



1919 MOUNTAIN BUS recently visited MIT extending the MOB's special offer to college students: during October two college students with valid IDs may enter 11 Museums of Boston (MOB) for the price of one. Above (on pavement), MIT students Michele Gersham, a sophomore in chemical engineering from Bal-

timore, and Thatcher Root, a sophomore in chemistry from Bloomfield Hills, Mich., learn about the offer from (left to right, in bus) Richard Friedman, Transportation Museum and bus driver; Karen Canfield, Museum of Science; Andy Friedenber, New England Aquarium, and Christy Moore, Museum of Fine Arts.

Hamburger To Receive F.O. Schmitt Medal

Dr. Viktor Hamburger, professor emeritus in the department of biology of Washington University, St. Louis, and a distinguished leader in developmental neurobiology, will receive the 1976 F.O. Schmitt Lectureship Medal and Award of the MIT Neurosciences Research Program on Wednesday, Oct. 20.

Dr. Hamburger will present his lecture, "The Developmental History of the Spinal Motor Neuron," at 4:30 pm in Kresge Auditorium. Dr. Frederic G. Worden, director of NRP, will make welcoming remarks, and Dr. Hans-Lukas Teuber, head of the MIT Department of Psychology, will introduce Dr. Hamburger. The program is open to the public.

The F.O. Schmitt Lectureship and Award was established in 1973 in honor of Dr. Francis O. Schmitt, who helped establish the field of biophysics in the 1950s and who founded the Neurosciences Research Program in 1976. Dr. Schmitt is Institute Professor Emeritus and professor of biology emeritus at MIT.

Dr. Hamburger is a noted researcher in the field of experimental neurogenesis—the analysis of the developmental mechanisms by which the complex structure of the nervous system and the patterns of

peripheral nerve pathways are created. His work on relationships between the outgrowing nerve fiber and its environment led to the discovery of the nerve growth factor, and he has also made important contributions to the understanding of the embryology of behavior.

Dr. Hamburger is the fifth neuroscientist to receive the Schmitt Award, which will be presented to him at the stated meeting of the NRP Associates on Sunday, Oct. 17, at the Neurosciences Research Program center at the house of the American Academy of Arts and Sciences.

Dr. Hamburger was born in Germany and studied at the universities of Heidelberg and Munich, and at the University of Freiburg, from which he received the PhD degree in 1924 and where he studied with the leading German experimental embryologist, Hans Spemann. After work in the Division for Experimental Embryology at the Kaiser Wilhelm Institute and later again at Freiburg, he came to the U.S. in 1932 on a Rockefeller fellowship to continue research at the University of Chicago. In 1932 he joined the faculty of Washington University in St. Louis, which he served from 1941 to 1966 as chairman of the de-

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Reactor Safety Study Critized

The federal government's *Reactor Safety Study*—known as the Rasmussen report—needs substantial revision if it is to be "directly relevant to the crucial energy production choices society now faces," according to Professor Joel Yellin of MIT.

Although Dr. Yellin believes the study "contains excellent summaries of background information for assessing nuclear risks," he criticized the report for failing to answer important questions related to the "choices between different energy technologies and between alternative power plant sites," and for not

properly evaluating very large uncertainties in the estimated probability of major nuclear accidents.

Dr. Yellin is a research associate of the Center for International Studies, an associate professor of social science in the MIT School of Humanities and Social Science, a member of the Technology Studies Program, and a lecturer in the Department of Political Science. He reviewed the *Reactor Safety Study*—an investigation of nuclear power plant safety conducted for the US Nuclear Regulatory Commission under the direction of Dr. Norman C. Ras-

mussen, head of the Department of Nuclear Engineering at MIT—in a recent issue of the *Bell Journal of Economics*.

The Rasmussen report suggests that the risk of a nuclear catastrophe is extremely small. Such events are

Professor Yellin will conduct a seminar on the subject, "What Do We Know About the Safety of Nuclear Reactors?" in Rm. 35-225, Monday, Oct. 25, at 3:30pm, sponsored by the Center for International Studies, the Technology Studies Program and the Department of Nuclear Engineering. Professor Norman C. Rasmussen will be the commentator.

predicted to occur only once in a billion years of reactor operation. However, Dr. Yellin points out in a summary of his research that "the uncertainties are such that this result may be in error, by a factor of one hundred thousand to one million, principally because of defects in computational procedures."

Dr. Yellin cautioned that his con-

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Smoke Detector Demonstration

The MIT Safety Office has arranged demonstrations of ionization-type smoke detectors which will be offered for sale to the MIT community at discount prices.

The demonstrations will be held Oct. 18-22 in Rms. E19-315A and E19-351B at 11:30am and 2pm daily. Manufacturers' representatives will demonstrate the detectors. The Safety Office has arranged such demonstrations from time to time for the last several years.

Samuel Levin, the Institute's radiation protection officer, and John M. Fresina, Safety Office director, in a recent statement issued to counter what they said was misinformation on the part of Ralph Nader, declared the radioactive ionization-type detectors are safe and give an earlier warning than the best non-radioactive detectors. A Nader-affiliated consumer health group has urged the government to recall the ionization detectors.

Herman Feshbach Appointed Green Professor of Physics

Dr. Herman Feshbach, head of the Department of Physics at MIT and a leader in nuclear physics, has been named to the newly established Cecil and Ida Green Professorship of Physics in the Department of Physics, effective October 1.

Appointment of Dr. Feshbach, who served as director of the MIT Center for Theoretical Physics from 1967-1973, was announced by Dr. Walter A. Rosenblith, MIT Provost, and by Dr. Robert A. Alberty, Dean of the MIT School of Science.

The Green Professorship in the Department of Physics is the first to be established in that department with the support of Mr. and Mrs. Green and brings to a total of six the distinguished endowed professorships supported by them at MIT.

The chairs supported by Mr. and Mrs. Green at MIT include the Cecil and Ida Green Professorship in Education, the Cecil H. Green Professorship of Electrical Engineering, the Robert R. Shrock Professorship in Earth and Planetary Sciences, and two Cecil and Ida Green Professorships of Earth Sciences in the Department of Earth and Planetary Sciences.

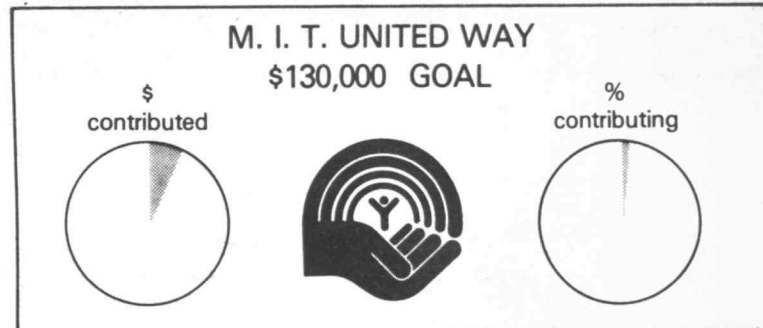
Mr. Green, who received the SB and SM degrees from MIT in 1923, was a co-founder of Geophysical Services, Inc., of Dallas, the predecessor company of Texas Instruments, Inc., a major international electronics firm, which he now

serves as honorary director.

Dr. Feshbach has been influential in the development of nuclear physics. He has served on a number of government committees and has been chairman of the Division of Nuclear Physics of the American Physical Society and is a member of the Society's executive committee.

He was a member of the Physics Survey Committee and the Committee on Nuclear Science of the National Research Council, and is chairman of the Council's subcommittees on Nuclear Structure and Nuclear Data Compilation. He has

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Political Economist Kaysen Named Skinner Professor

Dr. Carl Kaysen, a noted political economist, will be the first occupant of the David W. Skinner Professorship at MIT as Visiting Professor in the School of Humanities and Social Science during the 1976-77 academic year, President Jerome B. Wiesner has announced.

President Wiesner said Dr. Kaysen, Director of the Institute for Advanced Study at Princeton, New Jersey, for the past ten years, has a most distinguished record in education and public service. "His concern with the social, political and economic aspects of inequality, as they illuminate some of the basic elements of modern society, resonates with the interests of many of us at MIT," he said. "His coming will strengthen our commitment to the study of some of the central problems of modern society."

"If society is to remedy its present ills," President Wiesner said, "we will have to rely heavily on new organizational forms, new relationships, and new social policies to produce results. We lack, however, much of the necessary knowledge on which these developments could be based and our existing ventures in that direction are often inadequate and misdirected. Professor Kaysen's presence will help us greatly in exploring the fundamental issues of social policy in order to gain deeper insights into the whole process by which our society manages itself."

Funds supporting the Skinner Professorship were provided in a trust created by the late David William Skinner of Waban, Mass. Mr. Skinner, a 1923 graduate of MIT in economics and science, was, until retirement in 1972, vice president, general manager and vice chairman of the board of directors for the Polaroid Corporation of Cambridge, Mass. He died in 1974.

Dean Harold J. Hanham of the School of Humanities and Social Science said Dr. Kaysen will offer two undergraduate courses during the spring term—one on a historical

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CABLE TV SCHEDULE

October 13-19

Channel 8
Wednesday, Oct. 13
 12:00pm to 1:00pm **YOU ARE THE WAY**, United Way film describing how agencies use the funds they receive.
 4:30pm to 5:30pm **24-30 FPS**, Ricky Leacock, discussions with filmmakers, and examples of films from the MIT Film Section (L)
 5:30pm to 6:30pm **TUESDAY NOON**, Poets and Poetry. (L)
 8:00pm to 8:30pm **ELECTROMECHANICAL DYNAMICS OF SYNCHRONOUS MACHINES** BY Herbert Woodson
 8:30pm to 9:30pm **24-30 FPS (R)**
Thursday, Oct. 14
 11:30am to 12:00pm **RAINBOW FAMILY GATHERING July 1976** by Erika Franke and Brian Raila, a ten-minute color videotape: excerpts from a program documenting 'Architecture without buildings' in a temporary communal settlement.
 12:00pm to 1:00pm **AN EYE TO THE PAST**, presentation of films and tapes from the MIT Historical Collections.
 4pm to 6pm **TIME SERIES METHODS IN NON-PARAMETRIC THEORY** by Prof. E. Parzen. Program arranged through Prof. H. Chernoff of the Math. Dept.
 6pm to 7pm **AN EYE TO THE PAST (R)**
 7pm to 8:30pm **6.041, 6.431 QUIZ REVIEW** by Prof. Al Drake

8:30pm to 9:00pm **RAINBOW FAMILY GATHERING (R)**
Friday, Oct. 15
 7:00pm to 8:00pm **YOU ARE THE WAY (R)**
 12:00pm to 1:00pm **POTPOURRI**, Robert D'Ancona weekly live show (L)
 5pm to 6:00pm **POTPOURRI (R)**
Monday, Oct. 18
 11:00am to 12:00pm **POTPOURRI (R)**
 12:00pm to 1:00pm **YOU ARE THE WAY (R)**
 2:00pm to 3:00pm **THERMOSTATICS AND THERMODYNAMICS #1 (10.13)** by Dr. Myron Tribus
 3:00pm to 4:00pm **THERMOSTATICS AND THERMODYNAMICS #1 (R)**
 4:00pm to 5:00pm **ELECTRO-MAGNETIC FIELDS AND ENERGY (6.013)**, Prof. J. Melcher, homework session (L)
Tuesday, Oct. 19
 12:00pm to 1:00pm **TUESDAY NOON (L)**
 1:00pm to 2:00pm **THERMOSTATICS AND THERMODYNAMICS #2 (10.13)** by Dr. Myron Tribus
 2:00pm to 3:00pm **THERMOSTATICS AND THERMODYNAMICS #2 (R)**
 3:00pm to 4:00pm **THERMOSTATICS AND THERMODYNAMICS #2 (R)**
 4:00pm to 5:00pm **TUESDAY NOON (R)**
Channel 10
Wednesday, Oct. 13
 1:00pm to 5:00pm **MITV NEWS**
Friday, Oct. 15
 9:00am to 5:00pm **LOOKAROUND**
Monday, Oct. 18
 1:00pm to 6:00pm **MITV NEWS**
Channel 12
Tuesday, Oct. 19
 4:00pm to 6:00pm **TIME SERIES METHODS IN NON-PARAMETRIC THEORY** by Prof. E. Parzen. Program arranged through Prof. H. Chernoff of the Math. Dept.

Foreign Studies

German Academic Exchange Service Graduate Scholarships

The German Academic Exchange Service is offering to MIT two direct scholarships for award to students for graduate study in the Federal Republic of Germany during the academic year 1977-78. Scholarships are available to students of all disciplines, except medicine and pharmacy. An applicant's knowledge of German should be commensurate with his or her proposed project. Candidates must be between the ages of 18 and 32 and must have at least a Bachelor's degree by the beginning date of the grant.
 Contact: Graduate School Office, Rm 3-136. MIT deadline: November 1, 1977.

Winston Churchill Foundation Scholarships

The Winston Churchill Foundation awards approximately 10 scholarships annually to US citizens between the ages of 19 and 26 for the study of engineering, mathematics, or science at Churchill College, Cambridge University, England. MIT is invited to nominate two candidates for the award. The Institute's nominees are selected by the Foreign Scholarship Committee. Churchill Scholars have the option of spending one year at Cambridge working toward a Certificate of Diploma, or three years for the PhD. Applicants must have taken the GRE (Aptitude and Advanced Tests) no later than Oct 16, 1976.
 Contact: Graduate School Office, Rm 3-136. Deadline: Nov. 1, 1976.

Public Health Service National Research Service Awards

The Alcohol, Drug Abuse, and Mental Health Administration of the Public Health Service provides National Research Service Awards to individuals for research training experience in specified areas of biomedical and behavioral research. Although priority will be given to applicants for postdoctoral training, a limited number of awards for predoctoral training may be made. Predoctoral applicants must have completed two or more years of graduate work as of the proposed activation date of the award and have a doctoral prospectus. Applicants must propose research training in specified research areas of the biological, psychological or social sciences.
 Contact: Graduate School Office, Rm 3-136. Deadlines: Oct. 15, Feb. 1, or June 1.

Hughes Aircraft Company Fellowships

Hughes Aircraft offers fellowships to students working towards their Masters, Engineers or Doctoral degrees in the fields of electrical, mechanical, materials or aerospace engineering, computer science, mathematics or physics. Applicants must be US citizens and have an overall grade-point average of at least 3.0 out of a possible 4.0 (B or better). Most fellowships are work-study and so Fellows must attend a university in southern California. However, some awards are full-study and the Fellow may attend MIT or other universities throughout the country. Applications should be submitted between October and February 1.
 Contact: Graduate School Office, Rm 3-136.

Other Opportunities

Work with Elementary School Children

Undergraduates interested in research that can have immediate impact in improving reading abilities and in increasing general interest in learning, and who would enjoy working with Cambridge elementary school children of multi-ethnic backgrounds (approximate ages: 7-12 years) are invited to participate in a project of applied educational research. Students will assist in working directly with children in regular school settings, and may also participate in the analysis and interpretation of the ensuing data. Tutorials in developmental psychology relating ongoing research findings with theoretical frameworks of child development can be arranged for interested individuals. Mature, reliable and energetic students are needed. Students bilingual in Spanish and/or Portuguese are especially encouraged to apply.
 Contact: Muriel Birchette, Rm 20C-105, x3-5428 or x3-6047.

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.

Engineering Design Awards: Fall 1976

Funds are available for Clapp and Poliak Engineering Design Awards for fall term. Undergraduates are welcome to submit proposals for wage support and/or materials and supplies. An attractive feature of the award is that it is possible to undertake a design project in place of a term time job.

US Army Research & Development Laboratories

Natick Mass. Some opportunities are available for food science, chemistry, physics, and engineering majors. Natick Research Laboratories do research, development and engineering on: food science, packaging problem-solving, pollution abatement, textile technology, airdrop technology, environmental medicine, and human engineering (clothing, environment, nutrition). Project may be done for credit only.

Children's Museum

Boston, Mass. An opportunity for students to work in a team to develop and implement a new, state-of-the-art, minicomputer-based time-sharing system software package. The students will be responsible for researching and testing up-to-date strategies for the management of system resources, including: file system management; memory management; interprocess communication; CPU scheduling; device-independent I/O. The work will be done on a PDP 11/40 computer located at the Children's Museum. Familiarity with the PDP-11 and proficiency in some systems-level language desirable. Students should have completed Professor Donovan's Systems Programming

course, or have considerable systems programming background and be currently taking that course (or equivalent). Credit only.

Innovation Center

A project is available for a student with some electronics experience (6.301 or 6.101 or experience) to work on the redesign of a magneto-type ignition system for small two cycle engines. The new design should provide more reliable operation at low speed and improve manufacturability of the alternator. Knowledge or interest in electromagnetism as applied to small alternators would be helpful.
 Contact: Professor Newton, Rm 35 331, x3-2143; Professor Janssen, Rm 33-103, x3-6996; or Mr. Lamar Washington, Rm 33-111, x3-6946. For pay or credit.

Energy Laboratory: Electric Vehicles

A student is invited to join in a study of the market for second cars. Phase one will characterize multiple car owners and their behavior in the market. Phase two will use the results from this analysis to evaluate the market potential of various electric vehicle technologies. The student must have good computer programming skills, and a familiarity with APL is desirable; background in urban or transportation economics, and econometrics would be helpful.
 Contact: Richard Tabors, x3-3408 or George Berry, x3-5945, or come to Rm E40-172, Energy Lab.

Massachusetts General Hospital

Boston There is an opportunity for a student to assist with a project which is evaluating the development of respiratory patterns in normal infants in Cambridge. The work, at present, involves connecting the apparatus for a 12 hour recording (overnight analog) of respiration, EEG, EKG, and eye movements in infants at 1, 4, 12 and 26 weeks of age. The data is then printed and analyzed. Future developments include digitization and use of microprocessing techniques in order to simplify analysis and permit longer recording times.

Beth Israel Hospital

Boston It is generally accepted that cerebral blood flow (CBF) is altered following a sub-arachnoid hemorrhage. Specific aims of this project are to apply the hydrogen clearance technique to the measurement of regional cerebral blood flow in fully-conscious experimental animals, and thereafter follow the course of rCBF changes day-to-day in the same animals subjected to pharmacological manipulation of catecholamines before and after experimental stroke. Applicants should be in a pre-medical curriculum with an interest in neurological disease.

Eunice Kennedy Shriver Center for Mental Retardation: Studies on Brain Proteolipids

This project is directed to the chemical characterization of the myelin proteolipid protein and to the determination of its amino acid sequence. Procedures used in the laboratory include the preparation of chemically modified proteins, the enzymatic digestion of the protein and the characterization of the peptides obtained. The studies should permit an assessment of the evolutionary development of myelin proteins and should lead to a better understanding of myelin structure and function in normal and disease states. The student should have a good background in bio-chemistry and/or chemistry.

Echoes

50 Years Ago

Gerard Swope, '95, President of the General Electric Co., was elected to the executive committee of the Corporation of MIT.

George Sherwood Eddy has returned to MIT to speak on Russia. Mr. Eddy, an internationally famous lecturer, spent last summer in the USSR, where he interviewed Stalin and many other Soviet leaders.

40 Years Ago

Attendance was high at the Lacrosse rally. The sport, still developing at MIT, is growing increasingly popular.

25 Years Ago

Professor Serge Chermayeff, one of the foremost architects in the US, arrived at MIT for a 3-month stay. Professor Chermayeff is one of a number of temporary teachers coming to MIT to further enrich and vary students' curricula.

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

TECH TALK

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October 13, 1976

Tech Talk is published 44 times a year by the News Office, Massachusetts Institute of Technology. Director: Robert M. Byers; Assistant Directors: Charles H. Ball, Robert C. Di Iorio, Katharine S.C. Jones, Joanne Miller, William T. Struble and Calvin D. Campbell, photojournalist; Reporters: Cathryn M. Chadwick (Institute Notices), and Susan E. Walker (Institute Calendar, Classified Ads).

Address news and editorial comment to MIT News Office, Room 5-111, MIT, Cambridge, MA 02139. Telephone (617) 253-2701.

Mail subscriptions are \$8 per year. Checks should be made payable to MIT and mailed to the Business Manager, Room 5-111, MIT, Cambridge, MA 02139.

Technology Children's Center—Day Care Program has openings for children ages 2½ to 5, full-time. Tuition assistance available to MIT employees who qualify. Info: Child Care Office, Rm 4-144, x3-1592.

Smoke Detector Sale—Demonstration & sale of ionization type detectors Mon, Oct 18-Fri, Oct 22, 11:30am-2pm, Rms E19-315A & B. Representatives of 2 manufacturers will demonstrate, and offer at discount prices. Coordinated by Safety Office, x3-4736.

Club Notes

MIT Ballroom Dance Club*—The club will be very active this year, including special workshops for advanced dancers. Beginners always welcome. Info: Fern Crandall, x5-8534 Dorm.

Beefaroni Chess Club—An alternative chess club featuring relaxed serious chess. Info: Gary Kaitz, x3-7966.

MIT Bridge Club*—Open pairs duplicate bridge. Thurs, 7pm, Stu Ctr Rm 473.

MIT/DL Bridge Club*—ACBL Duplicate Bridge. Tues, 6pm, Stu Ctr Mezzanine Lng.

MIT Chess Club**—Chess and speed chess. Meetings Sat, 12n-7pm, Stu Ctr Rm 491. Info: x5-8156 Dorm.

MIT Dance Workshop—First meeting Mon, Oct 18, 5pm, duPont, T-Club Lng. Those interested in joining contact Mary Lou Sayles, Athletic Dept. x3-5005 or x3-4498.

MIT Go Club—General Meetings Mon, 7pm-12m, Stu Ctr Rm 407. Bring your own set. Info: Lorne Cooper, x5-7134.

MIT Goju Karate Club**—Mon, Wed & Fri, 7-9pm, Stu Ctr Rm 407. Info: Shawn x3-2018.

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

MIT Judo Club**—Beginner and experienced. Mon, Wed, Fri, 5:30-7:00pm; Sat, 1:00-3:00pm. DuPont gen exercise Rm. Chief instructor: Mr. Yanagi, 6th degree black belt.

MIT Juggling Club*—For beginner thru expert. Sun, 1-3pm, outside Stu Ctr.

MIT Math Club**—Meetings Sun, 7pm, Rm 4-182. New members always welcome. Info: Gail 5-6485.

MIT Scuba Club**—Scuba locker rental hours: Fri, 4-6pm, pick up; Mon, 9-10am, return; Alumni Pool.

MIT Shotokan Karate Club**—Rigorous training for intercollegiate competition & self-defense, given by 6th degree black belt. Thurs, 8pm; Fri, 6pm; Sun, 10am, duPont T Club Lge.

MIT Space Habitat Study Group*—Interdisciplinary studies on space colonization. Thurs, 7pm, Rm 37-252.

MIT Table Tennis Club**—Open to all students interested in trying out for the MIT Team. Meetings Thurs, 7-9pm, T Club Lounge, DuPont Gym.

MIT Tiddlywinks Association*—Meetings Thurs, 8pm, Stu Ctr Rm 407.

MIT Transcendental Meditation Club**—Get together for all MIT community meditators. Sun, Oct 17, 4pm, Bush Rm (10-105). Refreshments.

Unicycle Club*—Learn to ride or meet other unicyclists. Meet Sun, 1pm, Kresge Oval.

White Water Club**—Pool sessions alternate Tues, 8-10pm, Alumni Pool. Next session Nov. 9.

Religious Activities

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

MIT Baha'i Association*—Gathers informally in Pritchett Thurs, Oct 14, 12:30pm: World Peace.

MIT Buddhist Association*—Meditation session & informal discussion Thurs, 5:30pm, Rm 8-205. New members always welcome.

Jesus Christ's Full Gospel Meeting*—Singing, praise, prayer. Sun, 2:30pm, Stu Ctr Rm 355.

Jewish Holiday Services*—Shimmi Atzeret-Simchat Torah. Fri, Oct 15, 5:30pm, Kosher Kitchen (Rm 50-005). Sat, Oct 16: 9:00am, Bush Rm; Mincha-Maariv, 5:30pm, Bush Rm. Sun, Oct 17: 9:00am, Bush Rm; Mincha-Maariv, 5:30pm, Kosher Kitchen.

Prayer Time**—Lunch hour Bible classes led by Miriam R. Eccles. Fri, 1-2pm, Rm 20E-225. All are welcome.

Protestant Worship Service*—Worship, prayer, praise & teaching. Sun, 10:45am, Chapel. Coffee, donuts & fellowship following.

Tech Catholic Community—Roman Catholic Liturgies will be offered as follows: Sun, 9:15am, 12:15 & 5:15pm; Tues, 5:05pm; Thurs, 5:05pm; Fri, 12:05pm.

United Christian Fellowship*—Meeting with worship, fellowship, prayer & teaching. Tues, 6:30pm, Rm 1-236.

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 10-140, x3-4733.

Wednesday, October 13—Sandia Labs; Union Carbide, PhD ME. Thursday, October 14—Sandia Labs; Aramco Services Co; Colgate-Palmolive Co, R&D; General Atomic Co; Texaco Inc; Union Carbide: materials science & metallurgy, carbon products div, Linde div, chemicals & plastics div. Friday, October 15—General Atomic Co; Union Carbide: Linde div, chemicals & plastics-div; Amos Tuck School, Dartmouth College; Bethlehem Steel Corp; EDS Nuclear Inc.

Monday, October 18—Hewlett Packard Co; Intel Corp; Long Island Univ. Grad. School of Business Admin; Jet Propulsion Lab; Northeastern Univ. Grad Sch of Bus; Northrop Corp. Tuesday, October 19—Allis-Chalmers Corp; Carnegie-Mellon Univ. Grad Sch of Indus Admin; Dranetz Engineering Lab, Inc; B F Goodrich; Intel Corp; Jet Propulsion Lab; McDonnell Douglas Corp; New York Univ. Grad Sch of Bus Admin; Univ. of So Cal, Grad Sch of Bus; So Methodist Univ. Sch of Bus Admin; Naval Undersea Ctr; Owens-Corning Fiberglas Corp; US Energy Rsrch & Dev Admin. Wednesday, October 20—Albany International Corp; Armco Steel Corp; Atlantic Richfield Co; N American Producing Div; Ford Motor Co; Hughes Aircraft Co; electro-optical & data systems grp & radar avionics, microelectronic products & connecting devices divs; Div of Naval Reactors: ERDA; MITRE Corp; Nat'l Security Agency; Naval Undersea Ctr. Thursday, October 21—Argonne Nat'l Lab; Badger America, Inc; Battelle-Northwest Labs; Deere & Co; Harvard Grad Sch of Bus Admin; Northern Rsrch and Engineering Corp; Sante Fe Corp; Tex Instruments, Inc; US Navy. Friday, October 22—Battelle-Northwest Labs; Santa Fe Corp; Tex Instruments, Inc; Univ of N Carolina, Grad Sch of Bus Admin.

INSTITUTE NOTICES

Announcements

Add Date—Last day to add subjects to registration is Fri, Oct 15.

EECS Seniors—Applications for graduate work in the Department must be submitted by Nov 1. Seniors in other departments who plan to apply for admission during 1977 are also urged to apply by Mon, Nov 1. Applications available Rm 38-444 and Rm 3-103.

Faculty Members—Those interested in teaching undergraduate seminars, spring term '77, contact Undergraduate Seminar Office, Rm 7-105, x3-3621, immediately. Seminar descriptions deadline: first week in Nov.

Freshman Evaluation Forms—Deadline: Fri, Oct 22. Instructor turn-in deadline: Wed, Oct 27.

Freshman Reading/Resource Room—being set up by FAC Office. Contact: FAC Office, Rm 7-103, x3-6771 with suggestions or material you wish to loan or donate. Suggestions from upperclass students on material they would have found helpful as freshmen would be particularly appreciated.

Information Processing Service Seminars & Courses—Wed, Oct 12-Mon, Nov 1, Elementary PL/1; Mon, Oct 18, Runoff. Information & registration: Janette Hyde, Rm 39-427, x3-6320, 10am-3pm.

Juniors and Seniors—Last day to specify an elective to or from pass-fail grading is Fri, Oct 15.

MIT Logarithms**—Currently auditioning tenors for 1976-77. Interested undergraduates contact Dan Nolet, 492-6983 or Mike Harlan, 536-3931.

Preprofessional Meetings—Mon, Oct 18: Boston University School of Law group meeting with Prof Tamar Frankel, 12n, Rm 8-105; New York University School of Law interviews with Kathleen O'Connor, associate director of admissions, 2-4pm, Tues, Oct 19; Syracuse Law School interviews with James Douglas, associate dean, 1-5pm; Georgetown University Law Center interviews with Charles Vacobina, 9:30am-12n. Sign up in Preprofessional Office, Rm 10-186, x3-4158.

Seniors—Students who plan to apply for graduate work at MIT during 1977 are urged to apply by Mon, Nov 1. Applications available Rm 3-103.

Student Furniture Exchange**—To buy and sell used furniture. Tax free letters for donations. Tues & Thurs, 10am-2pm, 25 Windsor St. Info: x3-4293.

Peter Campus Video Works In Hayden Gallery Display

"Mask Projections," a group of recent video works by New York artist Peter Campus, will be on view in Hayden Gallery at MIT from October 15 through November 10.

The exhibition, sponsored by the MIT Committee on the Visual Arts, will open with a public reception on Friday, October 15, from 8-10pm. Campus, a Fellow at MIT's Center for Advanced Visual Studies, will attend. Hayden Gallery, at 160 Memorial Drive in Cambridge, is open to the public free of charge from 10am to 4pm Monday through Saturday.

Three new installation pieces developed in the past year will premiere in the MIT show. Five videotapes from 1973 to the present will also be shown continuously in a section of the Gallery.

Each installation piece is composed of a video projector and video camera with silicone diode vidicon tube. Through camera placement, light arrangement and distance of the projector from the wall, Campus concentrates on an exploration of both formal and psychological issues.

The viewer enters a darkened space illuminated by a rectangular light projection that approximates a picture frame 6 feet high by 3 feet wide. Only when he comes into the camera's range close to a corner wall does a distorted and inverted image of his face appear within the 'light frame.'

One of Campus's major concerns is conveying a heightened and broadened self-awareness. He attempts, in the installation pieces, to bring the viewer into a relationship with the projection of his own image by constructing a specific representation and manipulating light to emphasize one aspect of self or another. The act of the viewer's discovering his image is also an integral part of the work's conception. Images appear upside down both as a reference to the reversal made on the retina in human vision and as a device for setting up a situation of confrontation with a transformed yet still familiar self-portrait.

Just as important for Campus are the formal components of tone, plane and light that define the images. Campus's sensibility has been influenced by a range of sources in art throughout the ages including Manet, mannerist art, da Vinci and certain Egyptian, Chinese and pre-Columbian works.

Campus characterizes the new works in the genre of "masks" as they were used in the Ancient Greek and Japanese Noh Theatre—as "an exaggeration of certain emotions," rather than the hiding of feelings.

In the past decade video has gained acceptance as a legitimate art form through the pioneering efforts of Nam June Paik. Among those artists working expressively with video technology today, Campus has earned a reputation as a master in closed-circuit video work. Through his sensitive utilization of two of video's inherent properties—light and the emotional content associated with the medium—Campus has made a significant aesthetic contribution to the visual arts today. In recent conversations about his work Campus said: "Video is light—the projection of light. There is in video the translation from electrical energy so I must work with the medium's properties. I'm dealing with four qualities: the quality of wall, the quality of electronics, the quality of light and the quality of humanity. All have to interest me because, like the wood sculptor from Bahia creating puppets of twisted wood, these are the materials of my society. These are the materials I work with, that I live with, and I think my work has to express itself in terms of these materials."

In the recent videotapes, as in the installation pieces, there is a progression toward focusing on the face. The tapes, however, are more cerebral and aggressive than the closed-circuit pieces—short, intense narratives that deal with explicit imagery exploring some of the ideas and formal devices used in the installations. In that sense, Campus views his videotapes as notebooks of preparatory studies.

A selection of Campus's videotapes will be shown on WGBH-TV, Channel 2, Boston, from Monday, October 18, through Friday, October 22, at the end of the programming day, generally after midnight.

A native of New York City, Campus received a degree in experimental psychology from Ohio State University in 1960. From 1961-62 he studied at the Film Institute of City College of New York. He began his career as a video artist after working on the production end of the film business. He made his first short film in 1966, his first videotape in 1970, and his first closed-circuit piece in 1971.

His works have been widely exhibited in galleries and museums, in the US and abroad, including the Leo Castelli Gallery and Whitney Museum of American Art in New York City, the Walker Art Center in Minneapolis, the Museum of Fine Arts in Boston, the Institute of Contemporary Art in Philadelphia, the Sao Paulo Bienal in Brazil, and Project 74 in Cologne, Germany.

Political Economist Kaysen Named Skinner Professor

(Continued from page 1)
examination of government-business relations in the US and the other on the interactions among economic, political, and social inequalities in America.

Dr. Kaysen was Lucius N. Littauer Professor of Political Economy at Harvard when named Professor and Director of the Institute for Advanced Study in 1966. He succeeded the late Robert Oppenheimer, accepting the invitation of the Board to broaden the intellectual range of the Institute, a postdoctoral center noted particularly for work in mathematics and theoretical physics.

Under Dr. Kaysen's leadership, a new School of Social Science was conceived and is now established at the Institute. Its focus is the application of the tools of Social Science to the study of historical change. Having completed ten years as Director last July, Dr. Kaysen is on sabbati-

cal leave at MIT from his professorship in this new School.

Dr. Kaysen's interests have ranged widely and include the economics, politics and law of government regulation of business, the economics of the corporation, and the sociology of business beliefs. He served as Deputy Special Assistant for National Security Affairs under President John F. Kennedy from 1961 to 1963, assisting in the negotiations that led to the 1963 nuclear test ban treaty with the USSR, and presently serves as chairman of the panel on Scholarly Exchange with the Soviet Union of the National Academy of Sciences. He has been chairman or member of several national commissions dealing with public issues. Last spring, he presented the annual Godkin Lectures at Harvard, speaking on "More Equality as a Goal of Public Policy."

A 1940 graduate of the University of Pennsylvania, Dr. Kaysen was appointed a Junior Fellow in the Society of Fellows at Harvard in 1947 and became a member of the Department of Economics at Harvard in 1950. He received the PhD degree in economics from Harvard in 1954, was appointed full professor there in 1957 and was Littauer Professor from 1964 to 1966 when he left to become director of the Institute for Advanced Study.

Revised Text Issued

McGraw Hill has just published the eighth edition of *Personnel Administration*, a text book with cases, written by Paul Pigors, emeritus professor of industrial relations at MIT, and Charles A. Myers, Sloan Fellows Professor of Management at the Sloan School of Management. The text was first published in 1947.



HEALTH SCIENCES FUND FELLOWS—MIT doctoral candidates and Harvard MD-PhD students—recently presented summaries of their research in areas of life science and biomedical engineering to the trustees of the Fund at their annual meeting. Above (left to right) are: Nai-Kong Chung, Roderic Pettigrew, Barbara Gould, Mrs. U.A. Whitaker, a fund trustee, Dr. Irwin W. Sizer,

president of the Fund, Michale Scally, David Hardt, Allen Weigner and Norman Mazer. The presentation was followed by a reception and luncheon with the trustees: Cleve J. Fredericksen, Dr. George W. Thorn, President Jerome B. Wiesner and Miles J. Gibbons, Jr. Fund Fellowship holders missing from the picture are Hon-Chi Lee and Joe Orenstein.

Legionnaires' Hair Samples Analyzed

A team of scientists from Harvard University, MIT, and the MIT Lincoln Laboratory, working in cooperation with the Pennsylvania Department of Health, has completed an analysis of trace elements in hair strands taken from convalescent victims of the "Legionnaires' disease."

The analysis, made with a "scanning proton microprobe," has excluded with certainty that materials presently known to be detectable in hair—arsenic, mercury, and lead—were present in toxic amounts in the affected Legionnaires.

In addition, the scientists noted, there has been speculation that the toxic substance involved in the "Legionnaires' diseases" was nickel carbonyl. But while nickel was detected in many of the hairs, the scientists said, the levels of concentration at which it was found was always low—on the order of a few micrograms per gram of hair—and proved quite stable over a period of many months.

However, nickel carbonyl at present cannot be excluded without first

examining hair from a known victim of nickel carbonyl poisoning, according to the scientists, who said it has not been possible to obtain such samples.

The team includes Paul Horowitz, professor of physics, and Michael Aronson, a graduate student in physics, of Harvard University; Dr. Lee Grodzins, MIT professor of physics; and Dr. Jean L. Ryan and Harvey Rosen, of the MIT Lincoln Laboratory.

The "scanning protons microprobe" analysis employs a technique known as proton-induced x-ray emission, or "PIXE." A strand of hair is moved back and forth in front of a stationary 2-million-volt beam of protons. X-rays are produced at each point along the hair by the impact of the protons on the hair and each chemical element produces a characteristic x-ray "signature."

This technique is being applied by the team to a variety of problems in biology, metallurgy, and archeology, as well as toxicology.

The studies in toxicology use the hairs of victims to determine the distribution of elements along the length of the hair. Because hair grows at a uniform rate of about one centimeter per month, it is often possible to identify a toxic substance to which the body has been exposed at an earlier time by noting an increase in that substance at that point on the hair length that corresponds to the time of exposure.

Previous control tests on hairs from known victims of mercury, arsenic, and lead poisoning episodes

have shown clear evidence of these toxic substances and their dates of ingestion.

In the recent tests, one or more hair strands from each of the eight convalescent Legionnaires and four controls were analyzed. Each strand was examined generally for the presence of any suspicious elements, and then in detail for the distribution of each of 12 or more elements versus length along the hair.

The results were summarized by the scientists, as follows:

Traces of many heavier elements—including nickel, lead, bromine, copper, zinc, and others—were found in many of the hairs. In most cases, the scientists said, the distribution of these elements along the hair did not suggest a connection with the July convention. Nickel, for instance, was detectable in many of the hairs, but showed a relatively constant level extending throughout a period of many months, with no detectable increase in late July above the "normal" level detected.

In a few cases, the scientists reported, there were sharp peaks or dramatic changes in the abundance of some elements—particularly chlorine, calcium, iron, and copper—that are correlated with the onset of the disease, but the absence of a common pattern indicated that these changes reflected environmental influences or biochemical changes unrelated to the cause of the epidemic.

Development of the protein microprobe is funded by support from the National Science Foundation.

Hamburger To Speak

(Continued from page 1)

partment of zoology. He was elected to the National Academy of Sciences in 1953 and to the American Academy of Arts and Sciences in 1959.

The Neurosciences Research Program serves as a worldwide communications center for research in neuroscience. Sponsored by MIT and funded by federal agencies, the NRP's 32 Associates are drawn from such fields as medicine, psychiatry, physics, biochemistry, biology, neurology, and psychology. The present Associates include five Nobel Laureates.

Dr. Schmitt, who headed the program for 13 years, now serves as NRP Foundation Scientist. He received his PhD degree from Washington University in 1927 and, after postdoctoral work abroad, he returned to Washington University, where he became one of the first to apply x-ray diffraction and polarization optics to biology. His group had the first university electron microscope in the U.S.

Dr. Schmitt became professor of biology at MIT in 1941 and was department head from 1941 to 1955. His research on the fibrous proteins of the giant nerve axons of squid led to understanding the chemical and physical composition of myelin, the material that sheaths the nerve fibers. During World War II, Dr. Schmitt developed the technique for making collagen sutures. He was appointed Institute Professor in 1955.

Javan To Receive Frederic Ives Medal

Dr. Ali Javan, MIT professor of physics, will deliver the 1975 Frederic Ives Medal address—which he was unable to present last year because of hospitalization—on Wednesday, Oct. 20, at the 1976 annual meeting of the Optical Society of America in Tucson, Ariz. Title of the address is, "Precise Interferometric Laser-Wavelength Measurements: A Progress Report."

Connor Named Director Of Sea Grant Research

Dr. Jerome J. Connor, Jr., professor in the Department of Civil Engineering and head of the department's Constructed Facilities Division, has been appointed director of research activities in the MIT Sea Grant Program.

Announcement of the appointment was made by MIT Provost Walter A. Rosenblith.

As director of Sea Grant research, Professor Connor will have primary responsibility for establishing research policies in the MIT Sea Grant program which aims at applying the institute's capabilities to national, regional and local problems and opportunities in the oceans and coastal zones.

Professor Connor, Jean A. Horn, director of the Sea Grant Program, to plan and coordinate the program's research efforts in new technologies for human activities in the seas, methods for managing coastal land and water resources and development of new uses for marine mineral and living resources. He will work closely with Institute faculty members engaged in Sea Grant research projects. Professor Connor will also coordinate the dissemination of research results to potential users with Ernst R. Pariser, Sea Grant's associate director for advisory services.



Mr. Horn said Professor Connor's appointment is one more advance in the development and strengthening of the MIT Sea Grant Program. He stressed that Professor Connor has had a long association with the Program as principal investigator for the major coastal engineering research project on the sea environment of Massachusetts Bay and adjacent waters, which has developed predictive mathematical models for describing circulation and dispersion patterns in bays and estuaries. "Professor Connor's appointment will further strengthen and focus Sea Grant's research efforts," Mr. Horn said.

Professor Connor received the SB, SM and ScD degrees from MIT and joined MIT in 1962 as assistant professor in the Department of Civil Engineering. He was appointed professor of civil engineering in 1971 and was named head of that department's Constructed Facilities Division in July 1976.

His recent research activities have been in the area of computational mechanics, and particularly in numerical modelling of coastal processes. He has published three texts, the most recent of which is *Finite-Element Techniques for Fluid Flow*.

He is a member of the American Society of Civil Engineers, the Boston Society of Civil Engineers, the Society for Experimental Stress Analysis, and Sigma Xi.

THE INSTITUTE CALENDAR

October 13
through
October 24

Events of Special Interest

Young People's Lecture: Not Seeing Things* — Jerome Y. Lettvin, MD, communications physiology, electrical & bioengineering, RLE. Technology Children's Center, Inc. Lecture to benefit MIT's Nursery School and Day Care Center. Sun, Oct 24, 3pm, Rm 26-100. \$1 donation at door.

Seminars and Lectures

Wednesday, October 13

Low Temperature Radiation Damage Studies** — T. H. Blewitt, Argonne National Laboratory. Nuclear Reactor Laboratory Materials Science & Engineering Colloquium, 10am, Rm 10-105. Coffee 9:30am.

National Academy of Science World Food and Nutrition Study: Perspective on the Nutrition Overview Study Team* — Peter Timmer, H. E. Babcock Professor of Food Economics, Cornell University. International Nutrition Planning Seminar. 12n, Rm 66-144. Brown bag.

Solitary Wave Models of Gulf Stream Rings* — Glenn Flierl, oceanography. Oceanography Sack Lunch Seminar. 12n, Rm 54-311. Bring lunch, coffee available.

Agenda '76: Issues in the Campaign and Beyond* — James Q. Wilson, government, Harvard University. Political Science Seminar. 12n, Rm E52-461.

Chemistry of Meat Curing* — Jay B. Cox, Jr., Eastern Regional Research Center, USDA, Phila, Pa. Nutrition & Food Science Seminar. 1pm, Rm 66-360.

Notes on the Teaching-Learning Process* — Thomas F. Jones, vice president for research, visiting professor in electrical engineering & DSRE. Mechanical Engineering Systems and Design Division Seminar. 1pm, Rm 3-465. Bring lunch, coffee & tea available. Smoke-free.

Discussion of the Unique Features of the Glomar Explorer* — Cptn Harry A. Jackson, USN (Ret), consultant in naval architecture & marine engineering, visiting senior lecturer, ocean engineering. Ocean Engineering & Sea Grant Program Joint Seminar. 2pm, Rm 3-133.

Probabilistic Algorithms, Can Chaos Produce Uncertainty?* — Michael Rabin, Hebrew University, Jerusalem. Lab for Computer Science Distinguished Lecturer Series. 2:30pm, Rm 9-150. Refreshments 2pm.

Technology Requirements for Large Space Structures* — Sinclair M. Scala, chief scientist, reentry & environmental systems division, General Electric Co. Aero/Astro Aerophysics Seminar. 3pm, Rm 37-252.

Designing the 4051 Graphical Computing System* — Terry Hamm and Tom Peekema, Tektronix, Inc. IEEE Student Branch Seminar. 3pm, Rm 37-212.

Performance of a Soft Foundation Subjected to Cyclic Loads* — Harry G. Poulos, visiting lecturer from civil engineering, University of Sydney, Australia. Civil Engineering Constructed Facilities Division Seminar. 3:30pm, Rm 1-350. Refreshments 5pm.

Multicell Fluid Flow and Heat Transfer in Rod Bundle* — M. K. Yeung, G. Nuclear Engineering Doctoral Seminar. 4pm, Rm NW12-222.

Nuclear War — The Growing Probability* — Stuart Symington, US Senator, Missouri. Harvard-MIT Program for Science & International Affairs Seminar. 4pm, Harvard Yenching, 2 Divinity Ave, Rm 18.

Evidence for Melting in Rocks of Mantle Origin from Southwestern Oregon* — Henry Dick, WHOI. Earth & Planetary Sciences Colloquium. 4pm, Rm 54-425. Tea 3:30, Rm 54-923.

Simultaneous Contrast Experiments in Cat Retinal Neurons* — O. J. Grusser, Institute of Physiology, Free University of Berlin. Man Vehicle Laboratory Seminar. 4pm, Rm 33-206. Coffee.

Alienation and the Growth of Technology* — Paul A. Hanle, curator, science & technology, Smithsonian Institution. Technology Studies Seminar. 4pm, Rm 20D-205. Coffee 3:30pm.

Electron Properties of Bi_{1-x} and Sb_x Alloy* — Rudolph Herrmann, Humboldt University, Berlin. Francis Bitter National Magnet Laboratory Seminar. 4pm, NW14-2209. Refreshments 3:45pm.

Law — The Lawyering Profession* — Arthur Z. Gray, Esq. Law Related Studies & Preprofessional Advising & Education Office Seminar. 4pm, Rm 1-236.

The Responsibilities of a Physicist* — Bernard Feld, physics. Undergraduate Physics Colloquium. 4:15pm, Rm 4-339. Refreshments after.

Manifolds of Optimal Algorithms in Algebraic Complexity* — Arnold Schonhage, University of Tubingen, Germany. Applied Mathematics Combinatorial & Theory of Computation Group (Laboratory for Computer Science) Seminar. 4:30pm, Rm 2-338. Tea 4pm, Rm 2-349.

Light-Shade, Drawing as Basis of Expression** — Dick Stroud, artist, teacher. Student Art Association Lecture/Demonstration with slides. 7:30pm, Stu Ctr Rm 429. Free, wine & cheese. Info: x3-7019, 1-5pm.

Psychoacoustics of Noise in Digital Signal Processing* — Barry Blesser, electrical engineering. Audio Engineering Society Seminar. 7:30pm, Rm 6-120.

Thursday, Oct 14

Optical Communication Through the Turbulent Atmosphere* — Jeffrey H. Shapiro, EECS. EECS Optics Seminar. 2pm, Rm 36-428.

Use of the Science Citation Index — Diane Hofman, Institute for Scientific Information. Science Library Seminar. 2pm, Rm E53-220.

Why Get an MBA?* — Dean W. Currie, dean of admissions, Harvard Business School. Career Seminar. 4pm, Rm 5-134.

Stability Conditions for Systems Governed by Periodic Differential Equations* — Earl R. Barnes, International Business Machines Corp. ESL Control & Communications Seminar. 4pm, Rm 36-376.

Law — The Lawyering Profession* — Arthur Z. Gray, Esq. Law Related Studies & Preprofessional Advising & Education Office Seminar. 4pm, Rm 10-105.

Polycyclic Aromatic Hydrocarbon Carcinogenesis: Biochemical Selection Mechanism* — Dr. James Selkirk, group leader in chemical carcinogenesis, biology division of Oak Ridge National Laboratories. Nutrition & Food Science Seminar. 4pm, Rm 16-134.

Ion Selective Electrodes — Some Principles Applications and New Developments* — Truman Light, The Foxboro Co. Analytical Chemistry Seminar. 4pm, Rm 8-205.

Nuclear Power and Self Sufficiency* — J. Ernest Wilkins, Jr., visiting scientist, Argonne National Laboratory. Physics Seminar. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

Regulation of Amino Acid Release from Skeletal Muscle* — Dr. Neil Ruderman, chief of diabetics & metabolism, BU Medical School. Laboratory of Neuroendocrine Regulation, Nutrition & Food Science Seminar. 4:30pm, Rm 66-168.

Friday, October 15

Novel Application of Chemiluminescence Techniques* — James L. Gole, chemistry. RLE & Spectroscopy Laboratory Seminar on Modern Optics & Spectroscopy. 11am, Rm 9-150. Coffee 10:30am.

A New Maritime Policy* — Ernst G. Frankel, marine systems. Center for Transportation Studies Luncheon/Seminar. Luncheon 12n (\$1), lecture 12:45pm, Stu Ctr Mezzanine Lge.

Use of the Science Citation Index — Diane Hofman, Institute for Scientific Information. Science Library Seminar. 1:30pm, Rm 14S-100.

Application of Active Control Technology to Gust Alleviation Systems for Tilt Rotor Aircraft* — Yi Cheng, G. Aero/Astro Doctoral Thesis Seminar. 2pm, Rm 33-206.

Spray Combustion* — S. P. Hanson, G. Chemical Engineering Seminar. 2pm, Rm 66-110.

A Study of the Mechanism of Vortex Inhibition* — S. Ishikawa, G. Chemical Engineering Seminar. 3pm, Rm 66-110.

Plasma Confinement Experiments in the 2XII-B Device* — Tom Simonen, Lawrence Livermore Laboratory. Plasma Dynamics Seminar. 3:30pm, Rm NW14-2209. Refreshments 3pm.

Dual Phases in Soft Lattices (Ionic, Organic and Superconducting)* — J. C. Phillips, Bell Laboratories. Center for Materials Science & Engineering Colloquium. 4pm, Rm 9-150. Refreshments 3:30pm.

Monday, October 18

Lower Hybrid and Related Experiments on the Princeton L-3 Device* — P. M. Bellan, Princeton Plasma Physics Laboratory. Plasma Dynamics Seminar. 2pm, Rm NW14-2209. Refreshments 1:30pm.

What Do We Know About the Safety of Nuclear Reactors* — Joel Yellin, social science, lecturer in political science. Norman Rasmussen, head of Department of Nuclear Engineering, will comment. CIS Technical Studies Program & Nuclear Engineering Seminar. 3:30pm, Rm 35-225.

Spectral Methods for Mixed Initial-Boundary Value Problems* — Steven A. Orszag, applied mathematics. Applied Mathematics Colloquium. 4pm, Rm 2-338. Tea 3:30pm, Rm 2-349.



CHINESE DANCERS Chiang Ching (left) and Lu Chih Ming will present "An Evening of Classical and Contemporary Chinese Dance" at 8pm on Saturday, October 16, in Kresge Auditorium. Tickets for the evening, sponsored by the Chinese Student Club, will cost \$3.50 and \$5.50 at the door.

Computer-Based Aids to Judgement in Engineering: Can Judgement be Learned in College?* — Stanley A. West, civil engineering. Ralph M. Parsons Laboratory Water Resources & Environmental Engineering Seminar. 4pm, Rm 48-316.

Origin of Life — Manfred Eigen, Max Planck Institut fur Biophysikalische Chemie, Gottingen, W. Germany. Biology & Chemistry Special Seminar. 4:30pm, Rm 6-120.

Vegetarian Nutrition* — Joan Conway, G, nutrition. MIT Vegetarian Community. 5:15pm, Rm 3-133.

Tuesday, October 19

Kinetic Theory of Tokamak Plasmas with Self Consistent Flow* — J. Fisher, G. Nuclear Engineering Doctoral Seminar. 12n, Rm 38-166.

Bifurcations to Divergence and Flutter in Flow-Induced Oscillations of Pipes* — Philip Holmes, University of Sound & Vibration, Southampton, England. Applied Mechanics Seminar. 3pm, Rm 3-270. Coffee after, Rm 1-114.

Substitutions among Materials* — Joel Clark, materials systems. Materials Science & Engineering Seminar. 4pm, Rm 10-105. Coffee 3:30pm.

Holism as a Necessary Methodological Approach in Successfully Applying Advanced Technology to the Development of Devices for the Blind* — Hadi Madjid, senior economist, Arthur D. Little, Inc. MIT-Harvard Rehabilitation Engineering Center Seminar. 4pm, Rm 5-234. Coffee 3:30pm, Rm 1-236.

Anticrossing Spectroscopy — The Forbidden Way* — Terry A. Miller, Bell Laboratories. Seminar in Physical Chemistry. 4pm, Rm 4-370. Coffee 3:45pm, Rm 6-321.

The Falkland Islands Project* — Peter Throckmorton, underwater archeologist, marine specialist, author. EECS Seminar. 5pm, Rm 4-402.

The End of Objectivity: An Introduction to Existential Philosophy* — Gian-Carlo Rota, applied mathematics & philosophy. Man the Being of Distances: Concourse Lecture. 7pm, Rm 2-390.

Phantasms and Realities in the Middle East Conflict* — Menachen Brinker, Tel Aviv University. Israeli Students' Club Seminar. 8:30pm, Stu Ctr Rm 400.

Wednesday, October 20

Axisymmetric Critical Withdrawal or a Rotating Fluid — Some Implications for Ocean Thermal Difference Power Plants* — Jack Whitehead, physical oceanography, WHOI. Oceanography Sack Lunch Seminar. 12n, Rm 54-311. Bring lunch, coffee available.

Handling of Tractor Semi-Trailers* — Randy A. Coverstone, G. Mechanical Engineering Systems & Design Division Seminar. 1pm, Rm 3-465. Bring lunch, coffee & tea available. Smoke-free.

Convection, Mesoscale, and the Large Scale from the Great Plains to Georgia, to Gate to Garp* — Edward J. Zipser, National Center for Atmospheric Research. Meteorology Seminar. 4pm, Rm 54-100. Refreshments 3pm, Rm 54-923.

Viking Mission to Mars* — Robert J. Polutchko, manager of Viking Lander Support Office, Martin Marietta Corp, Denver. Aero/Astro Seminar. 3pm, Rm 37-252. Coffee preceding, Rm 33-222.

Programming Techniques for Planning Electricity Supply* — J. Guerra, G. Nuclear Engineering Doctoral Seminar. 4pm, Rm NW12-222.

Highly Excited Atoms* — Daniel Kleppner, physics. Undergraduate Physics Colloquium. 4:15pm, Rm 4-339. Refreshments.

Internal Structure and Linkage of Chromatin Subunits* — Dr. Markus Noll, Biozentrum, der Universitat Basel, Basel, Switzerland. Biology Colloquium. 4:30pm, Rm 6-120. Coffee 4pm, Bldg 56, 5th fl vestibule. (Note change of day.)

Transcendental Meditation: Introductory Lecture* — Sponsored by MIT Transcendental Club. 7:30pm, Rm 5-233.

Academic Opportunities in Israel — Nadau Halevi, economics, Hebrew University of Jerusalem. Hillel Foundation Lecture. 7:30pm, 312 Memorial Dr.

An Ultrasonic Tissue Signature for the Lung* — T. L. Rhyne, MGH. Joint meeting of IEEE Groups on Engineering in Medicine, Biology, Sonics & Ultrasonics. 8pm, Rm 36-153. Pre-meeting dinner 6pm, Faculty Club.

Thursday, October 21

The Permanent Transition: From Traditional to Industrial Society — Suzanne Berger, political science, associate chairman of the faculty. Humanities Department workshop on the History of Industrial Society (first in a series). 4pm, Rm E52-461. Students & faculty planning to attend should call Gail Rivest, x3-4965.

Cloud Feedback Experiments with the NCAR GCM* — Stephen Schneider, climate project, NCAR. Meteorology Seminar. 4pm, Rm 54-100. Refreshments 3:30pm, Rm 54-923.

On the Probability Distributions for Macromolecular Aggregates with Applications to Enzyme Activity, Immunoassay and Micelle Structure* — George B. Benedek, physics. Physics colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

Theoretical Studies of Chemisorption and Catalysis* — William A. Goddard, III, chemistry, Caltech. Harvard-MIT Physical Chemistry Colloquium. 8pm, Rm 6-120.

Friday, October 22

Recent Results in Laser Spectroscopy* — V. S. Letokhov, Institute of Spectroscopy, Moscow. RLE & Spectroscopy Laboratory Seminar on Modern Optics and Spectroscopy. 11am, Rm 10-105. Coffee 10:30am.

Diblock Copolymers as Stabilizing Agents in Elastomer Blends* — A. R. Ramos, G. Chemical Engineering Seminar. 2pm, Rm 66-110.

Transport Barriers of the Arterial Wall — The Endothelium* — J.M. Costa, G. Chemical Engineering Seminar. 3pm, Rm 66-110.

Computer-Controlled Assembly without "Robots"* — Daniel Whitney, section chief, C.S. Draper Laboratory. Mechanical Engineering Seminar. 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

Ion Heating of ATC Plasma in the Ion-Cyclotron Frequency Range* — Hironori Takahashi, Princeton Plasma Physics Laboratory. Plasma Dynamics Seminar. 3:30pm, Rm NW14-2209. Refreshments 3pm.

Community Meetings

MIT Women's Forum** — Meetings Mon, 12n, Rm 10-105. **Mon, Oct 18** Ann Kendall, chairperson of Committee to Ratify the Massachusetts ERA State Equal Rights Amendment, will speak on the **Mass ERA**.

MIT Women's League Classes*** — **Beginning Crewel Embroidery:** 5 sessions, beginning Wed, Oct 27, 12n, Rm 10-340. Fee: \$16. Registration & info: Nancy Hollomon, 734-4763 or Priscilla Gray, 729-4098. **Intermediate Crewel Embroidery:** 6 sessions, beginning Tues, Oct 26, 9:15-11:30am, Rm 10-340. Fee: \$20. Registration & info: Helena Toksoz, x3-3168. **Crewel & Canvas Embroidery Workshop:** 8 sessions, beginning Wed, Oct 13, 9:15-11:30am, Fee: \$32. Registration & info: Priscilla Gray, 729-4098.

Mass ERA** — Kitty Dukakis will speak at dinner meeting sponsored by AMITA (Association of MIT Alumnae) and AWS (Association for Women Students) Wed, Oct 13, Stu Ctr Mezzanine Lge. Comments by Florence Luscomb, '09. Dinner 6:30pm, speaker 8pm. You may attend just the lecture, but please RSVP for dinner (cost: \$7) by Oct 8 by calling Sandy Yulish 536-9052.

TOPS — Tech Organization for Professional Secretaries. **Thurs, Oct 14** Richard Cohn, finance, Sloan School, will speak on tax deferred annuities

Oct 14: Presentation by Working Group on Office/Clerical Issues. 12n, Walker Blue Rm (2nd fl).

Trip to Sturbridge Village** — Sponsored by MIT Women's League. Sat, Oct 16, meet in Sloan School parking lot, 9:30am. Cost: \$6 adults, \$3 children over 2. Price includes transportation, admission, afternoon snack of pie & donuts. Tickets on sale thru Fri, Oct 15, 11am-1pm in Bldg 10 Lobby or Foreign Student Office, Rm 3-107.

Meditation Workshop* — Sponsored by MIT Buddhist Association. Basics of Zen (Ch'an) meditation will be taught Sat, Oct 16, 10am-12n, Stu Ctr Mezzanine Lge.

Immunization: Preventing Illness — Edward Dyer, MD, chief of pediatrics, MIT. Medical Department Prenatal/Postnatal Program. Wed, Oct 20, 12n, Infirmary 3rd fl conference rm. Bring lunch, drinks provided. RSVP x3-1316. Limited babysitting available, please call.

MIT Womens' League*** — Mrs. Jerome B. Wiesner cordially invites League members to a tea, Wed, Oct 20, 3-5:30pm, President's House, 111 Memorial Drive.

Wives Group** — Group leaders: Charlotte Schwartz, sociologist & Myra Rodrigues, social worker, both from medical department; Carol Hulsizer, faculty spouse in residence, Ashdown House. Wed, 2-4pm, Stu Ctr West Lge. Babysitting Stu Ctr Rm 473. Cheryl, x3-4911.

Student Art Association Darkroom** — Non-class related use of darkroom still available. Contact SAA thru Fri, Nov 5, 1-5pm, Stu Ctr Rm 29. Students: \$20, others \$30. Info: x3-7019.

Wellesley Events

Radical Economics — Barry Bluestone, economics, Boston College. Economics Department Lecture, Wed, Oct 13, 7:30pm, Margaret Clapp Library Lecture Rm.

Jimmy Carter's Religion — Stephen Marini, assistant professor, Wellesley. Religion & Biblical Studies Seminar. Wed, Oct 13, 7:30pm, Davis Lge.

Jules & Jim — French Department Film. Thurs, Oct 14, 4:15 & 7:15pm, 377 Science Center.

Phela-Ndaba — End of the Dialogue — Slater International Center film and lecture on racism and conflict in S. Africa. Thurs, Oct 14, 8pm, 112 Pendleton E.

The Myth of Matriarchy: Its Political Functions — Ancient and Modern — Joan Bamberger, Tufts; Marilyn Arthur, Columbia; Elizabeth Long, Wellesley. Inter-Departmental Symposium. Thurs, Oct 14, 8pm, Margaret Clapp Library Lecture Rm.

Utah Repertory Dance Company* — Modern dance company performing at Wellesley Fri, Oct 15. Send ticket requests to Coordinator of Special Events, Rm 346 Green Hall, Wellesley College, 02181. Send stamped, self-addressed envelope.

Women in the Arts — Joanne Hamlin in *No Borrowed Stream*. Remarkable women from America's past brought to life thru their own words. Sat, Oct 16, 8pm, Jewett Auditorium.

Social Events

Faculty Club Special Dinners*** — Fri, Oct 15: **Dinner Dance**. Choice of roast sirloin or broiled swordfish. Complete dinner, live music, beginning 7:30pm. \$15/couple. RSVP for all, x3-4896.

Wonderland Trip* — Sponsored by MIT-Wellesley Ballroom Dance Clubs. An outing to Wonderland Ballroom in Revere — a chance to put together all the steps you've learned, and to learn new ones. Fri, Oct 22. Info: Sandra Youa, 235-9673.

Latin-Disco Party* — Sponsored by Wellesley Ballroom Dance Club. Workshop for cha-cha, tango, merengue & hustle to sounds of Latin disco music. Sun, Oct 24, 2-5pm, Alumni Hall, Wellesley. Info: Sandra Youa, 235-9673.

Movies

Fluid Dynamics of Drag* — Fluid Mechanics Film. Thurs, Oct 14, 4pm, Rm 39-500.

Paper Chase** — LSC. Fri, Oct 15, 7 & 9:30pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

To Kill a Mockingbird** — SACC Film Series. Fri, Oct 15, 7 & 9:30pm, Rm 54-100. Admission 75¢, MIT or Wellesley ID required.

Il Grido (Antonioni)* — Film Society. Fri, Oct 15, 7:30 & 9:35pm, Rm 6-120. Admission \$1.

The Great Dictator** — LSC. Sat, Oct 16, 7 & 10pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

Galileo* — LSC. Sun, Oct 17, 6:30 & 9:30pm, Rm 26-100. Admission 75¢.

Vorticity; Low Reynolds Number Flow* — Fluid Mechanics Films. Mon, Oct 18, 4pm, Rm 39-500. Free.

Vorticity; Low Reynolds Number Flow* — Fluid Mechanics Films. Thurs, Oct 21, 4pm, Rm 39-500. Free.

Godfather Part 2** — LSC. Fri, Oct 22, 6 & 10pm, Kresge. Admission 75¢, MIT or Wellesley ID required.

Slaughterhouse 5** — SACC Film Series. Fri, Oct 22, 7 & 9:30pm, Rm 54-100. Admission 75¢, MIT or Wellesley ID required.

L'Aventura (Antonioni)* — Film society. Fri, Oct 22, 7:30 & 9:40pm, Rm 6-120. Admission \$1.

Three Days of the Condor** — LSC. Sat, Oct 23, 7 & 10pm, Kresge. Admission 75¢, MIT or Wellesley ID required.

The Maids* — LSC. Sun, Oct 24, 6:30 & 9pm, Rm 26-100. Admission 75¢.

Lobby 7 Events

Scenes by MIT Shakespeare Ensemble* — Scenes from Shakespeare's *Hamlet*, *The Two Gentlemen of Verona*, *The Taming of the Shrew* and *Much Ado About Nothing*, and from Moliere's *Don Juan*. Sponsored by Lobby 7 Committee Fri, Oct 15, 12n, Bldg 7 Lobby. Free.

Live Chess Game* — MIT Chess Club. Thurs, Oct 21, 12n, Bldg 7 Lobby. Free.

Music

The Prague String Quartet* — Sponsored by Music Section. Program includes works by Haydn, Bartok and Beethoven. Wed, Oct 13, 8pm, Kresge. Free.

Albanian Folk Music Group** — Lecture/demonstration sponsored by MIT Music Section. Thurs, Oct 14, 5:15pm, Music Library. Free.

MIT Chamber Players* — Program includes works by Marais, Beethoven, Rochberg & Schumann. Fri, Oct 15, 8pm, Kresge. Free.

Theatre and Shows

Cat on a Hot Tin Roof* — MIT Community Players production of Tennessee Williams' drama. Performances Thurs-Sat, Oct 14-16; 8pm, Kresge Little Theater. Tickets: \$3, \$2.50 with MIT student ID. On sale lunch hours, Bldg 10 Lobby. Reservations: x3-4720.

The Taming of the Shrew* — MIT Shakespeare Ensemble production. Wed, Oct 20-Sun, Oct 24, 8pm, Sala. Tickets: \$1.50 on Wed & Thurs, \$3 & 3.50 Fri-Sun, student & group discounts available. Info: x3-4420.

Dance

Dance** — Sponsored by sophomore class and Ballroom Dance Club. There will be dance contests in waltz, jitterbug, tango, disco, with prizes. Fri, Oct 15, 9pm-1am, Walker Memorial. Admission: \$1.50, all welcome. Refreshments.

Disco-Dance* — Sponsored by Gays at MIT. Fri, Oct 15, 9pm-1am, Sala. Everyone welcome. Admission \$1.50, free with MIT ID. Info: x3-5440.

An Evening of Classical and Contemporary Chinese Dance* — Sponsored by MIT Chinese Student Club. Featuring Chiang Ching and Lu Chih Ming. Sat, Oct 16, 8pm, Kresge. Tickets: \$3.50 & \$5.50 at door. Reserved: \$3 & \$5, call 494-8103 aft 6pm.

Foxtrot Workshop* — Sponsored by MIT Ballroom Dance Club. Basic steps & turns taught, no experience or partner necessary. Sun, Oct 17, 2pm, Sala. Sharon Pastoriza, x5-8667 Dorm.

BU-MIT Ballroom Dancing** — Learn to dance. Beginners Wed, 1-2pm, or 3-4pm; Tues, 2-3pm; advanced Tues, 3-4pm; men especially invited. All at BU, Sargent Gym. Info: Frank Vitagliano, 846-0746.

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

Renaissance Dance Group* — We dance for our own amusement Wed, 8pm, Burton dining rm. Info: Beth Parkhurst, 964-1840.

Exhibitions

Victorian Newton Photographs* — Photographs taken by Betsy Fuchs. Thru Fri, Oct 22, Rotch Library Visual Collections, Rm 7-304. Exhibit open during library hours.

MIT Creative Photography Lab* — Photographs by BiFekie, Lanzano, Mendoza & Sloan. Thru Tues, Oct 26, 3rd fl duPont Gym. Hours: Mon-Fri 9am-10pm, Sat 10am-6pm, Sun 12n-8pm.

Photographs* — Exhibition of photographs by MIT Student Art Association summer session, Linda Wasko, instructor. Thru Oct, Bldg 7, main corridor.

Hayden Corridor Gallery Exhibit* — Works on Paper by Ralph Coburn. Open daily.

Mask Projections* — Three new video installation pieces and selected videotapes by Peter Campus. Fri, Oct 15-Wed, Nov 10, Mon-Sat, 10am-4pm, Hayden Gallery. Public opening Fri, Oct 15, 8-10pm.

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

Hart Nautical Museum* — Permanent exhibit of rigged merchant and naval ship models of yachts and engine models. Bicentennial exhibit: "1776-1976" — a frigate, 2 schooners, a gondola, and the Durham boat of the American Revolution. Open daily in Bldg 5, 1st floor.

MIT Historical Collections* — Permanent exhibition Mon-Fri, 9am-5pm, Bldg N52, 2nd floor. **Bicentennial Exhibits:** Katharine Dexter McCormick, '04; Vannevar Bush, '16; Karl Taylor Compton; and Norbert Wiener, 1876 exhibit, Bldg 4 corridor. **the New Technology Exhibit and Energy Exhibit:** 2nd floor balcony.

Facsimiles of Composers' Manuscripts* — Including Bach, Haydn and Beethoven. Music Library, Rm 14E.

Athletics

Home Schedule — Wednesday, October 13 — V, JV/F Soccer. Brandeis, Tufts, 3pm, Briggs Field. **Saturday, October 16** — V, JV/F Cross Country. Williams & Tufts, Franklin Park. **V Soccer.** U of Lowell, 2pm, Briggs Field. **Saturday, October 16 & Sunday, October 17** — V Sailing. NEISA 3-crew team racing championship, Staake Trophy, MIT/Harvard, 9:30am, Charles River Lower Basin. **Tuesday, October 19** — W Volleyball. Wellesley, 7pm, duPont Gym. **Wednesday, October 20** — JV/F Soccer. Phillips Academy, 3pm, Briggs Field. **Saturday, October 23** — V Sailing. 4-Crew Single-Handed Team Race, 9:30pm, Charles River Lower Basin. **V Soccer.** Holy Cross, 2pm, Briggs Field. **JV/F Soccer.** Babson, 10am, Briggs Field. **Sunday, October 24** — V Sailing. Open Dinghy Invitational, 9:30am, Charles River Lower Basin.

Maggie's Self-Designed Fitness Class — Classes 12n-1pm & 1-2pm, du Pont fencing & wrestling rms; 5-6pm, du Pont T Club Lge. PE credit course, but all are welcome.

Low Back Problem Exercise Class — Thurs, 1-2:30pm, Stu Ctr West Lge. Bring 3 pillows and a note from your doctor. Fee to be determined.

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 20 through Oct 31 to the Calendar Editor, Room 5-111, Ext. 3-3279, before noon Friday, Oct 15.

Lowell Institute School Boasts Enrollment Boom

Enrollment has mushroomed at the Lowell Institute School since its reorganization three years ago, according to Dr. Bruce D. Wedlock, director of the program.

Dr. Wedlock credits the increase to a restructuring of the curricula. Before 1971, LIS offered two-year programs in electrical, mechanical and computer technology, similar to many offered by community colleges. Enrollment for the last year of the two-year programs was down to 12.

By offering instead a wide variety of courses not given elsewhere, enrollment jumped to 199 in 1973, 394 in 1974, and the figures soared to 542 for 1975. Fall term registration this year boasts approximately 305 students.

Since it does not offer a degree program and is therefore not restricted by degree requirements, the Lowell School has great flexibility in topic selection and coverage. Introductory courses emphasize current applications of a subject rather than traditional course material which may have little immediate relevance to the student. For example, the course in machine tool fundamentals teaches how to operate various machinery, rather than the more theoretical aspects of the subject.

Access to MIT facilities enables the LIS to offer unusual subjects. Many of its teachers are drawn from the MIT teaching staff. Special laboratory facilities, not available to other night school programs, are also available. Because of these facilities the LIS is able to offer unique courses, such as scientific glassblowing, microprocessors and hi-speed photography.

Good publicity is another factor in the recent success of the program. According to Dr. Wedlock, people don't realize that courses like technical writing laboratory and improving oral communications can lead to advancement in their jobs, and so prefer the more unusual courses. This type of course is often undersubscribed, indicating a need for good publicity. The School has responded with a publicity program which currently sends out approximately 1,800 brochures to individuals and companies.

The Lowell School's new curricula and increased visibility has resulted in more applications than it can accommodate. In addition, while a 50 percent completion rate is considered adequate for most night school courses, 73 to 77 percent of Lowell Institute students complete their course work.

Hubbard Receives Scott Paper Award

James E. Hubbard, a senior in mechanical engineering from Baltimore, Md., has been selected as the 1976 recipient of the Scott Paper Company Foundation Award for Leadership at MIT.

The award is given to a student at the end of his third year studies in the field of chemical engineering, mechanical engineering, electrical engineering and computer science or in the Sloan School of Management program who has demonstrated a "high level of scholarship and noteworthy success in extracurricular activities." In selection of the student, weight is given to qualities which will enable him or her to succeed as a leader in industrial or commercial activities.

In both the last year of undergraduate and the first year of graduate studies, the recipient will receive a stipend of \$2,000. In addition, during the first year of the award the student's academic department will also receive an unrestricted gift of \$2,000.

In April, 1976, Hubbard was elected chairperson of the northeast section of the National Society of Black Engineers, which was formed in 1975

to encourage black Americans to enter the engineering profession.

Also last spring, BlackME, an organization which had been formed at MIT in the early 1970s to benefit minority students in the Department of Mechanical Engineering but had been inactive for several years, was revitalized under Hubbard's leadership. The newly reorganized group has established a tutoring program, improved communications between the students and faculty of the de-

partment and has compiled a resume notebook to be circulated among potential employers. In recognition of this innovative program, Hubbard received a William L. Stewart, Jr. Award at the 1976 Awards Convocation.

Mr. Hubbard's future plans include a master's degree in mechanical engineering, followed by work in industry, preferably in the area of research. He plans eventually to return to school to earn his PhD.



Lettvin To Lead Off Lectures

"Not Seeing Things," a discussion of protective coloration in animals by Dr. Jerome Y. Lettvin, professor of electrical and bioengineering at MIT, will launch a 1976-77 lecture series to benefit the Technology Children's Center, Inc.

Professor Lettvin's lecture, to be given Sunday, Oct. 24, at 3pm in Room 26-100 at MIT, will probe what goes into imitation and, more importantly, why animals undertake imitation. Dr. Lettvin, a noted neurophysiologist, also holds an appointment in the Department of Biology as professor of communications.

Technology Children's Center Lectures have been held for a number of years to provide support for pre-school programs—both nursery school and day care—at MIT. A \$1

donation is requested.

This is the first year that a lecture series has been arranged. The lectures are aimed at young people approximately twelve years old and older.

The second lecture, "Building a Solar House," will be given by Dr. Richard D. Thornton, professor of electrical engineering, who lives in a house using solar energy, on Sunday, Jan. 23, 1977.

"Earthquakes" is the title of the final lecture to be given Sunday, March 13, by Dr. William F. Brace, Cecil and Ida Green Professor of Geology in the Department of Earth and Planetary Sciences.

CLASSIFIED ADS

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. Only Institute extensions may be listed. Members of the community who have no extensions may submit ads by coming in person to the Tech Talk office, Room 5-111, and presenting Institute Identification. Ads may be telephoned to Ext. 3-3270 or mailed to Room 5-111. Please submit all ads before noon, Friday, Oct 15. They will be printed on a first come first serve basis as space permits.

For Sale, Etc.

Tires for Honda Civic, nw orig equip, \$15. Bill, x3-7573.

Philco refrig, works perf, \$50. x5-7444 Dorm.

Pr Delta blk stud snows, F78x15, mtd Ford whls, blnd, used 1 seas, lk nw, \$60/pr. Fred, x8-2471 Draper.

Koss ESP-9 hphones, best over \$50. Mike, x3-2411, aft.

Used furn: chests; tbls; lamps; mirror; paintings; bdsprds; grdn furn; 4 snows for Chevy Nova; 4 snows for Volvo 144; 30 gal glass lined wtr htr; all priced reas. Call 1-655-5285.

Muskat fur coat, sz 14-16, \$20. Dotty, x8-3501 Draper.

Pentax 6X7 w/f2.4 104 mm lens & case, \$500. Call 625-0937, evgs.

AR trntbl w/Shure M91ED, dust cover, base, dust bag, \$65; Caber m Flo ski boots, sz 10, \$20. Ron, x3-4211.

Pr C78x14 snows, 4 ply, Ford Mav rims, used 1/2 seas, \$35. Hank, x1-7285 Linc.

Harmony mandolin, 3 yrs, lk nw, \$70 or best. Call 547-4386, aft 5.

SCM Galaxie Deluxe port manual typwrtr w/case, exc cond, \$45. Bill, 494-8845, evgs.

Girl Hyde fig skates, sz 13, exc cond, \$10; 9x12' gold rug, v gd cond, \$40. Bob, x5892 Linc.

Hoover port washer, exc cond, \$100; Acoustic amp, 165 RMS, mdl 470-6, 12" spkrs, graphic equalizer, \$700. Doris, x7155 Linc.

Antique mahog dining tbl, seats 4-6, gd cond, \$60 or best. Martha or Tom, 661-7631, evgs.

HP 55 calc, \$200; BSR rcvr w/spkrs & Rek-O-Kut trntl w/Stanton 681A crtrdg, \$150. x5-9463 Dorm.

Lg refrig, 5' hi, loc at MIT, \$25. Arthur, x3-3747.

'73 Lark hdtp camping trlr, exc cond, lots extras. x3-6034.

Zenith b&w TV, \$60; elec grill, \$10; '62 Ply wgn, gd run cond, poor body, fall sticker, \$150 or best. Call 494-8444.

Sew mach, perf working order, mahog cab, \$45 nego. Christine, x3-2686, aft.

(2) tangerine LR chrs, gd cond; pr m ski boots, sz 12; 14 lb bowling ball, gd cond. Marion, x3-6153.

Port b&w TV, working cond but can use some attention, best over \$35. Dave, x3-1986.

Pr tires, BF Gdich Slvrton belted, E78x14, mtd Olds whls, 3-4 K, \$20/ea, can buy sep. Bob, 494-9205, evgs.

Hewlett Packard security cradle for HP 45, 55, 85 calc, nw, unused, \$10. Ed, x5-9806 Dorm.

Car stereo cassette player, Audiovox C988, b nw, nvr used, exc wrnty, \$55. Maureen, x3-3748.

(3) tkts to Harv vs Brown football game, Sat, Oct 30, 4:30pm, \$5/ea. Madeline, x3-3636 for loc.

World's best barbell set, York Big 12 Spec, 200 lb, compl w/bench press, \$100 cash. x3-3356.

Beaut gold k sz bdsprd, \$50. Irene, x225 Linc.

KLH 24 am, fm, pm, must hear to believe, best. Karen, 547-5812.

Marantz mdl 1030 integrated amp, 15 RMS W/ch at .5' THD, wrnty, exc cond, cost \$150, \$70. Bill, x5-9338 Dorm.

Samigon auto 2X tele extender to fit Canon F-1, FTB, TLB, TX, nw \$30, exc cond, slmd used, \$20; deluxe film loader, used 2X, Coop \$10, \$6; f Clark Wallbees, sz 7N, lk nw, too sm, nw \$32, \$25. Barry, x3-6526.

Leath coat, m 3/4 length, brn, sz 44. Myron, x3-2636.

Cassette tape: Maxell UD C-90, \$2.80/ea, \$2.75/ea by box (12). Rich, 787-5288, evgs.

Mercedes marine diesel, 40 hp. Richard, x3-5221.

Condenser enlarger, odds & ends of darkrm equip. \$35; IBM Std elec, \$100. Ed, x3-5763.

(2) SW Technical "Psychodelia" color organs: 1 digital, 1 analog, orig \$45/ea, 1 SW Tech "540" stereo amp & preamp, 20 W/ch, nds work, \$25/all 3; Sony SQ4D 4 chnl decoder, unused in orig box, \$25; 12" Jensen Instrument spkr w/15 lb driver, \$12; 5x7" auto spkr w/2 lb driver, \$4. Dan, 661-7118.

(3) man wall tent w/2 slp bags, \$50; port 18" outdr grill w/charcoal, \$4; 1 spd oscillating fan, \$10; all exc cond. Silvia, x3-3300.

Dual 1019 rcdr changer & Shure V15-II, \$75. Carl, x3-5593.

(3) girl bikes, 20", (1) \$25, (2) \$30/ea. Russ, x474 Linc.

Twin sz Simmons matt, b nw, orig wrapping, \$45; used matt, \$10; \$50/both. Call 547-7599, 4-7pm.

Stereo amfm push bttn car radio, \$45; stereo car spkrs, \$6; 2 A78x13 used tires, \$12; pr 13" stud snows on Pinto rims, \$20. Bob, x3-2593.

Pr Allstate 9.00x14 snows, \$10/ea. H. Canning, x206 Linc.

(2) twin bdsprds, 1 hvy 100' Indian cotton, gold tone stripes, \$5; 1 machine washable, lk pink, \$4; both lk nw; 2 pr org cotton drapes, fit 25-50" wndws, 68" long, incl hooks, lk nw, \$5/both. Patrick, 547-3630, evgs or wknds.

Exc qual lg mtl office desk, 5 drw, file drwr, incl leath chr, glass top, best. Call 523-5906, wkds.

Aries synthesizer oscillator, assembled, \$90. Call 492-6983.

Book collectors, I may have that spec book you've been looking for. Lesley, x8-2185 Draper.

Lawn sweeper/leaf collector, gd cond, \$20. x3-6811.

Pr H78x15 tires for Olds, on b nw rims, \$20/ea. Tony C, x3-4419.

Dynalite skis w/Marker M3 bndgs, 185 cm, used twice, \$45. Joe, x3-6746.

Pr tkts to Luciano Pavarotti concert, Sun, Oct 24, 3pm, \$7.50/ea. Kenneth, x3-1575.

(4) D78x14 tires, \$5/ea; 2 D78x14 Sears snows, used 1 yr, \$35; hand lawn mower, \$10. Tony, x8-1319 Draper.

(8) trk stereo tape deck w/spkr & tapes, \$35; pr G78x14 belted snows w/rims, \$40. Bill, x366 Linc.

Estate sale: natural slvr blu mink stole, \$250. Marcia, 492-3810.

Crib; playpen; hichr; changing tbl; back carrier; carseat; carriage; Marie, 327-2592.

Canon FTb w/1.8 lens, 5 mos, \$200, body only \$160. Call 232-2900, aft 6.

Sofa, gd cond, \$25. Jim, x8-1468 Draper.

Qn sz waterbed, matt, liner, Chemelex htr, \$60. John, 494-8136, aft 6pm.

Hoover port washer, exc cond, \$75. Tony, x7420 Linc.

Scientific calc, Novus Math, all fcns, mem, RPN logic, adapter, \$30; wd plant stand w/shlf & hangers, lg unit, \$12; hvy wood wntn cot, fur lining, sz 36, exc cond, orig \$50, \$40. Kirk, 494-8869.

Chr & sofa, \$75; formica K tbl w/4 chrs, \$35. Call 749-1037, evgs.

Stud ww snows, C78x13, on Ford Pinto rims, lk nw, \$45. x8-2593 Draper.

GE deluxe toast-r-oven, exc cond, \$15. x3-5046.

M 10 spd bike, 24", \$85; Rogers drums: 5 drums, 3 Zildjian cymbals, hi-hat, compl fittings w/seat, \$250; 6 str guitar w/case, \$40. Neville, 868-9583.

Almost nw gd qual 12x16 royal blu nylon carpet, \$100. x8-1583 Draper.

Stl shelving; hcky pants; baby carriage & playpen; doll carriage; encyclopedia; whl chr. Call 232-0205.

Rhodan Tesseract, lk nw, modified for chronosynclastic operation, many access, operators & repair manual, best, w/ consider trade for newer mdl. Arthur, x5-9167 Dorm, evgs.

Dual 1218 trntbl w/base, dust cover, Shure M95ED crtrdg, exc cond, \$110. Dan, x5540 Linc.

Frpl screen, 32" hi, 44" W, antique wrought iron finish w/mtd andrions, poker, \$75; twn bedspring, \$10. Hank, x8-4166 Draper.

Nw pink nylon quilted hsecoat, sz 14, Saks 5th Ave, was \$45, \$25; 16 oz bge Irish wool, \$10. x3-3696.

Car boat rack, adj for all mdls, \$15; stud snows w/rims, 1K long distance, sz H78x14, \$45/pr. x3-3069.

Vehicles

'64 Volvo 122S, 4 dr, 5 stl belt radials, much rust, 1 bad rod bearing, gd for repair or many parts, \$200. Bent, 628-6883, evgs.

'66 Ford Mustang, gd run cond, \$425. Call 536-3364, evgs & wknds, lve msg.

'66 VW, \$395. Ellen, x3-6610.

'67 Volvo 144S, 4 dr sed, gd eng & body, radio, snows, lvg cntry, \$600. Alexander, x3-3374.

'68 Ford conv, auto, p st, disc brakes, exc handling, \$450; '68 Ford Mustang, 6 cyl, auto, p st, runs gd, \$375. Vin, x5461 Linc.

'68 VW bug, dk blu, stick shift, extra snows, exc run cond, \$575. Miller, x3-2837.

'68 Pont Tempest, 2 dr, 6 cyl, ovrd cam, gd cond, \$300 or best. Shane, x5-9559 Dorm, evgs.

'68 Opel, gd cond, nw sticker, \$450 or best. Linda, x7809 Linc.

'70 Simca, 4 dr, 80 K, nw brakes, muff, universal joints, gd mech cond, 2nd ownr, \$350. Robert, x3-2317.

'70 Toyota Corolla wgn, 82 K, nw brakes, tires, clutch, batt, gd body, \$600. S. Kirsch, x3-1461, lve msg.

'70 Ford LTD cntry sq, 9 psgr wgn, auto, p st & br, fac AC, roof rack, 76 K, some rust but runs well, \$1,000 or best. x3-6520.

'70 BMW 2002, std, v cin, 65 K, nw synchros, shocks, etc, \$1,950; '70 Caddy conv, 128 K, restored to lk nw cond. Dick, 283-6786, or lve msg Rm 36-368.

'70 Triumph Spitfire, 1 ownr, gd cond, \$950 or best. Call 254-4611, evgs.

'70 Malibu, V8, 307, 78 K, p st, auto, am radio, mtd spare & 4 snows, defogger, CB antenna, gd cond, \$1,100. Abe, x5846 Linc.

'71 Ford Mustang Grande, bge w/brn vinyl top, V8, 302 cu in, exc cond, auto, p st & br, radials, 50 K, well kept, must sell, \$1,400. Said, x3-6646, lve msg.

'71 Opel 1900, 2 dr, 1.9 L auto, 39.5 K, gd gas mileage, exc cond, \$1,250. Call 646-2485, evgs.

'71 Opel, auto, 39 K, 2 dr, exc cond, best. Emily, x3-1341.

'72 Pinto wgn, 48 K, 2000 cc, gd cond, nw parts, \$1,400. Call 661-7228.

'72 Jeep Commando, 4 whl drive, auto, p st, \$2,000. x5770 Linc.

'72 Toyota Corolla wgn, 61 K, gd cond. John D, x8-4019 Draper, lve msg.

'72 BMW 2002, wht, stereo, amfm & cassette player, sunfr. Afi, x3-2209.

'72 Citroen, 59 K, Ziebart, 1 ownr, exc cond, recent paint, reas price. Janet, x7396 Linc.

'72 Audi 100LS, 4 spd, amfm, 2 dr, nw tires & exh sys, nw batt, gd run cond. Eunice, x3-5344.

'72 Peugeot 504, 4 dr sed, auto, 51 K, nw Michelins, valves, rear brake pads, \$2,150. x8-3541 Draper.

'73 Toyota Celica, body damage left side, nw tires, 45 K, \$1,500. x5727 Linc.

'73 VW, exc cond, amfm, auto, 58 K, priced to sell. John, x196-461 EDC.

'73 Fiat 128, 4 spd, 25 K, gd cond, best reas. x3-2772.

'74 Land Cruiser, overdrive, 2 tops, 10 whls. x3-3247.

'74 Valiant, gold, exc cond, 22.5 K, Ziebart coating, \$2,500. x346 Linc.

'75 Mustang II Ghia, 4 cyl, 4 spd, amfm, bumper guards, rotunda 5 yr undercoat, cstm velour uphol, exc cond, has to be seen, \$3,295 nego. Joe, x8-3701 Draper.

'75 Yamaha RD 350, luggage rack, crash bars, chn, lock, ideal commuting & trips, exc cond, \$850. Dale, x3-1559.

Housing

Bedford, spac cape w/addition, 1/2 acre treed lot, qt str, 10 rms, 1' B, frpl LR, sep DR, hrwdw fls, alum comb wndws, full bsmnt, panelled rc rm, garage refrig, 2 AC, gas stove, dishwasher, immed occup. \$50,900. Call 275-9116, evgs.

Hos, S End brick townhse, 5 BR, 2' B, LR, DR, fam rm w/Franklin stove, grdn, all redone, \$49,000. Call 267-6148, evgs.

Hkline, priv rm on qt res str, nr MIT, \$25/wk. Call 738-4685.

Hkline, apt avail 11/1, 3 BR, lg K, LR, nr T, x3-6328.

Hkline, cozy 3 rm apt, conv loc, \$203 htd. Hill, x3-5442.

Camb, Eastgate 9-A BR apt, sub 11/1-Feb or Aug. Alexander, x3-3374.

Camb, BR apt, K, LR, B, avail 11/15, \$195 incl ht, gas, hot wtr. Call 868-9835.

Camb, apt avail Tang hall beg 12/10, \$99 incl util. Alex, x3-3676.

Cohasset, spectacular HR oceanfront apt on priv 10 acre estate, study, lg K w/dw, LR, partly furn, priv tennis ct, carport, decks, must see, \$200 + util (Oct-June 15). Call 267-7291.

Lex, 8 rm, 4 BR colonial, lg mod K, fam rm, 1/2 acre nr Linc Lab, H Sq bus, avail immed, ask \$54,900. Dr. Parker, x3-5553.

Medford, 5 rm hse, 2 BR, encl porch, walk-up attic, full bsmnt, garage, ask \$29,900. Jacky, x8-3389 Draper.

Cape Cod, Dennis, pleasant 2 BR cape on lg priv lot overlk Cape Cod Bay, frpl LR, compl winterized, FHA ht, priv beach, \$45,000. Robert, x7030 Linc.

Animals

AKC reg doberman pinschers, whelped 9/30, champ line, tails, declaws & ears done, avail about 11/15. \$250. Jerry, x3-7713.

Sealpt Siamese kittens born Aug 24, \$20. Al, x5448 Linc.

Gerbils, 2 m, 1 f, free, w/ also sell cage for sm amt, nego. Call 734-0648.

M choc pt Siamese cat, 2 yrs, free, outdr cat, nds yard. Linda, x3-1590.

Last: keys on chain w/"Personal Products" label, in Chem Eng bldg or Stu Ctr, Oct 3. Janek, Tang 13E, x3-6530.

Last: cstm made wedding ring in mens duPont locker rm, nr locker 501, names Craig & Sharon make up ring/wheat separating names on 1 side, cross on other; reward. Call 266-1977.

Last: Kryptonite bike lock in pkg lot under Dewey Lab; reward. Elliott, x5-9123 Dorm.

Last: reward for 4 mos old brn short hair puppy, responds to Doag, Jeff, x3-7441, lve msg.

Found: slvr ID bracelet on soccer field, w/name Arthur Pereira. Amparo, 494-0073, evgs.

Wanted

Tutor nded for college lvl organic chem. Call 354-5910.

Prsn for biweekly apt cleaning & occasional evg & wknd babysitting for 2 yr old. Sarah, x3-5775.

BYTE issues 2, 3, 8, 9, 10 for purchase or copying; nos. 12, 13, 14 avail. Nigel, x8-1185 Draper.

Old piano at reas price. Suzanne, x3-7769.

Lg pillows or cshns for couch. x5-6686.

Grad stu, 25, wants to share ski hse for wnter. Roy, 491-6300, days.

(2) 14" rims to fit Dodge Dart. Chris, x3-2375.

Phone answering mach. Sully, x3-6693.

Refrig. Doug, x5-6391 Dorm.

Bsmnt cluttered w/old furn, rugs, old pics, throw away items? We accept donations of the above to furn stu rms. Call 494-0271, aft 7pm.

Gold coins, any cond, any denomination, cash pymt. John, x5-9460 Dorm, 6-10pm.

Humidifier, around 10 gal cpty; steam ht radiator. Paul, x7128 Linc.

Used IBM Selec typwrtr, gd cond. Pam, x3-4977.

Player piano rolls. Joan, x7002 Linc.

W/ buy used copy Henderson & Quandt, Microeconomic Theory. Sharon, x5-8492 Dorm.

Parking

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

W/ swap West for Albany or East. Kay, x3-4951.

W/ swap West for Albany or East, x5-6240 Dorm.

W/ swap Albany for East. Gerhardt, x3-6595.

W/ swap Albany for Sloan or East. Jane, x3-5775.

Miscellaneous

Nd ride M-Th from Powderhse Sq area to & from MIT, work 9-5, w/ pay. Joan, x3-6603.

Weaving lessons on floor looms, beginner & intermed. Call 739-1056.

Typing, fast & accurate, manu, theses, papers, almost anything, x3-4342.

Study singing or piano w/prof, exper tchr offers patient, org instr designed to suit stu nds, it's never too late to start! Free intro lesson. Call 729-7591.

Typing, fast & accurate, manu, theses, papers, etc. Cathy, x3-5891.

IBM Correct Selec, fast & accurate typing, reas rates. Jean, 628-8271.

Surplus Property

Surplus property for transfer or sale for research or teaching programs only. For further information contact W.A. Derry, Property Officer, x3-2777.

Blanchard #18 grinder; Niagara power press; Monroe mdl 610E cal; GE welding mach; auto transporter mdl TNE4648.

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 Assistants for Women and Work (10-215) and Minority Affairs (10-211), and in the Personnel Office (E19-239). Personnel interviewers will refer any qualified applicants on all biweekly jobs as soon as possible after their receipt in Personnel.

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

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 - Ann Perkins)

Virginia Bishop 3-1591
Mike Parr 3-4266
Ken Hewitt 3-4267
(Secretary - Joy Dukowitz)

Sally Hansen 3-4275
Lewis Redding 3-2928
Richard Cerrato 3-4269
(Secretary - Jenni Leibman)

Sponsored Research Staff, Systems Programmer, temporary, in Earth and Planetary Sciences to design and implement interactive image processing system on mini-computer: design data base for cataloging, locating and accessing digital images; develop command language and interactive environment for communicating with users; implement algorithms for comparing, enhancing, filtering and transforming digital pictures; train users; document system use. Degree in computer science, ability to do creative design work, experience with time sharing systems and mini-computer assembly languages as well as in depth knowledge of PL/I required. At least 2 years programming experience at system design level also necessary. D76-197 (10/13).

Sponsored Research Staff, Research Engineer, in the Energy Laboratory to work with chemical engineering group studying coal and gas combustion: develop new and refined methods of quantitative instrumental analysis of product gas samples. A minimum of a B.S. in science or engineering required (M.S. preferred). Laboratory experience and the ability to develop and troubleshoot instrumentation also necessary. Experience with gas handling, vacuum techniques, analytical methods such as gas chromatography, mass spectroscopy and optical spectroscopy preferred. D76-198 (10/13).

Academic Staff, Nursing Supervisor, in Medical Department Evening Ambulatory Clinic will provide primary nursing care as well as supervise up to 6 nurses and support personnel; and related staffing and administrative functions: Applicants must be Mass. Registered Nurses and graduates of an Adult Nurse Practitioner or Physician Assistant Program. Experience in primary care and supervisory/administrative ability also necessary. Hours: Mon.-Fri. 4pm-12am, rotating weekends. (day or evening shifts). Will also rotate on-call duty with other nursing supervisors. C76-18 (10/13).

Sponsored Research Staff, Technical Assistant, in Earth and Planetary Sciences paleomagnetic laboratory to measure directions of magnetization in rock specimens in an automated spinner magnetometer, and cut specimens by diamond saw in relation to determination of paleomagnetic pole positions. Bachelors degree in geology, some exposure to ore microscopy required. Major interest in geochemistry, some exposure to computer operated instrumentation helpful. Position is temporary for one year. D76-199 (10/13).

Academic Staff, Technical Assistant, in the Biology Department will perform biochemical research in project areas such as the characterization of Escherichia coli DNA polymerases; initiation of DNA synthesis in the absence of a primer; *in vitro* synthesis of transfer RNA. A masters degree in biochemistry or 2-5 years related experience is required as well as a knowledge of biochemical techniques involving chemistry of nucleic acids, enzyme purification and enzyme assays. Knowledge of sterile techniques and general bacteriology helpful. C76-17 (10/13).

Admin. Staff, Systems Programmer, in the Information Processing Services, Multics Systems Assurance Group to perform quality assurance for the systems: test, integrate changes submitted by Honeywell for inclusion in standard product; crash analysis; performance tuning. A Bachelors degree, or equivalent combination of education and experience, proficiency in PL/I and experience in systems assurance type functions on a large scale computer system required. Experience in use of Multics or other advanced time-sharing systems preferred. A76-40 (10/13).

Sponsored Research Staff, Laser Physicist, in the National Magnet Laboratory will design, test and operate a wide variety of far infrared and submillimeter molecular gas lasers and detectors to be used for plasma diagnostic in tokamak thermonuclear experiments. BS or MS in Physics, or equivalent, plus five years experience in operation and design of molecular gas lasers required. D76-190 (10/13).

Sponsored Research Staff, Mechanical or Electrical Engineer in the National Magnet Laboratory will design complex superconducting magnet systems for experimental magnetohydrodynamic power generators. BS in electrical or mechanical engineering plus ten years experience in design of superconducting magnets and large cryogenic systems required. D76-191 (10/13).

Sponsored Research Staff, in Nutrition and Food Science will carry out varied duties related to research utilizing experimental animals: prepare special diets; administer toxins; carcinogens; perform autopsies; supervise technicians. Approximately one half time will involve teaching and supervising students involved in research (UROP). Experience in studies involving toxicologic or carcinogenic evaluation of chemicals and natural food products required. Bachelor's degree or equivalent preferred. D76-195 (10/13).

Administrative Assistant, Exempt, in the National Magnet Laboratory to verify and approve all non-salary charges, and assign related charges to various categories; assist in preparation of financial reports to sponsoring agencies; reconcile monthly statements of cost; assist in preparation of financial reports. Accounting experience, familiarity with MIT procedures required. Temp. for 2 years but may be extended. E76-37, E76-38 (10/6).

Sponsored Research Staff, Technical Assistant, in

Nuclear Engineering to work on development of new radiopharmaceutical research centering on aspects of protein analysis by gel electrophoresis, dialysis and column chromatography. Bachelors degree in biochemistry or chemistry, experience with various chromatographic techniques required. D76-189 (10/6).

Sponsored Research Staff, Postdoctoral Scientist, in the Center for Space Research to assist in planning for data analysis of HEAO A-4, both scientific and computer processing; develop computer programs for reading data from satellite and for scientific analysis, both short and long term. After launch, participate in scientific analysis and further software development; help plan mission operations goals during painted phase of mission. Ph.D. in physics, scientific experience with X-ray astronomy data analysis and with mini-computer systems (Data General Nova) required. Applicants should also have understanding of experimental problems of X-ray and gamma ray astronomy, and computational techniques of sky-survey mapping. D76-187 (10/6).

Sponsored Research Staff, Mechanical Engineer, in the Laboratory for Nuclear Science to participate in design, fabrication and installation of mechanical systems. Initial duties will be related to construction of new facilities for experimental nuclear physics. Position involves procurement as well as design, and working closely with other engineers and physicists in team efforts and projects. B.S. in physics or mechanical engineering and at least five years experience in two or more of the following areas are necessary: magnet design; large-scale, high purity water systems; cryogenics systems; vacuum systems. D76-185 (10/6).

Sponsored Research Staff, Postdoctoral Scientist, in the Center for Space Research to participate in analysis of data from the SAS-3 X-ray astronomy satellite. Propose, secure and analyze data from specific observations with the satellite; develop required computer programs; supervise undergraduate and graduate students. Position requires Ph.D. in Physics; experience in astrophysics, familiarity with instrumentation and scientific results in X-ray astronomy; mini-computer data analysis experience as well as experience in development and organization of total computer software systems. D76-188 (10/6).

Sponsored Research Staff in the Laboratory for Nuclear Science will do post-doctoral research with the APC Group in high energy elementary particle physics. Experience with bubble chamber data analysis programs, real-time data analysis experience, Ph.D. in high energy physics required. Experience with bubble chamber analysis at Fermilab energies highly desirable. D76-180 (10/6).

Sponsored Research Staff, Staff Engineer, in Electrical Engineering and Computer Science to work in the Electric Power Systems Engineering Laboratory on the development, construction and testing of a superconducting generator. Will design electrical components of generator, instrumentation and relaying circuits, documentation of designs and report writing. Will work closely with students and faculty; supervise technicians and machinists. SM in Electrical Engineering plus two years experience, or equivalent required. A strong background in electromagnetics and electromechanics, some experience in cryogenic systems and/or heat transfer desirable. D76-182 (10/6).

Sponsored Research Staff, Programmer, for the Small Astronomy Satellite II group of the Center for Space Research. Maintain and improve a data analysis system using a Data General real-time disk operating system to acquire, present and reduce data produced by an orbiting x-ray observatory. Reorganize, rewrite and document existing software; develop new software. A minimum of 2 years experience with assembly language required. Knowledge of Data General's operating system desirable. D76-179 (10/6).

Sponsored Research Staff, temporary, in the Energy Lab to coordinate and administer 4 research projects on coal and gas combustion; develop analytical techniques for measurement of chemical species in flames and products of combustion; co-supervise graduate theses and undergraduate students involved in research (UROP). A strong chemical kinetics background at Ph.D. in Physical Chemistry level, postdoctoral experience in optical techniques for the measurement of transient chemical species, preferably by laser experience required. Organization and administrative skills also necessary. Temp. for 1 year. D76-181 (10/6).

Sponsored Research Staff, Staff Engineer, to work in the Electric Power Systems Engineering Laboratory and Cryogenic Engineering Laboratory on development, construction and testing of a superconducting generator. Coordinate design efforts; design components and instrumentation, documentation of designs; supervision fabrication, assembly and performance of experiments on superconducting machines. Will work with students and faculty and supervise technicians. SM in Mechanical Engineering and 3 years experience required. Skill and experience in mechanical design and analysis of rotating machines and an interest in cryogenics and electric power also necessary. D76-183 (10/6).

Admin. Asst. V in the Office of the Director, Systems Dynamics Group, Sloan School of Management will coordinate activities of Director, Executive Director and Project Liaison of Group; develop knowledge of projects; initiate and follow up on project matters independently (compose letters; circulate information to staff; maintain records). Will also type correspondence, maintain general files; arrange travel and meetings. A minimum of two years college training and 5 years administrative/secretarial experience are required. Applicants must also be able to coordinate a variety of details, to judge their relative priority and to communicate effectively. 37 1/2 hr/wk. B76-547 (10/13).

Sr. Secretary V to the Director of the Planning Office, will perform secretarial duties for Director and professional staff; answer correspondence independently and/or from verbal instruction; organize meeting agendas; arrange business meetings, luncheons; handle some manuscript editing; maintain budget records; assist in budget preparation; type correspondence and reports; coordinate work of other secretaries during peak work loads. At least 5 years responsible secretarial experience, or college training and 3 years secretarial experience required. Position also requires ability to transcribe machine dictation and to work under pressure. Interest in planning and/or architecture helpful. B76-527 (10/6).

Secretary IV in the Energy Laboratory will assist faculty member, and administrative assistant and provide part time support to energy management information system staff members; compose and type routine correspondence; handle administrative responsibility for newsletter; (assemble articles, illustrations; computer edit). Shorthand, typing, machine dictation skills and two or more years responsible office experience required. College training, writing skills desirable. Position includes occasional evening and weekend work. B76-550 (10/13).

Secretary IV to Research Associate and professional staff in the Center for Policy Alternatives, a multi-disciplinary Center performing policy analysis on current issues. Will type reports, correspondence from written draft and machine dictation; arrange meetings and travel; answer routine correspondence and other inquiries independently. Will be trained to use Infodata work processor. Excellent typing, organization skill required. College training, knowledge of French desirable. Shorthand helpful. B76-549 (10/13).

Secretary IV to three Personnel Officers Office of Personnel Services will perform a wide variety of duties relating to employment and the provision of personnel services to MIT departments. In addition to general secretarial duties (typing, answering phones, filing) will independently follow up on

Reactor Safety Study Critized

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clusions "should not be taken to imply that major accidents are likely, or that commercial power reactors are presently unsafe. The available evidence does not support such pessimistic conclusions, but it does suggest that the Rasmussen calculations are inadequate, and that substantial revision of the *Reactor Safety Study* is essential if a reliable assessment of reactor safety is to be reached."

The principal conclusion of the *Reactor Safety Study* is that the risks of nuclear reactor operation are thousands of times smaller than the risks associated with other industrial activities and natural events. However, Dr. Yellin stated that this conclusion is entirely dependent on estimates of the number of "early fatalities" which would result from nuclear accidents. He said that the results of the *Reactor Safety Study* show that such early fatalities represent only a tiny fraction of the expected consequences of nuclear accidents, each early fatality being predicted in the study to be accompanied "by roughly 700 cancer deaths, 700 genetic defects, 700 spontaneous abortions, and 4,000 thyroid growths with high incidence among children." Dr. Yellin said that because of the omissions of these large long-term consequences from the risk comparisons "the conclusion that nuclear accident risks are relatively very small is highly misleading." In his view, long-term health effects associated with nuclear and non-nuclear power plants must be evaluated and compared more thoroughly than has been done in the past.

Dr. Yellin said he also believes that a general study of nuclear reactor safety, such as the Rasmussen report, should include an analysis of the probabilities and consequences of nuclear accidents at specific plant locations.

According to Dr. Yellin, in order to estimate the risk associated with an individual reactor, the *Reactor Safety Study* averages risks associated with nuclear power plants over 68 existing US nuclear sites—even though risks associated with particular sites may differ by factors of 1000 or more.

Risks to the general public from nuclear power plants are not properly evaluated, according to Dr. Yellin, by weighted averaging procedures which combine risk factors relevant to lightly populated sites in the South and Southwest with estimated risks of nuclear accidents at sites near Chicago, Philadelphia, Boston and New York.

"Requirements for site-specific analyses are already incorporated in federal nuclear licensing regulations, and such information should be included in a general study of reactor safety," he added.

At a June 11 hearing before the House Subcommittee on Energy and the Environment—a unit of the Committee on Interior and Insular Affairs—several other scientists also discussed the Rasmussen report.

Wolfgang K.H. Panofsky, Director of the Stanford Linear Accelerator Center and chairman of the review panel for an American Physical Society group that issued one of the most detailed critiques of the original draft of the Rasmussen report, said the report exaggerates the degree of confidence one can place in its estimates.

"The probabilities of accidents of major degrees of severity calculated in the report are subject to considerably larger uncertainties than those stated," he said. Professor Panofsky also stated that the findings of the study with respect to the comparison of risks of nuclear and non-nuclear disasters are presented

"in a highly misleading manner. The most serious omission," he pointed out, "is that latent cancer and genetic effects from a reactor accident are not included in the summary comparisons."

Panofsky stressed that his critical remarks do not "imply that reactors are in fact less safe than the Rasmussen report asserts them to be. Rather my conclusion is that the Rasmussen report has very greatly overstated the certainty of its conclusions; for this reason and because of the intractability of much of the reasoning used in the report its findings should not be used as a definitive basis in the formation of policy."

Dr. Robert Erdmann, an engineer with considerable experience in the nuclear area now working at Science Applications, Inc., in Palo Alto, California also testified at the hearing. He pointed out that "the fault tree/event tree approach" used in the report "appears to be the most versatile and the most quantitatively reliable at present." He also stressed that "certain accident sequences were...reevaluated during the period from the draft to the final report," and that "these reevaluations tended to confirm the findings of the draft report."

Another member of the American Physical Society's review group—Frank von Hippel of Princeton University's Center for Environmental Studies—was equally critical as Professor Panofsky. Von Hippel claimed the Rasmussen report is "highly misleading," "does not provide the information required for siting decisions," and is "deceptive" in its comparison of reactor accident hazards with other hazards to which we are exposed, such as meteors, earthquakes, fires, and explosions. He suggested that the Rasmussen group "have done an important service by assembling a great deal of relevant information," and that the subcommittee should consider com-

missioning another study, under the auspices of the Office of Technology Assessment, which would start with the background information already assembled, and redo the calculations.

Dr. William Rowe, Deputy Assistant Administrator for Radiation Programs for the US Environmental Protection Agency, also presented a summary of an EPA Review of the Rasmussen report at the hearings. He stated:

"The results of our review of the final report confirm our opinion that the *Reactor Safety Study* provides a major advance in risk assessment of nuclear power reactors, and that the Study's general methodology provides a systematized basis for obtaining useful assessments of the accident risks where empirical or historical data are presently unavailable.

"It is our opinion that, although some correction is needed, the Study results provide the first credible assessment of the likelihood of major nuclear reactor accidents and their risks. The net correction to overall risk may range upward to a factor of several hundred, but we believe that the most likely value lies in the lower part of this range."

Professor Rasmussen also appeared at the hearings and discussed his report. He emphasized that the most likely outcome of a reactor accident in which there was a complete melt-down of the reactor core "would be almost no predicted health effects to the public." Furthermore, he stated that "the consequences of reactor accidents are smaller than many people had believed," and that "the likelihood of reactor accidents is smaller than that of many other accidents having similar consequences." "It is important to understand," he said, "that we do not now, and never have, lived in a risk-free world."

Herman Feshbach Appointed

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also served as consultant to four of the country's leading research establishments—Argonne National Laboratory, Brookhaven National Laboratory, Los Alamos Scientific Laboratory, and Oak Ridge National Laboratory. Dr. Feshbach is a member of the board of trustees of Associated Universities, Inc., a research management organization that operates Brookhaven National Laboratory and the National Radio Astronomy Observatory. He is also a member of the National Academy of Sciences.

As the recipient of the 1973 Tom W. Bonner Prize of the American Physical Society, Dr. Feshbach was cited for "outstanding achievements" in his contributions to the theory of nuclear reactions and in his development of practical methods useful to experimentalists and data analysts.

Dr. Feshbach is associate editor of the *Annals of Physics* and a member of the board of editors of *Computer Physics Communications*. He is co-author with P.M. Morse of *Methods of Theoretical Physics*, a basic text in the field, and with A. deShalit, of the text *Fundamentals of Nuclear Theory*.

Majid To Speak At Seminar

Dr. Hadi Madjid, senior economist with Arthur D. Little, Inc., will be the speaker at the Harvard-MIT Rehabilitation Engineering Center's seminar at 4pm Tuesday, Oct. 19, in Rm. 5-234.

Dr. Madjid, who has been blind since a school-boy accident, will describe the overall invention, development, evaluation and use process involved in bringing high technology to handicapped users. In part, his presentation will be based on a study he did for the National Science Foundation on the role that innovation and federal financing has played in the successful introduction of the Optacon, an optical-to-tactile reading aid for the blind.

Dr. Robert W. Mann, Whitaker Professor of Biomedical Engineering, is co-director of the Rehabilitation Engineering Center.

In 1954-55, Dr. Feshbach was a Guggenheim Fellow, and in 1962, a Ford Foundation Fellow at CERN, the European center for nuclear research.

Dr. Feshbach received the SB degree from the College of the City of New York in 1937 and the PhD from MIT in 1942. He became instructor in physics at MIT in 1941, was appointed assistant professor in 1945, associate professor in 1947, and was promoted to the rank of professor in 1955.

Library Features Albanian Music

Some Bostonians of Albanian descent will sing and discuss music of their folk tradition in the MIT Music Library (Rm 14E-109) at 5:15pm on Thursday, October 14.

The polyphonic music, an oral tradition, bridges a vast cultural and time gap. It predates in its crudeness the development of Western forms of polyphony. Some musicologists believe it is as old as megalithic culture.

The session, to which all are invited without charge, will include a short introduction, singing, and an interview with Professor Stephen Erdely, associate professor and director of music in the Department of Humanities. The interview will focus on the music's tradition and its use today. It will be recorded on videotape by MIT's Oral History Program.

Dance Workshop To Be Organized

The Modern Dance Workshop to be conducted by Mary Lou Sayles will hold its first organizational meeting on October 18 at 5pm. The workshop is open to the MIT community and no previous modern dance experience is required. For further information please contact Mary Lou Sayles at ext. 3-5005.

routine personnel/payroll procedures; check references; assist new employees in preparation of forms and other procedures; maintain complex appointment calendars; handle some secretarial duties relating to labor relations; answer personnel inquiries for applicants and employees. Excellent typing, ability to work under pressure and with a great volume of phone activity required. Applicants must also be able to set priorities and to deal with people sensitively. Familiarity with MIT personnel and payroll procedures helpful. B76-543 (10/13).

Secretary IV to two Political Science faculty members will type course materials, correspondence, manuscripts; arrange meetings, travel; act as liaison with students. Secretarial school training and a minimum of 3 years experience, or equivalent combination of education and experience required. Applicants must be able to organize and carry out work independently. B76-460.

Secretary IV to the Manager of Labor Relations to handle various duties related to Institute's relationship with labor unions; schedule meetings with Institute and union representatives; take meeting minutes; review publications for relevant information and carry out other related research projects; maintain complex filing system; coordinate participation in conferences; arrange travel; monitor accounts. Excellent organization and general secretarial skills, a facility with detailed work and an interest in labor law and practice required. Shorthand/speedwriting desirable. Position requires occasional overtime. B76-544 (10/13).

Secretary IV in Urban Studies and Planning will share secretarial duties with other secretary; type and duplicate class materials, reports, correspondence; maintain files and grant records. May assist other departmental secretaries in peak periods. Excellent typing, machine transcription skills, previous secretarial experience required. MIT experience preferred. B76-530 (10/6).

Secretary IV to the Assistant Director, Center for International Studies. Will assist with headquarters secretarial duties including typing of reports, proposals, papers. Excellent typing, flexibility for varied assignments and ability to work under pressure required. B76-526 (10/6).

Secretary IV to several Physics Dept. faculty members. Type technical manuscripts, correspondence, grant proposals; open and distribute mail; maintain petty cash fund, office supplies. Perform other general secretarial duties as necessary. Technical typing, and English grammar skills required. B76-525 (10/6).

Secretary IV, part-time, to faculty and research staff in Materials Science and Engineering. Type technical manuscripts, reports, letters; maintain files; handle other secretarial duties as necessary. Excellent technical typing skill necessary. 20 hrs/wk. B76-528 (10/6).

Secretary IV, part-time, Psychiatry Service in the Medical Dept. will perform secretarial duties including typing, filing and general clerical projects relating to Health Plan. Duties involve some shared responsibilities with other secretarial staff as well as independent projects. Ability to interact well with people essential. Sensitivity and judgement in handling confidential matters required. Careful attention to detail, excellent typing and organizational skills a necessity. Responsible job in busy and stimulating office with emphasis on personal and telephone contacts. Approximately 25 hrs/wk. Non-smoking office. B76-535 (10/6).

Secretary IV in the Center for Cancer Research will type manuscripts, letters, transcribe machine and/or shorthand dictation; arrange travel; schedule appointments and handle other general secretarial duties. Previous secretarial experience, preferably at MIT, organizational ability, ability to compose letters required. General editorial skills, familiarity with biomedical terminology desirable. B76-533 (10/6).

Secretary IV to faculty member in Urban Studies and Planning; type proposals, manuscripts, class materials; maintain and monitor budget records; handle other general secretarial duties including some editing. Excellent secretarial skills (shorthand preferred), ability to handle a wide range of activities, and work independently required. Non-smoking office. B76-420 (9/8).

Secretary III in the National Magnet Laboratory to type letters, financial reports and some technical material; file; answer phones; assist with other clerical functions as necessary. B76-541, B76-542 (10/6)

Sr. Accounting Clerk IV in the Biology Department to handle various duties related to student and biweekly payroll process; maintain records of research and other accounts; prepare related transfer requests, expenditure reports, computations and billing; assist in preparing financial sections of grant proposals. Will also answer phones, file and occasionally act as messenger. High school graduate, or equivalent, facility with figures and ability to work independently required. B76-532 (10/6).

Clerk III in the Physical Plant Department Central Utilities Plant will consolidate data from logs and charts and total results; correlate data to guidelines and use data to calculate performance; maintain daily inventory and monthly summary of plant input/output; purchase and maintain inventory of plant supplies and equipment; prepare time cards; coordinate plant purchasing and payroll activities. A high school graduate or equivalent with at least 1 year responsible clerical experience is required. Ability to use calculator and some typing ability also necessary. Some knowledge of boiler plant equipment, and mechanical interest preferred. 35 hrs/wk. Flexible work schedule. (7am-3pm, Mon. thru Fri are the most likely hours.) B76-539 (10/6).

Sr. Clerk/Receptionist III in the Office of Personnel Services to share responsibility with other receptionist in varied duties related to employment process; provide information on job status, specifications, personnel procedures, to applicants and others; assist persons in completing applications; refer general inquiries to appropriate offices; prepare weekly job lists and job board; xerox and distribute material; file; perform clerical duties related to applicant activity file. Typing skill, ability to exercise judgement, sensitivity in service-oriented function required. Some working experience preferred. 37 1/2 hrs/wk. B76-522 (10/6).

Clerk III in the Division of Laboratory Animal Medicine will record purchasing information; maintain records; prepare billing; file; type. Some bookkeeping experience, typing skill required. B76-545 (10/13).

Clerk III, Accounts Payable Clerk, in the Comptrollers Accounting Office will process invoices; apply discounts; audit invoices; accumulate information on outstanding commitments. Will also batch processed invoices; compute totals; prepare for keytape entry. Applicants must be able to operate adding machine and to work with figures. B76-546 (10/13).

Clerk Typist II in Purchasing to record data from requisitions on log sheets; type purchase orders from hand written copies; prepare form letters; file (numeric). May operate folding-inserting machine. Fast, accurate typing, ability to plan own work load required. B76-538 (10/6).

Biweekly, part-time, in Psychology to train monkeys for various experiments; assist researchers in operations and experiments. Applicants must be able to work with animal subjects. 15 hrs/wk. (1pm-4pm). B76-548 (10/13).

Campus Patrol Officer, Hourly, required 3-5 years experience in all phases of law enforcement (criminal law, court procedures, criminal investigation, case preparation, complaint investigation; report writing). Will be required to obtain Emergency Medical Technician certification; may be required to complete additional police academy

training. Must qualify in use of firearms, have a valid driver's license and an honorable discharge from any earlier police service. Candidates must pass Institute physical exam, 40 hrs wk, rotating shift. Position includes long hours occasionally. H76-108 (10/13).

Cook's Helper, hourly, part-time, in the Dining Service to prepare salads for lunch and dinner and other work related to salad preparation; slice and portion meats for sandwich counter. Applicants must be able to follow written and oral instructions. Kitchen background preferred. 16 hours/wk., flexible schedule, including weekend work. H76-103 (10/6).

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

ADMINISTRATIVE:

A75-71, Documentation Manager, Admin. Info. Systems (7/14)
A76-15, Dir. of Computer Services, Info. Processing Serv. (6/30)
A76-19, Systems Planner, Info. Processing Serv. (7/14)

A76-23, Alumni Regional Director, Alumni Assoc. (7/28)

A76-36, Data Base Manager, Off. of Facilities Mng. Systems (9/15)

A76-37, Dir. MIT Educ. Council, Admissions (9/29)

BIWEEKLY:

B76-189, Clerk III, Admissions Office (8/25)
B76-204, Tech. Typist III, Res. Lab. Elec. (8/25)
B76-213, Sr. Sec. V, MIT Alumni Fund. (6/9)
B76-215, Sec. IV, Materials Sci. & Eng. (9/22)
B76-262, Admin. Asst. V, National Magnet Lab (7/14)

B76-274, Sec. IV, Energy Lab. (9/29)
B76-283, Sec. IV, Center for Policy Alternatives (9/8)

B76-290, Sec. IV, Lab. for Computer Sci. (7/28)
B76-334, Sec. III, Sloan School (8/25)
B76-336, Sec. IV, Center for Space Res. (8/25)
B76-348, Sr. Clerk III, Registrar's Office (8/25)
B76-349, Sr. Clerk III, Registrar's Office (8/25)
B76-359, Sr. Clerk III, Devel. Office (8/25)
B76-365, Production Asst./Sec. IV, Campus Info. Serv. (8/25)

B76-366, Sec. IV, Humanities (8/25)
B76-377, Sec. IV, Chemical Eng. (8/25)
B76-392, Sec. IV, Alumni Assoc. (9/8)
B76-394, Sec. IV, Earth & Planetary Sci. (9/8)
B76-400, Sec. IV, Earth & Planetary Sci. (9/8)
B76-402, Sr. Clerk Typist III, Resource Planning (9/8)

B76-414, Sec. III, Res. Lab. of Elec. (9/15)
B76-437, Tech. Asst. V, School of Humanities & Social Sci. (9/15)
B76-438, Sec. IV, Joint Ctr. for Urban Stud. (9/15)
B76-441, Sec. IV-V, Off. of Facil. Mng. Syst. (10/6)

B76-449, Sec. III, Medical Dept. (9/15)
B76-460, Sec. IV, Political Sci. (9/22)
B76-470, Sec. IV, Resource Devel. (9/22)
B76-481, Sec. IV, Devel. Office (9/29)
B76-484, Sec. IV, Civil Eng. (9/29)
B76-486, Sec. IV, Office of the Chairman of the Corp. (9/29)

B76-488, Sec. III, Materials Sci. & Eng. (9/29)
B76-504, Clerk III, Industrial Liaison Program (9/29)

B76-505, Sec. IV, Mech. Eng. (9/29)
B76-508, Sec. IV, Dean of Eng. (10/6)
B76-509, Sr. Clerk IV, Medical Dept. (10/6)
B76-511, Asst. Computer Oper. III, Office Admin. ginnom o vh sstem (10/6)
B76-517, Techn. Asst. III-IV, Safety Office (10/6)
B76-518, Acct. Asst. V, Comptrollers Office (10/6)

ACADEMIC STAFF:

C76-4, Tech. Asst., Biology (4/28)
Cuydh, Microbiologist, Medical Dept. (4/21)
C76-11, Asst. Radiation Protection Officer, Medical Dept. (8/11)

C76-14, Tech. Asst., Biology Dept. (9/15)
C76-15, Head Librarian, Libraries (9/15)
C76-16, Tech. Asst./Lab. Coordinator, Biology (10/6)

SPONS. RES. STAFF:

D75-48, Economist, Energy Lab. (6/25)
D75-161, Economics Policy Analyst, Energy Lab. (9/15)
D76-17, Biochemist, Res. Lab. of Elec. (2/25)
D76-19, postdoc. res., Physics, Lab. for Nuclear Sci. (3/3)

D76-44, postdoc. res., Physics, Lab. for Nuclear Sci. (4/14)
D76-49, Plasma Physicist, National Magnet Lab. (4/14)
D76-57, Stress Structure Design, National Magnet Lab. (4/28)
D76-61, Energy Economist, Energy Lab. (5/5)
D76-67, Biologist/Biomedical Engineer, Mech. Eng. (5/5)
D76-70, postdoc. res., Physics, Lab. for Nuclear Sci. (5/5)
D76-71, postdoc. res., Physics, Lab. for Nuclear Sci. (5/5)
D76-71, postdoc. res., Physics, Lab. for Nuclear Sci. (5/5)
D76-80, Electrical Engineer, National Magnet Lab. (9/29)
D76-84, postdoc. res., Res. Lab. of Elec. (6/2)
D76-108, Eng. Prog., Res. Lab. of Elec. (7/14)
D76-113, Res. Engineer, Center for Trans. Stud. (7/14)
D76-115, Immunologist, Clinical Research Ctr. (7/14)
D76-121, Res. Engineer, Energy Lab. (7/28)
D76-123, Staff Biophysicist or Biochemist, National Magnet Lab. (7/28)
D76-126, Immunologist, Clinical Research Ctr. (8/11)
D76-131, Research Analyst, Ctr. for Policy Alternatives (7/28)
D76-140, Operations & Instrumentation Manager, National Magnet Lab. (8/25)
D76-147, Systems Prog., Lab. Nuclear Sci. (9/15)
D76-148, Project Eng., Mechanical Eng. (9/15)
D76-151, Magnet Design/Mathematical Analyst, National Magnet Lab. (9/15)
D76-154, Experimental Physicist, National Magnet Lab. (9/15)
D76-162, Programmer, Lab. for Nuclear Sci. (9/29)
D76-172, Chemist, Elec. Eng. (10/6)
D76-173, Biochemist, Center for Cancer Research (10/6)
D76-174, Scientific Prog., Earth Planetary Sci. (10/6)
D76-175, Scientific Prog., Earth Planetary Sci. (10/6)

EXEMPT:

E76-21, Editor, MIT Press (7/28)
E76-32, Tech. Asst., Microreproduction Lab. (9/15)
E76-34, Admin. Asst., MIT Press (9/22)
E76-35, Food Serv. Prod. Superv., Food Serv. (10/6)

HOURLY:

H76-92, Tech. A. Chemistry Dept. (9/15)

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

B76-389, Sec. IV
B76-519, Payroll Clk. III
A76-38, Admin. Staff
B76-471, Tech. Asst. V
B76-256, Sec. IV
B76-463, Sec. IV
B76-499, Lib. Asst. III
B76-208, Sec. IV
B76-507, Sr. Clk. III
B76-506, Edit. Sec. IV
B76-487, Sec. III
B76-424, Sec. IV

The following positions are on HOLD pending final decision:

B76-482, Sec. IV
D76-114, Admin. Staff
C76-13, Clk. II
B76-510, Tech. Asst. IV
B76-537, Tech. Asst. IV
B76-496, Edit. Asst. V
B76-411, Sec. III-IV
E75-15, Eng. Asst.

H76-104, Pot Washer
B76-477, Sr. Clk. III
B76-432, Sec. IV
H76-96, Asst. Animal Tech.
H76-97, Asst. Animal Tech.
B76-501, Sec. IV
B76-445, Reactor Oper. IV
F76-1, Cage Changer

The following positions are on HOLD pending final decision:

Sec. IV
Spons. Res.
Admin. Staff
Clk. II
Tech. Asst. IV
Tech. Asst. IV
Edit. Asst. V
Sec. III-IV
Eng. Asst.

United Way Chief Solicitors Go All Out

"The Institute's chief solicitors for this year's United Way of Mass Bay 'Breakthrough' Campaign are more enthusiastic than ever before," says Michelle Whitlow, coordinator for the MIT campaign.

"This year's solicitors are deeply involved and committed to the goals of the United Way," she continued. "They are concerned that their people be informed about the fund and aware that the United Way is depending very heavily on the education division to help in achieving their breakthrough goal of \$18.6 million."

Chief solicitors provide the main thrust for the drive, according to Ms. Whitlow. They are responsible for the personal contact considered so important by the fund.

Assisted by the area coordinators—appointed for the first time this year to organize campaign activities in each school, and in the vice presidential and provost areas of responsibilities at the Institute—the chief solicitors of each department or office are available to answer any questions donors may have about the United Way and to deliver pledges and donations to the campaign coordinator.

Chief solicitors are:

Office of the President and Chancellor—Information Processing Service: Joseph J. Connors, Rm 39-441, x3-4117; **Office of the President and Chancellor:** Kathy Jones, Rm 5-111, x3-2701, Pat Wallace, Rm 10-205, x3-1707; **Office of Artificial Intelligence Service:** Anita Ross, Rm E19-689, x3-7711; **Student Affairs:** Katharine Cutting, Rm 7-133, x3-4051; **Institute Information System:** Kathy Jones, Rm 5-111, x3-2701; **Athletics:** David Michael, Rm W32-133, x3-7947; **MIT Press,** Mary E.J. DeSesa, Rm E32, x3-5646.

Office of the Provost—Artificial Intelligence Laboratory: Donna Barry, Rm NE43-338, x3-3471; **Lowell Institute:** Marie C. Fazio, Rm 5-118, x3-4895; **Laboratory for Computer Science:** Herb Hughes, Rm NE43-103, x3-3568, Marsha Baker, Rm NE43-103, x3-5803; **Cancer Research Center:** Betty Willis, Rm E17-110, x3-6403; **Summer Session:** Maria S. Murphy, Rm E19-356, x3-2101; **Military Science:** Mary Hovnanian, Rm E20-126, x3-4471; **Center for International Studies:** Jessie Janjigian, Rm E53-471, x3-3141; **Libraries:** Sylvia McDowell, Rm W20-500, x3-7050; **Aerospace Studies:** Thomas Paczkowski, Rm 20E-111, x3-4472; **Joint Center for Urban Studies:** Peter Leavitt, 53 Church Street, x3-2029; **Harvard-MIT Program in Health Sciences and Technology:** Keiko F. Oh, Rm 16-522, x3-1445, Edward Sadowski, Rm 36-789, x3-1585; **Division for Study and Research in Education:** Elaine Medverd, Rm 20C-126, x3-7363; **Sea Grant Program:** James Grayson, Rm 1-207, x3-7138; **Provost Office:** Hartley Rogers, Rm 2-270, x3-2681; **Committee on Visual Arts:** Cynthia Mast, Rm 7-143, x3-4400.

School of Architecture and Planning—Architecture: Ann Beha, Rm 7-303, x3-4408; **Urban Studies and Planning:** Marion Redonnet, Rm 7-341, x3-2023.

School of Engineering—Aeronautics and Astronautics: David G. Jansson, Rm 33-103, x3-6996; **Mechanical Engineering:** William Westcott, Rm 3-164, x3-2257; **Electrical Engineering and Computer Science:** Deborah Anthony, Rm 38-445, x3-4642; **Electrical Power Systems Engineering Laboratory:** David Otten, Rm 10-015, x3-5958; **High Voltage Research Laboratory:** Hazel Emerson, Rm N-10, x3-2592; **Center for Advanced Engineering Studies:** Doreen Lopes, Rm 9-223, x3-7400; **Nuclear Engineering:** Donna Dutton, Rm 24-102, x3-4208; **Ocean Engineering:** J. Kim Vandiver, Rm 5-223, x3-4366; **Civil Engineering:** Sheila Murphy, Rm 1-342, x3-4532; **Electrical System Laboratory:** Richard A. Osborne, Rm 35-308A, x3-2141; **Center for Transportation Studies:** Louise Carella, Rm 5-206, x3-7131; **Chemical Engineering:** Richard Donnelly, Rm 66-442, x3-4588; **Materials Science and Engineering:** Joseph Dhosoi, Rm 8-309, x3-3301; **Center for Policy Alternatives:** Alan Harger, Rm E40-226, x3-1663.

School of Humanities—Economics: Idella Tapley, Rm E52-373B, x3-3366; **Humanities:** Roberta Towner, Rm 20B-231, x3-4067, Robert E. MacMaster, Rm 14N-421, x3-2641, Dora Oppel, Rm 14N-407, x3-4441; **Linguistics and Philosophy:** Marilyn Silva, Rm 20D-105, x3-4141; **Political Science:** Jessie Jangigian, Rm E53-471, x3-3141; **Psychology:** Ina Armstrong, Rm E10-008, x3-5748.

Alfred P. Sloan School of Management—Sloan School: Esther Merrill, Rm E52-402, x3-2931; **Operations Research Center:** Jeremy F. Shapiro, Rm E53-379, x3-7165.

School of Science—Meteorology: Jule G. Charney, Rm 54-1424, x3-2451; **Cell Culture Center:** Natalie M. Sears, Rm E17-321, x3-6438; **Nutrition and Food Science:** Charles Cooney, Rm 16-229, x3-3108; **Clinical Research Center:** Dr. C.S. Davidson, Rm E18-473, x3-6302/3; **Biology:** Genevieve M. O'Hehir, Rm 56-509, x3-4703, Maija Ahlquist, Rm 56-731, x3-5993; **Mathematics:** Michael Proctor, Rm 2-367, x3-2857; **Chemistry:** Jack Irvine, Rm 18-388, x3-1802; **Physics:** Harold Enge, Rm 58-015, x3-4153; **Neurosciences Research Program:** Nancy Burke, 165 Allandale, Jamaica Plain, 522-6700; **Earth and Planetary Sciences:** Harold Fairbairn, Rm 54-1124, x3-3388.



SIGNED, SEALED AND DELIVERED—President Jerome B. Wiesner (left) presents his United Way pledge card to Pat Wallace, one of the two area coordinators and chief solicitors for the Office of the Chairman of the Corporation, President and Chancellor and Vice President.

Vice President for Financial Operations—Office of Sponsored Programs: Francis Conroy, Rm E19-702, x3-3820; **Purchasing:** Glenn Curtis, Rm E18-360, x3-7247; **Comptroller:** J.C. Sears, Rm E19-565, x3-2749; **Lincoln Laboratory Fiscal Office:** Nancy J. Alusow, Rm Linc. A-281, x181-650; **Audit Division:** Mary Jane Burke, Rm E19-655, x3-4136.

Vice President for Operations—Safety Office: Catherine Coleman, Rm E19-207, x3-4736; **Campus Patrol:** Terrence Downes, Rm W31-215, x3-3997; **Housing:** Luise Keohane, Rm E18-306, x3-5146; **Food Service:** Salvatore Lauricella, Rm E18-306, x3-5137; **Graphic Arts:** Don Collupy, Rm N42, x3-4765; **Telecommunications:** Beverly Robinson, Rm E19-741, x3-3650; **Physical Plant:** William Combs, Rm E18-207, x3-3936; **Endicott House:** Mimi Pierson, 80 Haven Street, Dedham, 326-5151.

Vice President for Administration and Personnel—Student Financial Aid: Lois Levine, Rm 5-119, x3-4971; **Admissions:** Peter Richardson, Rm 3-108, x3-4791, Joanne L. Cummings, Rm 3-108, x3-4791; **Planning Office:** Dorothy Swanke, Rm E19-451, x3-5831; **Career Planning and Placement:** Diane Meade, Rm 10-140, x3-4737; **Vice President's Office:** Diane Parson, Rm 7-201, x3-4516; **Personnel:** Buzzy Bluestone, Rm E18-320, x3-4071, Clare Paulding, Rm E19-239, x3-4263, Ellen Schena, Rm E19-239, x3-6513.

Vice President and Dean of the Graduate School—Arteriosclerosis Center: Rosemary Mone, Rm E17-421, x3-3012; **Environmental Medical:** Jean Pender, Rm 20B-238, x3-2596; **Registrar:** Winston E. Flynn, Rm E19-338, x3-4788; **Graduate School:** Jean Richards, Rm 3-136, x3-4860; **Medical:** Larry Bishoff, Medical, x3-1774.

Vice President for Research—Laboratory for Nuclear Science: Natalie Algar, Rm 26-445, x3-7062, Phyllis A. Cusanelli, Rm 26-415, x3-4237; **Center for Materials Science and Engineering:** Marion DuBois, Rm 13-2153, x3-6850; **Energy Laboratory:** Ann Rowbotham, Rm E40-139, x3-3401, Karen Keefe, Rm E40-105, x3-3404; **Research Laboratory of**

Electronics: Richard V. Keyes, Jr., Rm 36-477, x3-2520; **Center for Space Research:** Daniel Calileo, Rm N51-340, x3-6120, Diane Eisenhaur, Rm 37-276, x3-6116, Anne Johnson, Rm 37-581, x3-7550; **National Magnet Laboratory:** Paul Smith, Rm NW14-1209, x3-5404; **Vice President for Research:** Lilliam Giuliana, Rm 3-305, x3-5914.

Vice President for Resource Development—Development Office: Richard W. Keefe, Rm 10-277, x3-3839; **Industrial Liaison Program:** Cynthia Bloomquist, Rm 39-665, x3-5814.

Other Departments—Vice President, Secretary of Institute: Cara L. Trinder, Rm 7-211, x3-2058; **Alumni Association:** Nancy Russell, Rm E19-438, x3-4894; **Treasurer:** Valerie C. Diorio, Rm 4-106, x3-6057, Kimball Valentine, Rm 4-105, x3-2822; **Credit Union:** William Otenti, Rm E19-601, x3-2844; **Faculty Club:** Ann Hanks, Rm E52, x3-4896; **Institute Real Estate Office:** Carol Bostick, Rm W31, x3-4301; **Lincoln Laboratory:** John Kessler, Lin Rm A163, x181-225.

Seminar Series To Hear Hanle

Dr. Paul Hanle, curator of science and technology at the National Air and Space Museum, Smithsonian Institution, will present the third Technology Studies Seminar, "Alienation and the Growth of Technology," on Wednesday, Oct. 13.

The Technology Studies Seminar Series, offered each term by the Technology Studies Program is open to the public, free of charge. Seminars are held in Rm 20D-205 at 4:00pm preceded by coffee served in the same room at 3:30pm.

B. J. Benn of Lincoln Lab

Funeral services were held Saturday, Oct. 9 at St. Bernard's Catholic Church in Concord for Bernard J. Benn of Concord, head of the administration division at Lincoln Laboratory, who died suddenly following a heart attack on Wednesday, Oct. 6, at Emerson Hospital.

Mr. Benn joined the staff of Lincoln Laboratory in July, 1952, as systems engineer, and contributed to the Laboratory's development of the SAGE Air Defense System. In 1962 he was founding member and operations director of Lincoln Lab's large radar and optical measurements station on Kwajalein Atoll in the central Pacific.

In 1964 he was appointed assistant in the radar measurements division,

Robert H. Haggerty of RLE

Funeral services were held yesterday (Tuesday, Oct. 12) at 9am at St. Mary's Church in Cambridge for Robert H. Haggerty of Cambridge, a stock clerk in the Research Laboratory of Electronics, who died Friday, Oct. 8, after a long illness. He was 46.

An employee of the Institute for 23 years, Mr. Haggerty came to MIT in 1953. Since April, 1976, he had been on long-term disability.

He leaves his wife, Kathleen Hag-

and in 1969 returned to Kwajalein as associate manager of the field site. He was later named group leader of the experimental systems group, and in Aug., 1974, was appointed head of the administration division and a member of the Lincoln Laboratory Steering Committee.

Born in Houlton, Maine, on Feb. 5, 1926, Mr. Benn received the BS degree in electrical engineering from the University of Maine in 1950. From 1944 to 1946 he served with the US Army in Europe. He was 50 at the time of his death.

He leaves his wife, Mary Elizabeth (Ryan); three children, Kathleen Ann, Sharon Angela and Michael John Benn; and three brothers, Carl, Earl and Ira Benn.

gerty; two sons, Kevin and Patrick Haggerty, and his mother, Margaret Haggerty of Medford. Other relatives include two brothers, Edmund Haggerty of Albany, Ga., and John L. Haggerty of Calif.; and three sisters, Margaret Jordan of Natick, Theresa Haggerty of Medford, and Frances Donohue of Malden.

Burial took place at Mt. Auburn Cemetery in Cambridge.

Shakespeare Ensemble to Give 'The Taming of the Shrew'

The MIT Shakespeare Ensemble will open its third season with a production of Shakespeare's early comedy, *The Taming of the Shrew*.

The play will be performed on a thrust stage in the Sala de Puerto Rico of MIT's Student Center from Wednesday through Sunday, October 20-24, at 8pm.

The Taming of the Shrew is a tale about a hot-tempered woman finally conquered by her husband. Most productions of the play treat it as pure farce, Shakespeare's early Italian style, according to Professor Murray J.K. Biggs, Ensemble director and assistant professor in the MIT Department of Humanities.

"We're attempting a more ambiguous production," Professor Biggs said, "going for farce where it's crying out for farce but elsewhere giving full weight to the play's humanity. With this reading Petruccio and Kate are not sexual types, and their battle is not simply a battle between the sexes but a battle between persons. We hope to achieve a more complex production this way."

The leads, cast last spring, will be played by Alex Orlovsky (Petruccio), a senior in aeronautics and

astronautics from Bath, Maine; Mitchell Rothstein (Tranio), a senior in mathematics from South Nyack, N.Y., and Jo Ann Kruger (Kate), a senior in civil engineering from Pomona, Calif.

The Shakespeare Ensemble will stage scenes from five plays—four by Shakespeare and one by Molière—at 12 noon in Lobby 7 on Friday, October 15.

Tickets may be purchased in the lobby of Building 10 on classdays through Friday, October 22, from 10am to 5:30pm. Tickets are also available at the door 45 minutes before curtain time. All seats cost \$1.50 on Wednesday and Thursday, October 20-21; and \$3.00 or \$3.50 on Friday through Sunday, October 22-24. Student and group discounts are available. Reservations may be made by calling 253-4420.

The MIT Shakespeare Ensemble, a dramatic group devoted to extensive performance of Shakespeare's plays, will perform a series of scenes throughout the academic year in the MIT Chapel, Student Center, and Lobby 7, as well as at area high schools and colleges.

Women's League Activities Embroidery Workshops Set



Mrs. Priscilla Gray (center) demonstrates some fine points of embroidery to Jane Grant (right) and Peggy Utterback, members of a previous MIT Women's League embroidery class.

—Photo by Calvin Campbell

Rene Fell, vice president of the National Standards Council of American Embroiderers, will teach a crewel and canvas embroidery workshop at the Institute this fall—one of three fall embroidery classes sponsored by the MIT Women's League.

Mrs. Fell, an internationally known embroiderer, has taught all types of embroidery in Boston and at museums and needle guilds throughout the US. She taught a class for beginners at the Institute last fall which was particularly successful.

"The MIT Women's League is most fortunate in having such a recognized expert in this field to teach the embroidery workshop," said Mrs. Priscilla Gray who will teach the beginning and intermediate classes.

The workshop will begin on Oct. 13 and meet for eight sessions on Wednesdays from 9:15-11:30am in the

Foliage Tour Plans Sturbridge Visit

As part of its annual fall Foliage Tour, the MIT Women's League is sponsoring a trip to Sturbridge Village on Saturday, Oct. 16.

The tour will leave from the Sloan Building parking lot (Bldg. E52) at 9:30am. The buses will return late in the afternoon, so those touring should please bring lunch.

The trip will cost \$6 for adults and \$3 for children over 2 years of age. This fee includes transportation, admission to Sturbridge Village and an afternoon snack of cider and donuts.

Tickets will be on sale in the lobby of Bldg. 10 today through Friday, Oct. 15, from 11am to 1pm, as well as in the Foreign Student Office (Rm 3-107).

Jackson Room (10-280). Those interested should contact Mrs. Gray, 729-4098, for registration and information about materials needed.

The Women's League will also sponsor beginning and intermediate classes in crewel embroidery taught by Mrs. Gray. Beginning classes will meet for eight sessions on Wednesdays from 12:00-1:00pm in the Emma Rogers Room (10-340) beginning on Oct. 27 and continuing through January.

Intermediate classes will begin on Oct. 26 and meet for six sessions on Tuesdays from 9:30-11:30am in the Emma Rogers Room. Contact Mrs. Helena Toksoz, 253-3168, for registration and information.

Fall Blood Drive Needs Volunteers

The MIT Women's League is seeking volunteers for the Fall Blood Drive which begins Wednesday, Oct. 27, in the Sala de Puerto Rico, Student Center, and continues through Friday, Nov. 5.

Representatives of the Women's League, which has long been instrumental in recruiting staff for the semiannual MIT Blood Drive, said that volunteers are needed to type blood and take temperatures, help out in canteens and provide professional nursing aid.

Blood Drive hours are: 9:30am-4:30pm on Oct. 27-29 and Nov. 2 and 4; 2:30-8:30pm on Nov. 1 and 3; 11:30-6pm on Nov. 5.

Members of the MIT community wishing to volunteer their services should write or call Jean Bridge, Women's League Blood Drive Chairwoman, 285 Pelham Island Rd. Sudbury, Mass. 01776 (Telephone: 358-4959).