughes Aircraft Company; 3M Company; Petro-Marine Engineering, Inc.; Union Carbide Corporation/BS, MS.

Oct. 16—Stanley Consultants; Tandem Computers; Varian Associates, Inc.

Oct. 16, 17—EG&G Idaho, Inc.; Oak Ridge National Laboratory.

Oct. 17—American Hospital Supply Corporation; Badger America, Inc.; Eli Lilly & Company; Fairchild Camera and Instrument Corporation; McGraw Edison Company; Northeastern University/Graduate School of Business Administration; Philadelphia Electric Company; Raychem Corporation; Silicon Systems, Inc.; United Technologies Research Center; Sargent & Lundy Engineers.

Oct. 17, 18—Babcock & Wilcox.

Oct. 18—Amdahl Corporation; Colt Industries, Inc.; Frito-Lay, Inc.; GAF Corporation; BF Goodrich; IBM; Polaroid Corporation; Rogers Corporation; Systems Control, Inc.; System Planning Corporation; The Warner & Swasey Company.

Oct. 18, 19—Motorola, Inc.; The Standard Oil Company (OHIO).

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.

Brain Neurochemistry and Behavior

Ongoing research projects involve the effects of various treatments (e.g., pharmacological, dietary, and surgical) on brain neurotransmitters, and how alterations in brain neurochemistry may effect such behaviors and physiological processes as pain sensitivity, aggression, and regulation of body temperature. Training will be given in the performance of a number of biochemical assays, formulation of diets, small animal surgery, and histology. Contact Dr. Arthur J. Schlosberg at 56-129, x3-3896, or at 56-141, x3-6709.

Department of Food and Nutrition: Food Protein Technology

1) Physical stability of soybean protein isolate. The mechanism and conditions of dispersion stability of proteins in water will be studied. Students will be involved in developing techniques for the determination of the dispersion stability of colloidal systems. 2) Property structure relation of protein semi-solid. Histochemical studies will be conducted to characterize the structure of cheese products. Students will be involved in the preparation, staining and microscopic observation of cheese samples as well as the instrumental measurements of protein semi-solid. Contact ChoKyun Rha, 56-137, x3-3493, or Dr. Cheri-Ho Lee, 16-239, x3-3688.

Laser Spectroscopy

There are several opportunities for undergraduates with extensive background in electronics in projects involving a number of delicate experimental investigations in laser spectroscopy of atoms, molecules and crystals. Extensive knowledge and experience in analogue and digital electronics, computer interface, etc., is essential. Contact Prof. M. Salour, 36-389, x3-5956, on Tuesdays and Thursdays at 12 noon.

Human Rehabilitation: Boston College Peripatolgy Program

The touch technique is the method of walking with the cane conventionally chosen by rehabilitation specialists teaching orientation and mobility to the blind. The preliminary calculations necessary for documenting path coverage in the touch technique and in a promising new technique have been worked out and computer programmed. Further work is needed to refine and extend both these calculations and the computer program. Additionally, a computer program that will print out orthographic projections of cane walking is needed. The work would be done at MIT.

Massachusetts Office of Consumer Affairs: Solar Action Office

Students are invited to work on a variety of projects, including: the administration of a Department of Housing and Urban Development grant program which will provide 1375 Massachusetts homeowners with \$400 each toward the purchase and installation of solar domestic hot water systems; the development of strong solar warranty and maintenance-service contracts; the exploration of financing options for solar construction; and the drafting of solar legislation and administrative regulations in the areas of tax incentives, sun rights, and insurance. Economics and/or computer background is preferred. Solar experience and access to a car will be helpful. The project entails at least 15-20 hours per week.

Center for Space Research

This lab is in the midst of designing a vestibular research experiment for use on Space-lab I. Experiment control is handled by a specially designed computer system bearing an unfortunate resemblance to a PDP-8. There is an opportunity for a student, part-time, to do programming for the flight system. Wages available. Prior course 8 experience is not required. Contact Robert F. Goeke, N51-309, x3-1910.

Coastal Engineering Field Study

A project is available on the effectiveness of a low-cost erosion device. The student will assist in sediment analysis of sand, beach profiling, data reduction, and the development of computer plotting programs. This project will require approximately 10 hours per week during the term. Contact Andrew Gutman at Sea Grant, x3-7079.

Graduate Studies

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 Thurow, Rm E52-252D. Application deadline, late October.

Woodrow Wilson Women's Studies Research Grants**—Research grants to encourage original and significant research about

women. The grants, which average \$1,000, are awarded to students in doctoral programs in any field of study at graduate schools in the US. Applicants must have completed all pre-dissertation requirements. Info: Graduate School Office, Room 3-136. Application deadline: November 1, 1978.

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

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

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

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

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

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.

Danforth Foundation Fellowships**—For the first time the Danforth Foundation is asking for nominations for postbaccalaureate awards. Applicants should hold a master's degree or equivalent number of course credits and be enrolled full or part time in a program leading to the doctor's degree, with serious interest in a career of teaching in a college or university in a field common to an undergraduate liberal arts curriculum in the US. A special effort is being made to bring qualified persons from racial and ethnic minorities into the teaching profession through this fellowship program. Graduate students wishing to apply should submit brief summaries of their plans for graduate study and an academic career in university teaching to Jeanne Richard, Associate Dean of the Graduate School, Rm 3-136, before October 20, 1978.

11am-1pm POLITICS AND TELEVISION: Ed Diamond with David Klattel of WCVB
1-3pm MIT CHORALLARIES: by Video Club
6-7pm THE NORTH END: by Abraham Ravett
7-9:30pm 17.24 live from 9-150

Friday, October 13

Channel 8:
11am-12noon SELECTED SHORTS: "Weightlessness," "Prisoners Dilemma," "Computer Music," "Seabrook," "Marriage," "Cold Shoulder"

12noon-1pm ENGINEERS IN SOCIETY: by Joseph Yamran
1-2pm THE MIT DATING GAME: by Basement Video
2-3pm THE NORTH END: Repeat, Thursday, Oct. 12, 6pm

Monday, October 16

Channel 8:
11am-1pm POLITICS AND TELEVISION: Repeat, Thursday, Oct. 12, 11am
1-3pm THE BAKKE DEBATE: Repeat, Wednesday, Oct. 11, 12noon

Tuesday, October 17

Channel 8:
11am-1pm THE MIT CHORALLARIES: Repeat, Thursday, Oct. 12, 1pm
1-2pm DESIGN OF FIELD STUDIES: Repeat, Wednesday, Oct. 11, 11am
2-3pm SEX ROLES IN SOCIETY

CABLE TV SCHEDULE X3-3625

October 11 - 17, 1978

Wednesday, October 11

Channel 8:
11am-12noon DESIGN OF FIELD STUDIES: John E. Gordon
12noon-2pm THE BAKKE DEBATE: by Video Club
2-3pm SEX ROLES IN SOCIETY

Thursday, October 12

Channel 8:

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

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

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.

Root-Tilden Scholarship Program, New York University Law School**—20 Root-Tilden Scholarships are awarded each year to graduates of accredited colleges who are committed to public service. The program complements normal law curriculum, giving opportunity to observe and support work of lawyers committed to public service. Each scholarship covers full tuition for one year and is renewable. Additional aid, on a loan, part-loan or part-grant basis, may be granted upon a demonstration of need. Deadline for nominations, Oct 19. To place your name in nomination, make an appointment with Dean Susan Haigh Houpt, Preprofessional Advising & Education Office, Rm 10-186, x3-4158.

Foreign Studies

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

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

Echoes

October 15 - 21

50 Years Ago

Republican candidate for the office of the President of the United States, Herbert Hoover, visited MIT this week. Crowds of enthusiastic Tech men spilling over from the Great Court onto Memorial Drive welcomed the presidential hopeful.

40 Years Ago

The Field Day dance will feature a "battle of the bands." Glenn Miller's band with vocalist Marion Hutton will represent swing while Nye Mathew will provide the evening's sweet music.

25 Years Ago

According to President James R. Killian's annual report the Institute is becoming "a modern university based around science and technology rather than classical studies, but embracing the arts, the social sciences, and the humanities as essential partners."

Prepared by Marcia Conroy, MIT Historical Collections, x4444.

TECH TALK Volume 23, Number 10 October 11, 1978

Tech Talk is published 39 times a year by the News Office, Massachusetts Institute of Technology. Director: Robert M. Byers; Assistant Directors: Charles H. Ball, Robert C. Di Iorio, Paula Ruth Korn, Joanne Miller, William T. Struble and Calvin D. Campbell, photojournalist; Reporters: Elizabeth C. Huntington, (Institute Notices), Marsha G. McMahon, (Institute Calendar, Classified Ads).

Address news and editorial comment to MIT News Office, Room 5-113, MIT, Cambridge, MA 02139. Telephone (617) 253-2701.

Mail subscriptions are \$12 per year. Checks should be made payable to MIT and mailed to Business Manager, Room 5-113, MIT, Cambridge, MA 02139.



A SPECIAL EVENT held in conjunction with the annual meeting of the MIT Corporation on Friday, Oct. 6, was a colloquium honoring MIT faculty members who hold Institute Professorships and Endowed Professorships. MIT Provost Walter A. Rosenblith, above left, an Institute Professor, chaired the afternoon panel which included (from left): Dr. David Baltimore, American Cancer Society Professor of Microbiology in the Department of Biology and the

Center for Cancer Research; Dr. Mildred S. Dresselhaus, Abby Rockefeller Mauzé Professor of Electrical Engineering and director of the Center for Materials Science and Engineering; Elting E. Morison, Elizabeth and James Killian Professor, Emeritus, in the School of Humanities and Social Science; and Dr. Arthur P. Mattuck, Class of 1922 Professor of Mathematics and chairman of the Undergraduate Mathematics Committee.

Edgar Schein Appointed Sloan Fellows Professor

Dr. Edgar H. Schein, chairman of the Organization Studies Group at MIT's Alfred P. Sloan School of Management, has been named Sloan Fellows Professor of Management.

Professor Schein, whose appointment was announced by Sloan School Dean William F. Pounds, succeeds Professor Charles A. Myers, who retired as Sloan Fellows Professor in July.

The chair was established in 1962 by the Society of Sloan Fellows, made up of graduates of the school's Sloan Fellows Program, the oldest executive education program in the United States.

Professor Schein has taught the Sloan Fellows the basic subject in organizational psychology since shortly after joining the Sloan School faculty in 1956 as an assistant professor. Starting in 1976 he also began an informal series of couples seminars in which some 20 to 30 couples in several sections meet with Professor Schein and his wife to discuss problems of work-family interaction, mid-life transitions and other issues.

Professor Schein, who is widely recognized for his research on the role of human factors in management and organizations, became professor of organizational psychology and management in 1964 and chairman of the Sloan School's Organization Studies Group in 1972.

In that post, he has developed a research program on the problems of adult socialization, career development and the interaction of work, self and family issues through the life cycle of men and women in different occupations.

One of the staff projects—research done on a panel of Sloan School graduates who were studied prior to graduation and again 10 to 12 years into their careers—has culminated in a book, *Career Dynamics*, published this year.

Professor Schein received a PhD degree at the University of Chicago in 1946, the BA and MA degrees from Stanford University in 1948 and 1949, and a PhD from Harvard University in 1952. After completing his doctorate he worked as a research psychologist and as Chief of the Social Psychology Section at the Walter Reed Army Institute of Research in Washington, D.C.

In 1960, Professor Schein wrote a book, *Coercive Persuasion*, which serves as one of the basic references for understanding the so-called brainwashing techniques used by the Communists during the Korean conflict.

Later, his research, teaching and consulting on problems of organization development and management development led Professor Schein to a formulation of how



Professor Schein

industrial psychology could be best applied to organizational problems. His short text, *Organizational Psychology* (1965), was one of the first two books to use this title and has helped to define this rapidly growing field.

From 1968 to 1971, Professor Schein took a leave of absence from the Sloan School to become Undergraduate Planning Professor. He launched the Task Force on Educational Innovation, which served as a forum for various innovative programs to share ideas and problems.

Professor Schein is a Fellow of the American Psychological Association and of the American Sociological Association. He has served as a member of the board of the National Training Laboratories and of the North American Research Group on Management.

He and his wife, Mary Lodmell Schein, have three children, Louise, Elizabeth and Peter. They live in Cambridge, Mass.

Dramashop to Present Three One-Acts

The MIT Dramashop will open its fall season with "An Evening of One-Act Plays," October 12-14, 8pm, in the Kresge Little Theatre.

The program includes works by Giacosa, Pinter and Lavedan. The plays are related thematically but offer contrasting theatrical styles.

For *Ever and Ever*, by Henri Lavedan, is a vignette of two young lovers who meet in the Bois de Boulogne in Paris. This production, set at the turn of the century, will feature Victoria Change '79 as Lucie and Michael Guenette '81 as Jacques.

Sacred Ground, by Giuseppe Giacosa (best remembered as Puccini's librettist for *La Bohème*, *Madame Butterfly* and *Tosca*), is a conscious imitation of Strindberg. Written in 1894, the play explores the structure and expectations of marriage, time and external pressures. Directed by David Dreyfuss, an MIT graduate student, the play will be set in a small country house near Lake Como in the 1890s, and will feature Steven Solnick '81 as Paolo, Ron Lyons '79 as Mario the brother, Barbara Masi '81 as Paolo's wife Anna and Susan Downing '81 as the servant, Maddalena.

The final work for the evening will be Harold Pinter's *The Collection*, written in 1961. This piece explores the dynamics of jealous suspicion in the lives of two London

couples. Directed by Bob Schaffer '80, *The Collection* will feature Stefano Bertozzi '81 as Harry, Mark Schafer '78 as James, Albert Ruesga '80 as Bill and Joanne Baldine, a graduate student, as Stella.

Following the program, the audience is invited to a critique with

cast and crew, and a coffee house. Admission is free.

Full-time, registered students interested in participating in an adaptation of Aristophanes' *The Frogs* should note that auditions will be held in the Little Theatre on October 30, 7:30pm. Performances are scheduled for November 16-18.

Whitaker Health Sciences Fund Trustees Elect Holmes

The election of Mrs. Ruth Holmes as a trustee was the highlight of the annual meeting of the Whitaker Health Sciences Fund held at the MIT President's House on October 5.

Mrs. Holmes is the daughter of the late U.A. Whitaker, founder and, for several years, a trustee of the Fund. A portrait of Mr. Whitaker, given to the Fund by AMP, Inc., the company which Mr. Whitaker founded, was on display for the occasion.

The major part of the day was devoted to a meeting with MIT doctoral candidates who hold Whitaker Health Sciences Fund Fellowships in the biomedical sciences and engineering. Each Fellow was given the opportunity to review his thesis research with the Trustees.

The Board of Trustees approved the Annual Report for 1977-1978, submitted by its President, Dean Emeritus Irwin W. Sizer. In dis-

cussing plans for the next fiscal year, the Board's favorable consideration was given to the recommendation that the Graduate Fellowships be increased next year to \$11,075 per student to take care of the increase in tuition, medical fee and living costs.

The Fund hopes to be able to support 15 such Fellowships next year, five of which will be reserved for doctoral students in the new Whitaker College of Health Sciences, Technology and Management, as well as 19 Faculty Research Grants (\$25,000 per grant), nine of which will be allocated for collaborative research with the Harvard Medical School and the Boston University School of Medicine.

Copies of the Annual Report of the Whitaker Health Sciences Fund are available to the MIT community in the Fund headquarters, Rm. 4-234.



Mrs. Holmes with Dr. Sizer at the annual meeting of the Whitaker Health Sciences Fund board of trustees.

Samuelson Serves on Tax Panel

Dr. Paul A. Samuelson, Institute Professor and professor of economics, is a member of a committee opposed to tax reduction plans such as California's Proposition 13 and the Massachusetts proposal known as Proposition 2½.

The committee, made up of about 30 persons, most of them in the academic community, is called the Committee for a Progressive Response to Proposition 13. Such "arbitrary tax limits," the committee said, would place many

cities in "severe financial jeopardy." It called instead for "more sensible, long-lasting solutions to control government expenditures, ease the state tax burden and make the tax structure more responsive."

Committee members include Harvard political scientist Samuel H. Beer, Harvard psychiatrist Robert Coles, Williams College historian James MacGregor Burns, and Boston City Council President Lawrence S. DiCara.

Hugh Hampton Young Fund Awards Fellowship, Prize

Richard K. Lester of Yorkshire, England, a graduate student in nuclear engineering, has been selected as the Hugh Hampton Young Memorial Fund Fellow, and Michael J. Wargo, a graduate student in materials science and engineering from Clairton, Pa., has been awarded a Hugh Hampton Young Prize for the 1978-79 academic year.

The Hugh Hampton Young Memorial Fund was established in 1966 by an anonymous donor in memory of Dr. Hugh Hampton Young, a distinguished surgeon who was affiliated with Johns Hopkins University for many years. The Fund was created to provide premium financial assistance to outstanding students with exceptional breadth of interests who show great promise of becoming capable and effective directors and coordinators of broad projects covering many disciplines. This is the third year the awards have been made.

Selection of the students was made by the Hugh Hampton Young Memorial Fund Council, as required by the gift, from nominations submitted to them by Dr. Kenneth R. Wadleigh, vice president and dean of the graduate school. The Council members are: Ralph A. Fletcher, Barnett D. Gordon and Francis E. Stern, all MIT Class of 1916, Thomas E. Weil '49 and Gene Gordon, son of Mr. Barnett Gordon.

Richard Lester received his BSc degree in chemical engineering from the Imperial College of Sci-

ence and Technology, University of London, in 1974 and began his graduate study that fall in the MIT Department of Nuclear Engineering. In January, 1977, he took a leave of absence from his doctoral program to take up an appointment as a Visiting Research Fellow in the International Relations Division of the Rockefeller Foundation. Mr. Lester is currently pursuing his dissertation research in the area of nuclear fuels supply and the study of energy policy issues.

Michael J. Wargo received the SB degree in geophysics from MIT in 1973. He returned to MIT in the fall of 1974 to begin a PhD program in materials science and engineering and is currently working on his thesis research which deals with the performance of electronic materials in solid state devices.

The Hugh Hampton Young Fellowship provides full tuition and fees and a nine-month stipend of \$550 per month. The Hugh Hampton Young Prize carries an honorarium of \$3,000.

Lincoln Collects 213 Pints of Blood

Lincoln Laboratory staff members contributed a total of 213 pints of blood to the Lexington Red Cross at a two-day blood drive at Lincoln on September 25 and 26.

MIT's major fall blood drive will be held in the Student Center early next month.

P.R. Leaders Will Discuss Island's Future

Three Puerto Rican political leaders will present the options for Puerto Rico's future, as a commonwealth, a state, or an independent nation, in a lecture series planned by the Club Latino at MIT.

Rafael Hernández Colón, president of the Popular Democratic Party, Puerto Rico's main opposition party, will explore possible modifications to Puerto Rico's commonwealth status to provide greater sovereignty for the island at 8pm, Friday, Oct. 12, in Room 26-100.

Rubén Berríos Martínez, president of the Puerto Rican Independence Party, will present the case for independence at 8pm on Tuesday, November 2, in Room 10-250.

Luis A. Ferré, founder and president of the pro-statehood New Progressive Party and governor of Puerto Rico from 1969-73, will speak on the advantages of statehood for Puerto Rico at the final lecture of the series. Mr. Ferré is a well known figure at MIT. A life member of the MIT Corporation, he has served on many Institute committees and has been a frequent speaker and guest lecturer at the Institute. Mr. Ferré will speak at 8pm, Tuesday, Nov. 7, in Room 10-250.

THE INSTITUTE CALENDAR X3-3270

October 11 through October 22

Events of Special Interest

"La Collectionneuse" — Eric Rohmer, french film director, presents and discusses his work in film screening. Courtesy of the French Library of Boston. Sat, Oct 14, 2pm, Rm 66-110. Free.

Seminars and Lectures

Wednesday, October 11

Chemical Exchange between Seawater and Old Oceanic Crust* — Dr. Russ McDuff, Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915. Coffee provided.

Transition from Strict to Laissez-Faire Form of Economic Government Regulation of the Airline Industry* — Monte Lazarus, Senior Vice President, Government Affairs, United Air Lines. Flight Transportation Laboratory, Aeronautics and Astronautics Seminar, 2pm, Rm 35-225.

Optimizing the Gains of the Barometric-Inertial Vertical Channel* — William S. Widnall, associate professor, aeronautics and astronautics. Aeronautics and Astronautics General Seminar, 3pm, Rm 37-252. Coffee served preceding seminar. Rm 33-222.

BWR Subchannel Analysis Using the Drift Flux-Vapor Diffusion Approach* — A. Faya, Nuclear Engineering Doctoral Seminar, 4-4:30pm, NW12-222.

Monitoring of Carbon Potential in Industrial Carburizing Furnaces* — Dr. Dirk Appel, Chief Engineer, Thermo Electron Corporation. Thermodynamics Seminar, 4pm, Rm 1-114. Coffee served 3:45pm.

Why Get an MBA?* — Dennis B. Metcalfe, Director of Admissions, Graduate School of Business, University of Chicago. Career Seminar, 4pm, Rm 10-250.

VLBI — A Radio Telescope as Big as the Earth* — Prof Bernard Burke, physics. Undergraduate Physics Colloquium, 4:15pm, Rm 4-339. Social Hour follows.

Two-Dimensional Model for Two-Phase Flow in LMFBR Fuel Assemblies* — M. Granziera, Nuclear Engineering Doctoral Seminar, 4:30-5pm, Rm NW12-222.

Reading* — Stephen Jay Gould, Harvard University, author of Ever Since Darwin, columnist for Natural History Magazine. Writing Program Science Writing Series Seminar, 8:15pm, Rm 14E-304. Refreshments following.

Thursday, October 12

Noise Approach to Biological Systems Analysis* — Syozo Yasui, assistant professor, physiology and Biophysics, University of Texas. Man-Vehicle Laboratory Seminar, 11:30-1pm, Rm 37-232.

Photography of Birds, Bats, Bugs and Bullets* — Harold E. Edgerton, Institute Professor Emeritus, Noon, Rm 4-402.

A Review of the Importance of Stability and Control on Aircraft Safety* — Dr. Seth B. Anderson, NASA Ames Research Center, Moffett Field, California. Laboratory for Information and Decision Systems Colloquium, 1pm, Rm 39-500.

Thermophilic Bacteria, Ecology, Physiology and Technology* — Dr. J.G. Zeikus, Associate Professor of Bacteriology, University of Wisconsin-Madison. Food and Applied Microbiology Group Seminar, 2pm, Rm 16-134.

Efficient Single-Scatter Model for Atmospheric Optical Propagation* — Cardinal Warde, assistant professor, electrical engineering and computer science. Electrical Engineering and Computer Science Optics Seminar, 3pm, Rm 36-428.

Interaction of Fast Molecular Ions with Matter* — Dr. D.S. Gemmel, Argonne National Laboratory, Argonne, Illinois. Physics Colloquium, 4pm, Rm 26-100. Tea served 3:30pm, Rm 26-110.

Nutritional Status and Immunological Responses* — Dr. R.K. Chandra, Professor of Pediatric Research, Memorial University of Newfoundland. Human and Clinical Nutrition Group Seminar, 4pm, Rm 16-134.

Techniques for the Management of Design on Large Scale International Projects* — David Beldotti, Badger Company, Cambridge. Civil Engineering Seminar, 4pm, Rm 1-350. Refreshments served.

The Emerging Network Marketplace; Network Information Services in the 1990s* — Herbert Dordick, Research Program on Communications Policy Seminar, 4-6pm, Rm 37-252.

The Puerto Rican Status Question: A Lecture Series* — Lic. Rafael Hernandez Colon, Former Governor of Puerto Rico '72-'76. Sponsored by Club Latino. Conference and discussion on the alternative of Free Association between Puerto Rico and the US, 8pm, Rm 26-100. Free. Ticket information call Juan Fernandez 494-0330 or Jesus Alvarez 494-9039, x5-8327 Dorm. Reception after lecture.

Friday, October 13

Arab Nationalist View of US-Arab Relations* — George Jabbar, Office of the President, Damascus, Syria (on leave); Chairman, Department of Politics, Arab League Educational, Scientific, and Cultural Organization (ELCSO), Cairo; PhD American University. Center for International Studies Seminar, 12-1:30pm, Rm E53-482, everyone welcome, bring your own lunch.

Transportation Activities in Massachusetts* — Frederick P. Salvucci, Secretary of Transportation and Construction, Massachusetts Department of Transportation and Construction. Center for Transportation Studies Luncheon Seminar, 12:45-2pm, optional luncheon, Noon-12:45pm, Rm 1-150. Luncheon Fee: \$1.25.

Chemical Engineering Seminars* — Simon P. Hanson, Evaporation and Combustion of Derived Liquid Fuels; 2pm. Kenneth G. Hellyar, A Twenty Minute Discourse on Some Aspects of an Experimental Study of Emulsion Stability, 2:50pm. Shingo Ishikawa, A study of the Mechanism of Vortex Inhibition, 3:25pm, Rm 66-110. Coffee will be served.

Design and Conduct of Epidemiological Field Studies: III Development of a Compatible S.O.P. (Standard Operating Procedure)* — Dr. John Gordon, Professor of Epidemiology, Emeritus, Harvard School of Public Health. International Nutrition Program Seminar, 2pm, Rm 66-144.

The Pure Electron Plasma: Liquid, Crystal* — Prof T.M. O'Neil, University of California, San Diego. Plasma Fusion Seminar, 3pm, Rm NW16-212.

Worldwide Economic, Social and Technological Trends in Computer Automated Manufacturing* — Eugene Merchant, director of research planning, Cincinnati Millacron, Inc. Mechanical Engineering Seminar, 3pm, Rm 3-133. Coffee at 4pm, Rm 1-114.

Observations of Severe Thunderstorms on the Western Plains* — Dr. Howard Bluestein, University of Oklahoma, Norman, Oklahoma. Meteorology Seminar, 4pm, Rm 54-100. Tea and coffee served 3:30pm, Rm 54-923.

What Preschoolers Know About Numbers* — Prof Rochel Gelman, Psychology, University of Pennsylvania. Psychology Colloquium, 4:30pm, Rm E10-013. Coffee at 4:15pm.

Monday, October 16

Battling the System: What Can Happen in South Africa?* — Dr. Helen Suzman, M.P. and Parliamentary antagonist for 25 years of the National Party of South Africa. African Luchoon Seminar, 1-2pm, Rm E53-482, everyone welcome, off-the-record, bring your own lunch.

The State of the Air Transportation Industry: Problems and Prospects* — Richard W. Taylor, Vice President and General Manager, Commercial Programs, Lockheed-California Company. Flight Transportation Laboratory, Aeronautics and Astronautics Seminar, 2pm, Rm 35-225.

Searching the Scientific Literature through Science Citation Index** — Charity McDonald, Institute for Scientific Information. Science Library Lecture, 3pm, Rm 14S-100.

Bifurcation and Stability of Periodic Solutions from a Zero Eigenvalue* — Kerry Anne Landman, mathematics. Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served at 3:30pm, Rm 2-349.

Extended X-Ray Absorption Fine Structure (EXAFS) Analysis of Short-Range Order Structures — Application to the Impregnated Catalysts Ni, Mo/ γ Al₂O₃* — Dr. Iwao Kohatsu, visiting scientist, Ceramics, material science and engineering Special Ceramics Seminar, 4pm, Rm 13-3101.

Looking at Data to Find Evidence for the Occurrence of Nonlinear Wave Packets: Where and How One Looks* — Prof E. Mollo-Christensen, meteorology. Water Resources and Environmental Engineering Seminar, 4-5pm, Rm 48-316. Coffee at 3:45pm, Rm 48-410.

The Myth of Nutrition Planning* — James Pines, Vice President, New TransCentury Corporation. International Food and Nutrition Policy Project Seminar, 4-6pm, Rm 16-310.

Shock-less Supercritical Flow on Profiles and Wings* — Prof Klaus Oswatitsch, Professor and Director of the Institute of Fluid Dynamics, Technical University of Vienna, Austria, currently Visiting Professor, Department of Aerospace Engineering, University of Maryland. Fluid Mechanics Seminar, 4-5pm, Rm 5-234. Coffee served at 3:55pm.

Distributed Shortest Paths Algorithms* — Pierre A. Humblet, electrical engineering and computer science. Sponsored by the Laboratory for Information and Decision Systems. LIDS Colloquium, 4pm, Rm 37-212.

Tuesday, October 17

Collisional and Non-Collisional Relaxation Processes* — Teymour Boutros-Ghali, Doctoral Thesis Fusion Seminar, Noon, Rm 38-166.

Computational Fluid Dynamics Applications* — Dr. William F. Balhaus, NASA Ames Research Center. Aeronautics and Astronautics Seminar, 3:30pm, Rm 9-150. Coffee at 3pm.

The Disappearance of Computers and Software As We Know Them Today* — Ruth M. Davis, Deputy undersecretary of Defense, Department of Defense. Laboratory for Computer Science Distinguished Lecturer Series, 3:30pm, Rm 10-250. Refreshments 3pm.

Amorphous Semiconductor Technology* — Prof David Adler, electrical engineering and computer science. Materials Science and Engineering Colloquium, 4pm, Rm 4-270. Refreshments at 3:30pm.

The Complex Modified Korteweg-de Vries Equation* — Flora Chu, assistant professor, electrical engineering and computer science. Seminar Series for Mathematical Methods for Nonlinear Problems, 4pm, Rm 26-217.

Order-Disorder Phenomena in Ammonium Halides* — Prof Carl W. Garland, chemistry. Physical Chemistry Seminar, 4pm, Rm 4-370. Coffee 3:45pm, Rm 6-321.

Structure and Biomechanics of Bone* — J. Lawrence Katz, professor of biophysics and biomedical engineering, Director of the Center for BioMedical Engineering, Rensselaer Polytechnic Institute, Troy, New York, Visiting Professor at Harvard Medical School. Committee on Biomedical Engineering Seminar, 4-5:30pm, Rm 37-212. Refreshments served.

Surface Chemistry of White Dwarfs* — Dr. Charles Alcock, Institute for Advance Study, Princeton. Astrophysics Colloquium, 4:15pm. Coffee 3:45pm.

The Cytoplasmic Ground Substance of Cultured Cells: Its Ultrastructure and Possible Roles in Cellular Organization, Differentiation and Intracellular Motility* — A presentation in 3D and time lapse cinematography. Dr. John J. Woloszewick, University of Colorado. Biology Colloquium, 4:30pm, Rm 6-120. Coffee served 4pm, 5th Floor, Bldg 56.

Wednesday, October 18

Recovery of Uranium from Sea Water* — F. Best, Nuclear Engineering Doctoral Seminar, 4-5pm, Rm NW12-222.

A Search for Stable Heavy Particles: Are There Quantum Numbers Beyond Charm?* — Prof Lawrence Rosenson, physics. Undergraduate Physics Colloquium, 4:15pm, Rm 4-339. Social Hour follows.

Thursday, October 19

How Many Bananas in a Bunch (Possible Applications of Fuzzy Set Theory to Operations Research)* — Dr. Joseph R. Fiksel, Operations Research Group, A.D. Little. Operations Research Center Seminar, 4pm, Rm 24-121. Coffee and doughnuts served.

A New Model, Based on Regulation of Uptake of Essential Nutrients for Regulation of Cell Division and Malignant Transformation* — Dr. P.M. Bhargava, Regional Research Laboratory, Hyderabad, India. Nutrition and Food Science Seminar, 4pm, Rm 16-134.

PIXE: Proton Induced X-Ray Emission as Applied to Environmental Analysis* — Prof Robert Litman, University of Lowell. Analytical Chemistry Seminar, 4pm, Rm 8-205.

Friday, October 20

Chemical Engineering Seminars* — Joseph Y. Yeboah, The Fluidized Bed Pyrolysis of Coal in the Presence of Dolomitic Compounds, 2pm. Kevin G. Neoh, title to be announced, 2:50pm. Kevin O. Meyers, Synthesis and Characterization of Multifunctional Silicone Elastomers, 3:25pm, Rm 66-110. Coffee served.

Applications of Fluorescence Techniques in Polymer Science** — Prof M. Morawetz, Polytechnic Institute, New York. Polymer Science Seminar, 2:30pm, Rm 8-314.

TOREx* — Peter A. Politzer, assistant professor, Nuclear Engineering Plasma Fusion Seminar, 3pm, Rm NW16-212.

Children's Rights in School: The 3rd Revolution* — Jan McDaniel, Sudbury Free School. SACC Seminar, 3pm, Rm 9-150.

Community Meetings

Wives' Group** — Wed, Oct 11, "Where and How to Shop in Boston," will be discussed by the Wives' Group Leaders, Charlotte Schwartz, Myra Rodrigues and Carol Hulsizer, 3-5pm, West Lounge, Student Center. Babysitting provided.

Mass Voice of Energy, Student Chapter* — Help us create a working forum for a balanced energy plan. Thurs, Oct 12, 5pm, Rm 24-115. For further information call x3-5118 or 354-0396.

Wives' Group** — Wed, Oct 18, Doreen Beinart, Co-Housemaster, Burton House, will lead a discussion on "Rearing Children in a New Culture," 5pm, West Lounge, Student Center. Babysitting provided.

Technology Wives Organization October General Meeting — "What MIT Has to Offer Wives" — Representatives from the Athletics Department, Personnel, Medical Department, libraries and Womens' Groups will provide information about MIT facilities. Wed, Oct 18, 7:30pm, Mezzanine Lounge, Student Center. Newcomers, members invited. Refreshments. Information: Rachel Kent 494-0137 or Roberta Caton x3-2406.

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

Technology Wives Organization Weekly Exercise Class** — An hour 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

The Shakespeare Ensemble* — Performing scenes from The Merchant of Venice, Measure for Measure, Much Ado About Nothing, and Don Juan (Moliere). Wed, Oct 18 and Thurs, Oct 19, Noon. Free.

Social Events

Electrical Engineering and Computer Science Social Hour* — Sponsored by the Eta Kappa Nu. Wed, Oct 11, 4-5pm, Rm 10-105. Coffee, cider, donuts served.

Latin Night: Dance and Enjoy* — Big party with Boston's Best Latin Band, Orquesta Fiesta, and open rum bar by Rums of Puerto Rico. Sponsored by the Club Latino. Fri, Oct 20, 8:30pm-2am, Burton Dining Hall. Admission: non-members \$3; members \$2. Ticket information: Juan Fernandez 494-0330 or Jesus Alvarez 494-9039 or x5-8327 Dorm.

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.

Music

Chamber Music Society* — Program includes works by Schubert, Quintet in C Major, "Shepherd on the Rock", and other songs; Beethoven, Quintet for Piano and Woodwinds in Eb Major. Sat, Oct 14, 8pm, Rm 10-250. Free. A reception will follow, Rm 10-105.

An Evening of Indian Classical Music* — Nikhil Banerjee on the Sitar. Sponsored by Sangam, part of Sangam's Cultural Interchange Program. Sun, Oct 15, 4pm, Kresge Auditorium. Admission: \$5, \$4 for students. Refreshments served.

Noon Hour Chapel Concert* — Alexander's Feast, Thurs, Oct 19, Noon, 1pm.

Guest Artist Series* — Frank Glazer, pianist, Professor of Piano, Eastman School of Music, will give a lecture on "The Science and Common Sense Piano Techniques". Thurs, Oct 19, 4-6pm, Rm 14E-109. Free.

Guest Artist Series* — Frank Glazer, piano. Program: Beethoven's Sonata Op. 110; The Wanderer Fantasia in C by Schubert; Schoenberg's, See Kleine Klavierstucke, Op. 19; and Sonata No. 3, Op. 3 in F minor by Brahms. Fri, Oct 20, 8:30pm, Kresge Auditorium. Admission: \$1 at the door, free in advance in Lobby 10.

Symphony Orchestra* — David Epstein, conductor; Ellen Hassman, cellist soloist. Program: Overture by Korngold; Dvorak's Cello Concerto in A Major; and Symphony in C by Bizet. Sat, Oct 21, 8:30pm, Kresge Auditorium. Admission: \$1 at the door, free in advance in Lobby 10.

Faculty Recital* — Rosemary Harbison, violin. Program includes works by Mozart, Bach and Brahms. Sun, Oct 22, 8pm, Kresge Auditorium. Free.

Movies

Program of Fluid Mechanics Films* — Surface Tension. Thurs, Oct 12, 5pm, Rm 3-270. Last 29 minutes.

Grand Illusion** — LSC Classic Film. Fri, Oct 13, 7:30pm, Rm 10-250. w/MIT or Wellesley ID. Starring Erich von Stroheim.

The Red Detachment of Woman* — Sponsored by FLCC. Sat, Oct 20, 2pm, Rm 3-370. Donation \$1.

The Odessa File** — SCC Midnite Movie. Sat, Oct 14, Midnight, Sala De Puerto Rico, Student Center, Free. Bring your own blanket and sit on the floor.

Dr. No** — LSC movie. Sat, Oct 14, 2pm, 7pm & 9:30pm, Rm 26-100. Admission: 75c w/MIT or Wellesley ID.

To Have and Have Not** — LSC movie. Sun, Oct 15, 6:30 & pm, Rm 10-250. Admission 75c w/MIT or Wellesley ID.

The Hunters** — Department of Humanities Film Series. Thurs, Oct 19, 2pm, Rm 16-310. Free.

Spirit of the Navajo and Intrepid Shadows** — Department of Humanities Film Series. Thurs, Oc 19, 3pm, Rm 66-056. Free.

Program of Fluid Mechanics Films* — Waves in Fluids, 33 minutes; Channel Flow of a Compressible Fluid, 29 minutes. Thurs, Oct 19, 4-5pm, Rm 3-270.

2001: A Space Odyssey** — LSC movie. Fri, Oct 20, 7 & 10pm, Sat, Oct 21, 2pm, 7pm & 10pm, Rm 26-100. Admission: 75c w/MIT or Wellesley ID.

The Lavender Hill Mob** — LSC movie. Sun, Oct 22, 6:30 & 9pm, Rm 10-250. Admission: 75c w/MIT or Wellesley ID.

Seven Samurai** — I Kira Kuosawa. LSC classic film. Fri, Oct 20, 7:30pm, Rm 10-250. 75c w/MIT or Wellesley ID.

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

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. Reception Tues, Oct 17, 7-10pm. 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.

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.

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

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

MIT Historical Collections* — In house exhibits include antique globes; The Ellsworth A. Wentz Collection of motors and meters; rare instruments including compasses, sundials and other measuring devices from the 17th and 18th centuries; Early Alumni and several exhibits of memorabilia and photographs honoring prominent graduates of the Institute; 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.

Varsity Ice Hockey** — Pre season meeting, Thurs, Oct 12, 5:30pm, all prospective players must attend. On ice practice starts, Thurs, Oct 16, 4th floor, W20-491, Student Center. Graduate students are eligible.

Fall Sports Home Schedule* — **Field Hockey:** Fri, Oct 13, Clark, 4pm. Mon, Oct 23, Pine Manor, 3:30pm. Tues, Oct 31, Endicott, 3:30pm. **Varsity M Sailing:** Sat, Oct 14 & 15, NEISA Team Racing Tournament STAAKE Trophy, 9:30am. Sun, Oct 22, Open Invitational, Smith Trophy, 9:30am. Sat, Oct 28 & 29, NEISA Fall Intersectional, Schell Trophy, 9:30am. **Varsity Soccer:** Sat, Oct 14, U of Lowell, 2pm. Sat, Oct 21, Holy Cross, 2pm. **JV/Frosh Soccer:** Wed, Oct 11, Tufts, 3pm. Sat, Oct 14, Emerson, host, 10am. Wed, Oct 18, Phillips Andover, 3pm. Sat, Oct 21, Babson, 10:30am. Sat, Oct 28, Emerson, 10am. **W Volleyball:** Thurs, Oct 12, Bridgewater, 7:30pm. Tues, Oct 17, Wellesley, 7:30pm. Sat, Oct 28, SMU & Kenne, 1pm. **Fall Women's Tennis:** Thurs, Oct 26, Boston State, 4pm.

Exhibits

Wednesday Afternoon Photography Lecture Series* — Olivia Parker will give an informal lecture and present her work in photography on "Still Life: An Exploration". Made possible by a grant from the Minolta Corporation. Wed, Oct 18, 4:30pm, Creative Photography Gallery, 120 Mass Ave, Cambridge. For information call x3-4424.

Department of Architecture Fourth Floor Exhibition Program* — The Laboratory of Architecture and Planning. On view daily through Oct 19, Bldg 7, 4th Floor.

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

Mostly Recent Work* — Frank Miller, graduate student, Department of Architecture. Exhibition of drawings on view through Oct 20, 8:30-5:30pm Rotch Library Visual Collections.

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.

MIT Historical Collections* — In house exhibits include antique globes; The Ellsworth A. Wentz Collection of motors and meters; rare instruments including compasses, sundials and other measuring devices from the 17th and 18th centuries; Early Alumni and several exhibits of memorabilia and photographs honoring prominent graduates of the Institute; 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.

Theater

An Evening of One Act Plays* — Dramashop presents Sacred Ground by Giuseppe Giacosa (a play from 1894 by Puccini's librettist, and Italian Strindberg), and The Collection by Harold Pinter. Thurs, Oct 12, 13, 14, 8pm, Kresge Little Theater. Admission: Free w/MIT ID or \$1 at the door without ID.

Death of a Salesman* — Community Players will perform on Fri, Oct 20, 21, 26, 27 and 28, 8pm. Sun, Oct 22, and 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.

Dance

Beginning Foxtrot Workshop* — Sponsored by the Ballroom Dance Club. Learn to Foxtrot, no partner necessary. Sun, Oct 15, 2-4pm, Sala De Puerto Rico, Student Center. Admission: 50c. For information call Teri Weston x5-8514 or Kelly Gamble x5-7336 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.

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

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

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

Send notices for Oct. 18 through Oct. 29 to Calendar Editor, Rm 5-113, x3-3270, before Noon, Friday, Oct. 13.

Athletics

Noon Hour Volleyball** — Starting up earnest, Thurs, Oct 12. For additional information call Jim Jones x3-2180.

25 to Begin ADP XII

The Office of Personnel Development announces the beginning of the twelfth session of the Administrative Development Program (ADP XII) on Thursday, Oct. 12. Instructors for the organizational psychology section of the program are Drs. Adam and Maureen Yagodka of the Office of Personnel Development.

Participants selected for the ADP XII are:

- Carmen Besterman, Office of the Chairman;
- John Bidwell, Facilities and Management Systems;
- Andrew Brown, Comptrollers Accounting Office;
- Mary Jane Burke, Audit Division;
- Linda Burley, Patent Office.
- Anthony Colozzi, Electrical Engineering and Computer Science;
- John DePamphilis, Housing;
- Nora Donahue, Lincoln Laboratory;
- Katherine Eisenhaure, Economics;
- Cathleen Feeley, Student Loan Office.
- Simon Foner, National Magnet Laboratory;
- Louise Harrigan, Development Office;
- Ellen Hoffman, Resource Planning;
- Richard Ingalls, Haystack Observatory;
- Micheline Jedrey, Rotch Library.
- Patricia Lewis, Accounts Payable;
- Martha Loss, Medical;
- Robert Matson, Administrative Computer Services;
- Lawrence Milan, Personnel Services;
- Kathleen Powers, Humanities Library.
- Judith Quimby, Nutrition and Food Sciences;
- Kathleen Rick, Personnel Services;
- Donald Silversmith, Lincoln Laboratory;
- Robert Wilson, Lincoln Laboratory;
- Kenneth Wright, Electrical Engineering and Computer Science.

The ADP XI resumed on Tuesday, Oct. 10, with the first class of the financial management section. The first portion of this section, financial management theory, is taught by Dr. Zvi Bodie, assistant professor of finance and economics in the School of Management at Boston University. The second portion, focusing on "Finances at MIT," is coordinated by Mr. George Pröndergast, assistant director of the Office of Sponsored Programs, and is taught by members of MIT's financial administration.

TWO Announces First Meeting

The first general meeting of the Technology Wives Organization will be held Wednesday, Oct. 18, in the Mezzanine Lounge at 7:30pm. Representatives from the Department of Athletics, Medical Department, Libraries, Personnel and women's groups will present a program of information on MIT facilities and services available to student spouses.



Rehearsing for chamber music concert, October 14, are from left, Jean Rife, Steve Umans, Sandra Apeseche and Tom Stevenson. John Kirsch is at the piano.

Chamber Players Announce Season-Opening Concert

The MIT Chamber Music Society will open its 1978-79 performance season with a concert by the Chamber Players in Huntington Hall (Rm. 10-250), on Saturday, October 14, 8pm.

The hall is more intimate than Kresge Auditorium, usually scheduled for such public performances at MIT, and will provide a more sympathetic acoustical environment for chamber music.

The program for the concert will mark the 150th anniversary of the death of Schubert with several songs by the composer, including *Der Hirt auf dem Felsen* (*Shepherd on the Rock*), Opus 129, featuring well-known Boston soprano Diana Hoagland, pianist John Buttrick, associate professor of music at MIT, and Steve Umans, clarinetist and MIT alumnus.

Special guests Arturo Delmoni, violinist, and Ronald Thomas and David Fink, cellists, will be joined by Timothy Morgenthaler, violinist and third year chemical engineering major at MIT, and Marcus Thompson, associate professor of music at MIT, violinist, in Schubert's well-known Quintet in C, Opus 163.

This group will also perform the Quintet in C on Friday afternoon, October 13, 5pm, at the Smithsonian Astrophysical Observatory,

60 Garden Street, Cambridge.

The October 14 concert will open with the Beethoven Quintet for Piano and Woodwinds in E flat Major, Opus 16. John Kirsch, a fourth year nuclear engineering major and past soloist with the MIT Symphony, will play piano. Woodwinds will include Steve Umans, clarinet, MIT alumnus Tom Stephenson, bassoon, Sandy Apeseche, oboe, and MIT chamber music faculty member Jean Rife, French horn.

The MIT Chamber Players were founded in 1974 by Professor Thompson, who continues to direct the group and its parent affiliate, the MIT Chamber Music Society. Personnel for Chamber Players concerts are drawn from members of the Society, the MIT music faculty and celebrated young professionals from the Boston area.

The Society's goal, to promote the performance of mixed chamber music at all levels of proficiency in the MIT community, is thereby realized for its more experienced students through these concerts.

A reception will follow the October 14 concert in the Bush Room, 10-105, where the public may greet the performers.

USMA to Honor Dr. Killian With Sylvanus Thayer Award

(Continued from page 1)
head a special task force of about 40 civilian scientists and engineers to review the best ways whereby the United States could deter or resist a surprise attack.

Dr. Killian has written about this period in his book, *Sputnik, Scientists, and Eisenhower: A Memoir of the First Special Assistant to the President for Science and Technology*, published by The MIT Press in 1977.

Through the years, Dr. Killian has compiled an extensive record of service to the government through his participation in advisory and study groups, and as a member of commissions and groups studying national problems.

In addition, he was chairman of the Carnegie Commission on Educational Television, and later served as a director and chairman of the Corporation for Public Broadcasting.

At the review of the Corps of Cadets tomorrow afternoon, Dr.

Killian will receive an engraved sabre commemorating the event from the brigade first captain.

The Thayer Award will be presented later at a dinner in the cadet dining hall. The program will include remarks by Lt. Gen. A. J. Goodpaster, West Point superintendent, and the singing of Alma Mater by the Cadet Glee Club.

Among those accompanying Dr. Killian to West Point will be MIT Chairman Howard W. Johnson, President Jerome B. Wiesner and former President Julius A. Stratton.

Yehuda Yannay To Give Lecture In Music Section

The MIT Music Section will sponsor a lecture on "Music, Time and Our Times: A Composer's View" on Tuesday, October 17, 4:30pm, in Room 4-160. Featured speaker will be composer-conductor Yehuda Yannay, associate professor of music at the University of Wisconsin in Milwaukee.

Dr. Yannay is the founder and conductor of the Music From Almost Yesterday Ensemble in Milwaukee, dedicated to the regular presentation of the music of the avant-garde. For several years he has been involved in interdisciplinary work in contemporary aesthetics.

With a special emphasis on experimental trends, Dr. Yannay has organized symposia, lectured, conducted panels, and researched related aspects of musical composition, technology, film, dance and theater.

Recently Dr. Yannay and a colleague, Professor Pavel Burda, received a major grant from the Vilas Foundation to organize an international symposium on the subject of "Time in Music, Rhythm and Percussion: East and West," scheduled for March, 1979.

A native of Rumania, Dr. Yannay resided in Israel for several years before coming to the United States. His works have been performed on stage and broadcast on radio throughout the United States, Europe and Israel.

Gunter Works To Be Exhibited

Virginia Gunter, director of the Margaret Hutchinson Compton Gallery (Rm. 10-150), will be one of 250 local artists who will open their studios to visitors during Artweek/Boston, October 14-22.

Artweek is being sponsored by the Artists' Foundation and the Mayor's Office of Cultural Affairs in association with museums, galleries, arts organizations and arts councils throughout the greater Boston area.

Ms. Gunter will be exhibiting new works on paper at the Helen Shlien Gallery, 348-354 Congress Street, Boston. The exhibition, titled "Drawings—Small Works," will be a group show of eight local artists, including Ms. Gunter.

Ms. Gunter is an environment sculptor concerned with light, shadow, air currents and natural elements. She creates sculpture for a particular site, for the space in which it will exist. Her works on paper are drawings for large sculptural works.

The Shlien Gallery will be open to the public 1-5pm, Sunday, and 12-5pm, Wednesday-Saturday.

CLASSIFIED ADS X3-3270

Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Persons who have no extensions or who wish to list only home telephones may submit ads by coming in person to the *Tech Talk* office, Rm 5-113, and presenting Institute identification. Ads may be telephoned to x3-3270 or mailed to Rm 5-113. **Deadline is noon Friday before publication.**

For Sale, Etc.

Frigidaire laundry Ctr, elect washer & dryer, apt sz, exc cond, \$200 nego. Call Debby x3-3404 or 623-1093.

B&W 15" TV, gd cond, UHF, \$35. Call Bob 492-8847 eves.

IBM Executive electric typewrtr, exc cond, \$200 or best. Call 625-0152 between 10-6pm.

Pool tble, standard sz, \$175 or best. Call 665-8142 aft 6pm.

Electric food slicer, old commercial unit, \$20 or best. Call Dick x3-6472.

Radial snows, used 1 season, sz 175 SR14, \$30 pr. Call Dick Clark x7842 Lincl.

Viscount Grand Prix, 10 spd, chrome-moly frme, Shimano components & shifter, 5 mos old, \$150. Call x3-6289.

2 19" B&W TV sets, \$50 ea; Dynaco PAS-3X stereo preamp, Zenith Allegro spkrs, \$10; 20 wood storm windows, great for greenhse; yellow mail cart, \$50; Garrard 42C trntble & port record player. Call Rocky x3-4882.

Electric range, 4 burner, 2 ovens, self timing oven, \$100; Cado teak wall sys, incl 4 cabs, magazine shlf, rails & shiving, value over \$2400, ask \$1200. Call x3-6328.

Csitt recorder w/built-in condenser mike, auto-level, AC adapter & batteries, \$20. Call John Small x3-3157.

Snows F78-14, Fleet Wood XT78, used 2 mos, \$50; snow blower, Aiens, 5 hp w/chains, used 3 mos, \$525. Call 894-3783 eves.

4000 BTU A/C, 2 yrs old, under wrnty \$80; 4 dram M chest, gd cond \$30. Call Mark x3-3483 or Alice 658-8627.

10 gal aquarium compl setup, \$35; 2 dble travis rod w/opt valiance rod, extends to 96", \$10 ea; sm child's oak school desk & chr, ready to paint or stain, \$10. Call 273-2095.

Coronet \$49; elect typewrtr \$125; guitar \$15. Call Marilyn x3-4603 or 547-6119 eves.

Direct drv trntble Technics 1950 specs comparable to best, 10 wttts, memograph repeat, stroboscopic adj etc - dustbag & lk nw Audio Technica cart AT 331E, \$140 nego. Call 494-0254.

Pr H78-14 snows on whls, used 2K, \$40; 20" G Ross bike, \$20. Call Don x3-2570.

Pr studded stl rads snows, sz 215-15 on 15" whls, \$40. Call Taylor x3-1491.

Pr General stud snows W/W F78-14, used 1 yr, \$30. Call Jim x3-7287.

Mahogany DR tble set w/6 chrs & buffet. Call Terry x8-4062 Draper.

2 tennis raquets, Wilson P2000, grip 4 3/8 light weight \$25; T3000, grip 4 1/2, med weight, \$30. Call Mike x8-4228 Draper.

Tempwood wood burn stove, yr old, perfect cond, \$200. Call x5721 Lincl.

Pr 560x13 nw Delta Supreme Sport Special 4 ply tires, w/rims, fits Toyotas \$40; lined leather jacket, W lg, \$25. Call Donna x3-4076.

VW luggage rack welded stl, \$20. Call x8-4378 Draper.

Tires, 1 Goodyr Polyglass G78-15, 1 Sears Glass Belted G78-15, 1 Goodyr Polyglass on rim G78-15, \$40 ea. Call Brenda x3-5228.

Platform bed w/draws for storage, tw sz, exc cond, org \$150; ask \$75. Call Annalise x3-1570 or 266-5003.

Air compressor 2"x2 1/2", 1 1/2 hp, 220V, snl phase. Call Dave x3-5829.

2 front row seat tickets for Cleveland Orchestra concert, Oct 23, 8pm, ea \$11 value, sell for \$8. Call 484-3689 eves or wkends.

Garrard trntble, \$25; Royal man typewrtr, \$20; M hike boots, sz 8 1/2, \$20. Call Jeannine x3-2163.

Freezr 9cf Bradford, all but nw, used 6 mos, \$175; humidifier used 2 seasons, gd cond, \$25. Call x3-2772.

Glass & steel coffee tble; blonde DR tble w/bamboo legs; Breuer arm chrs, metal bookes & file cab; W 3spd Raleigh, exc cond, w/baskets, more, best of fers. Call Anne x3-6915 or x3-3323.

Vy attractive wool brown 3 cushion couch & chr, w/chrome bases, gd cond, \$90 couch, \$40 chr, or \$100 for both. Call 259-0959 Lincl.

Dble bed incl matt, box sprg frme & head board \$45; single bed matt box sprng & frme, \$20. Call Ed x7452 Lincl.

4 shelf wall unit, 2" solid pine, shlvs, 16.8", 1@5' & 2@3', \$125 or best. Call Mike x3-4462 or 494-0360.

Pot btlv stove, coal burning, \$80. Call x8-1322 Draper.

3 spd M bike, 19" frme, rns fine, \$20. Call Gus x3-5118.

Omega IIIB spkrs, retail \$320 pr, w/ sell for \$260. Call x5-6125 Dorm.

9x12 avocado grn nylon shag rug, gd cond, \$50. Call Norm x5780 Lincl.

Onkyo A-7022 intergrated amp, perfect cond, 60 watts/channel, clean sound, many functions; Westinghse, A/C, 6000 BTU, sz perfect for Dorm windows, perfect cond. Call x5-9375 Dorm or 494-0087.

Text books, 20 math & physics, mostly physics, best offer over \$60. Call Lee x485 Lincl.

HiFi equipment, Dynaco FM-5 FM tuner, \$180; ADC XLM phono cart, \$20; Dynaco Quadaptor, \$15; Revox A 77 MkIII 1102 pr half-trck stereo tape deck \$650; Drake TR-4C amateur transceiver w/AC-4 power supply, \$550. Call 661-9046.

Attic sale, Sat, Oct 14, 10-4, espec Child toys, games, equip & odds & ends. Address: 33 Valley Road, Arl.

Wood desk w/4 draws, \$25; Litronix calculator & adapter, \$7; Underwood add mach, \$15; Juliette tape recdr, \$15; 4 prs wood fabric stretchers, \$1/pr. Call Mary x3-3855.

23" M 10 spd bike, 26" whls, nd some work, but can be ridden as is \$45; pr tires, 685-15 bias-ply \$15; bike racing handlebar, stl, \$2; pr PA cabs, folded horn w/12" spkrs & horn-tweeter, vy efficient, compact, gd for clubwork, \$125; ext sprg w/2-10" spkrs, \$35. Call Barry x3-7402.

Sm 6 draw desk; variety of chrs; 4'x5' lamb-skin rug; Singer zigzag sew mach; end tbles, all cheap. Call Thurs please x3-5117.

Viceroy Elect Eye camera, \$25; brownie Hawkeye flash camera w/flash \$15, incl misc flash cubes & bulbs. Call x3-3864.

Westinghse top loading port dishwasher, \$35. Call x3-7850.

Refrig/frzr, 4 cf, 30x18x18", org \$130, sell for \$70. Call Mitch 738-5166.

M wool blazer, 36R, suit 36L, sweaters, shirts, ties & shoes, all in exc cond, some designer clothes, 1-2 yrs old, mostly sz s&m. Call 494-9200

Down jacket, lg, red, \$30. Call x3-2922.

24" gas stove, gd cond, nice sz for camp or cottage, \$25. Call 488-4940.

Texas Insr SR 50A calculator, fl scientific, case, chrs, \$25. Call Paul x5-6688 Dorm.

2 10 gal aquarium setups, ss frame tank, fl chrome incand hood, pump, htr, 2 corner filters, opt tank divider, gravel, if new over \$40, now \$20 ea & 10 gal tank w/pump, 2 filters, gravel, full hood, works but nds nw switch, now \$14, divider for 5 gal tank \$1. Call Cynthia x3-3959.

Snow tires pr w/rims, 14" used 1 season, bias ply, lds of tread, \$45. Call Pete x5-8212 Dorm or 494-8163 anytime.

Used Electric, 13", \$300. Call Jean x3-6953.

Chrysler Airtemp, 18,000 BTU fits Eastgate case,ment, vy cool, ideal for hot Bos summers, \$100. Call 494-0254.

Trntble, Dual 1215 auto/standard trntble w/damped cueing, pitch control & Sure Hi-track cart, used 2 yrs \$50. Call 261-2442 eves, Molly or Dave.

Imp Bridge GR 650A, \$15; Oscillograph GE \$10; Chart Recdr, MI \$15. Call 876-0390.

Vehicles

'63 Mercedes 190, aging beauty, nds generator & head gasket, \$500. Call Solow x3-5268.

'65 Volvo classic, completely rusted but should run another yr, eng vy sound, \$400 or best. Call Bill x3-7573.

'67 Mercedes 250S, show room cond, brnd nw paint, rust proofed & undercoated, nw starter & btry, nw pads all around, eng just overhauled, truly a classic, now appreciating in value, ask \$3995. Call Mike x5-7115 Dorm.

'68 Mercedes 200D, gd mech cond, nd bdy work, rust, \$1500. Call x3-4636.

'68 VW Bug, exc cond, 800. Call Michael 723-8197.

'70 Cutlass, \$600, gear shift, radio, gd cond. Call 547-8038.

'70 VW Fastback, lt blu, auto, gd int, r/defogger, 4 gd tires + 2 snows, nw exhaust sys, 12K on rebt eng, \$800 or best. Call 628-9234.

'71 BMW 2002, mech perfect, runs like a charm, bdy some rust, prc below wholesale for quick sale. Call (1) 334-3652 or x5-7115 Dorm.

'71 Toyota Corolla, 4 dr sedan, stand shif, 63K, snows, nds some work. Call 864-8086.

'71 VW Super Beetle, rebt eng, AM/FM, sun rf, rads, \$1400, nego. Call 933-4738.

'72 BMW 2002, 60K, exc cond, maroon, AM/FM, Sempert rads, nw tune up & exhaust, \$2800. Call x3-5540.

'72 Dodge Polara, 73K, A/C, PS & PB, runs wl, \$800 or best. Call Bob x3-1470.

'72 Dodge Challenger, exc bdy & interior, nds eng work, \$1800. Call Mary x3-2137.

'72 Pontiac Grand Prix, gd mech cond, A/C, PS & PB, bucket seats, white side walls, vinyl top, best. Call Martha x3-3601.

'72 VW Van, rebt eng, nw hvy duty shock, nw front disc brks, pump i k & cabs blt in, \$1395. Call x3-6739 or 321-2678 aft 6pm.

'72 Vega, auto/radio, exc cond, snows, \$700 or best. Call Yi x5-9795 Dorm.

'73 Alfa Romeo Spider Veloce, red, exc cond in & out, 46K, 27mpg, \$3800 or best. Call (1) 772-6879 eves.

'73 Audi Fox, grn 4 dr, auto magic trans, completely rebt lk nw eng, not operable, missing rt hand constant velocity U joint, ask \$900. Call Joe Molloy x8-3235 Draper.

'74 Camaro, slvr grey, A/C, AM/FM csst, cruise control, \$3000. Call Bob x3-2894 Mon & Wed 1-5pm.

'74 Ford Torino, 4 dr, 70K, A/C, PS & PB, exc run cond, \$1700. Call Marty x5415 Lincl or 387-1746 aft 6pm.

'75 MG Midget, 28K, \$1900. Call Dale x3-1416.

'75 Mercury Bobcat, 4 cyl, stand shift, 35K, exc cond, \$1975. Call Ken 685-6884.

'77 Cutlass Supreme, exc cond, A/C, 8 track stereo, bucket seats, console, auto, 19 mpg, red w/white vinyl top & interior. Call 851-6884.

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

'77 Renault Le Car, GTL, 9500mi, Ziebart, beige, lk nw, mst sell, lv country, \$3100, nego. Call 489-1699.

'77 Toyota Celica GT Liftbck, AM/FM stereo, A/C, tinted glass, frnt spoiler, r/sun shades, rads, special black paint w/gold pin stripe, rustproofing, trailr hitch, \$4900. Call x213 Lincl or 935-3940.

Dune buggy, yellow fiberglss, chrome rims, '66 VW eng, many extras, ready for beach or st, hvy cover, over 4K invested, \$1600 or best. Call Ted x8-4611 Draper.

22' Lobster boat, 4 cyl inboard motor, open cockpit, exc for scuba diving, \$1200 or best. Call 631-1155 or x3-7289.

Fiberglass boat, 15' tri-hull '76, incl 40hp elect start Mercury motor, full canvas, extra gas tank, galvanized trailer. Call 275-1669 eves.

Housing

Bedford expanded Cape, exc cond w/frpl LR, eat-in K, 2 fl B, 3-4 beds, scr porch, lg wood lot, quiet st, nr schls & shops, principals only, \$64,900. Call x3-6793.

Belmont, 1BR, LR, K, B, study, 1st fl, 2 fam hse, sep entrance, off st park, T, nr shops, ww, \$295/mo util incl, avail Nov 1. Call Tracy x3-4840 or 484-7588 eve & wkends.

Furn or unfurn optional apt in prv school, Chestnut Hill section of Brkline, incl 2 sun, spc rms, 2 B, washr/dryr, A/C, all util & 2 park spcs, shr school K w/nw appl, incl D&D, etc, short walk to shops, trans, synagogue & church, avail Jan 1, \$300/mo. Call 469-0130.

Camb 1st fl apt, 2BR, B, eat-in K, DR, sun room, adults only, \$260/mo + ht. Call 864-1241 aft 5pm or wkends anytime.

Furn apt nr Harv Sq, avail for mo of Dec. For more info call Jay x8-1321 Draper.

White Mt, NH, 3 BR chalet w/frpl, LR, B, K, dine area, on vy prv 2 acre woods & appl trees. For details call Eva x3-5742.

Chalet, Eidelweis Conway, slps 10, elect ht, 1 1/2 B, avail full ski season, \$1500 or \$600/mo excluding ht. Call Frankel x3-6824 or 734-2221 eves.

Somerville, off Broadway, 4 rm furn apt, B, off st park, \$300/mo + util. Call x3-2131 Anne Marie 776-4883 eves.

Quichee, VT, arch design ski lodge in prv area w/chr lift & T-bar, 4 BR, lg LR w/frpl, fam rm, solarium, 2B, 2 zone oil ht, fly equip, rent by wk or wkend. Call x3-4291.

Ski Gunstock, 2 BR, 2B, condo, slps 6, cable TV, \$1500 for ski season, fall foliage also avail, \$150 wk or \$75 wkends. Call x3-6169.

Studio apt avail, 1 Longfellow Plc, \$234/mo, mod K & B, vy conv loc. Call x3-5997 or 567-9114.

Hse to rent, fly furn, end of Dec thru July, lovely counry setting, yet only 15 to 20 min to Camb or Bos, \$500/mo. Call x3-7586.

Brnd nw townhse, 3 BR, 2 1/2 B, ww, D&D, 2 patios, park, under 1 mi to MIT & BU, trans to medical area, etc, reasonable rates for responsible tenant. Call 491-4258 eves.

Animals

Kittens, fuzzy, loving, hsebroken & free, looking for gd homes. Call Gregory Baecher x3-7199.

Free to gd homes 1 black & white M, 3 calico F kittens, 7 wks old, healthy & hsebroken. Call Rita x3-4971.

5' Boa constrictor, \$75. Call x3-2522.

Lost and Found

I found a bank cheque from the Riverhead Savings Bank, Riverhead, NY, for \$65, if it is yours, you know who it is made out to & who signed it. Pls contact Educational Council x3-3354 to redeem the check.

Wanted

Gymnastics teacher for beginners, wl pay. Call Vicki x3-2793.

Guitar accompanist & or singer M or F to accompany 3 F vocalist, employees of MIT, interested in performing folk, jazz, blues, rock etc. Call Raine x3-5124.

Motorola 6800 editor-assembler to borrow for a few days, wl pay. Call Dave x3-5980.

Recent set of Encycl, reasonably prc. Call x3-7736.

Telephone w/mod plug. Call 626-0835.

To purchase directly from owner a hse in the Maimonides Sch area of Brkline or Weston, to close in spring, prc range 70's-90's. Principals only. Call 731-6838.

Architecture student/draftsman/illustrator to do drawings, mostly line and 1 map for PhD thesis, about 5-6 hr work, requiring drafting instruments, any reasonable fee paid. Call 494-0254 eves.

Riders wtd to & from Brkline, 9-5pm. Call Helen x3-2710.

Wanted used box-sprng & matt; DR tble w/4 chrs. Contact Bijiani x3-5315, 1-3pm.

Up to 11' of bookshlvs 6 to 7H. Call Ward x7236 Lincl.

Roommates

Apt to shr, Arl, pro to shr/sublet mod lux duplex, 3BR, lg LR, ww, lg K, D&D, washer & dryer, electronics library & lab, conv loc to T & Mass Ave, unique pro/business opportunity for RECS, prof, \$175-\$200. Call Mike or Ken 646-8230.

Pro responsible F looking for the same to shr apt, \$300/mo max. Call 262-5868.

Mature F pro sks others to find Brkline or Belmnt hse or apt, rent lts than \$200 ea. Call Marie x3-3807.

Parking Stickers

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

Swap West gar for Albany or East. Call Cliff x3-3179.

Trade West gar sticker for Albany. Call x3-2130.

Wl trade Westgate sticker & cash for West gar sticker. Call Chris x5-9636 Dorm eves.

West gar for Albany or East. Call George x3-7795.

Wl pay to trade Westgate sticker for West gar. Call Paul x3-1981 or x5-9555 Dorm.

Wl trade Albany sticker for Ford lot sticker. John x3-5146.

Miscellaneous

Could you use support w/basic skills in English, writing & editing? I am experienced at TUTORING FOREIGN STUDENTS. Call Evelyn x3-2748, 9:30-2pm for time & place on campus.

Free, Gestetner C10 copy mach, nds repair, some supplies incl. Call Michael or Barbara x3-4444.

Heating, A/Cing, ventilation, insulation work to be done. Call Arthur Dubois 893-5174 anytime.

Will swap Fri, 7:30pm indoor tennis time for 1 hr on Tues or Thurs pm, prefer between 7pm & 10:30pm. Call Mary Anne x3-2201.

Exp typing, wl do any form of typing. Call Linda x3-5476.

Exp typist wl type theses, MS, reports, fast & acur. Call x3-4528.

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

Surplus Property

MIT surplus property for transfer or sale for research or teaching programs only.

1 Solenoid Electromagnetic, 24"; also a mod B Particle Size Analyzer, Mig Coulter Electronics. For further info please call W.A. Derry, Property Office x3-2777.

POSITIONS AVAILABLE

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

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

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

Dick Higham	3-4278
Pat Williams	3-1594
Carolyn Scheer	3-1595
(Secretary — Tertia Perkins)	
Virginia Bishop	3-1591
Richard Cerrato	3-4266
Ken Hewitt	3-4267
(Secretary — Paulette Chiles)	
Sally Hansen	3-4275
Lawrence Milan	3-2928
Kathleen Rick	3-4269
(Secretary — Jenni Leibman)	

Assistant Director, of the Consortium on Financing Higher Education based at MIT, will participate in all aspects of program: conduct research; monitor relevant research of other individuals and agencies; plan and coordinate meetings of consortium membership, and act as secretary to its Policy Committee; assist coordinator for Federal Relations through research and analyses; manage office operations. Applicants must have experience in applied research and analysis, including skill in survey research and statistical methods; experience in higher education, specifically in areas related to financial aid admissions, as well as an understanding of issues related to financing higher education also necessary. SELECTED APPLICANT WILL NOT BE AN MIT EMPLOYEE. (10/11)

Admin. Staff, Fiscal Officer in the School of Engineering to be responsible for all administrative aspects of the Technology & Human Rehabilitation Program: prepare proposals; act as liaison among participating institutions; prepare reports; monitor expenses; prepare budgets; reconcile expenditures; assist in planning and setting up various laboratories. Experience in research and financial administration in academic setting required. Knowledge of proposal and report preparation, excellent interpersonal skills also necessary. A78-69 (10/4)

Acad. Staff, Applications Programmer, in Electrical Engineering and Computer Science to maintain and enhance application programs for current management information systems; specify, design, and code new application programs; document new or revised programs; train and assist users as necessary. Programming experience and an Associate's Degree or equivalent required. PL/1, Multics or RDMS experience helpful. C78-29 (10/4)

Sponsored Research Staff, Research Associate, in the Civil Engineering Constructed Facilities Division. Candidates must have experience in performing cyclic triaxial tests and analyzing and interpreting the resulting effective stress behavior. Knowledge of sample preparation techniques, electronic data logging and computer reduction of data is required to meet commitments on ongoing research. Candidates must hold a PhD in Civil Engineering with concentration in geotechnical engineering. Background in offshore foundation problems desired. Project is sponsored by overseas agency and asks for assistance in the design of an offshore storm surge barrier. Educational working environment, office and laboratory with some travel. R78-217 (10/11)

Sponsored Research Staff, Dietician, in the Clinical Research Center to supervise all dietary services; work with investigators in developing plans of study, planning diets and ordering supplies; teach assisting personnel dietary procedures; orient patients to diet requirements and help maintain their interest in study; prepare menus; order supplies, equipment and food; calculate dietary ingredients for metabolic studies. Registration (ADA), with good background in service required. Knowledge or interest in research also required. R78-224 (10/11)

Sponsored Research Staff, Research Associate, in Nutrition and Food Science to do nutritional biochemistry research in protein synthesis and human placental peptides, with special emphasis on nutritional factors affecting their synthesis. A PhD in nutritional biochemistry required, with experience in the techniques pertaining to the study of protein synthesis with isolated messages and protein factors, and strong background in density gradient centrifugation, chromatography, electrophoresis and peptide analysis. Experience in supervising and advising graduate students also necessary. R78-225 (10/11)

Sponsored Research Staff, Research Engineer, temporary, in the Energy Laboratory to perform research on the fluid mechanics and heat transfer of water cooled turbines and of fluid beds. A PhD in engineering with experience in fluid mechanics, two phased flows, and heat transfer required. R78-228 (10/11)

Sponsored Research Staff, temporary, in the Center for Transportation Studies to assume responsibility for software, design, implementation and maintenance on a large scale, real-time, automated transportation information and control system, operating on an Interdata 8-32 computer. Will interact with transportation analysts and operations personnel. At least 4 years' experience in Fortran programming in the mini-computer environment, with experience in real-time systems preferred. Bachelor's degree in computer science, mathematics or a related field required. Graduate degree preferred. Temporary through 8/79. R78-229 (10/11)

Sponsored Research Staff, Tech. Asst., in Biology to perform administrative and experimental work in large active molecular biology lab; assist

Secretary IV in the Institute Archives to type varied materials from machine dictation and handwritten draft; compose routine correspondence; schedule appointments; prepare payroll reports; order and maintain supplies; compile statistics; assist with special projects as necessary. Good general secretarial skills required in addition to the ability to work with minimal supervision and to perform work for several people. B78-605 (10/4)

Secretary IV in the Provost's Office, MIT/Wellesley Upward Bound Program to type letters, reports and other materials; perform accounting services; coordinate preparations for meetings, orientations or other events; answer phones; organize and maintain files. Excellent typing skill, Mass. driver's license and ability to get along well with others are required. Willingness to commute daily to Wellesley College and work there during 7-week summer session also required. B78-178 (4/19)

Secretary III/IV, part-time, in the Center for Advanced Engineering Study to type letters, reports and speeches; maintain files; answer phones; perform general office duties. Good typing skills, flexibility and willingness to do a variety of tasks required. 20 hrs./wk. B78-633 (10/11)

Sec. III/IV, part-time, in Mechanical Engineering to perform general office duties including machine transcription. Good typing skill and ability to transcribe machine dictation required. 20 hrs./wk. B78-604 (10/4)

Sec. III/IV in the Audit Division to perform receptionist duties; transcribe machine dictation; type statistical and financial reports. Excellent typing, command of English grammar and facility with figures required. B78-606 (10/4)

Sec. III/IV in Materials Science and Engineering to assist two faculty members and their research groups; type technical reports, manuscripts, statistical tables and charts from hand written text or machine dictation; compile research related information from library sources; arrange travel; prepare class materials. Excellent typing, ability to work on irregular schedule required. Familiarity with MIT procedures preferred. B78-610 (10/4)

Secretary IV to Administrative Officer in the Chemical Engineering Dept. to perform general secretarial duties: type; transcribe dictation; file; answer telephones; maintain contract and grant records; assist in arrangements for visitors; coordinate departmental secretarial requirements. Organizational ability required, as well as good secretarial skills. Shorthand or speedwriting and use of dictating equipment desirable. B77-655 (11/9)

Sec. III in Career Planning and Placement to perform several varied duties: type correspondence, interview and other reports; circulate job information to students and others; maintain job records and bulletin boards; assist with special projects including mass mailings, compiling lists, etc. Good secretarial skills required in addition to an interest in working in a service-oriented environment. B78-613 (10/4)

Sr. Lib. Asst. IV in the Lindgren Library to assist in all activities; circulation, reserves, catalog card changes; journals checking; bindery preparation; user assistance; typing. College training preferred. Library experience, familiarity with German or Russian helpful. Typing skill is necessary. B78-627 (10/11)

Clerk IV-V, Documentation Librarian, in Administrative Computing Services to maintain a reference and circulation library of Data Processing Documentation and technical information as well as vendor manuals and other relevant material. Will maintain circulation lists; distribute documents; assists in proofreading, editing, typing and other document publishing activities. A knowledge of basic data processing concepts and terminology, general clerical skills and familiarity with library procedures necessary. Typing skills are required. B78-632 (10/11)

Sr. Clerk IV, part-time, temporary, in the Libraries NASIC Search Service to assist users and prospective users of computerized bibliographic search service; answer questions about procedures, capabilities of service; handle related clerical duties including typing and maintenance of statistics. 15 hrs./wk., temporary through June, 1979. B78-626 (10/11)

Sr. Clerk III in the Office of Personnel Services to process personnel actions; answer telephone inquiries; coordinate activities between other personnel sections and payroll office. Will assist with special projects as necessary. Typing skill, facility with detailed work, ability to communicate with others over phone and in person necessary. Applicants must have at least 3 years' clerical experience. B78-620 (10/11)

Clerk/Typist III in the Energy Laboratory's Word Processing office to type manuscripts and other general material; maintain files; order supplies; xerox. Excellent typing skills, and good command of English language required. High school graduation also required. Will be trained for technical typing and in operation of Wang Word Processor. B78-621 (10/11)

Sr. Clerk III in the Nuclear Reactor Laboratory Fiscal Office to maintain purchase order and accounts receivable files; review account charges; prepare invoices for payment; assist in payroll preparation; maintain and update cost figures for proposals and budgets; type reports and proposals. Good typing and communications skills required. High school graduation with one year's business school or equivalent experience in accounting procedures also required. B78-622 (10/11)

Clerk III in Biology Headquarters to provide general office assistance: type letters, class notes; distribute informational and other materials to students; xerox; occasionally act as messenger. Position involves extensive contact with students, faculty and staff. Typing skill is required. B78-601 (10/4)

Clerk III in Medical Dept. Records Section to pull and file medical records; assist with maintenance of medical index; answer phones. Position requires ability to work in a busy setting and on one's feet all day. Demonstrated ability to handle clerical duties required. 37 1/2 hrs./wk. B78-603 (10/4)

Sr. Clerk III in the Admissions Office to type address labels; assist in large-volume mailings and special projects; occasionally operate IBM Mag-card machine (will be trained to operate). Excellent typing skill, ability to organize and handle detailed work required. Non smoking office. B78-617 (10/4)

Clerk III in the Office of the Registrar to perform receptionist and general clerical duties: answer phones; redirect inquiries; use record keeping computer terminals. Good typing skill, ability to work with a wide variety of people required. B78-618 (10/4)

Cashier III, Comptrollers Accounting Office to receive and disburse cash; prepare receipts; log mail receipts; cash personal checks; prepare checks for deposit; prove cash fund. Ability to handle a volume of cash transactions accurately, to work well with others and to operate a calculator required. B78-624 (10/11)

Clerk/Messenger II in the Sloan School of Management to assist with daily office activities; maintain photocopier; maintain and order office supplies; pick up and deliver office and classroom items. Physical stamina for lifting and outdoor exercise required. B78-623 (10/11)

Book Checker II part-time in Chemical Engineering Reading Room/Library to monitor general activity in the facility; maintain order; issue books, periodicals; follow up on unreturned materials; handle light clerical duties. Ability to type and to handle detailed work required. 20 hrs./wk. B78-615 (10/4)

Hourly, Technician B in the Chemistry Dept. to assist in laboratory and research work; operate experimental and technical equipment; lay out, wire and test prototype digital, analog, and radio frequency equipment; maintain inventory of electrical components and instrument documentation. Graduation from a 2 year day technical school or its equivalent applicable experience required. Must be able to work without supervision. 40 hrs./wk. H78-161 (10/11)

Hourly, Technician A, based at Linac, Middleton, Mass.; for the Environmental Medical Service to be responsible for operating shift; advise operating personnel on radiation hazards; operate radiation monitoring systems including establishment of control levels; establish safe radiation zone entry conditions and permissible occupancy times; supervise radiation protection aspects of research operation; prepare shift report. Applicants should be graduates of a two year day technical school, or equivalent, and should have a background in physical or biological processes. Experience in health physics or with radiation hazards also necessary. 40 hrs./wk. H78-156 (10/11)

Hourly, Sr. Tech., in the Gas Turbine and Plasma Dynamics Laboratory of Aeronautics and Astronautics to be responsible for construction of new mechanical experiments. Will work from verbal instructions and minimal sketches. Will work with students and supervise other personnel. Graduation from a 2-year day technical school, or its equivalent, and at least 5 years' experience as technician or machinist required. Extremely strong mechanical background required, including expertise with machine tools, welding, brazing and assembly. H78-95.

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

- ADMINISTRATIVE STAFF:**
 A77-3, Systems Programmer, Information Processing Serv. (2/16)
 A77-86, Systems Programmer, Information Processing Serv. (1/11)
 A78-14, Asst. Dir., MIT Associates Program (4/12)
 A78-20, Admin. Staff, Alumni Association (5/3)
 A78-27, Admin. Staff, Auditor, Audit Division (6/7)
 A78-30, Admin. Staff, Design Manager, MIT Press (6/7)
 A78-38, Admin. Staff, Systems Programmer, Information Processing Services (8/30)
 A78-44, Admin. Staff, Industrial Liaison Officer (8/30)
 A78-49, Admin. Staff, Financial Aid Officer (8/30)
 A78-56, Admin. Staff, Asst. Director, Resource Planning (9/6)
 A78-57, Admin. Staff, Property Auditor, Supervisor, Office of Facilities Management Systems (9/6)
 A78-58, Admin. Staff, Property Administrator, Office of Facilities Management Systems (9/6)
 A78-60, Admin. Staff, Asst. to the Dean, Dean for Student Affairs Office (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)

- BIWEEKLY:**
 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)
 B78-166, Sec. III/IV, Student Financial Aid Office (10/4)
 B78-167, Sec. III/IV, Mechanical Engineering (4/26)
 B78-185, Account Rep. V, Administrative Computer Serv. (4/26)
 B78-275, Sec. IV, Harvard-MIT Division of Health Sciences & Technology (6/7)
 B78-302, Sec. IV, Resource Development (7/12)
 B78-306, Sec. IV, Resource Lab. of Electronics (7/12)
 B78-328, Sec. IV, Humanities (8/16)
 B78-329, Sec. IV, part-time, Medical Dept. (10/4)
 B78-343, Sec. IV, Energy Lab (7/26)
 B78-349, Edit. Asst. IV, Center for Transportation Studies (7/26)
 B78-382, Sec. V, Physics (9/27)
 B78-387, Sec. IV, Material Science & Engineering (8/16)
 B78-392, Sec. IV, Division for Study & Research in Education (8/16)
 B78-408, Sec. IV, Sloan School (8/30)
 B78-414, Sr. Clerk/Keypunch Operator II, temporary, Office of Personnel Services (8/30)
 B78-423, Sec. III, Sloan School (8/30)
 B78-432, Sr. Clerk IV, Medical Dept. (8/30)
 B78-436, Sec. IV/Receptionist III, Math Headquarters (8/30)
 B78-445, Sec. IV, Center for Space Research (8/30)
 B78-453, Sec. IV, Nutrition & Food Sciences (8/30)
 B78-457, Sec. IV, Lab. for Computer Science (9/6)
 B78-463, Sec. IV, Sloan School (9/6)
 B78-472, Sec. III, Office of Facilities Management Systems (9/6)
 B78-484, Sec. IV, Civil Engineering (9/6)
 B78-488, Sec. III/IV, Arteriosclerosis Center (9/6)
 B78-490, Sec. III/IV, Ocean Engineering (9/6)
 B78-494, Sec. IV, Patent & Copyright Office (8/30)
 B78-495, Sec. III, Office of the Dean, School of Architecture (10/4)
 B78-496, Serv. Asst. III, Sloan School (9/6)
 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/Mag Card Operator, Economics (9/13)
 B78-519, Sec. IV, Laboratory of Architecture & Planning (10/4)
 B78-521, Sec. IV, part-time, Architecture Dept. (10/4)
 B78-523, Tech. Asst. V, Alumni Association (9/13)
 B78-525, Sec. IV/IV, 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)
 B78-536, Sec. III/IV, MIT Associates (9/20)
 B78-541, Sec. IV, Office of the Chairman (9/20)
 B78-542, Sec. IV, Program in Science, Technology & Society (9/20)
 B78-545, Sec. IV, Center for Space Research (10/4)
 B78-547, Sec. V, temp., Psychology (9/20)
 B78-549, Sec. III/IV, Mechanical Engineering (9/27)
 B78-550, Sec. III/IV, Mechanical Engineering (9/27)
 B78-558, Sr. Sec. V, Sloan School (9/27)
 B78-560, Sec. III/IV, Office of Personnel Relations, Benefits (9/27)
 B78-561, Sec. IV, Research Lab. of Electronics (9/27)
 B78-562, Sec. IV, Energy Lab. (9/27)
 B78-563, Sec. IV, Sea Grant College Program (9/27)
 B78-564, Sec. IV, part-time, Architecture (10/4)
 B78-567, Sr. Clerk III, Libraries (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)
 B78-574, Sec. IV, Admissions Office (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)
 B78-580, Sec. III/IV, Lab. for Computer Science (9/27)
 B78-582, Clerk Typist III, part-time, Graduate School Office (10/4)
 B78-589, Sec. IV, Earth & Planetary Science (10/4)
 B78-591, Sec. IV, Libraries (Archives) (10/4)
 B78-592, Sec. IV, part-time, MIT Press (10/4)
 B78-593, Receptionist/Clerk III, Student Accounts (10/4)
 B78-594, Sec. IV, Mathematics Dept. (10/4)
 B78-595, Sec. III/IV, Nuclear Eng. (10/4)
 B78-598, Sec. IV, Research Lab. of Electronics (10/4)
 B78-599, Sec. IV, Medical Dept. (10/4)
- ACADEMIC STAFF:**
 C78-6, Acad. Staff, Asst. Eng. Librarian, Engineering Library (4/5)
 C78-9, Acad. Staff, Asst. Science Librarian, Libraries (4/19)
 C78-12, Acad. Staff, Technical Instructor, Mechanical Engineering (6/7)
 C78-17, Acad. Staff, Research Associate (7/12)
 C78-22, 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)
- EXEMPT:**
 E77-54, Exempt, Eng. Asst., Center for Material Science (7/12)
 E77-56, Exempt, Estimator/Scheduler, Physical Plant (11/9)
 E78-27, Exempt, Admin. Asst., Libraries, Microreproduction Lab. (6/14)
 E78-35, Exempt, Tech. Supervisor, Physical Plant/Telecommunications (8/16)
 E78-36, Exempt, Principal Operator, Physical Plant (8/16)
 E78-42, Exempt, Dental Hygienist, Medical Dept. (9/6)
 E78-46, Exempt, Admin. Asst., Clinical Research Center (9/6)
 E78-47, Exempt, Asst. Accountant, MIT Press (9/6)
- HOURLY:**
 H77-89, HVAC Designer/Draftsperson, Physical Plant (10/4)
 H77-23, Machinist A, Nutrition & Food Science (3/8)
 H78-64, Sr. Technician, National Magnet Laboratory (5/31)
 H78-99, Sheet Metal Worker, Physical Plant (7/26)
 H78-106, Sr. Technician, (Electronic), National Magnet Lab (8/16)
 H78-137, Technician B, Center for Advanced Engineering Studies (9/6)
 H78-140, Tech. B, Haystack Observatory (9/27)
 H78-152, Mechanic B, Lab. For Nuclear Science (9/27)
 H78-157, Waiter/Waitress, Faculty Club (10/4)
- SPONSORED RESEARCH STAFF:**
 R77-53, Spons. Res. Staff, Res. Lab. of Electronics (4/12)
 R77-79, Spons. Res. Staff, Postdoctoral Research, Physics, Lab. for Nuclear Science (5/4)
 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)
 R78-79, Spons. Res. Staff, Mechanical Engineer (4/19)
 R78-81, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
 R78-82, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
 R78-83, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
 R78-84, Spons. Res. Staff, Lab. for Nuclear Science (4/19)
 R78-85, Spons. Res. Staff, Technical Asst., Nutrition & Food Science (4/19)
 R78-93, Spons. Res. Staff, Res. Engineer, Civil Engineering (5/10)
 R78-101, Spons. Res. Staff, Lab. for Nuclear Science (5/31)
 R78-102, Spons. Res. Staff, Lab. for Nuclear Science (5/31)
 R78-103, Spons. Res. Staff, Lab. for Nuclear Science (5/31)
 R78-104, Physicist, Temp., Lab. for Nuclear Science (6/7)
 R78-105, Physicist, Temp., Lab. for Nuclear Science (5/31)
 R78-108, Programmer, Temp., Res. Lab. of Electronics (5/31)
 R78-110, Spons. Res. Staff, part-time, Sea Grant College Program (5/31)
 R78-113, Spons. Res. Staff, Sloan School of Management (7/12)
 R78-117, Spons. Res. Staff, Temp., Economics Dept. (7/12)
 R78-119, Theoretical Plasma Physicist, National Magnet Laboratory (7/12)
 R78-120, Spons. Res. Staff, National Magnet Laboratory (7/12)
 R78-125, Spons. Res. Staff, Electrical Systems Laboratory (7/12)
 R78-133, Spons. Res. Staff, Sr. Microwave Systems Engineer, Natl. Magnet Lab. (7/26)
 R78-134, Spons. Res. Staff, Research Lab. of Electronics (7/26)
 R78-135, Spons. Res. Staff, Research Lab. of Electronics (7/26)
 R78-136, Spons. Res. Staff, Lab. for Computer Science (8/16)
 R78-145, Spons. Res. Staff, Electronics Engineer, Lab. for Nuclear Science (8/16)
 R78-146, Spons. Res. Staff, Electrical Engineer, Bates Linear Accelerator (8/16)
 R78-147, Spons. Res. Staff, Systems Programmer, Lab. for Nuclear Science (8/16)
 R78-148, Spons. Res. Staff, Organic Chemist, National Magnet 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)
 R78-163, Spons. Res. Staff, Systems Analyst, temp. Energy Lab. (8/30)
 R78-166, Spons. Res. Staff, Research Analyst, Center for Policy Alternatives (8/30)

- R78-168, Spons. Res. Staff, Programmer, Center for Space Research (8/30)
 R78-170, Spons. Res. Staff, Programmer, Center for Space Research (8/30)
 R78-184, 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)
 R78-196, Spons. Res. Staff, Project Manager, Center for Transportation Studies (9/13)
 R78-197, Spons. Res. Staff, Research Engineer, Energy Laboratory (9/13)
 R78-198, Spons. Res. Staff, Postdoctoral Scientist, Center for Space Research. (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)
 R78-211, 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)
 R78-216, Spons. Res. Staff, Education Asst., Sea Grant College Program (10/4)
 R78-218, Spons. Res. Staff, Financial Administrator, part-time, School of Engineering (10/4)

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

- | | |
|---------|-------------------|
| E78-24 | Exempt |
| B78-540 | Sec. IV |
| C78-19 | Acad. Staff |
| C78-20 | Acad. Staff |
| C78-21 | Acad. Staff |
| H78-151 | Machinist A |
| H78-192 | Spons. Res. Staff |
| B78-318 | Sec. IV |
| B78-454 | Clerk III |
| B78-431 | Sec. III |
| B78-619 | Sec. IV |
| B78-588 | Sec. IV |
| B78-508 | Acctg. Asst. V |
| A78-64 | Admin. Staff |
| B78-371 | Admin. Asst. V |
| B78-531 | Sec. III/IV |
| B78-590 | Cashier III |
| B78-587 | Sr. Clerk III |
| B78-596 | Sec. IV |
| H78-146 | Hourly |
| B78-193 | Spons. Res. Staff |
| B78-500 | Sec. IV |
| B78-583 | Sr. Clerk III |
| H78-154 | Hourly |
| B78-134 | Hourly |
| A78-59 | Admin. Staff |
| B78-600 | Clerk |

The following positions are on HOLD pending further decision:

- | | |
|---------|-------------------|
| R78-191 | Spons. Res. Staff |
| H78-100 | Painter |
| H78-101 | Painter |
| B78-535 | Sec. III |
| A78-51 | Admin. Staff |
| H78-160 | Hourly |
| B78-599 | Sec. IV |
| B78-614 | Clerk IV (p-t) |

 892 VERSION 03 FLC 0076 *****
 SERID *****
 DISTRIBUTION CODE ABD QAD093556
 SPOOL FILE NAME TYPE
 CREATION DATE 10/04/78 04:59:14
 SPOOL FILE ID 170
 RECORD COUNT 55,191 SUBSCRIBERS
55,191
TECHNOLOGY REVIEW
SUBSCRIBERS
THIS MONTH!

Join this growing readership at a special price to members of the M.I.T. community: the next 8 issues for \$7.50 (instead of \$15). Use the coupon.



Please enter my subscription for:

1 yr. \$7.50 2 yrs. \$15 3 yrs. \$22.50

Name _____

Address _____

City _____ State _____ Zip _____

Student, Faculty, Employee
 Class of _____

Please send information on special rates for gift subscriptions

Mail coupon to Technology Review, Room 10-140

Magnet Laboratory to Host MHD Design Conference

(Continued from page 1)

opening session. Dr. Shanklin will summarize the direction of the US MHD program and its organization, primary objectives, facilities, accomplishments so far and its goals for the future.

Magnetohydrodynamics is a continuous process, with no moving parts, in which an electrically conducting gas or plasma moving through a magnetic field generates an electric current. Superconducting magnets are wound from materials that lose all resistance to electric current when cooled to a temperature near absolute zero. They are thus potentially capable of generating high magnetic fields with nearly zero power consumption.

The Component Development and Integration Facility (CDIF), the focus of the first phase of the three-stage MHD power-generating program, is now under construction in Butte, Montana. The second stage will focus on the operation of a pilot plant. The first commercial MHD system, the final stage of the program, is scheduled for completion in the 1990s.

The conference, organized by D. Bruce Montgomery, associate director of the Magnet Laboratory and head of its Technology Division, and by John E.C. Williams and Peter G. Marston, group leaders in the Technology Division,

will review technological achievements of the past year and will, through workshops on October 19, attempt to define and outline approaches to the engineering problems which must be solved before commercial-scale superconducting MHD magnets can be constructed.

In addition to Dr. Shanklin, two other members of the Department of Energy MHD Division are scheduled to address the conference. George Rudins, contract manager, will present an overview of open-cycle MHD systems with emphasis on magnet and channel interaction and their significance to overall system performance. He will also talk about magnet size and field strength with regard to the price of electricity and power plant construction costs.

Marshall Sluyter, also a contract manager for the Department of Energy MHD Division, will discuss both closed-cycle and disk MHD systems—alternatives to the open-cycle system.

Other speakers from industry and from a number of laboratories including MIT's Magnet Lab, Argonne National Lab, and the National Bureau of Standards, will discuss their achievements in MHD technology.

Anyone wishing to attend the conference, luncheon or dinner should contact A.M. Dawson at (617) 253-5547 for more information.

Nuclear Engineering Plans 'Seabrook Week' for IAP

(Continued from page 1)

films, he has scheduled "Seabrook," an hour-long history of the opposition to Seabrook by the Clamshell Alliance. "It's an excellent film," says Dube. "It goes up to the summer of 1977 when 1,400 demonstrators were arrested at the site. In the film townspeople are interviewed. The head of the police department is obligated to keep trespassers off the site, but, interestingly, his wife is opposed to the plant."

"Is the Seabrook Nuclear Plant Needed and Is It Environmentally Sound?" will be the topic for a panel discussion on Wednesday. Already scheduled as panelists are Dr. Andrew Kadak of the Energy Research Group and Karin Sheldon of the New England Coalition on Nuclear Pollution. Dr. Kadak will defend nuclear plants, arguing why they are New England's best source of electrical power. Ms. Sheldon is a long-time active opponent of Seabrook.

To complete the panel Dube is trying to line up two representatives of the federal regulatory agencies that have approved the Seabrook plant—either the administrator or the regional administrator of the US Environ-

mental Protection Agency and a commissioner of the US Nuclear Regulatory Agency.

For Thursday Dube wants to get a big-name speaker. "Governor Mel Thompson would be nice," he says with a grin, "or maybe Jimmy Carter."

Finally, on Friday, after thinking about Seabrook for four days, people will have a chance to visit the plant itself. Participation will be limited to those with MIT ID cards.

Directions for signing up for the trip as well as the times and places of the on-campus activities will be included in the IAP Guides.

Golf Team Wins Berth at ECAC

The MIT varsity golf team, despite a winless 0-5 fall season, won a surprising second place tie in the Eastern Collegiate Athletic Conference regional championship tournament at Dartmouth's Hanover Country Club last Friday, due in significant measure to a one-under-par 69 by Doug Parigian, a junior from Lowell, Mass., who wound up low scorer for the tourney.

The second place tie qualified MIT for the second year in a row to play in the ECAC's Eastern Championships scheduled next Sunday and Monday at Essex Country Club in Salem, Mass., with teams represented from as far south as Virginia.

MIT tied Dartmouth at 307 total for four lowest scores by teams of five. Bob Cosway, a junior from Seattle, Wash., had 78 for MIT, Mike Varrell, senior from Rye, N.H., had 79, and Doug Wegner, senior from Youngstown, Ohio, had 81. Ned Emerson, sophomore from Duxbury, Mass., had 84. University of Vermont won with 299. Eighteen colleges and universities were entered.

Women's Basketball

There will be an organizational meeting of the women's intercollegiate basketball team on Monday, October 16, at 5:00pm. The meeting will be held in W31-118 (next to the Physical Education Office) and is open to all interested undergraduate women.



The annual meeting of the MIT Corporation each fall provides an opportunity for Mr. and Mrs. Cecil H. Green of Dallas, Texas, to meet face-to-face with the Ida M. Green Fellows. Mr. Green is a life member emeritus of the Corporation. The fellowships were established several years ago to promote graduate

education for young women. Shown above in the garden at the President's House are, left to right: Diane Bustamante, Cynthia Horan, Nancy Bartlett, Mrs. Green, Carol Simon, Mr. Green, Teresa Nolet (an honorary fellow), Jennifer Lynn Hall and Gerda Endemann.

Generator Construction Begins

(Continued from page 1)

the electrical power it needs to operate classrooms, offices, laboratories, dormitories, etc., from the superconducting generator.

What "most" means is that MIT actually draws 14 megawatts of power during its peak use periods—specifically, 2pm to 5pm weekdays. During those hours of the 30-day test period, MIT will draw all 10 megawatts from the superconducting generator and augment it with additional power from the Institute's regular supplier, the Cambridge Electric Co. On the other hand, when MIT demands fall below 10 megawatts—at night and on weekends, for example—surplus power from the superconducting generator will be fed to Cambridge Electric to augment that utility's regular sources of power.

Theoretically, superconducting generators would be cheaper and smaller and offer greater capability for withstanding large disturbances on a power system, thus making such systems more black-out proof. The US Department of Energy is supporting the 10-megawatt machine test program because of obvious potentials for improving electric power system performance.

Over the past decade, engineers in two MIT laboratories—the Electric Power Systems Engineering Laboratory of the Department of Electrical Engineering and Computer Science and the Cryogenic Engineering Laboratory of the Department of Mechanical Engineering—have collaborated to design, build and experiment with, first, a 45-kilowatt bench model and, later, a 3-megawatt floor model. Under carefully controlled laboratory conditions, both worked and yielded valuable data.

Design of the generator is being carried out by students from the two academic departments along with research staff under the direction of Professor Joseph L. Smith, Jr., Department of Mechanical Engineering, and Professor Gerald L. Wilson, director of the Electric Power Systems Engineering Laboratory. Also leading the project are associate professor James L. Kirtley, Jr., of the Department of Electrical Engineering and Computer Science and assistant professor Michael E. Crawford of the Department of Mechanical Engineering. Professor Emeritus Charles Kingsley, Jr., serves as consultant.

But as they, along with those who work in the real world of generating electrical power for public consumption, know only too well, vicissitudes of weather can and do combine with ups and downs in customer usage to throw overloads, surges and short circuits into any operating generator.

That is precisely what the MIT engineers plan to do with the 10-megawatt generator after it is completed in a year or so—intentionally throw every kind of wild pitch at it that they can conceive of and, ultimately, subject it to sustained use by at least one large scale customer, MIT itself.

Operation of the generator will not introduce a noise nuisance to the neighborhood. The engine, together with its exhaust and intake

ducts, will be housed in an acoustically-treated enclosure to suppress noise transmitted to the surroundings. Calculations indicate that the sound generated by the test apparatus will be less than the sound generated by ordinary street noise in the vicinity.

Nor will burning of fuel oil pose a pollution problem. Specifically because they wish to duplicate industrial conditions, the particular fuel employed will meet all the low-sulphur anti-pollution requirements presently imposed on public utility generating plants.

To understand the advantages of a superconducting rotor, one needs to think first about how a conventional generator works. There is, to begin with, an iron core wrapped with coils of copper wire. That is the rotor. It is suspended inside a stationary structure, also iron and also wrapped with copper coils. This is the stator.

A small amount of direct current is fed into the rotor wires, magnetizing the iron core and setting up a magnetic field inside the stator. When the rotor is made to spin inside the stator, the rotor's magnetic field, of course, spins with it and it is this spinning magnetic field that induces a voltage in the stator windings.

The electricity that flows through transformers and into transmission lines for use by customers is that which is induced in the stator.

In conventional generator design, the object is to minimize the amount of electricity needed to establish the rotor magnetic field while at the same time maximizing the strength of the magnetic field exerted and the amount of electricity induced in the stator.

In general, in the case of the rotor, these are achieved by the ways in which the copper windings are mounted on the rotor's iron core and by making the iron core—and, hence, the magnetic field it exerts—as large as practical. Stator output also is maximized by the pattern and density of copper windings.

But conventional generators have inherent and unavoidable inefficiencies. All of the electricity fed to the rotor windings to set up the magnetic field is lost in the form of heat due to the normal resistance of copper. Moreover, the current cannot be too high compared to the dimensions of the copper or resistive losses will result in burning out the rotor altogether. Nor can the iron core be too large or too heavy if the generator is to be economic.

Thus, conventional generator designs represent tradeoffs. The maximum size now possible with even the most advanced design and technology is about 1,500 megawatts.

The superconducting rotor, on the other hand, offers the theoretical possibility of building generators that produce up to 3,000 megawatts.

In the superconducting rotor, the need for an iron core is totally eliminated. The niobium-titanium alloy, since it loses all resistance to electricity at -450 degrees F, can carry a much higher current, thus generating a much larger magnetic field.

There are problems associated with the superconducting design, of course. To be superconducting, the niobium-titanium must be held constantly at or below -450 degrees F. If it warms even a few degrees it "quenches," or loses its properties of superconductivity, and is rendered useless. That means a vacuum chamber in which the alloy is mounted and kept below the critical -450 degrees F temperature by a constantly flowing bath of liquid helium—a complex engineering problem both in fabrication and operation.

In addition, the superconducting system must pay an energy price to liquefy the helium in the first place and, after it passes through the vacuum chamber, to reliquefy it so it can be recirculated and re-used. A part of the test generator building will house a helium liquefying system.

The site formerly was occupied by four interconnected four-story brick industrial buildings erected starting in 1919 by the Whittemore Shoe Polish Co. and used as a shoe polish factory until acquired by MIT in 1950. From then until the early part of this decade, the Whittemore buildings were used by what was then MIT's Instrumentation Laboratory in the design and development of gyroscopically-based inertial guidance, navigation and control systems for airplanes, ships, submarines, rockets, missiles, satellites and space vehicles.

Instrumentation Laboratory became the Charles Stark Draper Laboratory in the early part of this decade and in 1973 was divested from the university to become an independent entity. The Draper Laboratory vacated the Whittemore buildings more than a year ago when it relocated in new quarters in Cambridge's Technology Square. The 60-year-old buildings were only recently demolished to make way for the experimental superconducting generator.

Memorial Planned For Freshman

A memorial service will be held at 6:30pm, Wednesday, in the MIT Chapel for James A. Martin IV, 18, a freshman from Dallas, Tex., and a member of Sigma Phi Epsilon fraternity who collapsed and died Sunday while playing intramural soccer at Briggs Field. Funeral services also were scheduled Wednesday in Dallas.

Physicians from the nearby MIT Infirmary reached Martin shortly after he collapsed, but were unable to revive him. He was rushed to Massachusetts General Hospital by MIT ambulance where open heart massage likewise was futile. Autopsy results are pending.

Martin, an accomplished clarinetist, had played competitive sports in junior high school. He is survived by his parents, Mr. and Mrs. James A. Martin III, and two younger sisters, Lynne and Charlotte. He would have been 19 on Thursday of this week.

MIT on TV

Tonight (Wednesday, Oct. 11), WNAC-TV, Ch. 7 Boston, will feature MIT in a "Prime Concern" program about computers and how humans relate to them. Included in the 8:30pm broadcast will be the MIT Laboratory for Computer Science and the MIT Experimental Music Studio.

Noted Film Maker To Visit Campus

The noted French film maker Eric Rohmer, who directed the new wave films *My Night at Maude's* and *Claire's Knee*, will be present for a free screening of his film, *La Collectionneuse*, and will answer questions following the film.

The screening on Saturday, Oct. 14, at 3pm in Rm. 66-110 will be sponsored by the Foreign Languages and Literature Section of the Department of Humanities.