Massachusetts Institute of Technology

TECH TALK

August 26, 1981
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C.L. Wilson To Receive Tyler Prize

By ROBERT C. Di IORIO
Staff Writer

Professor Carroll L. Wilson, a renowned technologist and manager in the fields of ecology and world energy supplies, and Southern California Edison Co. have won the 1981 John and Alice Tyler Ecology/Energy Prize. Each will receive $100,000.

The Tyler Prize was established in 1973 by the late John C. Tyler, cofounder and chairman of the Farmers Insurance Group, and his wife, Alice Tyler. The recipients are nominated and selected by a panel of educators, scientists of international reputation and professional persons.

Mrs. Tyler will present the 1981 awards to Professor Wilson and representatives of Southern California Edison later this year in Los Angeles.

Professor Wilson, who developed a unique process for involving leaders in industry and government

Professor Wilson

from a dozen or more countries in global assessments, has spent much of his career seeking solutions to world energy and environmental problems. In 1946, Professor Wilson served as secretary of a group that developed the first plan for international control of atomic energy. The

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Freshmen Arrive for R/O Activities

By JOANNE MILLER
Staff Writer

The corridors, quiet and lightly traveled for the past several weeks, will come to life again with the arrival this week of the Class of 1985.

Foreign students from 23 countries began arriving Monday for special orientation programs that will acquaint them with both MIT and a new country. The remainder of the 1,058-member class is due Thursday, Aug. 27, for a 13-day Residence/Orientation period in which they will select places to live, choose academic options and explore extracurricular life at the Institute and in the greater Boston area.

R/O Week, as it is known, is longer than usual this year because of the late date of Labor Day (September 7), which has caused several changes in the academic calendar throughout the year.

R/O is a student-to-student program, organized and run by upper classmen who want to ease the transition into MIT for the newcomers. This year's coordinator is Rhonda Peck, a senior in management from Rochester, N.Y., who has worked with R/O since her sophomore year.

"The object of R/O is to introduce the freshmen and other new students to as much of MIT as possible in a short period of time," she explained, "so that they can make informed choices that will make their first year as comfortable and successful as possible. Because it's a little longer this year, there will be a bit of a breather at the end before registration and the start of classes."

Most freshmen will be met at Logan Airport by upperclassmen from the Interfraternity Conference who will be operating a continuous

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ASSEMBLY LINE—Members of the R/O committee and recruited passers-by in Lobby 7 assembled kits of information for incoming students one night last month. Altogether some 60 separate items were collated, stuffed into envelopes, at left, and addressed for mailing at top. *—Technique Photo by Bill Hofmann*

Help Available

Here is a list of places prepared by Rhonda Peck, R/O coordinator, where newly-arrived students can go for help and information.

Freshmen: Undergraduate Academic Support Office (UASO), Rm 7-103, x3-6786. R/O Center, Student Center second floor, x3-4551, after 8am Thursday, Aug. 27.

Army ROTC: East Campus; August 27 only in Rm 20E-018.

Navy ROTC: Rm 20E-125.

Air Force ROTC: Senior House.

All International Students: International Students Office, Rm 5-112 during office hours. After office hours, call 225-8634.

Transfer Students: Dean Holden, Rm W20-345 (Student Center), x3-7974 during office hours. After office hours, R/O Center, Student Center second floor, x3-4551.

Graduate Students: Departmental headquarters during office hours, or Anne Prince, Rm 50-222, x3-2195. There will be an information booth September 1-4 in Lobby 10.

Toyota Chair Established In Materials Processing

By ROBERT M. BYERS
Staff Writer

The Toyota Motor Co., Ltd., of Tokyo, Japan, has made a $1 million gift to MIT to establish an endowed professorship in the field of materials processing.

Announcement of the gift was made by Mr. Eiji Toyoda, president of Toyota, and Dr. Paul E. Gray, president of MIT.

By establishing the Toyota Professorship at MIT, Mr. Toyoda said his company hopes to promote cultural and technological exchanges between the United States and Japan.

"Through the new professorship," he said, "I hope the relationship between Toyota Motor and MIT will be deepened and the mutual understanding and friendship between Japan and the United States will be promoted."

Dr. Gray expressed MIT's gratitude.

"The Toyota fund will be a continuing source of support and strength for MIT teaching and research in the critical area of materials processing," he said. "This is an area in which MIT faculty members have excelled for decades and the Toyota gift will help continue that leadership."

Dr. Gray said that in recent years, MIT has strengthened its traditional commitment to the field of materials processing and manufacturing through the initiatives of the Departments of Materials Science and Engineering and Mechanical Engineering. These efforts, he said, have resulted in the establishment of two

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Union Negotiations Status

(The following report on the status of the negotiations between the Institute and the various unions representing MIT employees has been issued by James J. Culliton, the Institute's Director of Personnel.)

Six collective bargaining Agreements with four unions representing 1660 MIT employees expired June 30, 1981. The unions involved and their respective areas of representation are as follows:

—The Service Employees International Union AFL-CIO (SEIU) represents 680 maintenance and custodial employees under separate Agreements on the campus and at the Lincoln Laboratory.

—The Research, Development and Technical Employees Union (RDTEU) represents 850 technicians, machinists and other laboratory service employees on the campus at the Lincoln Laboratory and at the Haystack Observatory under a single Agreement.

—The Hotel, Restaurant, Institutional Employees and Bartenders Union, AFL-CIO (HRIEBU) represents 90 cooks and other culinary employees, waiters, waitresses and bartenders under separate Agreements covering the campus dining halls and the Faculty Club.

—The Independent Union of Plant Protection Employees represents 40

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Cable TV to Broadcast Live Coverage of Saturn

America's second Voyager spacecraft is flying past the planet Saturn this week and once again the MIT cable television system will present extensive coverage of the encounter.

Beginning after the noontime news today (Wednesday, Aug. 26), the Cable System has scheduled several hours of special broadcasts from the Jet Propulsion Laboratory (JPL) in Pasadena, Calif. The programs will continue daily through the end of this week and tapes of these broadcasts will be shown again September 1-9.

MITV provided similar coverage of the Voyager I encounter with Saturn in November 1980, and tapes of some of the 1980 programs featuring reports by project scientists will be included as part of this week's programs.

Special features of this week's coverage will be nightly one-hour live coverage from JPL, daily reports by members of the MIT plasma experiment team at JPL, and videotapes of visits to the laboratory made this summer by Anthony Tenczar, coordinator of the MIT cable TV system.

This year the programs will be broadcast from JPL via the Satcom I Satellite and will be picked up by a satellite antenna at Harvard and beamed to MIT via a microwave relay. (Last year's broadcasts were also sent via satellite but were taped by WGBH-TV for showing at MIT the following day.)

Times of the broadcasts can be found in the Cable Television Schedule on page 2 in today's Tech Talk.

The plasma science experiment

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Emergency Board Advised for Air Controllers Strike

(This op ed essay on the strike of the air traffic controllers was written for The Boston Globe by Professor Robert B. McKersie of the Sloan School of Management. It appeared in the Globe August 12.)

By ROBERT B. McKERSIE
Professor of Industrial Relations

Now that the strike by the Professional Air Traffic Controllers Organization has entered its second week and gives every indication of dragging on indefinitely, it is time to assess the long-run implications of this major confrontation. For the moment President Reagan has achieved a major objective by teaching the striking controllers that strikes by public servants will be dealt with severely; but other objectives will be difficult to achieve, and in many ways, the Administration has lost control over the future course of events.

So far, the public seems to approve of the Administration's actions. However, as time passes, the air controllers may be seen more and more as victims, if not martyrs, in a major showdown between the union movement and the Administration. As the controllers remain in limbo, they will be viewed less and less as workers who were taught a lesson and more and more as a group of key professionals who must have risked everything with a work stoppage.

While the union movement generally is unlikely to support the fired strikers in any large-scale fashion, we are already seeing displays of support by various foreign and domestic union groups that will keep the country on edge for a long time.

It is not clear that the Administration has comprehended fully the task of recruiting and training a whole new generation of air controllers. Given the requirements of high intelligence, mental visualization, self-confidence and composure under extreme pressure, it will not be easy to find the required talent.

Even if the controllers could be replaced, is there any assurance that another breakdown will not occur? Unless the structure of work and industrial relations is changed, it is unlikely that the situation will be any better with a new crop of air controllers.

The dispute has revealed a severe quality-of-work problem. While the Federal Aviation Administration has conducted some experiments to involve workers, to improve communications and to change management style, it has not dealt in any basic creative way with the quality-of-work challenge that it faces. Many companies in the private sector have made tremendous

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INSTITUTE NOTICES

Announcements

Volunteers Needed for International Open House--Helpers are needed to greet new students, staff, visiting scientists, and their families at the 9th Annual International Open House to be held in the Bush Room 10-105 on September 1, 2, and 3. Anyone interested in helping please call Julie Roberts, X3-1614. We also need cookies for the large group expected to attend. Anyone willing to contribute cookies should bring them to Rm 10-105 any time from September 1 thru September 3.

MIT Libraries Summer Hours--Labor Day, Mond, Sept 7, Student Center Library open. ALL OTHER LIBRARIES CLOSED. Sat, Sept 5 and Sun, Sept 6: Libraries on regular summer hours.

Talbot House Available**--The Labor Day weekend is still available to any group interested in visiting Talbot House in South Pomfret, Vermont. There are also weekdays available at lower rates in September. For more information and applications, please contact the Preprofessional Advising Office, 7-102, X3-4158.

Club Notes

MIT /DL Club**—ACBL Duplicate bridge, Tuesdays, 6pm, W20-473. Info: Arthur, X8-1414, Draper.

Caribbean Club**—Open to MIT-Wellesley community. For more info call Laverne, X3-5961.

Chess Club**—Speed chess, bughouse, and analysis for players of all levels. Meets Saturdays, 1:30pm-6pm, Rm 491, Student Center. Info: Brad, X3-7554 or 494-0263.

Frisbee Club**—For information: John Schutkeker, X5-7231 Dorm.

Hobby Shop**—Complete facilities for woodworking, metalworking and darkroom. Monday-Thursday, 9am-7pm, W31-031. Fees: $12/term students, $20/term, community. Info: X3-4343.

Investment Club**—Anyone interested in starting one call R. D. Laham, X3-6335.

MIT Juggling Club*--meeting every Sunday, 2-5pm, lobby of Bldg 13, or outside in front of Student Center. Beginners and onlookers welcome. Free.

MIT Scuba Club**—For membership info and club activities call Mike Hamner, 491-1284.

Outing Club**—Meetings, Mondays and Thursdays, 5-6pm, Rm 461, Student Center. Like the outdoors? Come share your interests, plan trips, and shoot the breeze. See our bulletin board by the Medical Dept. for current trips and shows.

Overeaters Anonymous—Meetings are held Mondays and Thursdays, 12-1pm, Conference Room 35-338. For info call X3-2153.

Shotokan Karate Club*—Rigorous training for physical well-being and self-defense. Classes meet 6-8pm, Tuesdays and Fridays, Varsity Club Lounge, Thursdays, Dance Room. Info: Jim, X3-8148.

Social Meeting*—Sponsored by GAMIT, everyone invited, gay, bisexual or straight. Drop by for some free refreshments or just to talk. Every Sunday, 5pm, Rm 50-306. Call X3-5440.

Tae Kwon-Do Club**—Korean Martial art involving rigorous training to develop total-body and mind control meetings. Monday, 5-6pm, T-Club Lounge (DuPont); Tuesday, 5:30-7pm, T-Club Lounge; Friday, 7-8pm, T-Club Lounge and Thursday, 5:30-7pm, Dance Studio; Friday, 5-6pm, T-Club Lounge. Call Hal, X3-6055 or Terry, X3-5806, days.

Tiddlywinks Association*—Meetings every Wednesday, Small Activities Office, 4th floor, Student Center, 7:30pm. Interested? Just curious? Everyone is welcome.

Wu-Tang Chinese Martial Arts Club*—Practice, Tuesday, Thursday, 8-10pm; Sun 6-9pm, T-Club Lounge or Dance Studio. Beginners welcome. Bring shorts, T-shirt and sneakers. Info: Howard 247-8691.

Table Tennis Club**— Meets every Monday, 8-10pm, T-Club Lounge, DuPont.

Women's Exercise Class**—Exercise, it's fun and healthy! Suzanne Brown, Instructor. Mondays, Wednesdays, Fridays, 1-2pm, Women's Lounge, Rm 8-219. Fee: $7/wk, $28/mo. Wear comfortable clothes.

Women's Rugby Club**—meets for practice Monday and Wednesday, 5:30-7pm, Briggs Field. All women are welcome, enthusiasm required. Contact Pam, X5-7237, Dorm. for more information.

Women's Water Polo Club**—Practices Monday & Wednesday, 3-5pm, and Thursday & Friday, 5-7pm at Alumni Pool. Any woman who is an undergraduate, graduate or staff member is welcome. No experience needed. For more information call Karen Fortoul, X3-6799 or Karen Klincewicz, 864-7240.

Religious Activities

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

Campus Crusade for Christ*—Family Time--a weekly fellowship including music, message and refreshments. Fridays, 7:15pm, Rm 37-252, Marlar Lounge. For more information: Phil Little, X3-2843.

Tech Catholic Community*—Sunday liturgies: 9am, 12 noon, 5pm, MIT Chapel. Prayer Group and potluck supper, Mondays, 6:30pm, info: Bob Simon, X3-1858.

Jewish Religious Services*—Friday: Orthodox services at sundown, Kosher Kitchen, Rm 50-005; Conservative/Reform group, 5pm, Hillel basement, 312 Memorial Dr.; Saturday: Orthodox services, 9am Bush Room, 10-105. For information, X3-2982 or X3-2987.

Prayer Time*—Friday afternoons, 1-2pm, weekly Bible Class led by Rev. Miriam R. Eccles, founder and director of the Alpha and Omega Missionary Society. Guest speakers, music and refreshments. Rm 20E-207. Welcome!

United Christian Fellowship*—Large group fellowship meeting: prayer, singing, sharing bible teaching. All are welcome to join. Meets on Friday, 7:30pm, Rm 1-236. For information: Elaine Pope, X5-9566 Dorm Line or X3-6940.

Noon Bible Study*—Every Wednesday, Rm 3-465, bring your lunch, all welcome. Ralph Burgess, X3-8121. (Since 1965)

Islamic Society*—Every Friday prayers will be held at 1pm, Kresge Auditorium, Rehearsal Room B.

Lincoln Laboratory Noon Bible Studies*—Tuesdays and Thursdays, M Trailer. Contact Annie Lescard, X262. **Morning Bible Studies**--Fridays, 7:30-8:30am, L-217. For information contact Ed Bayliss X8289, Linc.

Lutheran Episcopal Ministries*—Interdenominational service of Holy Communion, Wednesdays, 5:10pm, MIT Chapel. Supper follows in the basement of 312 Memorial Drive.

Graduate Studies

Fulbright-Hays Grants - Approximately 500 awards to 50 countries will be available for the 1982-83 academic year. The purpose of these grants is to increase mutual understanding between the people of the U.S. and other countries through the exchange of persons, knowledge and skills. Eligibility requirements include U.S. citizenship, a bachelor's degree before the beginning date of the grant and, in most cases, proficiency in the language of the host country. Completed applications must be delivered to the International Students' Office, Rm 5-112, by 5pm on Wednesday, September 30, 1981.

German Academic Exchange Service Awards - The German Academic Exchange Service (DAAD) awards grants to U.S. citizens to pursue a year of graduate study in the Federal Republic of Germany. Applicants must be proficient in German.

Churchill Scholarships - The Churchill Foundation of the United States awards 10 scholarships annually to U.S. citizens between the ages of 19 and 26 to pursue one or three years of graduate study in science, engineering or mathematics at Churchill College, Cambridge University.

Marshall Scholarships - The Marshall Scholarships, established by the British government as a gesture of thanks to the U.S. for Marshall Aid, are awarded annually to approximately 30 U.S. citizens under the age of 26 for two years of graduate study in any field at British universities.

Rhodes Scholarships - The Rhodes Scholarships are awarded for two years of study at Oxford University. Applicants must be U.S. citizens between the ages of 18 and 24. The most important requirement of a Rhodes Scholarship is quality of both character and intellect.

The application deadlines for these scholarships are in early Fall, so students who are interested in these and other programs should contact Dean Chamberlain in the International Students' Office, Rm 5-112, X3-3795, as soon as possible for further information and application materials. Please remember that MIT opens on Wednesday, September 9th.

UROP

For more information on UROP opportunities, MIT undergraduates should call or visit the Undergraduate Research Opportunities Program Office, Rm 20B-141, X3-5049 unless otherwise specified in the listing. Undergraduates are also urged to check the UROP bulletin boards located in the main corridor of the Institute and in the UROP Office.

Wright Brothers Wind Tunnel: Several positions available for students with UROP interests. The activity includes such work as model design and construction, wind tunnel test operations, software for the data acquisition systems, and instrumentation development. Research and development tests carried out for faculty and industry. PAY AVAILABLE. Contact: Prof. J. R. Baron, Rm 33-208, x3-4329 or F. H. Durgin, Rm 17-110, x3-2270. **2Q**

Man-Vehicle Lab- Mechanisms of Visual Information Processing: Eye movement measurements can facilitate our understanding of visual information processing mechanisms. Will investigate visual aspects of flight simulators. Some experiments conducted with the advanced simulator for pilot training. SUITABLE FOR JR. OR SR. Some knowledge of PDP-11/34 system and electronics preferred. PAY AVAILABLE. Contact: Paul Wetzel, Rm 37-155, x3-3752; Prof. Y. Zeevi, Rm 37-147, x3-7509 or Man-Vehicle Lab Office, x3-7758. **25P**

Numerical Simulation of Underground Hydraulic Fracturing: Will handle general programming and maintenance of engineering computer programs. Solid FORTRAN programming experience essential. Familiarity with relevant mathematical equations governing physical problems in mechanics and thermodynamics would be an advantage so that students can generate own programs as well. PAY AVAILABLE. Contact: Mohan Narendran, Rm 1-008, x3-2318 or Prof. M. P. Cleary, Rm 3-346, x3-2308. **14P**

Organ Perfusion Laboratory: Two students are invited to join a research group working on regulations of fat metabolism in isolated perfused organs (liver, kidney) from rats. Participants will be trained to assist in the surgical procedure and the setting up of the apparatus. They will also practice the use of radio-isotopes to determine metabolic rates. This is a non-smoking lab. Contact: Dr. Henri Brunengraber, Rm 56-229, x3-6783. **3Q**

Biological Membrane Modeling: Successful modeling of several essential features of phospholipid bilayer membrane behavior has recently been carried out with major contributions from undergraduate students. There are several advanced UROP or thesis opportunities for students with backgrounds in the areas of thermodynamics, statistical mechanics, electromagnetism. electro-chemistry, and/or physical chemistry. Contact: Dr. James C. Weaver, Rm 20A-128, x3-4194. **6Q**

Help Produce A Videotape On Nuclear Disarmaments: Help a physics senior working on a senior thesis. Need collaborators who can spend at least 12 hours a week preparing the background, planning the tape, shooting and editing. Could form the basis for projects or senior theses in science, political science, media, or film making. JRS. OR SRS. are preferred. Contact: Edwin F. Taylor, x3-7433. **1Q.**

A Programmable Sensor For Biotechnology: Student is invited to participate in a research project involving on-line monitoring of gas phase and dissolved compound which is important to both research and production in fermentations. Contact: Dr. James C. Weaver, Rm 20A-128, x3-4194. **62M.**

Short Course

Dynamic Fracture - Theory, Experiment and Application--by H.P. Rossmanith, Technical University of Vienna, Austria, visiting lecturer, Dept. of Mechanical Engineering, MIT. Preliminary Course Outline includes the following topics: 1. Dynamic elasticity theory; 2. Dynamic strain energy release rate; 3. Crack propagation with variable velocity; 4. Experimental investigations; 5. Fracture and wave propagation; 6. Applications of dynamic fracture. Schedule: Sept 9-18, MWF, 3-5pm Rm 5-134. If interested, please send name and phone to Prof. M.P. Cleary, Rm 3-356.

Student Jobs

Immediate opening for student to work on the development of the mechanical engineering junior materials lab, document and repair existing transducers; work on the design and construction of a general signal conditioner/amplifier to interface lab transducers with output devices. Should have instrumental experience and hands-on mechanical ability (2.671, 6.021, et). Junior or senior preferred. Hours: up to 20 hrs/wk. Salary: $4.50/hr and up. Contact: Frank A. McClintock, Rm 1-304, x3-2219.

Graduate students in business or law who excel in math, verbal and reasoning skills are needed. Teaching is done nights and/or weekends. Excellent salary. S.A.T. teachers as well. Contact Nancy Cassard, Stanley H. Kaplan, Educational Center, 482-7420.

Student assistant needed to assist headquarters and secretarial staff in xeroxing, delivering confidential materials, returning films for mailing, answering phones, light typing. Must be flexible, reliable. Hours: 5-10 hrs/wk, to be arranged. Salary: $4.50/hr. Contact: Bonnie Walters after Aug. 27, Rm 14N-405, x3-4430.

Wilson Wins Tyler Prize For Energy Contributions

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plan became the basis of the US proposals to the United Nations Atomic Energy Commission. As the first general manager of the US Atomic Energy Commission (1947-1950), Professor Wilson took a leading part in establishing a civilian-managed program including atomic power for submarines and civilian electricity, development of improved weapons and the use of radioactive isotopes for scientific and medical uses.

Following an industrial career that included uranium mining and the manufacture of nuclear fuel for submarines, he came to MIT in 1959 as professor in the Sloan School of Management.

Beginning in 1969, Professor Wilson helped establish and operate the International Centre for Insect Physiology and Ecology in Nairobi, Kenya. This laboratory is dedicated to basic research aimed at producing species-specific, biodegradable pesticides. As the US delegate and chairman of the Committee on Research Cooperation of OECD (the Organization for Economic Cooperation and Development comprised of 23 industrial Western nations), he helped launch a number of projects attacking environmental problems, such as toxic chemical trade and packaging, acid rain, and air and water pollution. As a member of the UN Advisory Committee on the Application of Science and Technology for Development, he helped to formulate the basic plan for the first UN Conference on Human Environment, held in Stockholm in 1972.

Professor Wilson organized a study group of 40 people from many disciplines which met for a month in 1970 in Williamstown to consider critical global environmental problems. Their report was published in October 1970 as "Man's Impact on the Global Environment: Report of the Study of Critical Environmental Problems." The following year he brought together 35 atomospheric scientists from 15 countries at Stockholm. Their assessment was published in September 1971 as "Inadvertent Climate Modification: Report of the Study of Man's Impact on Climate."

These two landmark studies summarized existing knowledge, identified critical gaps in that knowledge, and set priorities for work to be done. These research agenda have influenced priorities in many countries during the past decade.

In 1973 Professor Wilson delivered the Elihu Root lectures at the Council on Foreign Relations and described a plan for energy independence for the United States, proposing a quadrupling of coal output, conversion of a billion tons a year to gas, and expanding nuclear to 10 percent of energy supply, but putting all new plants underground. He also proposed a synfuels corporation and a special RFC-type of financing mechanism, both to be dissolved after 10 years. He also described the process he had conceived for making global assessments--one which would engage industrial and governmental leaders from a dozen or more countries.

To demonstrate that process, Professor Wilson enlisted 35 leaders from 15 countries to study global energy prospects to the year 2000. In May 1977, after nearly three years of work, the Workshop on Alternative Energy Strategies (WAES) released its report, "Energy: Global Prospects 1985-2000."

WAES was followed by the World Coal Study (WOCOL), which Professor Wilson organized in 1978. The WOCOL report, "Coal: Bridge to the Future," published in May 1980, found that coal could be mined, moved and used in ways that would meet the most stringent environmental standards of any country and still cost only half as much as oil.

"The projects which led to this award were the results of dedicated efforts by many people from many countries. I thank them for their superb support. An essential element for success was the unwavering support of MIT and its leaders, especially its chairman, Howard W. Johnson. I am pleased to have this occasion to thank all of my collaborators."

William R. Gould, SCE board chairman and chief executive officer, says the company is "humbly grateful" to be the first corporate winner of a Tyler Prize. All previous recipients have been distinguished individuals, including the late Dr. Arie J. Haagen-Smit, the Caltech professor credited with discovering the chemical nature of photochemical smog, and Dr. Rene Dubos, whose pioneering research in the 1930s led to the development of antibiotics.

The utility company was recognized as a "corporation vitally concerned and active in energy conservation programs and alternative energy sources." The announcement said the company won the prize "for its distinguished record of working to protect the environment and the company's recent commitment to aggressively develop renewable and alternative energy sources."

The $100,000 that SCE will receive with its prize will be divided and presented to USC and the California Institute of Technology, Gould has announced.

Cable TV to Broadcast Live Coverage of Saturn

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carrried out by both Voyager I and II spacecraft is of special interest to the MIT community in that the plasma detectors aboard both vehicles were designed and built in the MIT Center for Space Research (CSR) and principal investigator for the experiment is Dr. Herbert Bridge, director of CSR.

The detectors have been measuring the properties of low-energy ionized particles along the paths of Voyagers I and II since the spacecraft were launched in 1977. Dr. Bridge and his colleagues will be comparing the findings made by the Voyager I plasma detector with the results obtained from Voyager II.

At JPL this week for the flyby were Dr. Bridge, James D. Sullivan, a member of the CSR research staff, and Paul R. Gazis, a graduate student. Others who worked on the project were Joseph H. Binsack, CSR assistant director, Robert J. Butler of the CSR research staff, and John W. Belcher, Stanislaw Olbert and Alan J. Lazarus of the Department of Physics, plus numerous graduate students.

The videotapes made by MITV at JPL during this summer's visit were produced with the sponsorship of CSR and MIT Educational Video Resources.

CABLE TELEVISION SCHEDULE

August 26 - September 1

Wednesday, August 26
Channel 8:
12-12:30pm NOONTIME NEWS
12:30-2pm VOYAGER II SATURN ENCOUNTER - A rebroadcast of last evening's coverage from the Jet Propulsion Laboratory.
2-5pm VOYAGER I TRAVEL LOG - The Voyager I press briefing regarding last fall's encounter with Saturn. Featuring reports by project scientists.
7:30-8pm NEWSFILE - Rebroadcast of the 7pm CBS News.
8-9pm VOYAGER II SATURN ENCOUNTER - Live coverage from the Jet Propulsion Laboratory, Pasadena, California.
9-10pm MITV VOYAGER II REPORT - Interviews with members of the voyager team and videotaped visits to Jet Propulsion Laboratory facilities. Featuring daily reports by MIT Plasma Experiment team members at JPL.

Thursday, August 27
Channel 8:
12-12:30pm NOONTIME NEWS
12:30-1:30pm VOYAGER II SATURN ENCOUNTER - Rebroadcast of last evening's coverage from the Jet Propulsion Laboratory.
1:30-4:30pm VOYAGER I TRAVEL LOG - VOYAGER I press briefing regarding the 1979 Jupiter encounter.
7:30-8pm NEWSFILE - Rebroadcast of the 7pm CBS News.
8-9pm VOYAGER II SATURN ENCOUNTER - Live coverage from the Jet Propulsion Laboratory, Pasadena, California.
9-9:30pm MITV VOYAGER II REPORT - A presentation of the Voyager imaging system. Featuring today's report by members of the MIT Plasma Experiment Team at the Jet Propulsion Laboratory.

Friday, August 28
Channel 8:
12-12:30pm NOONTIME NEWS
12:30-1:30pm VOYAGER II SATURN ENCOUNTER - Rebroadcast of last evening's coverage from the Jet Propulsion Laboratory.
1:30-2pm MITV VOYAGER II REPORT - A presentation of the Voyager imaging system. Features today's updated report by members of the MIT Plasma Experiment Team at the Jet Propulsion Laboratory.
2-3pm MIT VOYAGER II REPORT - Videotaped visits to the Jet Propulsion Laboratory facilities and interviews with members of the Voyager team.
3-4pm VOYAGER II SATURN ENCOUNTER - See 12:30pm.
7:30-8pm NEWSFILE - Rebroadcast of the 7pm CBS News.
8-9pm VOYAGER II SATURN ENCOUNTER - The last hour of live coverage from the Jet Propulsion Laboratory, Pasadena, California.

Tuesday, September 1
Channel 8:
12-12:30pm NOONTIME NEWS
12:30-1:30pm VOYAGER II SATURN ENCOUNTER - Rebroadcast of the August 24 coverage from the Jet Propulsion Laboratory, Pasadena, California.
1:30-3pm VOYAGER II SATURN ENCOUNTER - Rebroadcast of the August 25 JPL Presentation.
3-4pm VOYAGER II SATURN ENCOUNTER - Rebroadcast of the August 26 JPL Presentation.
7:30-8pm NEWSFILE - Rebroadcast of the 7pm CBS News.
8-9pm VOYAGER II SATURN ENCOUNTER - Rebroadcast of the August 27 JPL Presentation.
9-10pm Voyager II SATURN ENCOUNTER - Rebroadcast of the August 28 JPL Presentation.

Kindergarten Opens Next Week

Technology Children's Center, Inc., will reopen its day care and kindergarten/ extended day on Tuesday, Sept. 1, and its nursery schools at Eastgate and Westgate on Wednesday, Sept. 9. An open meeting and social hour for parents, teachers and trustees of TCC will be held Wednesday, Sept. 9, 7-9pm in the Bush Room (10-105).

TECH TALK

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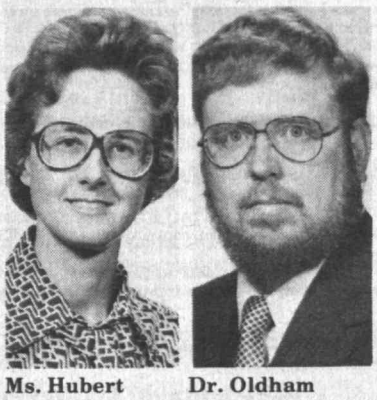
Two Appointed In Development

Dr. John E. Oldham, who was director of sponsored research at St. Joseph's University in Philadelphia, has joined MIT as assistant director of the Development Office.

"His addition to the staff will make it possible to give special attention to faculty support needs in a period of sharp decline in government funding," Dr. Vincent C. DeBaun, director of the Development Office, said in announcing Dr. Oldham's appointment. "Except for this special mission, his duties will encompass the full range of activities in raising funds from private sources."

As assistant director, Dr. Oldham joins Carol A. Hubert, who came earlier to succeed G. Rodger Crowe when he was promoted to associate director. Ms. Hubert came from Harvard University where she had been assistant director for foundation relations.

Dr. Oldham is a graduate of Seton Hall University and holds the PhD in sociology from Rutgers University. He was a research associate at the Human Care Systems Research Center at Rutgers before moving to St. Joseph's, where he was assistant professor of sociology and also held posts as assistant chairman of the department and coordinator of the Academic Computing Center.



Ms. Hubert Dr. Oldham

He has published essays and articles which have appeared in The Sociology of Work and Occupations, The New Social Sciences, Policy-Related Rehabilitation Research, and Children and Work, which was listed among the outstanding academic books of 1979 by the National Association of College and Research Libraries.

Ms. Hubert holds the AB degree from Holy Names College in Oakland, Calif., and the AM in English literature from the University of North Carolina where she was a Woodrow Wilson Fellow. For three years she was an assistant professor of English at Randolph-Macon Women's College before redirecting her career path into the development field.

As director of publications and public relations at the Madeira School, she wrote and edited magazines and catalogues that were nationally recognized. Later she was director for grants services at Colgate University where she worked closely with the senior academic officers.

Remanufacture Conference

A two-day conference on remanufacturing—the rehabilitation and production-line reassembly of parts such as automobile starters—got under way at MIT Wednesday, Aug. 26. US Sen. Paul Tsongas is scheduled as the dinner speaker tonight at the Faculty Club.

The conference grew out of a three-year study done by the Remanufacturing Group at the Center for Policy Alternatives. Robert T. Lund, who directed the study, said the need for a forum at which those interested in remanufacturing could discuss the issues involved became apparent during interviews with businessmen in the field. The Center for Policy Alternatives and the Center for Advanced Engineering Study are sponsoring the two-day conference.

Scheduled to take part in the conference are several government officials interested in remanufacturing for its energy-saving and resource-conserving capabilities and its potential to provide additional employment, and executives from several companies which produce remanufactured parts.

Students in the Summer Program for Engineers and Scientists at Lincoln Laboratory working on circuit boards are, from left, Sharyl Johnson of Texas Southern University, Nevin Harton of Tennessee State University, Steven Johnson of Texas Southern University and Herbert Kelly of Dillard University.

—Lincoln Laboratory Photo

23 Students Complete Program at Lincoln Lab

Twenty-three college students have returned home in high spirits after spending 10 weeks this summer working and studying at Lincoln Laboratory in the 1981 Summer Program for Engineers and Scientists.

This year was the seventh summer in which black students, representing 10 southern universities, spent most of their summer working at Lincoln Lab on assigned projects in signal processing, radar, computer systems, optics, lasers, digital circuitry and solid state research. The students lived in Burton House and shuttled daily 15 miles each way to the Lab in Lexington.

Derrell Dunn, a sophomore from North Carolina A&T, one of 10 sophomores newly selected for the program, worked in the Control Systems Engineering Group. His projects included calibrating a laser-light-sensitive diode measurement system and building and testing mockups of digital electronic circuit breadboards. Derrell cited the friendliness of his co-workers and being exposed to practical applications of electrical engineering as the best aspects of the program.

Karen Officer also spent her first summer at Lincoln. A sophomore at Tennessee State in Nashville, she developed interface software on a DEC MINC-23 computer for use in analog-to-digital converters. She also built an electronic sampling gate pulse generator under the supervision of Dr. Dennis Killinger of the Quantum Electronics Group.

Ms. Officer and the other nine sophomores in their first summer, took a Fortran course taught by James H. Cosgrove, a Lincoln staff member, and attended weekly lectures describing state-of-the-art research projects at Lincoln.

Among the eight juniors who returned for their second summer was Teressa Jackson from Southern University. She worked under the supervision of Dr. Mary A. Norton on a computer analysis of prerecorded video data in an experiment to determine the interaction between system tracking error and thermal blooming of the propagation medium because of laser heating. Steven Johnson, from Texas Southern University, designed and fabricated a UHF Cascode amplifier.

All of the junior returnees gave oral presentations on their summer assignments to the Lincoln Laboratory community as part of their communication skills course taught by Susan Colcock. The students also attended a course in digital electronics taught by Daniel J. Enxing.

Midway through the summer, 12 of the students spent a day on the campus attending orientation talks by Dr. John B. Turner, associate dean of the Graduate School, and Professors Arthur C. Smith of electrical engineering and computer science and Robert Birgeneau of physics. They also went on tours of electrical engineering, chemistry and physics laboratories.

"The day on the campus and the talks were extremely helpful in clarifying our questions about graduate school," Darrell Reid, a junior from Norfolk State, said.

"There is a keen interest on the part of the students to attend the MIT graduate school," Paul Hezel, coordinator of the Summer Program, said. "Along with that desire comes a string of anxieties, and the day on campus had a positive, calming effect."

Mr. Hezel said the present group of students has excellent potential—the right mix of ability and motivation—to pursue advanced degrees at MIT.

Since 1975 a total of 69 students have participated in one or more of the summer sessions. Twenty-three are active in the program at present. The others have taken industrial jobs or gone to graduate school. Seven have entered advanced degree programs at MIT.

Editor Named At Tech Review

Thomas Burroughs, a member of the News Service at the American Chemical Society since 1973, has joined the staff of Technology Review as a senior editor.

Mr. Burroughs, who holds a master of arts in journalism/science writing from the University of Wisconsin (1972) and a bachelor of arts in journalism from Ohio State University (1970), wrote and produced the ACS' sciencedocumentary, "Man and Molecules," for seven years before becoming managing editor of the ACS News Service in 1980. "Man and Molecules," covering such scientific topics as chemistry, energy, health, medicine, environment, space, technology, and the life sciences, is broadcast weekly by 500 radio stations for an estimated audience of 8 million. As managing editor of the News Service, Mr. Burroughs directed all ACS public information projects. Both assignments brought him into contact with leading scientists at major universities, research centers, and professional meetings.

Mr. Burroughs

Before joining the ACS, Mr. Burroughs was associate editor for the University of Wisconsin's Sea Grant Program in Madison in 1972-73. As a college journalist on the Ohio State Lantern, he won two William Randolph Hearst Collegiate Writings Awards. In 1972, as a science writer at the University of Wisconsin, he won the Wisconsin Natural Resources Foundation Award for communications in the natural sciences.

Mr. Burroughs' office is Rm 10-140. His phone number is x3-8258.

Chinese Books

The Humanities Library now has a small collection of Chinese language books. It is an eclectic assortment of novels, poetry, essays and history. The collection is uncatalogued and is shelved in the leisure reading collection.

Compton Gallery to Show Antique Scientific Tools

By BETSY HUNTINGTON
Staff Writer

The elegance of the eighteenth century expressed in its scientific instruments of polished brass and mahogany with artifacts, graphics and literature of the period will be on display in MIT's Margaret Hutchinson Compton Gallery (Rm 10-150) Friday, August 28-Saturday, Oct. 31.

"We started with the idea of presenting scientific instruments as a distinct part of 18th century culture," said Joan Loria of the MIT Museum, who is arranging the exhibition. "Then it seemed natural to include somme 18th century graphics and literature, and finally to try to give an overview of the intellectual climate of the 18th century itself."

The result is a fascinating collection, first of the instruments themselves, replete with decorative metal and woodwork—many of them the sophisticated toys of cultivated amateurs who made an avocation of scientific enquiry in their homes. These are accompanied by graphics, maps, and literature in the form of transactions of the Royal Society of London and books of the period.

The exhibition will be presented in four separate "rooms" in the gallery. The first, dedicated to instruments of trade and navigation, will include quadrants, octants and sextants; telescopes, maps, and graphics of the trade activities of the period. In this group is a five-foot high wooden figure of a seaman in uniform holding a sextant, which served as a sign for an instrument maker's shop.

The second room will center around a 6x6-foot electrostatic machine in mahogany and brass. With it will be displayed a Sisson quadrant, some elegant weights and balances, and a beautiful little mahogany and brass water pump. All are on loan from Harvard University where the instruments were used for instruction two hundred years ago.

The third room will contain instruments used for research and engineering in Europe along with research literature of the time. A 30x30-inch orrery is conspicuous, as are a dummy board of Benjamin Franklin lent by the Rye Historical Society and two engine models. One is a half-inch scale model of the Watt Engine, given to MIT by Mrs. Eleanore Bloedel; the other, a model of the Newcomen Atmosphere Engine, constructed in 1712 to lower the water level in mines and to distribute water in towns. Pages of the Royal Society's transactions are displayed here to illustrate the research that was going on at the time.

A fourth room will take the viewer into the home of the 18th century amateur scientist. These instruments were either for display in a gentleman's parlor or for his own use in his laboratory. They include a small orrery, a Sparhawk telescope with a heliometer, a microscope, an odometer (used for land measurement) and a "Thunder House" which demonstrated explosively the result of a lightning strike on a house. Rare books lent by Harvard University Archives, the Boston Public Library and MIT Archives round out this more intimate exhibit of the books and instruments likely to be owned by a cultured amateur in the 18th century.

The English instrument makers of the 1700s were the source of the finest scientific apparatus of their period. They had abundant supplies of high quality steel, brass, copper, and tin to work with, and though their work with lenses was primitive, the instruments they made of wood and metal were beautifully crafted and ornamented to the point of being works of art as well as of utility.

The collection to be shown at the Compton Gallery was gathered from the Harvard University Collection of Historical Scientific Instruments, the Francis Russell Hart Nautical Museum at MIT, the National Museum of American History of the Smithsonian Institution, the State Street Bank and the Rhode Island Historical Society.

Visual materials were provided by the Boston Public Library, the Essex Institute, Harvard University Archives, the Peabody Museum of Salem, the Rye Historical Society, the Science Museum of London, and MIT Archives.

The exhibition was organized by Professors Ruth Perry and Harriet N. Ritvo of the MIT Department of Humanities, and support was provided by a grant from the National Endowment for the Humanities, a funding agency of the federal government.

Army ROTC Graduates Win Record Number of Fellowships

Of the 25 ROTC cadets commissioned in the U.S. Army at MIT last June, 10 have been awarded two-year, fully-funded Army ROTC Fellowships for graduate study while on active duty.

They are the largest group from any university to win the fellowships, and are among the top five percent of all graduating Army ROTC seniors in the country. Only 103 of the Fellowships were awarded this year to seniors from 67 of the 283 universities that offer ROTC. Next in line to MIT was Purdue University where seven seniors were awarded Army ROTC Fellowships.

The Fellowships may be used by the newly commissioned officers while they remain on active duty. Only four of the Fellowship recipients from MIT will use their fellowships immediately.

Two will do their graduate work at MIT. They are Majes D. Oliver II of San Antonio, Tex., who will study for a master's degree in chemical engineering, and Stanley R. Silver of Ellsworth, Me., who will study for a master's degree in aeronautics and astronautics.

Charles W. Calkins of Ballwin, Mo., will study at the Washington University School of Law in St. Louis, Mo., and Morton Orlov II of Oaks Corners, N.Y., at the Fletcher School of Law and Diplomacy at Tufts University.

The six who will postpone their graduate study are:

Cynthia M. Bedell, who will serve with the Chemical Corps in the Regular Army. Ms. Bedell will be commissioned in Fall, 1981.

Susan E. Flint of Farmington, Me., who will serve in the Regular Army Corps of Engineers with the VII Corps in Germany.

Judith K. Frankel of Wantagh, N.Y., who will serve in the Regular Army Ordnance Corps with the 24th Infantry Division at Fort Stewart, Georgia.

Thomas P. Garigan of Alexandria, Va., who will serve in the Regular Army Infantry with the Berlin Brigade in Germany.

Michael W. Garland of Derry, N.H., who will serve in the Regular Army Corps of Engineers with the Eighth Infantry Division in Germany.

Christopher S. Wheeler of Sarasota, Fla., who will serve in the Regular Army Corps of Engineers with the 18th Engineer Brigade in Germany.

Calculus Change

There is a change in freshman calculus this fall. The old 18.01C-18.02C, which covered the year of calculus in a semester and a half (and finished in March or during IAP) has been replaced by a new, year-long sequence 18.011-18.021. Questions can be directed to the Undergraduate Mathematics Office, Rm 2-108, X3-4977.

Permanent License

Commuters to Lincoln Laboratory from the western suburbs now have permanent bus service from stops in Boxborough, Acton and Concord. Service has been available for the past 15 months, but has been operated on renewable thee-month temporary permits from the Massachusetts Department of Public Utilities, which has now issued a permanent licence for the route. The bus service was organized by Charles Summers of Lincoln Laboratory.

THE INSTITUTE CALENDAR X3-3270

August 26 through September 6

MISS THE TECH TALK DEADLINE?

Put your announcement on the MIT Cable System. "Today at the Institute" runs from 9 to 5 daily on Channel 10 and can be viewed in Lobby 7, Lobby 10, and anywhere the cable is connected.

Simply phone X3-7414 and leave your announcement. We prefer a day's warning, but faster action may be possible.

Useful also for correcting errors, notifying about cancellations, and dealing with emergencies.

Note: If you have met the Tech Talk deadline, your announcement is automatically put on the cable (except for exhibits and some multimeetings programs).

Community Meetings

MIT Faculty Club--**The Club is open Monday through Friday. Luncheon hours: Noon-2pm. Dinner hours: 5:30-8pm. Thurs, Aug 27: Lobster Night: $9.25 plus tax.

Alcohol Support Group--**Personal Assistance Program, Medical Dept. A self-help support group for persons concerned about the effects of excessive alcohol use on their lives. For place, time and day of the week, contact Ron Fleming, X3-4911.

Overeaters Anonymous--**Meetings are held Mondays and Thursdays, 12-1pm, Conference Room 35-338. For information call X3-2153.

Technology Children's Center, Inc.--Parent-Teacher-Trustee Opening Meeting and Social Hour. Wed, Sept 9, 7-9pm, Bush Room 10-105.

Social Events

MIT Open Chess Tournament*--Rated four round Swiss style. A Grand Prix tournament. Time limit is 45/2. $12. entry fee, $15. at door. Sat, Sun, Sept 12-13, Rm 491, Student Center. Registration: 10am, Rounds: 11am-4pm, 10am-3pm. For additional information: Brad, 494-0263 or X3-7554.

Theater

***Once Upon A Mattress**--**MIT Musical Theatre Guild, Aug 28, 29, Sept 4, 5, 10, 11, 12 at 8pm and Aug 30, Sept 5 at 3:30pm, Kresge Little Theatre. Tickets are $4.50, $2.50/students. Information and reservations call 253-6294.

Auditions for *Right You Are If You Think You Are* by Luigi Pirandello. MIT Community Players. Sept 1, 2, & 3, 7:30pm, Rehearsal Rm A, Kresge Auditorium. All levels of experience are welcome.

Exhibits

Hart Nautical Museum*--Collection of ship models, half-models and drawings, Bldg 5, first floor. For information call MIT Museum, X3-4444.

The MIT Museum and Historical Collections*-- unique collection of scientific instruments, architectural drawings, portraits, photographs and memorabilia that illustrates M.I.T.'s history and developments in 19th & 20th century American technology.

At the Museum, on view Mon-Fri, 9am-5pm, 265 Mass. Ave., 2nd flr, Cambridge.
Openings
Photographs by Timothy H. O'Sullivan 1840-1882: Photographs are from a geological expedition of the fortieth parallel 1867-1869. The expedition involved exploration and survey of land from Virginia City, Nevada to Denver, Colorado.
Selections of Posters of the First World War: From the permanent M.I.T. collection. These posters were designed for the U.S. Shipping Board by a group of well-known artists who donated their services. In the absence of mass media as we know it, these posters were a valuable communication device and conveyed a message of patriotism and shared responsibility for the successful completion of the war effort.

Ongoing Exhibitions
Selections from the Forbes Collection of Whaling Prints: lithographs, aquatints, and engravings about the technology and lore of a once great industry. **The Past as Prologue:** a collection of architectural drawings and models–a visual history of planning and building at M.I.T. **Mechanical Computing:** slide rules, slide rules, and more slide rules. **Julius Adams Stratton:** perspectives of a continuing career in celebration of his 80th birthday. For information call MIT Museum, X3-4444.

Corridor exhibits: Building 4: **Samuel Cate Prescott, Rogers Building, Norbert Wiener, Karl Taylor Compton. Community Service Fund, Ellen Swallow Richards.** Building 6: **Laboratory for Physical Chemistry.** Building 8: **Solar Energy, Society of the Sigma XI.** For information call MIT Museum, X3-4444.

Institute Archives and Special Collections*--Hetch Hetchy Dam Controversy: Public Land versus City Water. Photographs, maps and records from the John Ripley Freeman (1855-1932) Papers.

Stroboscopic Light Laboratory Corridor*--Permanent exhibit of high speed photographs. Main corridor, near Rm 4-405.

Cambridge & Somerville Street Corner Series*--Selected photographs by Brian Swift. Rotch Visual Collections, Rm 7-304, 9am-5pm. On view through Sept.

Exhibits

Wellesley College Exhibition: Charles Marville: Photographs of Paris at the Time of the Second Empire. First exhibition in America of Marville's photographs taken mostly between 1852-1870 of the old Paris of Balzac, Baudelaire and Victor Hugo before the vast urban reorganization. On view from September 4 through October 18. Jewett Arts Center, Wellesley College Museum. Open Mon-Sat, 10am-5pm, Sun, 2-5pm. Free.

Minority Graduate R/O

Minority Graduate Students Orientation Program--Fri, Sept 4, Bush Room 10-105. Master of Ceremonies, Mr. Edward "E". Horton, Physics Dept.

9:30am-10:00am--Coffee and Donuts

10:00am-10:30am--Welcome and Introductions. Dr. Kenneth R. Wadleigh, Vice-President and Dean of the Graduate School; Dr. Shirley McBay, Dean for Student Affairs; Dr. John B. Turner, Associate Dean of the Graduate School; Dr. Clarence Williams, Special Assistant to the President

10:30am-11:00am--Perspectives from the Faculty. Prof. Frank Jones, Ford Professor and Director Minority Intern Program

11:00am-12 noon--Support Offices. Student Financial Aid, Ms. Yvonne Gittens, Assistant Director; Campus Patrol, Mr. Zack Taylor, Patrolman; Counseling, Dean Mary Hope, Student Affairs; Medical & Health, Ms. Norma Loomis and Mr. George Taylor, Physician Assistant

Noon-1pm--Lunch in the Bush Room 10-105

1:00pm-1:45pm--Student Activities. Black Graduate Student Association, Gregory Williams, Chairperson; Black Student Union, Sam Austin, Co-Chairperson; First World Planners, Toye Brewer; Graduate Student Council, Nancy Wright; Black Graduate Student Tutorial Program, Brenda Kitchens; Mexican-American Student Association, Eddie Grado.

1:45pm-3:00pm--Panel Discussion, "Getting Over the Hump at MIT." Hamlet Herring, Materials Science & Engineering; Joseph Juarez, Mechanical Engineering; Carol Espy, Electrical Engineering; Craig Barnes, Urban Studies & Planning; Teresa Carter, Management; Luz Miranda, Physics.

R/O Highlights

Thurs, Aug 27: 8am-M: R/O Baggage Center open in Sala de Puerto Rico in Student Center. R/O Center open in West Lounge of the Student Center.

Fri, Aug 28: M-M: R/O Center open.
8am-5pm: R/O Baggage Center open in Sala de Puerto Rico in the Student Center. Ask at R/O Center for other times.
4:30pm-6:30pm: Freshman Picnic in Killian Court. Rain location: Special Events and Athletic Center. Fraternity Rush begins.

Sat, Aug 29: Fraternity Rush continues. First day of Dormitory R/O Activities and additional dormitory tours.
M-M: R/O Center open.

Sun, Aug 30: Dormitory activities, including tours, continue.

Mon, Aug 31: 5pm: Dormitory Preference Cards Due in the R/O Center.

Tues, Sept 1: 2pm: Meetings with Freshman Advisors.

Wed, Sept 2: 9am-4pm: Individual meetings with freshman advisors. Freshman ID and meal plan pictures taken in the R/O Center.
10am: Academic Convocation for all freshmen in Kresge Auditorium.
11am: Informal discussions of freshman core programs with faculty and staff: Chemistry/Biology in Chipman Room (8-314); Humanities in Kresge Little Theatre; Mathematics in Rm 2-102; Physics in Rm 4-339.
2pm-4pm: Academic Midway in duPont Gymnasium.

Thurs, Sept 3: 7pm-9:30pm: Athletic Midway in Rockwell Cage.
7pm-10pm: Activities Midway in duPont Gymnasium. Purchase tickets for Expedition Day (Tues, Sept 8) here.

Fri, Sept 4: 9am-9pm: R/O Center open.

Sat, Sept 5: 3:30pm-5:30pm: President's Reception for parents and freshmen at President's House (111 Memorial Drive). (Rain location: Student Center).

Sun, Sept 6: 9am-9pm: R/O Center open.

Library Tours

Introduction to the MIT Libraries and the Institute Library Catalog 14S-200--**Meet at the kiosk in the Humanities Library Reading Room, 14S-200. Fri, Sept 4, 11am, 2pm, 3pm. Tours also available on request. Inquire at the Humanities Reference Desk or contact Kathy Powers, X3-5673.

Barker Engineering Library 10-500--**Tues, Sept 1, 5:15pm; Wed, Sept 2, 3:15pm; Thurs, Sept 3, 5:15pm. Tours also available on request. Contact Carole Schildhauer, X3-6051.

Humanities Library 14S-200--**Self-directed tour available in Humanities Library Reading Room. Tours also available on request. Inquire at the Humanities Reference Desk, or contact Kathy Powers, X3-5673.

Rotch Library 7-238--**Fri, Sept 4, 11am & 2pm (Architecture). Tours open to all library users. Tours also available on request. For further information, contact Barbara Reed, X3-7052.

Science Library 14S-100--**Thurs, Sept 3, 1pm; Fri, Sept 4, 1pm & 4pm. Tours also available on request. Contact Lisa Cornelisse, X3-3528.

Branches and Reading Rooms

Aeronautics and Astronautics Library 33-316--**Tours available on request. For further information, contact Kate Herzog, X3-5666.

Chemistry Reading Room 18-480--**Wed, Sept 2, 11am. For further information, contact Eileen Dorschner, X3-1891.

Lindgren Library 54-200--**Fri, Sept 4, 2pm. For further information, contact Jean Eaglesfield, X3-5679.

Microreproduction Laboratory 14-0551--**For tour information, contact Peter Scott, X3-5667.

Music Library 14E-109--**For tour information, contact Linda Solow, X3-5636.

Rotch Visual Collections 7-304--**Tours included as part of the Rotch Library tours. Tours also available on request; for further information, contact Merrill Smith, X3-7098.

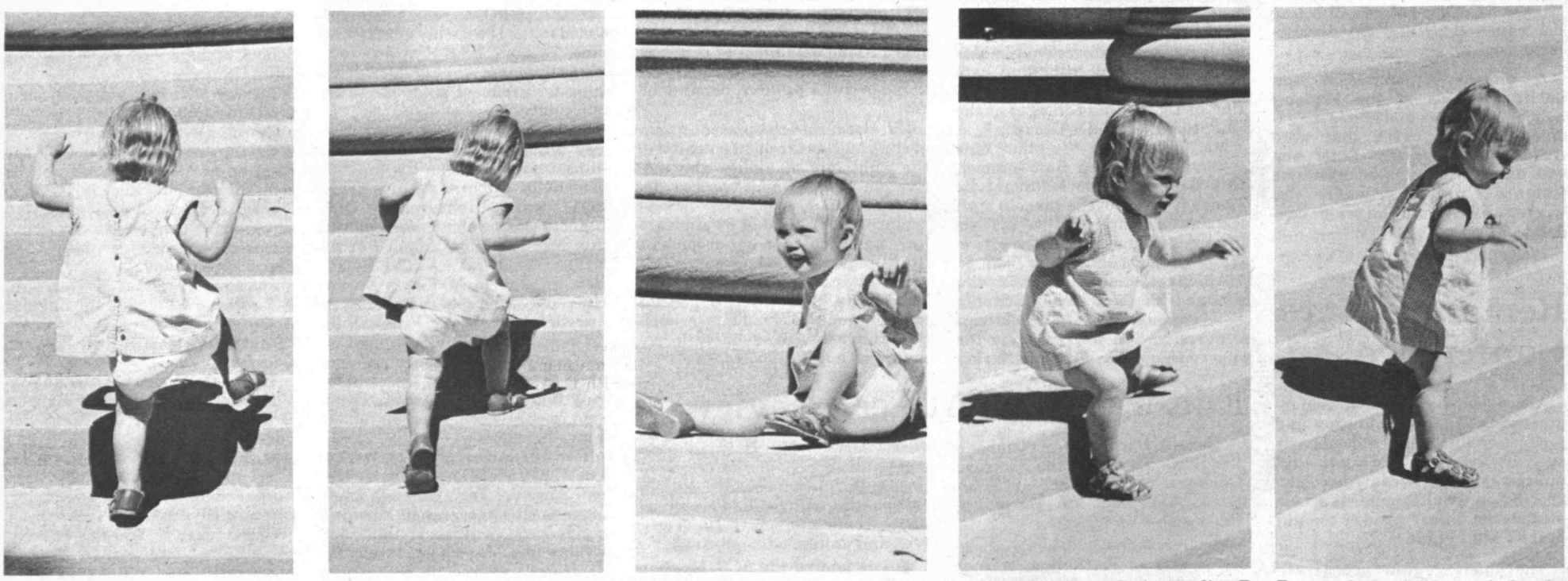
Student Center Library W20-500--**Tours available on request; for further information, contact Sylvia McDowell, X3-7050.

Von Hippel Reading Room 13-2137--**Tours available on request; for further information, contact Polly Baslock, X3-6840.

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 Wednesday, August 26 through Sunday, September 13, to Calendar Editor Rm 5-113, before noon, Friday, August 28.



THE UPS AND DOWNS of life on the steps of Killian Court were explored by Susan Pearce last week on her first day on campus. She is the daughter of Dr. and Mrs. Philip Pearce of Townsville, Queensland, Australia. Dr. Pearce is a visiting scholar in architecture and planning and his wife is a visiting scholar at Harvard this year.
—Photos by Calvin Campbell

International Open House Set

All new international students, staff, faculty and their families are invited to the ninth annual International Open House Tuesday-Thursday, Sept. 1-3, 9:30am-5pm in the Bush Room (10-105), to meet members of the MIT community and share refreshments and conversation.

Handout information on a wide variety of MIT organizations and programs of particular interest to families will be available. Members of The Wives Group, Tech Wives Organization and the MIT Women's League also will be on hand to meet the wives of newcomers. A children's play corner, courtesy of the Technology Nursery School, has been organized for youngsters.

A special program on education at MIT and styles of teaching and learning has been arranged for Tuesday, Sept. 1, 7:30-9:30pm. It will be chaired by Dr. Louis Menand III, special assistant to the provost and senior lecturer in political science. Panelists will be Professors David H. Friedman of architecture, Stephen D. Senturia of electrical engineering and computer science, Judith J. Thomson of linguistics and philosophy and August F. Witt of materials science and engineering.

Solution Proposed to Flight Control Computer Problem

(This second of two articles outlines possible solutions to problems confronting the National Air Space (NAS) computer system used in the control of air traffic. Dr. Toong is a member of the Management Science group and of the Center for Information Systems Research at the Sloan School. Dr. Gupta is a research fellow.)

By DR. HOO-MIN TOONG and DR. AMAR GUPTA

The FAA's current plan is to fully replace the present computer system by 1990, and it is currently conducting studies on how this 1990 full hardware and software replacement can best be accomplished. One possible flaw in this strategy is that the current computer system will not be able to keep up with the growth in traffic and computing needs until then. Consequently, the options are to either restrict air traffic to a level that the current system can handle, or to adopt an interim, short-term computer system that will stretch the life of the current system until full replacement can be carried out in 1990. In fact the air traffic controller's strike has served to exercise the first option by temporarily restricting air traffic. In the second case, it would be preferable to have the short-term system fit into the eventual full replacement plan. Various interim, contingency options are being considered.

One option to increase system performance is to rewrite the entire software system. This option implies high investments in terms of time and money. An alternative is to use an auxiliary processor, possibly a preprocessor, to augment the computing power. From a hardware viewpoint, this option appears feasible; however, the NAS software monitor is not capable of running tasks on several loosely coupled processors. Even if modifications were made to the NAS software to allow the offloading of an entire four advantages would result. First, function such as flight data processing or radar data processing to an auxiliary processor, each separate function would have to share the same data at high speeds and this would cause excessive communications between the 9020 (the present NAS computer system) and the auxiliary processor.

Another alternative is to replace selected pieces of current hardware (20-year-old technology) with faster but functionally similar pieces. This option permits higher overall system throughput with minimal expenditure on software modifications. (This will help to reduce the system response time below the current worst case of seven seconds.) Since hardware costs have been falling every year, it would be desirable to choose from current hardware that is off-the-shelf, rather than any customized computer systems such as the 9020. This option is called the "rehosting option."

If the 9020s were replaced by a system built around an instruction-compatible mainframe, such as the IBM 3033 or the Amdahl 470V/8, the newer technology would allow an increase of from three to 10 times in processing speed as well as an order of magnitude increase in storage space and in the number and capacity of i/o channels. The new system would provide sufficient capacity to handle not only the increased traffic loads expected over the rest of this decade but also the planned software enhancements to the system. Secondly, these gains could be achieved quickly, avoiding the lengthy and expensive process of rewriting the software. Third, reliability and maintenance problems with the aging 9020s would be alleviated. Finally, the fourth advantage is that an instruction-compatible mainframe would allow development of the full 1990 NAS replacement system on a gradual and modular basis without being rushed through development because of rapidly dwindling capacity of the 9020 system. The exact technical details to achieve such an instruction-compatible rehosting are not extraordinarily difficult but are beyond the scope of this article.

IBM instruction set compatible systems are currently available from IBM, Amdahl and at least 12 other companies in the US. A current generation mainframe such as the IBM 3033U or Amdahl V7, with a speed of about 6 MIPS (million instructions per second) each, offer a speed increase of around 10 as compared to the existing 9020 systems. This speed accelerator would mitigate problems of increased air traffic, reliability of aging hardware, and simultaneously provide sufficient scope for future software enhancements.

In summary, the National Airspace System requires computer system modifications during the 80's. These modifications can benefit from the technological advances and lower cost of modern technology. Besides providing higher performance, better availability, easy transition and adequate scope, for software enhancements, the new system, with its higher inherent reliability, will ensure better and more efficient tracking and routing of aircraft in our crowded skies.

Emergency Board Advised for Air Controllers Strike

(continued from page 1)

strides in improving the organization of work and involving workers in solving problems of stress and work assignments.

In this connection, both the FAA management and the PATCO leadership must be faulted for not coming to grips with the basic problem. Collective bargaining should be an institution that solves basic problems and enables the parties to work out more accommodating arrangements. In this case, collective bargaining has not dealt with the underlying issues. Instead of tackling the issue of stress directly, the negotiators have spent their time talking about wages, shorter hours, early retirement and manning levels.

Thus, while President Reagan may have achieved the objective of enhancing our respect for law and order, it is not clear that the objectives of minimizing disruption in the economy, improving the effectiveness of the air traffic control system and establishing a model for labor-management relations in the public sector have been furthered; if anything, these objectives have been hindered.

What steps or actions might be taken to regain control of the situation? Eventually, the controllers will need to be rehired on some basis. A variety of legal and administrative tribunals will be used by the fired workers to gain reinstatement. Somewhere along the line, someone sitting in authority will be impressed by the argument that the punishment exceeds the crime. Clearly, workers who violated an oath should be disciplined, and disciplined severely, but the President's ultimatum that they would be fired if they did not come back to work in 48 hours was not a just sentence. Some face-saving device will have to be found so that most of the workers can be reinstated at some point.

A second area for positive action involves a restructuring of the institutions that are responsible for the breakdown that led to this strike. It may be necessary to turn the functions of the FAA over to a regulated utility so that the initiative and competence that characterize the private or quasi-private sector can be brought to bear on the deep-seated personnel problems. The development of the current situation exemplifies what President Reagan has been saying all along: Government does not know how to run programs effectively.

Finally, some type of commission or special board is needed to investigate the situation and make recommendations for resolution. The Emergency Board procedure that exists for private-sector disputes affecting the national interest might be a model.

Certainly, the frustrations felt by the controllers did not suddenly spring forth full-blown over one weekend. They have been a long time in the making and will be a long time in the solution. To ask the agency and the higher levels of government that have been unable to cope with this situation in the past to be the sole architects of reform is not wise. Some type of third-party presence is necessary and should be helpful to the process of reconstruction.

Freshmen Arrive for R/O Activities

(continued from page 1)

shuttle service 9am-9pm Thursday and 9am-3pm Friday.

Once on campus, the new students drop their baggage in the Sala de Puerto Rico and go to the R/O Center in the West Lounge to get temporary room assignments. All dormitories will be open for tours of freshmen who may be interested in becoming residents.

R/O activities officially begin Friday afternoon at 4:30 with the Freshman Picnic in Killian Court (Special Events and Athletic Center, in case of rain). At the picnic freshmen will meet with their faculty or staff advisors and their upperclass associate advisors and hear welcomes from Ms. Peck, undergraduate president John De Rubeis, Dean for Student Affairs Shirley M. McBay and President Paul E. Gray. Others who will speak briefly are Peter H. Richardson, director of admissions, Jim Murray, chairman of the IFC and Dave Scrimshaw, chairman of the Dormitory Council.

The most colorful event of R/O follows with the beginning of the fraternity Rush when the 33 independent living groups vie with eye-catching gimmicks for the attention of the freshmen. This marks the beginning of the selection process during which each freshman chooses his or her permanent living situation. The process will continue through the following week until all freshmen are settled.

While the weekend focuses on Rush, the following week is devoted to introductions to educational programs (the Experimental Studies Group, Concourse, UROP), meetings with advisors, advanced standing exams, and more than a dozen tours to local attractions such as Quincy Market and the Kennedy Library.

Other aspects of campus life will make their debut on Thursday, Sept. 3, at the Athletic and Activities Midways. Meanwhile, special programs have been planned throughout the week for minority students, foreign students, women and transfer students.

The focus will be on parents on Saturday, Sept. 5, when there will be tours of the campus and a special panel discussion in Kresge Auditorium for freshmen and their families. The traditional President's Reception will be held at the President's House (Student Center in case of rain) Saturday afternoon.

On Labor Day afternoon the Student Center Committee will sponsor a get-together with music and food on the Student Center plaza. A number of off-campus tours will be available on Tuesday for students who sign up in advance.

The R/O Center will be open throughout the 13-day period, usually from 9am-9pm or midnight so that the new people can drop in for questions or conversation. In addition, the R/O committee will publish "The Daily Confusion" to alert everyone to activities in the living groups and last-minute changes.

Associates Merge with ILP

MIT has merged the two programs through which it provides access to research, faculty and staff for nearly 280 leading companies around the world.

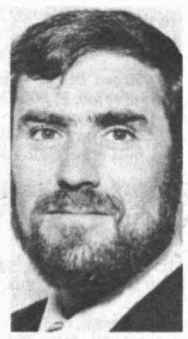
The merger of the MIT Associates Program and the Industrial Liaison Program, which became effective July 1, was announced by Dr. James D. Bruce, director of industrial liaison at MIT.

Cynthia C. Bloomquist, who has been director of the Associates Program since 1977, is now an assistant director of the Industrial Liaison Program, David R. Lampe and Thomas R. Moebus, who recently joined the Associates Program as assistant directors, have become industrial liaison officers in the Industrial Liaison Program.

"The merger is essentially only a title change," Ms Bloomquist said. "It reflects the culmination of a process begun a number of years ago which has resulted in the two programs offering the same services and publications and using the same sliding scale for fees, based on the member company's size and use of technology. This organizational change will have no affect on our relationships with member companies or with members of the faculty."

Mr. Lampe received the BS degree in mechanical engineering from

Mr. Lampe



Mr. Moebus

Virginia Polytechnic Institute, the SM degree in mechanical engineering from MIT and the MA degree in journalism from Stanford University. Before returning to MIT to take his industrial liaison post, he was a correspondent for Business Week in Los Angeles. Mr. Lampe also has written for Chemical Week and Engineering News-Record.

Mr. Moebus holds SB degrees in materials science and in industrial management from MIT and the MA degree in education/consultation from Clark University. A former metallurgist for Wyman-Gordon Co., he was director of the consultation, education and training unit of the Valley Adult Counselling Service in Linwood, Mass., before taking the post at MIT.

Soccer Team Has Ambition

Games with Division I rivals Harvard, Boston College, Boston University and Holy Cross, plus a contest with Division III national champion Babson, highlight the upcoming 1981 soccer schedule.

The Engineers, 4-9 last year, will open their season at home Wednesday, Sept. 16, against Harvard, then play at Babson Saturday, Sept. 19.

Coach Walter Alessi has nine lettermen back from last year's team including junior sweeper John Busa, a two-time Greater Boston League All-Star. He led the squad in scoring last year with five goals and two assists. "He's a quality performer," Coach Alessi said.

Others to watch are halfback John English, forward Steve Pomeroy, fullback Jim McLaughlin and goalie Bob Schaefer. Schaefer started the last eight games of 1980 and recorded the team's only shutout of the season, 2-0 over Holy Cross.

MIT again will compete in the highly regarded Greater Boston League with Harvard, BC, BU, Brandeis and Tufts. The Engineers were 1-3 (beating Tufts) in league play last year. Harvard joins the league on a full-time basis this season, while Brandeis and BU play each other for the first time since 1977.

In a nutshell, MIT needs better scoring—the squad scored only 19 goals last year—and defense in order to improve on last year's record.

"A tough schedule makes things more challenging," Coach Alessi said. "Realistically, a move toward .500 would be a step in the right direction."

Sports Medicine Post Filled

Paul Grace, head athletic trainer at North Adams State College the past four years, has been named to the new position of coordinator of sports medicine at MIT.

Mr. Grace

He will coordinate programs with the Medical Department regarding the care and prevention of athletic injuries. In addition, he will organize an injury data record system for varsity athletes and members of the MIT community and act as a liaison with other segments of the MIT community involved with sports medicine research.

A graduate of West Virginia University where he received both his bachelor's and master's degrees in physical education, Mr. Grace served as head trainer at WVU, Miami-Dade Community College in Florida, and St. Francis College in New York before joining the North Adams State staff in 1977.

Mr. Grace, 29, presently serves as the chairman of the Board of Certification for the National Athletic Trainers Association and is a research assistant for the Berkshire Sports Medicine Institute in Williamstown. He is a past president of the Eastern Athletic Trainers Association and a member of the American College of Sports Medicine, American Alliance of Health and Physical Education, and the Massachusetts Athletic Trainers Society.

A contributing author to a textbook now being published by the American Academy of Orthopedic Surgeons, Mr. Grace was an orthopedic clinic coordinator while at North Adams State.

Poker Strategy Probed in Book

Poker Players take notice. An MIT mathematics professor, Dr. Nesmith C. Ankeny, has written a book on the subject, *Poker Strategy—Winning with Game Theory* (Basic Books).

Christopher Lehmann-Haupt, who reviewed the book for The New York Times, describes it as a "witty and lucidly written treatise."

Professor Ankeny generally dismisses luck and psychology as important elements in poker, Mr. Lehmann-Haupt writes, preferring instead an "optimal strategy"—in Dr. Ankeny's words, "the one that brings the maximum guaranteeable profit over the long run when you are confronted with opponents whose responding strategies you cannot predict."

Rugby Today

MIT's Rugby Football Club gets a taste of international competition hosting the Olde Hirelings team from France at 5:30pm Wednesday, Aug. 26, on Briggs Field.

The Olde Hirelings team consists of players 35 years old and older. The squad is celebrating its centennial with a tour of the United States.

Cerino Elected To ECAC Post

MIT sports information director Ken Cerino recently was named first vice-president of the Eastern College Athletic Conference Sports Information Directors Association (ECAC-SIDA) for 1981-82 at the league's meeting in Philadelphia. He will be responsible for organizing panels for the annual workshop to be held next year on Cape Cod.

Other officers named were Jim Marchiony (Georgetown), president; Craig Smith (Lafayette), second vice-president, and Dick Lipe (Bentley), secretary-treasurer.

Mr. Cerino, 29, joined the MIT athletic staff in 1979 after working as a sports publicist at Iowa State University. A graduate of St. Bonaventure University, he is a member of the College Sports Information Directors of America (CoSIDA) and the United States Basketball Writers Association.

Toyota Chair Established In Materials Processing

(continued from page 1)

new school-wide interdisciplinary units within the School of Engineering: the Center for Materials Processing and the Laboratory for Manufacturing and Productivity.

The Toyota chair is not that company's first connection with MIT.

In 1976, Toyota made a grant of $500,000 to MIT to help support the Institute's Energy Laboratory. In 1979 the company also provided MIT with funds toward a Japan-U.S. Conference on Economic Problems at Maui, Hawaii.

In addition, a managing director of Toyota, Dr. Itaru Niimi, spent the spring term of 1980 at MIT as a visiting professor of materials engineering, in the Department of Materials Science and Engineering, working with MIT faculty in the Institute's Center for Materials Processing. Dr. Niimi has since become a founding professor at the newly-opened Toyota Technological Institute in Nagoya. Dr. Gray was a principal speaker at April ceremonies marking the opening of that Institute.

The Toyota gift brings MIT's endowed chairs to 117. Nearly half have been established—by individuals, foundations and corporations in the US, Europe and Asia—since 1974 when MIT began a special effort to increase its endowed chairs. The endowments are invested and income from them used to support individual professors who are appointed to the chairs.

"The increasing number of endowed chairs established in recent years is largely the result of a greater awareness on the part of donors of the special and lasting value of such chairs and the unique contribution they make to the intellectual life of the Institute and to the advancement of knowledge," President Gray said.

"The support and encouragement such donors have provided to a succession of distinguished holders have directly contributed to the strength of the MIT faculty and to the high esteem in which its members are held throughout the world."

Union Negotiations Status

(continued from page 1)

security guards at the Lincoln Laboratory.

Except in the case of the HRIEBU, which requires separate discussion, the prior Agreements with these Unions have been extended and negotiations on the terms and conditions of new Agreements have continued without interruption and in what we consider to be a constructive manner. Although some diffucult and important issues remain to be resolved with each Union, the initial differences in position have been greatly narrowed and we think there is good reason to expect that the negotiations can be brought to a mutually satisfactory conclusion in the near future.

Negotiations with the HRIEBU were broken off on July 23, when the Union's President, Mr. Domenic Bozzotto, walked out of a negotiations meeting and allowed the Agreement to expire. The employees have continued to work, however, and the wages and other conditions of the previous Agreement have been kept in force without benefit of a formal extension. Mr. Bozzotto was subsequently quoted at length in the July 27 issue of The Tech with regard to his dissatisfaction with the progress of the negotiations and the Union's intention to call for a strike on August 16 if agreement was not reached by that date. The strike did not occur but we have received unofficial information indicating that the strike date has been moved to September 8.

Difficulties with this Union arise primarily from a conflict between our view that the difficult scheduling and other problems involved in providing food services in an educational institution require a reasonable degree of flexibility in the assignment of work, as opposed to the Union's view that job duties would be narrowly defined and work assignments made along closely drawn jurisdictional lines. These differences are, no doubt, heightened by the fact that the Union has recently undergone a change of leadership and the new officals appear to be strongly oriented toward the work practices and requirements of hotels and commercial restaurants, which are quite different from those of educational institutions. However, it is not our opinion that our positions on this matter are irreconcilable or that our differences are so great as to warrant a discontinuance of the negotiations and a threat of a strike. We do believe that if negotiations are resumed, and the issues addressed with a spirit of compromise on both sides, some middle ground can be found to form a basis for resolution.

David Karp

Private memorial services were held for David Karp, 53, of Winchester, associate leader of the radar sensors group at Lincoln Laboratory. Mr. Karp died August 15 of injuries suffered in an automobile accident earlier that day.

A native of New York City, Mr. Karp received the BS degree in electrical engineering from the City College of New York in 1951. He had been associated with Lincoln Laboratory since 1955, and had led a number of research efforts in communications.

Most recently he was leading a research program developing the application of advanced weather radar surveillance in air traffic control. He was also engaged in a study of problems of the blind landing system used on aircraft carriers.

Mr. Karp is survived by his wife, Noelle Palliser Karp; four daughters, Caroline, Catherine, Jennifer and Veronica; a son, David, and a sister, Ruth Karp.

Alfred Lovgren

Alfred E. Lovgren, 74, of Woburn, a retired painter in Physical Plant, died Friday, Aug. 21. Mr. Lovgren worked at MIT from 1960 until his retirement in 1972.

He is survived by two daughters, Barbara Johnson of Woburn and Nancy Lilly of Rowley; a son Alfred E. Lovgren of Arlington, and six grandchildren.

CLASSIFIED ADS X3-3270

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

For Sale

Westinghse hvy duty elec dryer 220V, reg cycle only, brown, $35. Call X8-3124, Draper.

Rugs, wh wool woven 9x12, $60; rust broadloom 9x10, $40; man's dresser, $40. Call 354-5312 after 6pm.

VW tires, as new, $30 ea or 5 for $125. Call 661-9046.

Pr "Fabiano Mountain" hiking bts, sz 7W, $50; Chouinard 55cm carbon-glss shaft North-wall hammer & model zero ice-ax, $60 ea; 25 lb weightlifting dumbbell, $10; 2 L Lowe access. pockets for Lowe packs, $15 ea. Call X3-2115 or 864-7087.

Two Uniroyal radials, FR78-15, w/rims, low mi, $110 or best. Call X3-5992 or 926-0050 eves.

Kenmore wash mach, apt sz, $75. Phil, X3-3897.

Convert sofa bed; 12x15 rug, like new, best offer. Call 876-3983 eves.

2 tickets for "King & I," orchestra, 15th row, center, Fri, Sept 18. Jean, X3-3727.

2 IBM model 'C' typewriters, just overhauled, perfect working cond, $350 ea or $650 for both. Call 787-5248.

Broyhill lg sofa, matching loveseat, coffee & end tbl, gd velvet chr, credenza, chrome etagere Singer sewing mach w/ cabinet & chr & attach, negot. Call X3-2882 or 322-5175.

Bkcase, homemade, varnished oak color, ez to transport & assemble, 92"w x 45"h x 11"d. Hanan, X3-5306 or 628-0033.

Sears' canary yellow twin spread w/matching curtains, great for dorm, $25. Kathy, X3-5763.

Furniture: dble BR set, walnut dining tbl w/6 chrs, bureaus, tbls, etc. Call X3-7095.

GE refrig, oldie but coldie, $60. John, 646-6246.

Counter height refrig w/formica top, $100. Call 227-2578.

Single bed w/wooden frame, $75. Call X3-6513 days or 354-6811 eves.

Turntbl & 2 Pioneer spkrs, $130 or best offer. Mark, X3-7580.

Sofa, 84" long, aqua tweed, exc cond, $150. Call 729-0288.

Woman's 14K gold Movado Swiss watch, square shape w/ alligator strap, worn 6 mos, $750 retail, asking $250 or best offer. Call 864-3648 or X3-6342.

Mod coffee tbl glass top, $40; mod sm 30"x30", DR glass top & chrome, $20; dbl bed (twin), $65., items are 10 mo old. Nader, X3-2108 days or 566-1425 eves.

6 new oriental carpets, 4'x6', & 5'x7', Bukara & Farahan designs, made in India, vy reasonable, $300-$600 ea. Call 776-8154 or (collect) 203-569-3005.

Air cond, $85; dining tbl & 6 chrs, $45; sofa, $30; desk & chr, $35, other hsehold items. Call 494-9020.

Compact stereo sys, AM/FM stereo w/8 track play & record & turntbl, $75. Chuck, X3-3074.

Stove, gas on gas, wht Magee, 36", vy cln, gd cond, $150. John, X8-4118 Draper or 864-7725 eves.

2 air cond, box fan, space htr, dble futon w/frame, sngl pltfrm bed, lmps, chrs, maple tbl, b&w TVs, stm iron & board, bkcases, dishes, pillows, quilts, etc, all cheap, lots more free. Karen, 227-9272 or Tanay, X3-2127 days.

Air cond, gd working order, $30; 25" Zenith color TV, nds rabbit ears, $60. Ellie, X3-4765.

Vitamix juicer, mixer, blender etc; silver tray, crystal goblets, etc. Call X7076 Lincoln or 486-8238.

Couch, mod, chrome & lthr look, $200 or best; sewing mach, 15 stitches & all accesories, $100 firm. Call 864-2346.

Sears Kenmore microwave oven, $135. Dave, X3-8410 or 923-4110.

Twin sz mattress & box spring w/metal frame, only 9 mo use, like new, $40. Call 484-8602 eves.

Carpets, 12'x12', $25 & 4'x7', $5; old, noisy window fan, $15; counter top oven, $15; oval rugs, approx 4' longest direction, $3 ea; clay pots, $1 ea. Lynn, X3-6648.

English pram, $45; crib $35; sngl bed, $25; 6' sofa, grn & gld, $100; matchg chr, $25; gold uphol chr, $50; mod couch, $45; coffee tbl, $50; bureau w/mirror, $150; teak corner cabnt, $95; big walnut desk, sm metal dsk. Bruce, X3-5588.

Twin bd w/hdboard, $100; lge desk w/chr, $100; sm desk, $30; queen sz BR set, $800; lge mahogany bkcse, $200. Call 876-9389, 7-9pm.

Woman's 1 spd, 26" Columbia bike, functionally sound, average appearance, $15. Len X5484, Lincoln or 263-1694 after 6pm.

Typewriter, Coronamatic w/cartridge, auto return, $100. Herb X8-1631, Draper.

Pioneer car stereo, underdash KP 500 model, FM cassette, FF, REV, mute, loudness, SEP base & treb, exc cond, $100. Kathy, X3-5369.

12'x14' rust colored area carpet, acrylic, exc cond, $75. Cheryl, 738-9366 after 7pm or X3-3091.

Two end tbls whitewd; 2 tangerine LR chrs, trpl dresser & night stands, Danish mod, all wd, 2 board & bowls, maple colonial hi-fi radio combination. Maryann, X3-5205 or 233-0162.

Full sz bx sprg & mattress, 7 yrs warranty, exc quality & cond, $175., comparative value, $350. Dheera, X3-4906 or 864-2771 eves.

Woman's bike, 24", gd cond, $75. Hartmut, X3-6295.

Woman's sz 10 frml dress, flr length, off-wht bckgrnd w/lilacs, can be worn off shoulder, chiffon-type material, soft, flow effect, ideal for mother of bride or groom, $50 (orig $80). Susie, X3-2260.

Steel-bltd radial tires, 2 w/1 rim, P185/75-R13, nrly new, $45 ea. Jay, X3-8531 or 494-8377.

Sears' ht screen, fireplace ht exchanger, fits fireplace openings 33 1/8"-39", $150. Everett, X5411, Lincoln or 667-1162.

Stereo record cabinet, $30; barbells, #20; chr, $10; Salton yogurt maker, $6; 3-spd Columbia bike, $25. Call 876-5411.

Custom blt bed w/Sealy Posturepedic mattress, $300 (worth $500); butcher block coffee tbl, $125 ($250 new); cross-country skis, bindings, poles, $50 (used once); 3-spd bike, $25. Call 876-5411.

Solid maple 6-drawer dresser, 46x20x33, $40; wd bkcase, 33x37x12, $15. Sol, X3-2469.

3-pc BR set, long dresser w/mirror, 6 drawer chest, hdbrd, dbl mattress, box sprg & frame, exc. cond, $300. Marianne, 868-4914 after 2pm.

Pool tbl, 4x8, slate top, exc cond w/lt & billiard ball clock, $350; Arien's lawn vac attach, fits most pwr units, $100; Magnavox mahog console AM/FM stereo & rec player $75; 5 pc mahog BR set, gd cond, $500. Call 862-5904.

GE refrig, 17.4 cu ft, used 8 mos, almond, energy saver, frost free, adj shelves, moving to sm apt, $200 or best; Hoover flr scrubbler & polisher, used 4 x's, $60 or best offer. Thelma, 1-532-0067.

Nova owners: 6 new spark plugs R46T, 2 ea; tune up kits, fan belts, 1 ea; oil, air, gas filters, will fit 6 cyl 72-74, maybe other yrs, all for $6. Harry, X3-4819 or X3-5837.

Love seat, couch, sm refrig, DR tbl w/4 chrs, 4 ez chrs, lge dresser & lamp. Laura 247-1615.

Moving sale: hsehold gds, port dshwshr, custom-blt K counter work island, bamboo blinds, studded snows B70-13. Jim X3-8148 or 536-5198.

Guitar amp, Peavey Musician 210 watt head w/reverb, tremelo, G band eq, effects, exc cond, $175. Don, 623-8585 eves.

Full sz bed w/ cherry hdbrd, match night tbls, $100. Call 492-3620.

Refrig, $50; 9x12 carpet, $10; Olsen stereo, $20; pr 6"x9" car stereo spkr, $10, old easy chr, $5. Art, X3-3695 or X5-9882, Dorm.

Leaving sale: Admiral side by side refrig/frze, $150; Hotpt refrig, $40; DR tbl, $40; chrs, $8 ea; sofa, $25; rocker, $20; 2 twin matt, $15 ea, misc dishes & K items. Call X3-5586 or 646-0224.

Pioneer underdash car stereo radio/cassette player (nds reversing belts), mount & spkrs, $65 may be sold separately; FP screen & andirons, $25; metal garment rack, $5; crockpot, $10; wanted hubcaps for Datsun 2802. Linda, X3-1782.

Aquarium, 55 gal. all glass; Aqua King filter; dbl fluorescent hood; diatomaceous earth pwr filter, best offer. Rosemary, X3-5002.

Tennis racquet, Chris Everett autograph, 4 ½ wgt, nylon string, slightly used, asking $55. Linda, X3-5188.

3 bikes, 1 Gitane, fr, man's 10-spd, $80; 1 Raleigh, man's 3-spd, $40; 1 Raleigh woman's 3-spd, $40, all exc cond. Emily, 776-1954 after 6pm.

Garage sale: books, clothing, hsehold items, Sun, Aug 30, 10am-4pm. Rain date: Sun. Sept 6, 81 Stanton Rd, Brookline. Call X697, Lincoln.

Zenith color TV, $110; 2 fancy big chrs w/ red velvet, $50 ea; baby items; '68 Plymouth Fury II, vy gd cond, $350. Call X3-6726 or 566-1593.

Kayak, lg vol. fiberglass, 1 man 13' 2", 35 lbs. $100. Call 237-1350.

Dresser, pillows, plants, beds, standing lamp, chest, foam bed, percolator (10 cups), roaster oven, sleds, bike, twin mattress, child's bed frame, Atari game w/ 3 cartridges, 19" color TV. Call 864-7527.

Yard sale w/ baby furn & clothes, 75 Thorndike St, Arlington, Sat, Aug 29. Call X3-3018.

Minolta XD-11 camera outfit, new w/ many lenses, tripod, pistol grip case etc, pd over $1,000, all in boxes, must be seen. Best offer. Steve, 593-3198.

Man's 10-spd Nishiki bike, 19" frame, hardly used $175; bike front whl, 26", quick release, best offer. Tracy, X3-3027.

Moving, must sell: 2 single beds, $30 ea, K cabinet, $30; bathrm cabinet, $45; oak desk, $125; oak DR sidebrd, $200; armchr, $15; child's changing tbl, $10; 3-spd woman's bike, $25; 16" b&w TV, $60; a/c, notice brd, $10. Call 731-5347.

TRs Video monitor in new cond, $100; Sola harmonic-neutralized 250 VA voltage regulator, $60; Mechanics Delight '66 VW bus, $500. Martha, X3-1564 (Rm 6-128).

Radial arm saw, $200; drafting set, $100; port-a-crib, $20; infant swing, $8; sm coffee tbl & 2 end tbls, toys, books, baby clothes. Christine, X3-6784.

Lg dresser, 5 drawers, almost new, dark veneer, vy attractive, $300 or best offer. Alan, X3-3408 or 523-5357.

Port wshr & dryer, $300; 12x12 gray carpet, $100; 9x12 rust carpet, $90; Birdseye maple bureau, $75; 3 pc walnut/wht formica dresser set, $70; king sz waterbed, $40. Jeff, X7965 Lincoln or 263-1233 after 6pm.

Everything must go: 2 classic cars, Damler SP250, Alfa-Romeo Giula Spyder (Project car); 350 Harley "Parts" motorcycle, elect organ, bass, practice amp, new trumpet, other great furniture. Paul, 489-1958.

Vehicles

'64 Ford Falcon, 65K, some rust, gd int, tires, new exh & auto, $450 or best offer. Rick X7012, Lincoln or 667-2807 eves.

'68 Rover, 2000 TC, exc cond, no rust, 65K, $1,300. Call 623-9354.

'70 Chrysler New Yorker, gd cond, auto, best offer. Moezeddin, X3-6495 lv msg or 277-7997 eves.

'70 BMW 2002, orig from Calif, AM/FM cassette, 4-spd, 26 mpg av, vy gd cond throughout, $2700. Call X3-2048 or 1-934-5226.

'70 Buick Skylark, 6 cyl, engine exc, elec hitch, $600 or best offer. Bill, X3-2776 or 245-6139.

'71 Citroen DS21, vy gd cond, hydraulic shift, had valve job, $1,800. Dan O., X3-2042, 232-4696.

'71 LTD wgn, runs well but badly rusted rear end, best offer. Call X3-7282.

'71 VW Super Beetle, orig owner, gd cond inside & out, reliable, runs great, $800. Call X3-5502 or 944-4933 after 6pm.

'72 Vega wgn, auto, 59K, runs well, some rust, $450 or best offer. Bob, 492-8982 or X3-7578.

'72 Maverick, 55K, gd engine, rust, new exh sys & front end, $475. Bill, X3-4986 or 536-3258.

'72 Plymouth Duster, 2-dr, 6 cyl, blk vinyl top, a/c, exc running cond, body rusted & nds work, passes Mass. Safety Inspection, $450 or best offer. Jeff, X3-6404 or 547-9100.

'73 Chevy Impala, auto, 100K, p/s, p/b, rear defrost, new shock & battery, nwly reblt carburetor, some dents & rust, but gd shape & reliable, only, $650. Call X3-2223 or 494-1401.

'74 Renault 12 TL sta wgn, nw exh sys, radiator, water pump & voltage regulator, reblt starter & alternator, frnt whl drve, a/c, reg gas, $1,400. Call 667-4522.

'74 Pinto Squire station wgn, auto, 83K, radial tires, new transm, brks, & water pump, 2 snows on rims, reg tires, rear defog, exc cond, $1,000. Dave, X3-2546.

'74 Fiat 124, low mi, AM/FM, 27 mpg, gd mech cond but rusty, gd commuter car. Ellen, X3-8256; X3-2639, or Martin 876-5076 eves.

'75 Dodge Dart 4-dr, auto, 6 cyl, 2 gd snows, dependable, gd mech cond, $1,600 or best. Call X7294, Lincoln or 263-2116 eves.

'75 Pontiac Grand Safari stn wgn, 80K, pwr everything, a/c, 4-way stereo & tape, fabric seats, many extras, beaut inter, vy gd mech cond, some rust, great family car, seats 8, $1,400 or best offer. Call 492-4550.

'75 Dart, 4-dr, auto, 70K, AM/FM, gd mech cond, $1,700. John X8-3955, Draper.

'75 Honda CB400F cycle, 6.8K w/ 3 helmets, $800. Carole, X3-6051.

'76 LTD station wgn, p/s, p/b, p/w, stereo radio, auto, p/l, new transm, $2,300 or best offer. Call 666-3683 or X8-1554, Draper.

'76 Pontiac Grand Prix SJ, 60K, 2-dr, V-8 auto, p/s, p/b, a/c, AM/FM stereo cassette, p/w, rw defog, radial tuned susp, cruise control, exc interior & exterior, exc engine, more options, must see to appreciate. $3,000 or best offer. Karen, X3-4291 after Aug 30.

'77 Saab, 99GL, 4-dr, 4-spd, 78K, reg gas, gd cond, nds some work, $4,200. Call X5306, Lincoln.

'78-'79 Honda Hawk 500, 5-spd, 4400 mi, mint cond, com-star wheels, luggage rack, sissy bar, roll bars, $1200 or best offer. Call 231-0950 after 4pm.

'78 Honda 750, 4.2K, exc cond, luggage rack, crash bar, helmets, lock, $1,750. Jeff, X3-1539.

'79 Honda Civic, 32K, new radials, new exh sys, rust proof, tune up, exc cond, $3,900 or best. Call 354-9401

'80 Suzuki cycle GS550E, 1K, mint cond, in warranty, windshield, crash bars, rack, quartz headlight, $1,650 or best. Harold X3-3512 or 776-9077.

'80 Datsun 200 SX, cruise control, inter wiper, p/m, sunroof, AM/FM stereo radio, p/a, $6,800. Call 453-2842.

'81 Yamaha cycle XJ650H, 5 mo old, 6100 mi, shaft drive, 4 cyl, elec start, exc cond, $2,600. Bob X8466, Lincoln.

14' Corson fiberglass outboard boat, 40 hp, Evenrude motor, cmpltly equip, trailer Holsclaw, $1,000. Mike X3-6080.

Catalina 30' tall rig sloop, slps 7, 150, 110 & main, oven, H&C pressure water w/shower, full elec & more. Call X3-7129 or 275-9397.

Sailboat, Catalina 27', 9.9HP O/b, whl, VHF, AM/FM, 8 head sails, 2 mains, 2 anchors, etc, $16,000. Call 436-1797 eves.

Housing

Bedford, 2 BR duplex ranch, new decor, w/w, yard & pking, avail 9/1/81, no pets, approx 2 mi from Lincoln Lab, $425/mo + util. Call 862-2684.

Brookline, $95,000 will buy spacious & conven, 2 BR, 2 B, condo in impeccable hi-rise, overlooking delightful gardens & water fountain. Call X3-2818 or 277-6667 before 9pm.

Cambridge, for sale, unique 1 BR condo nr Harvard, Dana Hill, leaded glass windows on 3 sides, hardwd flrs, working fp, top flr of secure 4-story brick bldg, $57,900. Call 492-4759 after 6pm or wkends. Possible owner financing.

Cambridge, Porter Sq, 1 BR in 4 BR apt, nr bus rtes, supermarket, 24 hr store, ht & hot water incl, $190/mo. Call 492-8302, 6pm - midnight or X3-3296.

Chatham, Cape Cod, lovely hse, big LR, fp, 2 BR, priv dock area, tennis court, swimming pool, $225/wk after Labor Day; also avail for winter rental. Call 366-2788.

Chelsea, London, 1 BR apt avail Sept 1-25, fully furn, quiet, conv to transp, 100 lbs/wk, min. 2 wks. Devvie, X3-4003.

Jerusalem, lux furn villa for rent in exclusive loc, avail immed for year. Call X3-2004 or 244-8377.

Lexington, mod, 4 BR hse, furn, 2 B, LR & DR, wooded lot w/access to nrby priv pool & tennis courts, $900/mo + security, avail for 1 yr Sept 1, 1981. Call 628-2385.

White Mts, NH, nr 4 ski areas, mod duplex chalet, ea unit has 3 BR, 1½ baths, w/w, fp, deck, compltly furn on 1.6 acres, $72,500. Dick, X7124, Lincoln.

Winchester, exquisite split ent, 11 rms incl 4 BR, 2½ B, lovely entertainment rm, brick fp, ect, custom blt by owner w/many added attractions, $154,900. You must see to believe. Call 729-3293.

Animals

Registered 4 yr old filly, 14.3 hands, chestnut, blk tail & mane, 4 whte socks, neg Coggin's test, lot of potential for experienced rider, rides Western & bareback, exc disposition, gd home a must, $2,500. Call 692-2839 (Westford).

5 mo old, all blk M, full pedigree, cocker spaniel pup, papers for AKC registration, gd w/children, vy affectionate, nds gd home, $200 or best offer. Karen, X308, Lincoln.

Lost and Found

Lost: Korean passport around Westgate area. Kim, X3-4287.

Wanted

Seeking 1 BR apt (or studio) in Camb, prefer Harv Sq. area, from Sept. 1-Dec. 1. Call X3-6862 or 491-5424.

Share a ride to New York City on Labor Day wkend, share expenses & possibly driving. Karl, X106, Lincoln.

Cobblestones. Tony, X3-5717.

Small office refrig, approx 6 cu. feet. Lillian, X3-4861.

Used bicycle in gd cond & desk (not too big). Erhard, X3-3150.

Moderate sz rm w/cooking & refrig for resp, clean, quiet 30+ woman in job transition period, nr Harv & MIT, w/in 10 min of T, in safe, clean establishment, 1-3mos, $45/wk max. Call X3-2653 1-5pm, 497-0580 other times.

BU Celebrity Series subscriber who can obtain tickets for me for one performance. Marilyn, X5724, Lincoln.

Pianist & flutist seek string player to join amateur trio. Paul, X3-4827 days or 782-4449 eves.

Crib & other used baby equip. Debbie, X3-7094 or 232-5272 eves.

Temp (9 mo) home for Labrador/German Shepherd puppy, wl pay medical, good exp. Susan, 876-5570 or DL5-6484 eves.

Roommates

One F is looking for 1 F rmmte for own rm in Brighton, $160. ht incl, 1 min to T, K & B, share util. Call 783-4346.

Camb, avail immed, 1 BR of 2 BR apt nr Inman Sq, part furn, F or M, 30+ pref, $180 mo, plus util. Ron, X3-1763, days, or 491-0547 eves.

F to shr lovely, spac Camb apt off Brattle, 2½ BR, outdoor patio, yd, wdstove, etc, avail Sept 1, $277/mo w/out util, pref prof, companionable, independent, vegetarian, apprec alternative life styles & status quo. Call 876-7618 or 1-369-6058 thru 29th only.

Beaut Belmont 2 BR, LR w/fp, DR, study, K w/pantry, porch, basement, yd, garage, trolley to Harv Sq, in 2 fam hse to be shared w/27 yr old M, serious but fun loving MIT PhD, asst prof at BU, $310 exc util. Randy X3-6668 or 776-7059 eves.

Brookline visit scholar seeks rmmates for newly renov 5-BR apt, approx $250/mo incl ht, nr T, shopping. Stan, X3-7738 or 277-2535.

One neat studious indiv to shr 2 BR apt in Brighton, clean, furn, quiet residential neighborhd, mod K, bath, a/c, off st pkng, nr bus, $225/mo w/out ht, avail 9/1/81. Charlie, 254-1429 or (201) 247-0229.

Carpool

Rider wanted to shr cost of renting U-Haul van to Chicago, Sept 16. Etahn, X3-8092 or 354-3521.

Miscellaneous

Need help with the figures in your thesis? Experienced draftsman, reasonable rates. Peter, 265-0595.

French, Russian lessons from professional. Call 593-1705.

Experienced piano teacher will teach you how to play the piano, reasonable rates, adults & children. Call 232-6219.

Free adorable kittens. Call 469-0079.

Will do any typing except technical. Pat, X8-2811, Draper.

POSITIONS AVAILABLE

It is Institute policy not to discriminate against individuals on the basis of race, color, sex, sexual orientation, religion, handicap, age, or national or ethnic origin in the administration of its programs and activities.

This list includes all nonacademic 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 (10-215, 10-211) and in the Personnel Office (E19-239).

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

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.

Pat Williams	**3-1594**
Susan Lester	**3-1593**
Appointments: Ann Canavan	**3-4270**
Virginia Bishop	**3-1591**
Richard Cerrato	**3-4266**
Ken Hewitt	**3-4267**
Appointments: Marsha Gens	**3-4268**
Sally Hansen	**3-4275**
Vera Ballard	**3-4277**
Kathleen Rick	**3-4269**
Appointments: Etsuko Kumai	**3-4274**
Dick Higham	**3-4278**
Anne Whitman	**3-6510**
Ann Perkins	**3-6511**
Appointments: Tertia Perkins	**3-6513**

Administrative and Academic Staff

Purchasing Agent, Purchasing and Stores, to supervise a buying team of 2 administrative assistants and one purchase order typist/expeditor, in purchasing materials required by the Office of Laboratory Supplies for resale to Institute departments, laboratories and projects. Responsibilities include soliciting and negotiating long-term and other cost effective purchase arrangements to the fullest extent practicable to ensure the acquisition of goods at lowest possible cost. Will also develop new sources able to offer favorable pricing arrangements, including minority and women-owned business concerns. An accounting or business degree or equivalent combination of education and experience is required, as well as considerable experience in material and inventory control, material requirements planning, and purchasing. A157

Applications Programmer, Office of Facilities Management Systems, to participate in ongoing maintenance and enhancement of INSITE 3, a facilities data base system written in PL/I and running on IBM's OS/VS1 operating system. Will offer system support to the consortium of users of INSITE 3; participate in design and implementation of next generation of system. Requires a minimum of an Associate's degree or equivalent combination of education and experience, plus at least 2 years programming experience. Familiarity with PL/1 and on-line editing systems, as well as with IBM's CMS and OS/VS1 and JCL highly desirable. A156

Administrator, Medical, to manage operations and the administrative aspects of clinical programs in the Department's Psychiatric and Social Work Services. Will supervise support staff and maintenance of patient record system; assist clinical staff in administrative management of patient care. Requires a minimum of 3 years supervisory and office management experience, as well as the ability to deal effectively with the complexities of coordinating a variety of administrative activities. A155

Administrative Assistant (part-time), Nuclear Engineering, to manage, on behalf of the Administrative Officer, the financial and business aspects of all sponsored programs. Will prepare research proposal budgets, proposal review; monitor sponsored program budgets; perform monthly analysis and projections of sponsored accounts with special attention to restricted budget categories; prepare sponsored letters for prior approval expenditures. Other administrative duties include preparation of staff payroll, telecommunications analysis, and equipment inventory. Requires a minimum of an Associate's degree or the equivalent combination of education and experience. C047

Staff Accountant, Comptroller's Accounting Office to perform internal cost audits on research programs; prepare monthly invoices and fiscal reports; assist in cash flow and forecast functions. A Bachelor's degree in accounting or equivalent combination of formal education and experience is necessary. Some experience in a university accounting setting is desirable. A153

Staff Accountant, Comptroller's Accounting Office to perform internal cost audits of research contracts and grants; coordinate accounting, audit and cash flow functions with Office of Sponsored Programs and other Institute departments. A Bachelor's degree in accounting or equivalent combination of formal education and experience is required as is excellent communication skills. Some experience in university accounting is desirable. A152

Programmer Analyst, IPSO, to do general consulting in Academic and Research Computing Services. Will learn hardware and software of IBM system/370, VM system, and Honeywell Level 68/DPS Multics; will assist customers (MIT research staff, graduate students, faculty) in choosing appropriate systems; will assist customers in isolating and solving problems in using IPS systems; will report problems to management and technical personnel, write articles and documentation. Will teach short courses. Requires Bachelor's degree in Math, Science or Engineering, with course work in computing, or equivalent experience. Good communication skills essential. Experience with software on large-scale time-sharing systems, especially FORTRAN on IBM/370 or Honeywell Multics desirable. A151

Programmer Analyst, IPSO, to serve as an extension to IPS academic and research computing services at the East Campus Computing Facility, for both IBM 370/168 and the Honeywell (Multics) systems. Will provide technical service for the Sloan School PRIME 400 computer and computing assistance to the Sloan School; will provide consultation for users of the PRIME 400, write and maintain user documentation, troubleshoot on PRIME hardware and software, PRIME program maintenance and implementation; will modify and maintain administrative systems for the PRIME. Requires Bachelor's degree or equivalent experience, minimum 1 to 3 years experience in writing and testing programs on large-scale, time-sharing systems, excellent communication skills. Experience with IBM, Honeywell or PRIME systems and application libraries or packages desirable. A149

Industrial Liaison Officer, 2 positions, Industrial Liaison Program to provide interface between MIT and assigned member firms of Industrial Liaison Program; responsible for effective liaison activities among MIT faculty, staff and representatives of member companies. Will plan and perform servicing of companies, including visits, group presentations, meetings with company officials; assist member companies with technical questions by arranging appropriate faculty contact or by providing relevant information; recruit new member companies. Candidate must have intellectual depth, poise, willingness to travel extensively. Requires a Bachelor's degree plus a Master's, preferably one of which is from MIT. In addition, 1 position prefers one degree in Electrical Engineering & Computer Science or Mechanical Engr., other position prefers one degree in Chemical Engineering. A minimum of 2 years' industrial experience, ability to communicate with technical staff and corporate executives as well as MIT faculty and staff, and in-depth knowledge of the Institute also necessary. A148; A150

Administrative Officer, Center for Advanced Engineering Studies. Will report to the Director of Continuing Education Center and will maintain responsibility for administrative, personnel and fiscal matters pertaining to the Center; develop and prepare annual budget; coordinate and assist with preparation of research grants; act as liaison between Center and other Institute offices; review and analyze revenues and expenses; interview and hire personnel; assign space and coordinate space changes; oversee purchase of major equipment; recommend procedures relating to program planning. A Bachelor's degree, preferably in Business Administration or the equivalent combination of education and experience required as is previous administrative experience. MIT experience helpful. C046

Postdoctoral Associate, Nutrition and Food Science, to work in bacterial genetics, improving and constructing strains for overproduction of amino acids. Experience in recombinant DNA technology and cloning essential. C043

Librarian/Documents Coordinator, Center for Policy Alternatives: responsible for small research library containing 5500 books, 100 periodicals, and original research reports; will acquire, organize, maintain and distribute materials; perform computerized literature searches; maintain on-line data base management system; oversee the sale and inventory of research reports. Candidate must have Master's in Library Science, experience with original LC cataloging, familiarity and interest in computer systems, ability to work independently. C042

Business Services Officer, Libraries, to prepare all financial documentation for the Libraries' proposed and authorized budgets, under the direction of the Administrative Officer. Will monitor expenditures against approved spending plans; develop and operate computerized financial control systems for budget and accounting functions; negotiate with vendors and Purchasing Office; issue and control purchase orders; arrange required services from Physical Plant, Telecommunications Office and other Institute Depts.; assist in development of policies in assigned areas; identify operational problems and recommend solutions; supervise staff in invoice processing, expenditure reports and other accounting activities. Requires Bachelor's degree and 3 years' directly related experience, though additional experience may be substituted for a portion of the educational requirement. Good oral and written communication skills essential. Practical experience with data base management systems and knowledge of the Institute desirable. C045

Assistant Director for Public Services, Libraries, to direct and supervise the operations and administration of the divisional, branch and reading room units of the library system, as well as other public service activities both internal and external. Will be a member of Libraries' Steering Committee; will share responsibility with other committee members for overall administration of library system, policy determination and implementation, salary review and promotions. Will report to the Director and Associate Director. Requires MLS from an accredited library school, at least 8 years of professional experience in positions of ascending responsibility in academic/research libraries, including 3 years in administration of public services. Extensive experience with sophisticated systems, including on-line data base searching and automated circulation systems also essential. Knowledge of and/or experience in collection development in academic/research libraries required. Background in science and technology desirable. C044

Sponsored Research Staff

Engineer, Ocean Engineering, to assume major responsibility for field trial of large scale model of subsurface oil collector for use over subsea well blowouts. Will work with faculty member on design of experiments, design of components, development of test plans, conducting tests, analyzing results and preparing reports. Will handle acquisition of needed equipment, including what must be manufactured from the engineer's own plans. Will be responsible for delivery of equipment and personnel to test site, as well as for managing, with aid of two assistants, liaison with regulatory authorities governing test sites. Will arrange all necessary subcontracted services. Applicants must be familiar with chemical concentration measuring equipment such as spectrophotometers and instrumentation tape recorders; and with experiments requiring diver-installed equipment and attachment of such equipment to small vessels. Applicants with backgrounds in Civil, Mechanical or Ocean Engineering, must have SM with some experience, or SB with considerable experience in practical endeavors. R581

Technical Assistant, Biology, to perform experiments and related duties in protein chemistry. Will do Edman degradation, column chromatography, high performance liquid chromatography, distillation, recrystallization, protein and peptide purification. Requires BS in chemistry or biochemistry, as well as familiarity with a range of protein chemistry equipment, including: Beckman Sequencer, Waters HPLC, and Hewlett-Packard GLC essential. R577

Magnetic Separation Engineer, National Magnet Laboratory, to carry out pilot-plant test program in magnetic separation, including magnetite recovery from coal streams. Will supervise tests, analyze data, supervise laboratory analysis, and write reports; participate in fundamental magnetic separation research. Requires Master's degree in applied physics or engineering, plus experience in research and plant operation, mineral beneficiation and analysis, magnetic separation techniques and chemical analysis. R576

Senior Magnet Design Engineer, National Magnet Laboratory, to supervise projects in High Field Magnet Division. Will be responsible for all aspects of high field magnet development projects, including high field pulsed magnets and superconducting magnets for nuclear magnetic resonance and general use. Will initiate proposals for new magnet development and applications for high field magnets. Requires BS in applied physics or engineering, as well as 10 years experience in the design, development and manufacture of superconducting, water-cooled and pulsed magnets with fields of 15 tesla or 100 megajoules stored energy. R575

Technical Assistant (temporary—6 mos.), Nutrition and Food Science, to perform HPLC analysis of body fluids, tissues and foods for Vitamin A and E isomers of carotenoids. Duties also include Spectrophotometer analysis of total carotenoids, Radial immunodiffusion assay of serum retinol binding protein and prealbumin. Requires BS in Biology and the ability to work independently. HPLC experience preferred. R571

Technical Assistant, Biology, assist in the area of molecular genetics of yeast; work involves microbiological techniques including media making, growth and transformation of both *E. coli* and yeast, and enzymatic assays in both organisms. Work also involves recombinant DNA techniques such as DNA preparation, restriction enzyme analysis of plasmid DNA, plasmid constructions, labeling DNA with radioisotopes, and DNA sequencing and blotting (both Northern and Southern). Requires a BS or MS in microbiology or related field and experience using the following equipment: spectrophotometers, ultracentrifuges, and gel electrophoresis apparati. R568

Research Scientist, Experimental, Plasma Fusion Center to perform diagnosis of high-temperature plasmas produced in Alcator tokamaks using techniques such as those based on electron cyclotron emission and Thomson scattering. While use will be made of existing systems, candidate will be expected to design, supervise construction of and use upgraded systems with improved spatial and time resolution; participate in interpretation of results in light of plasma confinement and transport. While documentation of plasma paramters, such as electron temperature and density profiles is a major component of the job, candidate will be expected to develop novel experiments and measurements in this general area. A PhD in experimental plasma physics with experience in methods of diagnosis of high temperature plasmas required. Familiarity with use of lasers, optics and IR techniques desirable. R566; R567

Sponsored Research Staff, Physics, to do research on gravity antenna projects. Requires background in same plus physics, and experience in electronics design, testing and construction, with a special emphasis on analog and digital circuitry used in electropical systems. Experience in troubleshooting electronic systems essential. R565

Research Scientist, Center for Space Research, to do theoretical and interpretive studies of wave particle interactions in the terrestial magnetosphere and ionosphere. Requires a PhD in physics or related field, a strong mathematics background, and 2 years experience in active research on the kinetic theory of plasma, particularly in collective phenomena of nonlinear plasma waves and instabilities. R563

Technical Assistant, Nuclear Engineering, to assist in animal tumor therapy research and mixed-field radiation dosimetry studies. Tasks include animal handling (assisting in growth-/health monitoring, CT head scanning procedures); preparation of animal tisuue samples for both whole body and high resolution neutron-induced autoradiographic studies, and experimental phantom dosimetry studies to determine mixed-field components for therapy using techniques such as gold foil activation and thermoluminescent dosimetry. Studies involve facilities at several institutions: MIT Nuclear Reactor, the MIT DCM, and the Brigham and Women's Hospital. BA in biology plus experimental and animal handling experience required. Present funding through 6/30/82. R562

Technical Assistant, in Nutrition and Food Science to assist in studies which involve the measurement of alternatives of pulmonary function in guinea pigs by inhalation of air pollutants. Emphatic animal handling essential. An MS or BA in Life Science or Toxicology and several years of research experience is required. Toxicology or physiology background desirable. R561

Technical Assistant, Biology, to perform under direction, technical work of a specialized nature requiring a background in tissue culture, cell biology and biochemistry. Requires BS in biology or related field as well as experience in handling tissue cells, media preparation, and carrying out routine biochemical procedures used in cell culture work. A basic knowledge of light microscopy, the use of isotopes, PAGE, and ultracentrifugation procedures is desirable. R559

Research Scientist, Artificial Intelligence Laboratory, to design mechanical arms and hands featuring dexterity and speed, coupled with force and touch sensors; these devices will perform tasks of practical import, such as locating, identifying, retrieving and installing parts. Position involves work on new manipulator control ideas such as the recursive formulation of Paul or Hollerbach; will deal with high-level programming languages, problem solvers, and spatial-reasoning packages. Requires an advanced degree in Artificial Intelligence or a field closely related to Robotics, or a combination of related education and high-level research. Candidates should be specialists in high-level programming languages, with a thorough understanding of LISP. R558

Research Specialist, Artificial Intelligence Laboratory: to extend and reimplement existing experimental programming tool into a well-engineered prototype on the MIT LISP Machine. Will work under the direction of two research scientists and one associate professor in the Programmer's Apprentice Group. Requires BS in Computer Science or equivalent, with a strong background in Artificial Intelligence and extensive experience with MACLISP or LISP Machine LISP. Candidate must be highly skilled in implementation techniques for interactive, knowledge-based systems. Preference given to candidates with demonstrated ability to work independently on large-scale, long-term implementation projects. Non-smoking office. R557

Research Specialist, Artificial Intelligence Laboratory, to assist in the designing of mechanical arms and hands featuring dexterity and speed, coupled with force and touch sensors; these devices will perform tasks of practical import, such as locating, identifying, retrieving and installing parts. Position involves work on new manipulator control ideas such as the recursive formulation of Paul or Hollerbach; will deal with high-level programming languages, problem solvers, and spatial-reasoning packages. Requires a Bachelor's degree in a field closely related to Robotics or a combination of related education and substantial experience. Candidate should be familiar with high-level programming languages, with an understanding of LISP. R556

Research Specialist, Artificial Intelligence Laboratory: will develop and maintain PDP11 and VAX software supporting exotic peripherals; determine the nature of and localize hardware failures; assist researchers in the development of system software interfaces. Also responsible for performing picture and sensor input and output operations for the computer vision and robotics groups in the AI Lab. Will assist approximately ten research scientists and graduate students; report to three associate professors and one senior research scientist. Requires experience with PDP11 Assembly language, PDP10 Assembly language, and DOS operating system. Candidate should have knowledge of PDP11 and VAX architecture, UNIBUS, process control computer methods, and photographic techniques. Interest in computer vision and robots plus willingness to collaborate with researchers are essential. R555

Research Scientist, Haystack Observatory, to monitor the processing of very long baseline interferometry data: review output of the Mark III VLBI processor, interface with the scientific users of the Mark III VLBI system and be responsible for the preparation of a data processing report for each experiment. Candidate should have a PhD or its equivalent in radio astronomy or related field. Experience in very long baseline interferometry is highly desirable, though not essential. While the position is primarily that of a support person for other scientists, there will be considerable opportunity for collaboration and individual research. Some knowledge of computer programming is also desirable. R554

Research Staff, Center for Cancer Research: responsible for the electron microscope facility. Duties include instruction of novices in the use of the electron microscope and in the preparation of biological samples for electron microscopy in a facility containing two electron microscopes, darkroom, and sample preparation room. Techniques routinely used will include nucleic acid electron microscopy, ultra microtomy, and negative staining of particular samples. Will be directly involved in research projects in the Cancer Center utilizing the electron microscope. Requires BS degree and experience in use of electron microscopes, and related equipment. Candidate should have a background in cellular and molecular biology and experience in preparation techniques listed above. Good communication and organizational skills necessary to instruct users in electron microscopy, to arrange schedules and work independently, and to modify techniques to suit specific research needs. R553

Technical Assistant, Nutrition and Food Science, to do research on specific neuronal proteins, or the neuronal metabolism of essential fatty acids and choline, or both. Responsibilities will also include the enzymatic-isotopic assay of choline and acetylcholine. Candidate should be trained in biochemistry or biochemical pharmacology, preferably with a Master's degree or its equivalent; have experience with general chromatographic techniques (e.g., liquid, affinity, isoelectric focusing) and/or gas chromatography, especially for fatty acids and prostaglandins. R552

Technical Assistant, Biology, to work in laboratory for the study of molecular and cell biology; will carry out cultivation of specialized mammalian cells, and tests of performance of cells after cultivation; will handle biochemical and immunological procedures for the analysis of proteins, enzymes and nucleic acid. Bachelor's degree in biology and at least two years experience in mammalian cell culture, biochemistry and immunology. Experience with microscopy helpful. R551

Control System/Diagnostics Engineer, Plasma Fusion Center, to be responsible for the coordination and design of control systems for the TARA Tandem Mirror, a large fusion experiment. Will involve fast and slow timing of the experimental equipment interlocks for protection on a $14 million experiment. Should have BSEE or equivalent. Knowledge should cover both analog and digital electronics. Knowledge of computer control and CAMAC desirable. R512

Power Electronics Engineer, Plasma Fusion Center, will work on fusion power systems for a $14 million tandem mirror experiment. This work will include: coordination of installation of a 10-circuit 15-MWDC pulsed magnet supply, pulse neutral beam power supplies, including 30 KW filament supplies, 300 KW arc supplies and 1.5 MW, 20 KV acceleration supplies. Will work closely with scientists and grad students on development of fusion power systems for a wide range of current and future applications. Should have BSEE or equivalent. Specialization in power systems preferred. R511

Library Support Staff

Library Assistant IV (part-time), Laboratory for Computer Science, to manage general operation of the LCS Reading Room, including development and maintenance of the library collection. Duties include acquisitions, cataloguing, classification, and circulation. Involves extensive use of LCS on-line computer system. Requires college background with 2.5 years library experience, as well as familiarity with computer science. Experience with on-line system strongly preferred. B1259

Secretary/Staff Assistant

Administrative Secretary to coordinate secretarial and administrative work for the Statistics Center of the Mathematics department. Will be responsible for the timely production and distribution of technical reports; coordination of course schedules, textbook assignments and grade reports. Will also assist with details of preparing proposals; publicizing course offerings; control and integration of funds allocated to various projects; perform general secretarial duties and assist with other tasks as assigned by the Director. As the Center expands, more administrative tasks will be assigned. A minimum of 4.5 years of experience, ability to establish priorities and to work under pressure required. Good interpersonal skills and technical typing skill or a willingness to learn also necessary. B1293

Administrative Secretary, Office of the President, to provide secretarial and administrative support to the Executive Assistant to the President/Manager of Campus Information Services. Will arrange and coordinate complex appointment and meeting schedules; compile information for correspondence; answer telephones; receive visitors and provide answers to routine inquiries; monitor financial accounts; originate, review and maintain files. May also perform secretarial services for the Administrative Assistant to the President. Position requires excellent typing and organizational skills; exceptional proofreading ability and command of the English language; ability to anticipate needs and set priorities and to work independently and as part

of a team. Secretarial training and four to five years of experience is necessary as is ability to work under pressure. Some college experience and knowledge of MIT helpful. Non-smoking office. B1257

Sr. Secretary, to work with Research Associates and Administrative Asst. in Technology Adaptation Program. Will answer phones; arrange travel; file; type correspondence, manuscripts, reports, theses when related to project work; and interact regularly with faculty, administration and students. 2.5 years of experience, good typing skill including technical typing ability and sensitivity in dealing with confidential matters required. 37.5 hrs./wk. B1294

Sr. Secretary-Technical, to provide secretarial support to several faculty members in the Mathematics department. Duties include typing correspondence, class materials and manuscripts; maintaining records and files; arranging travel; answering phones, responding independently to routine inquiries; assisting with departmental overload as time permits. Requires good typing skill, including technical typing experience; ability to set priorities and work independently with minimal supervision. B1292

Sr, Secretary (part-time), Earth and Planetary Sciences, to handle heavy secretarial workload for 4 faculty members and their staff. Will work with administrative assistant who handles all financial and personnel aspects of operation. Duties include typing of scientific manuscripts and correspondence, some of it technical; answering telephones; scheduling appointments; mailing reprints; and assisting with general office coverage. Position involves very heavy typing. Requires excellent typing skills and the ability to order priorities in a busy, high-pressure setting. Flexibility with regard to overtime is necessary. Experience in scientific equation typing desirable. B1291

Sr. Secretary, Earth and Planetary Sciences, to handle heavy workload for 3 faculty members and their staff. Will work with administrative assistant who handles financial and personnel aspects of the operation. Duties include typing of scientific manuscripts, proposals, and correspondence; answering telephones; scheduling appointments; mailing reprints; running errands; photocopying; generally assisting with office coverage. Position involves heavy typing. Excellent typing skills required, along with either experience in or a willingess to learn word processing. Candidates must be able to organize well, set priorities, take directions from a variety of persons, and work to meet deadlines. This is a busy office. B1290

Sr. Secretary (part-time), Economics, to work for 1 faculty member whose field is economic history. Duties include: typing of manuscripts, often with technical content; course materials with problem sets and exams; correspondence; arranging travel; maintaining files; overseeing arrangement of readings for the introductory economics subject. Requires excellent typing and general office skills. Candidates must be able to set priorities, work independently, and sustain ongoing projects. B1289

Sr. Secretary, Campus Information Services, to provide secretarial support for the Assistant for Special Events. Will assist in planning and operation of conferences at the Institute; originate and maintain files and records; schedule appointments and meetings; schedule space for MIT services for Career Planning and Placement recruitment program; answer telephone; type correspondence, reports, budgets; initiate routine correspondence; arrange travel; and handle registration forms. Will also review monthly accounting statements of conferences to compare expenditures with budgetary projections. In addition will provide backup assistance to Analytical Studies and Planning Group. Requires excellent typing as well as the ability to work on more than one project simultaneously, while maintaining attention to detail and accuracy. Knowledge of bookkeeping and accounting desirable. Position involves some overtime and weekend work. B1286

Sr. Secretary-Technical (part-time), Plasma Fusion Center, to perform secretarial duties for staff engaged in TARA Tandem Mirror fusion experiment. Will work for 5 to 6 research scientists and 2 to 3 staff engineers. Will schedule meetings; arrange travel; compose and type general correspondence, technical manuscripts; file; answer telephones; greet visitors; handle supply, equipment and government surplus ordering. Requires 2.5 years' direct or related experience, excellent typing. Experience in scientific equation typing preferred. Candidates must be able to order priorities, work independently, and deal with a variety of people. B1284

Sr. Secretary, Food Service, to perform general secretarial work. Will screen telephone calls and visitors; type correspodence, menus, catering reservations, budgets, meeting notes; obtain prices from purveyors; prepare forms for unit use; schedule appointments; arrange travel; distribute mail; respond to standard inquiries by mail; compose nonroutine letters from dictation; maintain files. Requires excellent general office skills and 3 years direct or related experience. This position involves much student contact. B1283

Sr. Secretary (temporary), Political Science, to work 18 hrs. per week, through academic year only, under the supervision of Special Assistant to the Dept. Chairman. Will file; answer telephones; handle mail; arrange travel and meetings; do occasional library research; proofread; photocopy and mimeograph; type varied matter, sometimes on word processor. Will share receptionist function and help with occasional work overflow. Requires 2.5 years' direct or related experience as well as excellent typing and proofreading skills. Good command of English, experience with or willingness to learn word processing essential. Ability to work with a variety of people and occasionally under pressure important. B1279

Sr. Secretary (part-time), to work 18 hrs. per week for one faculty member of the Political Science Dept. Will file; answer telephones; maintain calendar; handle routine correspondence independently; arrange travel; type varied matter, sometimes using word processor; proofread manuscripts; do occasional library research; and coordinate student assistants' work. Requires excellent general secretarial skills, as well as the ability to work with minimal direction. A willingess to learn word processing essential. College background, knowledge of modern foreign languages, plus a basic knowledge of accounting desirable. B1278

Sr. Secretary, to assist 3 faculty members of the Political Science Dept. Will maintain calendars; file; handle mail; arrange travel and meetings; prepare vouchers; photocopy; type and proofread a variety of materials from handwritten or dictaphone drafts, sometimes using word processor; perform other routine duties including occasional library research. Requires 2 to 3 years direct or related experience as well as excellent typing and organizational skills. Familiarity with or willingness to learn word processing essential. College background preferred. Position involves a great deal of contact with students. B1277

Sr. Secretary, Laboratory for Computer Science, to provide secretarial support for 2 faculty members in Theory of Computation Group. Will answer telephones, type, file, arrange travel and use computer system for text-editing of class notes and papers. Requires high school graduation or its equivalent, plus 2.5 years' direct/related experience or an equivalent combination of education and experience. Good technical typing skills and the ability to work with minimal supervision essential. NON-SMOKING OFFICE. B1276

Sr. Secretary, Sloan School of Management, to provide secretarial support for Area Head and another faculty member in Corporate Policy and Strategy Area. Will type and prepare course material, working papers, grant proposals, summer program materials; monitor accounts; organize and maintain files; requisition office supplies, books, AV equipment; arrange travel; maintain conference calendar; schedule appointments; answer telephones; and interact with students. Requires attention to detail, good interpersonal and communication skills, as well as a minimum of 2.5 years' direct/related experience. Ability to work with minimal supervision essential. Shorthand or dictaphone desirable. B1272

Sr. Staff Assistant, Research Laboratory of Electronics, to assist in providing secretarial support to faculty and staff of a large research group. Will prepare manuscripts, proposals, reports and class notes, using computer text editing system; answer telephones, schedule appointments and respond to questions independently; assist administrative staff assistant as needed. Requires 2.5 years' direct/related experience and good typing. Experience with text editing on computer system or the willingness to learn is essential. B1270

Sr. Secretary, Nutrition and Food Science, to perform secretarial duties for 1 faculty member plus research group. Will type correspondence, reports and research proposals from dictaphone, rough drafts; answer telephones; arrange schedules and travel; file; troubleshoot; direct activities of part-time secretary. Generally will coordinate activities of this very busy laboratory. Requires a minimum of 2.5 years' experience as well as excellent typing and organizational skills. Experience in or the willingness to learn word processing essential. Knowledge of biological and clinical terminology helpful. B1265

Sr. Secretary, to perform secretarial duties for 4 to 5 faculty members in Center for Theoretical Physics. Will type technical papers, course work, exams; prepare abstracts from handwritten material; answer telephones; arrange travel; do photocopying; mail reprints. Requires secretarial experience, including technical typing. The capacity to work under occasional pressure, with interruptions, essential. B1264

Sr. Secretary, to work directly with Regional Director of Alumni Association. Will assist with coordination and implementation of Association and alumni programs for New England. Will type; take dictation; handle correspondence; use word processor; prepare and coordinate mailings; file; perform other general office procedures. Will arrange meetings; interact with alumni and MIT administration and faculty by telephone, mail and in person; assist with special projects as needed. Requires 2.5 years direct or related experience. Good typing, organizational skills essential, as well as a capacity to deal with a great variety of people. At times the job will involve working with minimal direction. Knowledge of MIT helpful. B1263

Sr. Secretary, Physics, to support a newly expanded astrophysics group consisting of 6 faculty and staff members. Will type and prepare journal articles, proposals, correspondence; make travel arrangements; answer telephones, handle mail; file; and perform other general clerical/administrative duties. Requires 2.5 years experience, excellent typing and organizational skills as well as shorthand or speedwriting. Position involves ordering priorities and working with minimal supervision, at times under pressure. Experience in technical typing or the willingness to learn important. B1260

Sr. Secretary-Technical, Plasma Fusion Center, to perform secretarial duties for the Division Head and Group Leaders of the Fusion Systems Division. Will type and proofread technical research reports, manuscripts and general correspondence; arrange meetings and appointments; answer telephones; receive and screen visitors; handle mail; arrange travel; file; interact with other MIT operations. Requires 2.5 years' related experience, excellent typing, including scientific equation typing. Good interpersonal skills essential. Position involves ordering priorities and managing workloads with minimal supervision. B1258

Sr. Secretary, Sloan School of Management, to provide secretarial support for one faculty member in Operations Research and one faculty member in Accounting and Control. Will answer telephones, echedule appointments and answer questions independently. Will type correspondence from handwritten or dictaphone originals; reports and classnotes. This position involves heavy typing, sometimes taking a poorly organized original and revising it into acceptable form. Will share work overloads of others in the Dept., including visiting faculty. Requires excellent typing and organizational skills as well as a good command of English. Excellent proofreading and editorial skills. Ability to work independently and often under pressure. College background is desirable. B1253

Sr. Secretary/Receptionist, part-time (1-6 pm), will provide secretarial support for the Office of the President and serve as receptionist for the Office of the President and the Office of the Provost. Will type and proofread correspondence, reports and speeches from dictaphone, rough draft, and/or direct instruction. Responsible for proper format, spelling, punctuation and routine verification of references. Will answer all incoming calls for the President's Office, and provide backup telephone answering for the Provost's Office. Variety of other duties include handling outgoing mail; maintaining and originating complex filing and recordkeeping system; reproducing reports, correspondence and manuscripts and assisting with other projects as assigned. Requires good typing skill; excellent command of the English language; ability to work as member of a team; 2-3 years direct/related experience. Also requires ability to quickly learn and communication information about MIT; tact and discretion. Knowledge of MIT helpful. 1-2 years' college preferred. Non-smoker preferred. 25 hrs./wk. B1250

Sr. Secretary, Humanities, to share responsibility for providing secretarial support to Foreign Languages and Literatures faculty and teaching staff. Will type; answer phones; file; order textbooks and supplies; schedule classroom use and assist in publicizing and organizing lecture and other events presented by the section. 2.5 years of related experience, or equivalent combination of education and experience, excellent typing skill and ability to work well with minimal supervision required. B1247

Sr. Secretary, Humanities, to perform general secretarial duties for staff members of the Writing Program who teach expository and creative writing. Will arrange for readings by visiting writers and staff members; type manuscripts; assist in faculty searches; coordinate conferences; promote and review cases. Will also assist in answering student queries. Other tasks for Section and Dept. will be assigned. Because of the diverse activities involved, this position demands flexibility. Excellent typing skills. A minimum of 2.5 years office experience, preferably in an academic institution, essential. B1246

Sr. Secretary - Technical (part-time), Operations Research Ctr., for Co-Director of Center. Will perform general secretarial duties, including phone answering, maintaining calendar, scheduling meetings, travel arrangements, typing correspondence from machine transcription and written drafts. Research project duties consist of technical manuscript typing, reproduction and mailing. Course secretarial duties include typing, photocopying, filing course materials. Will also interact with students and others involved in administration of two subjects, Requires excellent technical typing and the ability to work independently. B1240

Sr. Secretary, MIT Industrial Liaison Program, to type correspondence and reports; answer telephones; transcribe machine dictation; make travel arrangements; file. Will handle other general office procedures as needed for two staff members working with member firms of Liaison Program. Office responsibilities include use of office information system based on DEC VAX 11/780 for which training will be provided. Graduate of secretarial or business school preferred. Good typing and organizational skills required, as well as a good command of English. This position will involve organizing office procedures and working with minimal supervision. One to two years prior office experience desirable. B1239

Sr. Secretary, Materials Science & Engineering, to perform secretarial duties for 2 faculty members and graduate students in their research groups. Will type technical reports, manuscripts, correspondence, statistical tables and charts from handwritten texts or dictaphone; compile research information from library sources; schedule travel; maintain files; respond to reprint requests; prepare classwork notes, exams, homework and handouts. Requires excellent typing and a minimum of 2.5 years experience, or an equivalent combination of education and experience. Familiarity with MIT desirable. B1229

Sr. Secretary to Marine Industry Advisory Services Manager, Sea Grant College Program, to handle routine correspondence independently, answer or redirect inquiries re: activities and operations of the MIT Marine Industry Advisory Services. Will assist in organizing agenda for meetings; handle mailings; keep attendance records and make luncheon arrangements; maintain accurate invoice and payment records of Collegium members. Will do heavy typing at times. Requires high school graduation of equivalent and/or secretarial school training with at least 3 years office expereience and good typing skill. Experience with or willingness to learn word processing essential. MIT experience and interest in ocean and marine related activities desired. B1214

Sr. Secretary, Center for Cancer Research, to provide secretarial support for one faculty member and busy research group. Position involves heavy typing of correspondence, grants and manuscripts. Will maintain files; small journal reading room; answer and screen telephone calls; mail reprints; order office supplies; photocopy; help monitor monthly expenditures on research accounts; process requisitions. A minimum of 2.5 years experience or an equivalent combination of education and experience required. Good typing, proofreading and dictaphone skills essential. Experience with word processor or willingness to learn also essential. Familiarity with biological and chemical terminology helpful. Busy office. B1212

Secretary (temporary: Sept. 1 - May 31, part-time), Athletic Dept., to assist Sports Publicity Director in covering 32 intercollegiate sports. Will type releases, statistics; operate copier and mimeograph machines; answer telephones; file; handle requests; undertake special projects as assigned. Requires high school graduate or equivalent, as well as an interest in collegiate sports. Good typing and organizational skills. Interpersonal skills important. B1262

Staff Assistant, Center for Policy Alternatives, to work with research staff on projects related to environmental/occupational health policy and regulation. Will perform general secretarial duties; monitor monthly accounting statements; type manuscripts; organize research proposal files; organize class materials; function as a liaison with students. Excellent typing and organizational skills required; speedwriting desirable. Candidate should be able to work independently as well as part of a team. Interest in subject matter helpful. Experience with WANG word processor preferred. NON-SMOKING OFFICE. 40 hrs./wk. B1231

Staff Assistant, Artificial Intelligence Laboratory, to work, under the supervision of two faculty members and three research scientists, providing general secretarial support for a small group. Will type, proofread reports, do correspondence; type class notes; answer telephones and receive visitors; maintain files; schedule appointments, seminars, and meetings; make travel arrangements. Other tasks will be assigned. Good typing and organizational skills. NON-SMOKING OFFICE. B1218

Technical Support Staff

Technical Artist, Plasma Fusion Center, to create technical illustration and graphics materials for publication and displays. Will draw charts, graphs, isometrics or free-hand illustrations in color or black & white; produce drawings from rough sketches, blueprints or actual machinery; use and coordinate photographic, printing and typesetting services. Will spec type for publication and large display graphics. Requires background in technical illustration and use of ink and alternate lettering means. Requires ability to work under occasional pressure to meet deadlines. B1271

Output Processing Assistant, Administrative Computing Services, to operate the decollating/bursting equipment according to established guidelines. Will deliver output reports to user offices, function as general messenger in data processing environment. Requires high school graduation or the equivalent. Data processing background desirable. B1269

Account Representative, Information Processing Services Operation, Administrative Computing Services, will, under general supervision from the Sr. Account Representative, ensure the quality and timeliness of production commitments within the operations facility. Will be responsible for preparing input and jobs for processing and for reviewing outputs to ensure that they meet the client's requirements. Requires high school graduation or equivalent; 2.5 years' direct/related experience in data processing. Six months should be at MIT and some experience should include scheduling and operating data processing equipment. 40 hours/week. B1223, B1248

Sr. Communications Console Operator, Physical Plant, to be responsible for monitoring all on-going Control Center activities. Will act as shift leader; assist in diagnosis of system or equipment malfunctions and assure appropriate responses are made by operators; prepare reports regarding operations; train operators. Requires 4.5 years of related experience and ability to communicate effectively and respond quickly and calmly under pressure. Two years of post high school technical education may be substituted for 2 years of related experience. Will occasionally be required to work an irregular shift. 40 hrs./wk. B1209

Data Entry Operator, Personnel, to perform data entry for the Employee Records Section. Will use INFOREX and IBM equipment; key and verify employment-related information; set up files for new employees; assist in the preparation of the MIT Directory; mount/dismount tapes, clear disks and make transfers. This is a busy office with a large volumeof transactions, and from time to time there is substantial schedule pressure. Occasional overtime is required, but advance notice is given. This office is accessible to physically handicapped employees. Good command of English important, as well as the mechanical aptitude normal in this kind of work. Attention to detail is extremely important. High school diploma or equivalent plus a minimum of 1 year data entry experience, or some combination of education and applicable experience. B1236, B1288

Office Assistant

Administrative Assistant, Ocean Engineering, to perform administrative and secretarial duties for the plume facility of the Marine Hydrodynamics Laboratory. Work involves liaison with contract sponsors and related MIT administrative offices. Will handle equipment and materials orders, communicating with suppliers, preparing purchase requisitions, obtaining purchase orders and performing any followup. Will maintain laboratory files; carry secretarial chores for one research engineer and one professor; supervise any temporary secretaries; check monthly accounting statements and take corrective action when necessary; handle timely acquisition of laboratory supplies from MIT stockrooms; hire needed temporary laboratory employees. Four and one-half years of relevant experience necessary. Knowledge of MIT helpful. B1285

Administrative Assistant, to provide administrative and secretarial support to the Sloan School Director of Finance and Administration. Will work closely with director and other staff members, performing varied administrative, accounting and clerical tasks in a busy service-oriented office. Will maintain computer budget; initiate usage bills and generate periodic computer-related statistical reports; monitor SSM program accounts and perform related analysis; order all Sloan School office equipment and furnishings; compose and type correspondence from draft or dictaphone; perform other related financial and clerical tasks as needed. Requires excellent typing and proofreading skills, as well as the capacity to handle a wide range of difficult situations. Knowledge of bookkeeping or accounting highly desirable. Familiarity with MIT helpful. B1282

Administrative Assistant, Earth and Planetary Sciences, to manage office and perform administrative and secretarial tasks for two professors of marine geophysics and their staff. Will prepare and submit research proposals; manage research contracts involving budget forecasting, salary allocation and monitoring of monthly statements; arrange travel; type; file; answer telephones; coordinate typing of manuscripts with word processor operator; handle bureaucratic matters for graduate students; edit and proofread technical reports. Requires high chool graduation or its equivalent as well as 4.5 years' direct/related experience. Excellent typing, organizational and communication skills essential, along with the ability to work with minimal supervision. Administrative experience at MIT preferred. B1275

Administrative Assistant, Economics, to perform administrative duties for 2 faculty members. Will handle mail; keep files; make appointments and screen calls; plan conferences; arrange travel; prepare course materials; type correspondence; type and edit manuscripts; handle publications collection; assist in grant management, including maintenance of monthly summaries and projections on grant and contract budgets; journal management. This position involves heavy student contact. Requires excellent typing and organizational skills. Ability to work under pressure to meet deadlines and to work with minimal supervision. Minimum 4.5 years experience. Experience with word processor or the willingness to learn. College background preferred. B1256

Sr. Office Assistant (part-time), Information Processing Services, to distribute and sell technical documentation, under the direction of administrative staff member. Will sell documents over-the-counter and distribute internally. Will do on-line text-editing and database maintenance; file; and perform other related duties as needed. Excellent interpersonal skills essential. Good typing, organizational skills and attention to detail important. B1268

Sr. Office Assistant, MIT Press, to research and respond to customer complaints by telephone and mail. Will also research complaints through CRT and computer records; issue credit and debit memos through CRT; help in order processing when necessary; mail invoices. Requires good typing and excellent interpersonal skills. At times this position requires dealing tactfully with sensitive complaints. High School graduation or the equivalent required. Business school graduate preferred. B1261

Sr. Office Assistant to act as word processing specialist and assistant to the administrative coordinator of the International Food and Nutrition and Food Science dept. Will key and edit documents, letters, manuscripts, grant proposals, using word processor; implement use of special software; schedule facility use; supervise, train operators; order supplies and equipment servicing; coordinate payment and purchase order requests; do monthly accounting for postage and xerox expenses; assist with special project and other related duties as necessary. Requires excellent typing, word processing skills, knowledge of dictaphone and 2 to 3 years of related office experience. B1230

Clerical Assistant, in the Undergraduate Chemistry Office, Chemistry Department, to provide general information regarding lectures and labs in a "high traffic" office; type roll sheets, course lists, problem sets, quizzes, exams; maintain a variety of files; xerox; answer phones; and perform messenger duties for the office. Requires high school graduation, or equivalent, and typing ability, stressing accuracy and reasonable speed. Ability to work in a busy office also necessary. B1227

Office Assistant/Receptionist, Personnel Office, will share responsibility to provide services related to the employment process; provide information on job status, specifications, application procedures, etc., to applicants and others; assist persons in completing applications and refer general inquiries to appropriate Institute offices. May operate word processing equipment. Assist with resume acknowledgement process and work on other projects as necessary. On occasion a large volume of filing of applications will be necessary. Applicants should be able to grasp both routine procedures and to recognize unusual situations and respond to them appropriately. Requires the ability to monitor several situations at once (phones, applicants, etc.) Accurate typing is necessary. Office experience in some type of public service capacity preferred. Familiarity with word processing equipment desired; willingness to learn necessary. 37.5 hrs/wk. NON-SMOKING OFFICE. B1287

Office Assistant (part-time), Sloan School, to perform general clerical tasks in a busy office in master's program of the SSM. Will type address labels; mail descriptive brochures and applications; open applications and cross-check files; enter application data into computer terminal; and answer telephones. Requires good typing. Familiarity with computerized data entry desirable. This work involves having to decipher a great variety of handwriting styles. B1281

Office Assistant, Medical, to work in MIT's Health Plan Enrollment Services Unit. Will be responsible for processing MIT Health Plan and Student Insurance Program applications; will check accuracy of Plan's on-line computerized data base; log and modify appropriate information; assist with special projects; review fee-for-service bills; and provide other secretarial support as needed. Good typing and attention to detail required. Experience with on-line computer terminals preferable. B1234

Receptionist/Office Assistant to serve as receptionist in Environmental Medical Service. Will answer telephones, greet visitors, do general and technical typing, deliver materials to other Institute offices, and perform other general office duties. Requires good typing as well as poise and good communication skills. B1222

Service Staff

Evening and Night Custodians/Night Polishers, Physical Plant, must be able to speak, write and understand the English language. Variety of shifts, regular and irregular schedules.

Stockperson, Physical Plant, to handle stockroom procedures. Will load and unload trucks; maintain stock records, issue, ship and receive supplies and equipment. Requires high school graduation or its equivalent, as well as 1 to 2 years applicable experience, including experience in stock trades, and a Massachusetts driver's license. Work schedule to be determined by need of operation, so willingness to work irregular hours necessary. H471

Machinist A, Laboratory for Nuclear Science, to set up work and operate machine tools, working to close tolerance from blueprints, specifications, verbal instructions, or sketches. May direct and train machinists of lower grade. May be required to handle and machine radioactive materials, in strict accordance with appropriate radiation procedures. Candidates should demonstrate familiarity and a high degree of skill with all commonly used machine tools. Requires a minimum of five years applicable experience as a machinist. H467

Dormitory Maintenance Mechanic, Campus Housing, to perform a wide variety of tasks in servicing, maintenance, repair and renovation of dormitory buildings and equipment. Will accept repair orders; assign job priorities; direct the work of other maintenance employees as needed; assist House Manager in planning and execution of an adequate preventative maintenance program; and to perform other duties of a handyman as required. Requires skill with all common tools and small power tolls, and a minimum of 3 years experience in maintenance and repair of common building fixtures. H448; H449

Carpenter, Physical Plant. Requires a minimum of 7 years experience in the trade with particular emphasis on finish carpentry work. Applicant must be able to read prints and do layouts on all types of cabinets, models, etc; perform door and partition installations and lay floor tiles. A thorough knowledge of working characteristics of various types of materials and wood working machinery is required. H466

Heat and Vent Mechanic, Physical Plant (irregular shift). Requires a broad range of experience in building heating, ventilating and air conditioning (HVAC) operations and maintenance. Specific experience in the operation of steam heating systems, NVAC controls, boilers, water treatment, and refrigeration systems with hands on experience in the repair, replacement and adjustment of their operating components is required. High school education, or equivalent, and a minimum of 5 years experience in the operation and maintenance of building HVAC systems necessary. Formal training in mechanical operations and maintenance may be considered as a substitute for a portion of the experience requirements. H464, H465

Steamfitter, Physical Plant, to maintain high and low pressure steam systems consisting of pressure reducing valves, traps, expansion joints and boilers. Ability to work from blueprints, verbal instruction or sketches necessary as is ability to electric arc weld all piping systems as required and work towards A.S.M.E. certification for steel pipe. A minimum of five years recent experience applicable to the trade. Availability to work any shift as required by operations of the Pipe Shop. H455