Massachusetts Institute
of Technology

TECH TALK
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September 24, 1986
Volume 31, Number 8

Morrison days

Institute Professor Philip Morrison of the Department of Physics will be honored with a special two-day symposium, "The Worlds of Philip Morrison," Friday and Saturday, September 26 and 27. The occasion: his 71st birthday, which occurs November 7.

Friday's activities will be at the Hyatt's John Quincy Adams Ballroom and will include the presentation of papers on astrophysics, disarmament and education—areas in which Professor Morrison is deeply interested. Saturday's events begin at 8:15am in Kresge and will include remarks by Professors Carl Sagan and Hans Bethe of Cornell University as well as by Professor Morrison. The concluding event—a festival of kites and other flying objects—will begin on the Kresge Oval at 12:45pm. Most of the activities are open to the Institute community without charge. Call the Office of Conference Services, 3-1703, for more information.

Inside today:

i/s, the newsletter from Information Systems, is included as a pull-out supplement to today's paper.

Trunk Room sale

The residents of Burton House—needing storage space—will hold a trunk room sale Saturday, Sept. 27, 10am-4pm. To be sold are treasures left by long-departed students, including clocks, electronics, skis, books, course materials, etc.

We are assured, by the way, that the organizers of the sale have made every attempt to reach the owners of the items to be sold.

Splash classes

A few spaces are left in the swim classes offered by the Child Care Office. Classes will be held in Alumni Pool Saturday mornings, Sept. 27-Nov 22 (except Oct. 11). Each class will enroll up to 10 children with one parent per child. Classes are scheduled as follows: 9am—9-24 months; 10am—3-4 years, and 11am—4-5 years. The fee is $35 per child.

For further information or applications, drop by the Child Care Office, Rm 4-144 or call x3-1592.

Copy cards

New photocopying machines that will accept pre-valued credit cards are being installed in Barker, Dewey and Hayden Libraries. The new copiers should be available by September 30.

The magnetic-strip cards will have values of 100 or 500 copies each and may be purchased with an MIT account number, cash or check. Costs are $10 for a 100-copy card; $45 for a 500-copy card.

Cards will be sold at the Microreproduction Laboratory, Rm 14S-0551 daily 9am-4:45pm. They can also be ordered by mail (include the number desired and value of each card on requisition form) and picked up at the Hayden Building circulation desk, Rm 14S-100, during regular circulation hours.

REAL THING—Yes, those are soda bottles suspended from the wing of MIT's newest human-powered aircraft—the Michelob Light Eagle—in a proof test carried out in a hangar at the Lincoln Laboratory Flight Facility at Hanscom Field in Bedford September 14. Altogether, 82 plastic soda containers, each filled with varying amounts of water, were hung under the ribs of the plane's 102-foot wing to make certain the carbon-fibre tubing that forms the main spar could withstand the stresses of flight, supporting a 150-pound pilot in various flight configurations. When it proved it could, those working on the project burst into applause. The aircraft, now taking final shape, is scheduled for rollout October 15, followed by flight tests at Hanscom and an effort to break the world's distance record for human-powered flight—22.5 miles. That record attempt—to last about two hours and cover 30 miles—is expected to take place in January, probably in California. Plans call for construction of a nearly identical second plane leading to the ultimate goal of "Project Daedalus"—a flight later in the year from Crete to mainland Greece, recreating the legend of Daedalus.

—Photo by Steve Finberg

Lincoln Lab develops aircraft collision-avoidance system

By CHARLES H. BALL
Staff Writer

An aircraft collision avoidance system that the Federal Aviation Administration wants installed in the nation's airliners was developed at MIT's Lincoln Laboratory.

The FAA, which funded the development of the system, has announced that it will seek to impose a rule requiring airlines to install the devices in their fleets. The agency also has approved detailed specifications for a production version, whose cost has been estimated at up to $75,000.

A senior engineer on the project, Dr. William H. Harman, said that the system, known as TCAS (Traffic Alert and Collision Avoidance System), which has been under development for about 10 years, could have prevented the mid-air crash of a Mexican airliner and a private plane near the Los Angeles airport on August 31.

"TCAS is ready if the country needs it," said Harman. "It's ready to go in regard to its technical parts. It has been very thoroughly tested."

The MIT-developed system uses on-board transponders—already standard equipment in airliners and many general aviation planes—as the basis for collision avoidance. The transponders are electronic devices that, when interrogated, strenghten the aircraft's image on controller screens. Some transponders, including all used by airliners, also display the aircraft's altitude on the screen.

The TCAS system for small, piston-powered planes is somewhat less sophisticated

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Budget shows modest surplus

MIT had a modest surplus for the third consecutive year in fiscal 1986, but it once again was achieved by using a portion of unrestricted gifts that might otherwise have been added to endowment, the Institute's chief financial officer has reported.

James J. Culliton, vice president for financial operations, also warned that the Institute, despite the favorable financial results of the last few years, continues "to face critical financial issues that require increased endowment if they are to be resolved."

"Among those major universities with which we compare," he said in his annual report, "our endowment is the smallest in relation to operating expenses."

"The reason," he explained, "can be traced to our continued rapid growth relative to other universities, the unusually high expenses associated with our laboratory-intensive instruction and research, and the relatively few decades we have had to build our endowment."

As a result, Mr. Culliton noted, MIT will embark on a major fund drive to "significantly increase" the Institute's endowment.

MIT closed fiscal 1986—the year ending last June 30—with a surplus of $1,507,000, almost identical to the $1,512,000 surplus reported for fiscal 1985.

Looking ahead a year, Mr. Culliton said the operating budget for fiscal 1987 is expected to produce a slightly larger surplus of $1,900,000.

The projected surplus, Mr. Culliton said, will be achieved only if:

—tax and other legislation does not cause a severe decline in gifts or student financial aid;

—inflation remains low;

—cost control and budget restraint con-

(continued on page 6)

Coast Week activities planned

"Coastal Charts and Coastal Wrecks" a panel discussion on coastal mapping and research is being sponsored by Lindgren Library Monday, Sept. 29, as part of Coast Week.

The national event, which started Saturday, Sept. 20, and will continue through October 13, is an annual one designed to focus attention on America's shores. Organizations and agencies across the country sponsor activities for it.

This year Lindgren Library, which houses most of the Institute's collections on oceanography, will feature speakers: Jeff Benoit, geologist of the Massachusetts Office of Coastal Zone Management on shoreline change maps; David Weaver, independent cartographer on his *Explorer's Map and Directory of the New England Coast*; Diane Jarock, design manager of the MIT Press on the soon-to-be published *Atlas of Georges Bank*; and Institute Professor Emeritus Harold Edgerton on his photographic work in the Boston Harbor and the Charles River.

Refreshments will follow the discussion to be held at 4pm in Rm 54-915.

Also, the Sea Grant Program is sponsoring a photography contest in honor of Coast Week. Photos of any coastal view, beach scenes, recreational or industrial uses of coastal areas, illustrations of coastal issues and scenes of Coast Week activities are eligible. Prizes will include dinner at Legal Seafood, free cruises, free museum entries and/or photography supplies.

The deadline for entering is Friday, Oct. 3, at 5pm. For more information contact Madeleine Hall-Arber, Rm E38-374, x3-7079.

INSTITUTE NOTICES

*—Open to public
**—Open to MIT Community only
***—Open to members only

Announcements

Bursar's Office Student Services and Student Loans—Hours of service, M-F, 9am-5pm, Rm E19-215.

Value Cards for Photocopiers—New machines available in the Barker Engineering, Dewey and Hayden Bldg Libraries by Sept 30. These copiers accept coins or pre-valued, magnetic-strip cards which have values of 100 or 500 copies each, and may be purchased using an MIT account number, cash or by check. Cost: $10/100 copy card; $45/500 copy card, available at the Microreproduction Lab, Rm 14-0551, M-F, 9am-4:45pm. They can also be ordered by mail and be picked up at the Hayden Bldg Circulation Desk, Rm 14S-100 during regular circulation hours. Include the number desired and value of each card on MIT requisition form.

Career Planning and Placement Company Recruitment Presentations—**AT&T Bell Laboratories**—Information Night, Sept 25, 3-8pm, Ashdown House Main Dining Rm.

MIT Child Care Office Swimming Classes—Held at the MIT pool, 8 Saturday mornings starting Sept 27. Each class enrolls 10 children with the participation of one parent/child. Schedule: 9am—Children 9-24 months old; 10am—Children 3-4 years old; 11am—Children 4-5 years old. Fee: $35/child. Info/applications, Rm 4-144, x3-1592.

Basic Pistol Marksmanship Course—Oct 2, 6pm, DuPont Pistol Range. Course covers safe handling, storage along with developing marksmanship skills as required by local police for licensing. Five Thursdays. Limited to first 20. Fee covers everything. Register/info, Andy Platais, x8-3871 Draper.

September Degree Candidates—Post cards must be returned to Rm E19-335 to indicate whether diplomas are to be mailed, called for in person, or if attendance at commencement, June 1, 1987 is planned.

Free Museum of Science Admission for MIT Students—With MIT student ID, provided by MIT chapter of Tau Beta Pi, the Engineering National Honor Fraternity. Also, reduced admission to special exhibits.

Vegetarian Cooking Classes**—Bhakti Yoga Society classes and feasts of ancient Indian cuisine, Fri, Sept 26, Oct 3, 10, 17, 24 & 31, Nov 7, 14 & 21, Dec 5, 12 & 19, 5:30pm, Senior House Fassett Lounge. Info: x5-6685 dorm.

Arts Hotline—Recorded information on all arts events at MIT may be obtained by dialing x3-ARTS. Material is updated every Monday morning.

Nightline—a student-run hotline** open every evening of the term, 7pm-7am. If you need information about anything or you just want to chat, give us a call. We're here to listen. x3-7840.

Club Notes

MIT Student Cable Programming Group—Seeks students interested in programming the MIT Cable Television channels. Opening meeting:Wed, Sept 24, 4pm, Rm 9-026. New members are welcome. Contact Jeffrey Cohen, x5-8178 dorm.

MIT Student Center Committee—Do you like band concerts, parties, comedy acts, movies, and good times? Join us Sundays, 7pm, Student Ctr Rm 347 or call x3-3916 for more info.

MIT/DL Bridge Club*—Duplicate bridge, Tues, 6:30pm, Student Center Rm 349. ACBL masterpoints awarded; come with or without partner, newcomers always welcome. Special tournaments monthly. Handicap game, 3rd Tues every month. Info call Gary Schwartz, x8-2459 Draper, or Mark Dulcey, 272-8428. Admission: $1/students, $2/non-students.

MIT Chess Club*—Chess tournaments and informal play, Sats, 1pm, Student Ctr Rm 491. Info: Richard Seitz, x5-8944 dorm or George Yu, x5-8452 dorm.

MIT Table Tennis Club—Meets Fri, 8-10pm; Sat, 6-9pm, DuPont T-Club Lounge. All levels welcome. Info: Hoang Do, x3-2843.

Animal Rights Forum*—Meets 2nd & 4th Weds each month, 5pm, Rm 8-105. Info: Peter Mead, x5-9616 dorm.

Women Graduate Crew—Seeks coxswains and experienced rowers. Info: Sophie Fallou, x3-5483.

MIT Rugby Club—Practices T/Th, 5pm, Briggs Field. New members welcome. Call Jim Boyd (Capt), x3-1817 for info.

MIT Outing Club*—Camping, cycling, climbing, canoeing, cabins: meets M/Th, 5-6pm, Student Center Rm 461. Also, see our bulletin board in "Infinite Corridor" next to Athena.

Scuba Club—The club sponsors dives throughout the term. Call scuba locker (x3-1551) for info and equipment rentals. For more info contact Michael Bernard, x3-8907 or 628-3018 eves.

MIT Hobby Shop—Complete supervised facilities for woodworking and metalworking, Rm W31-031, M-F, 10am-6pm; Wed, 10am-9pm. Fees: $15/term students; $25/term community. Info, x3-4343.

MIT Wonhwa-do Club*—A synthesis of karate-do and judo-type martial arts, meets MWF, 7-8:15pm, DuPont Exercise Rm. Beginners welcome. Info: Victor Lin, x5-8227 dorm.

MIT Nautical Association—Sailing Pavilion open everyday from 9am to sunset until mid-November. Three levels of shore school (beginners') classes offered M & Th, 5:15pm; boardsailing classes, Tues, 5:30pm; racing, Mon, 5:30pm, all levels welcome. Info: x3-4884.

Religious Activities

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

Tech Catholic Community*—Roman Catholic Masses: Suns, 9am, 12 & 5pm, MIT Chapel. Tues & Thurs: 5:05pm, MIT Chapel. Fri, 12:05pm, MIT Chapel. Chaplaincy Office: x3-2981.

MIT Hillel*—Shabbat Services: Sept 26—Orthodox 6pm, Walker Rm 510-010; Conservative/Reform, 5:30pm, Hillel W2A. Shabbat Dinner, 6:45pm, Kosher Kitchen, Walker Hall Rm 50-007; reservations due by Thurs, 5pm; call x3-2982; $6.50. Kosher Kitchen also serves walk-in dinner, M-Th, 5:30-6:30pm, $5.75 cash/Validine. **High Holiday tickets**—available Thurs, Sept 25, 10am-3pm, Lobby 10 Hillel booth; tickets required for Rosh HaShana eve and Kol Nidre services. **Sat, Sept 27**—Selichot Services, 11:30pm, Hillel W2A; Orthodox Services, 9:05am, Walker Hall Rm 50-010. **Sun, Sept 28**—"Celebration of the Torah," 2-4pm, Ashdown House Dining Rm. Join in welcoming MIT Hillel's new torah; live music, dancing, refreshments.

Lutheran Ministry and Episcopal Ministry**—Weekly service of Holy Communion: Wed, 5:10pm, MIT Chapel. Supper follows at 312 Memorial Drive. For further info, call x3-2325/2983.

Baptist Student Fellowship*—Tuesday Celebration, Tues, 6:30-8pm, Rm W-2A. Supper served, $1.50. **Graduate Students Bible Study,** Wed, 8pm, Rm C-1 Westgate.

Graduate Christian Fellowship*—Large Group Meeting, With worship, teaching and fellowship, Thurs, Oct 2, 6:30-8:30pm, Student Ctr Center Lounge. Also prayer groups and Bible studies. Info: Eric Birgbauer, x3-3027 or 776-4507.

United Christian Fellowship**—Large group meetings every Fri, 7pm, Student Ctr Mezzanine Lounge. Come and join us for worship, prayer, Biblical teaching, singing and fellowship. Small group studies in dorms at various times. Info: Gail Sadlo, x5-8957 dorm.

MIT Islamic Society*—Daily prayers, Ashdown House (basement), 5 times a day. Call x5-9749 dorm, for schedule. Friday prayer, Ashdown House 1-1:30pm, Khutba starts at 1pm, congregation at 1:20pm.

MIT Bahai Association*—Informal discussions, Thurs, 8pm. Nancy, x3-3361 or Brian, 354-0117.

Christian Science Organization at MIT*—Weekly Testimony meetings, Thurs, 5:45pm, Rm 4-145.

Lincoln Laboratory Noon Bible Studies*—Tues & Thurs, Kiln Brook III, Rm 239. Annie Lescard, x2899 Linc.

Morning Bible Studies—Fri, 7:30-8:30am, L-217. Ed Bayliss, x3456 Linc.

Noon Bible Study*—Every Thurs, Rm 66-160, bring lunch. Ralph Burgess, x3-2422. (Since 1965).

Edgar Cayce Study Group*—Tuesdays, 6:30-9pm, Edgar Cayce's Search for God material will be used as the basis for group discussion & meditation. For info: Douglas McCarroll, 497-0819 12-9pm or Scott Greenwald, x3-7423.

Graduate Studies

Unless otherwise indicated, contact Dean Jeanne Richard at the Graduate School Office, Rm 3-136, x3-4869 for further information.

1987-88 Fulbright and Other Grants for Graduate Study Abroad. Approximately 700 awards to over 70 countries will be available. Applicants must be US citizens at the time of application, who will hold a bachelor's degree or its equivalent before the beginning date of the grant and, in most cases, be proficient in the language of the host country. Except for certain specific awards, candidates may not hold a PhD at the time of application. Candidates for 1987-88 are ineligible for a grant to a country if they have been doing graduate work or conducting research in that country for six months or more during the academic year 1986-87. Creative and performing artists are not required to have a bachelor's degree, but they must have four years of professional study or equivalent experience. Candidates in medicine must have an MD or equivalent degree (e.g. DDS, OD) at the time of application. Applications available Rm 5-106. Deadline: Sept 26, 1986.

German Academic Exchange Service Awards. German Academic Exchange Service (DAAD) awards grants to US citizens to pursue a year of graduate study in the Federal Republic of Germany. Applicants must be proficient in German. No more than two applicants can be recommended for this program from MIT. Completed applications due in Rm 5-106 by 5pm, Mon, Oct 20, 1986.

The Fannie and John Hertz Foundation Awards. Graduate fellowships to students of outstanding potential in the applied physical sciences. Fellowship may be used at one of 20 institutions, including MIT. Applicants must be US citizens, or have documented proof of intent to acquire it. The proposed field of graduate study must be concerned with applications of the physical sciences to human problems. High previous scholastic performance is expected of all applicants, including at least an A- average during the last two years of undergraduate work. For 1987-88, the fellowships will cover $7,000 towards tuition and a $12,500 stipend. It is the student's responsibility to make up the difference between the educational allowance and tuition at MIT. Applications in Rm 3-138. Deadline: Nov 1, 1986.

Winston Churchill Foundation Scholarships. The Churchill Foundation of the US awards nationally 10 scholarships each year to US citizens between the ages of 19 and 26 to pursue one to three years of graduate study in science, engineering or mathematics at Churchill College, Cambridge University, England. Only two candidates can be recommended for this program from MIT. Info: Rm 5-106 by 5pm, Tues, Nov 11, 1986.

Marshall Scholarships. Established by the British government as a gesture of thanks to the US for Marshall Aid, awarded annually to approximately 30 US citizens under the age of 26 for two years of graduate study in any field at British universities. Applications available Rm 5-106, x3-3795. Interviews held by appointment with Prof Alar Toomre, Rm 2-371, x3-4326. Submit applications directly to the British Consulate General, 4740 Prudential Tower, Boston, MA 02199.

Rhodes Scholarships. Awarded for two years of study at Oxford University. Applicants must be US citizens between the ages of 18 and 24. The most important requirement of a Rhodes Scholarship is quality of both character and intellect. Further information and applications can be obtained from Prof Eugene B. Skolnikoff, Ctr for International Studies, x3-3140, Rm E38-648.

Luce Fellowships. The Luce Fellows Program provides a year of professional-level activity in an East Asian country for young Americans who have completed their undergraduate work and are under 30 years of age. It is not for Asian specialists. MIT nominees are selected early in the fall. For information contact Prof Eugene B. Skolnikoff, Ctr for International Studies, x3-3140, Rm E38-648.

St. Andrew's Society Scholarships. Scholarship Program of the St. Andrew's Society of The State of NY offers graduate scholarships to American students of Scottish descent to study in any of the universities of Scotland and to, therefore, promote cultural interchange between Scotland and the US. Only one application will be considered from any individual college or university. Each scholarship provides funds up to a total of $10,000.

ITT International Fellowship Program. A maximum of 25 fellowships are awarded to US university graduates to study abroad in any of 25 countries for one academic year. Candidates submit the standard Fulbright application forms for this award. Additional information available in Rm 5-106.

Fulbright Collaborative Research Grants, 1987-88. Designed for teams of 2-3 graduate students or recent post-doctoral researchers to perform joint research in most countries in the world (except most East European countries, the USSR, and Indochina). There are no restrictions on fields of study. Applicants should check with IIE (Institute of International Education) regarding country availability, prior to applying. Applicants must be US citizens at the time of application, have received the majority of their high school and undergraduate education at US educational institutions and must hold a BA degree or equivalent before the beginning date of the grant. Applicants with a PhD at the time of application may have obtained the degree no earlier than June, 1984. Applicants in medicine must have an MD degree or equivalent (e.g. OD, DDS) at time of application. Applicants are expected to have written and spoken proficiency in the language of the host country. The statement of proposed research submitted by team members may be identical, complementary to, or present a different dimension of the team's research. Also, evidence of affiliation abroad with a host country institution on on-going project that will oversee the research must be presented with the application. Grants are normally for 6-10 months and will provide fixed sum awards to each member of the team, in addition to basic health and accident insurance coverage. It is expected that each member of the team will carry out research in one country abroad for a minimum of six months during the same academic year, although all members of the team do not necessarily have to be in the host country concurrently. Applications available Rm 5-106. Deadline: December 1, 1986.

Other Opportunities

Harry S. Truman Scholarships. Awarded on the basis of merit to current sophomores in good standing who are US citizens or nationals. Students following courses of study in history, political science, public administration, economics and finance, and international relations are especially encouraged to apply. Awards are made to one student from each state, DC, Puerto Rico and, (as a single entity) the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands. In addition, up to 52 Scholarships-at-Large may be awarded. Each scholarship covers tuition, fees, books, and room and board to a maximum of $6,500 annually, and is renewable for the senior year and for up to two years of graduage sutdy. Contact Dr. Louis Menand III, Rm E51-201G, x3-7752 no later than October 3, 1986.

International Opportunities

The following is a list of opportunities available to foreign nationals or students desiring work abroad. For more information on these, please see the International Jobs notebook in the Office of Career Services, Rm 12-170.

Citicorp Investment Bank has a position for a student of Swiss nationality who will be graduating in December. The student should speak German and French fluently and possess excellent anlaytical, quantitative, and communication skills. After a training period in New York, the candidate will relocate to Zurich.

The Computer Engineering and Consulting Limited in Tokyo would like to hire a graduate who is bilingual in Japanese and English to work in Japan.

Internships

The following is the list of internships received this week. For more information please see the Internship Information notebook in the Office of Career Services, Rm 12-170.

Volunteer internships: Consumer Energy Council of America Research Foundation in Washington, DC (legislative and research tasks); Joint Action in Community Service, Inc. in Boston (openings for ten interns to assist young people returning from residential vocational training); Commonwealth of Massachusetts Department of Public Health in Boston (work on conference and research project addressing violence as a public health issue) & NOVA documentary series in Boston (broadcasting and documentary production).

Internships Offering a Stipend:

Los Alamos National Laboratory in New Mexico 1987 Undergraduate Student Employment Program and 1987 Graduate Research Assistant Program.

Student Jobs

There are more job listings available at the Student Employment Office, Rm 5-119.

On Campus: Non-Technical
Office assistant for the Computerized Literature Search Service. Provide assistance to staff, answer phones, schedule appointments, file, type, and greet walk-in clients. Hours flexible, preferrably in the afternoons. Wage arranged according to experience. Contact: Joan Whitaker or Mary Pensyl, Computerized Literature Search, Rm 14S-M48, x3-7746.

On Campus: Non-Technical
Interesting, lucrative work available doing surveys and market research, histrionic talent is an advantage. Knowledge of various skills can only be to your advantage such as acting, computer studies, economics. Juniors to MBA's (even PhD's) may apply. Flexible hours, 4-8 hr sessions in two sites: Wellesley or Cambridge. Pay depends upon knowledge and experience in various subjects. Contact: Guy Burn or Davis Farmer, Corporate Development Systems, Inc, 180 Linden Street, Wellesley, MA, 431-1095.

Off Campus: Non-Technical
Intern-Co-op available at the Museum of Science for a workshop teacher. Conduct workshops for/with elementary school teachers. Must have science interest and background, and previous teaching and presentation skills. Creativity, enthusiasm, persistence and humor and imperative. Salary depends on experience. Contact: Judy Soko-Margolis, 723-2500, x388.

Off Campus: Non-Technical
Intern-Co-op available for a kit developer. Assist unit head with development of science kits to be used by elementary school teachers with their students. Responsible for researching science activities, gathering museum materials into portable boxes. Must have science interest and background; be reliable, independent and able to cooperate in a team effort. Should have experience with multi-media materials. Creativity, enthusiasm, and humor helpful. 10-20 hrs/wk; salary dependent upon experience. Contact: Judy Sokol-Margolis, 723-2500, x388.

UROP

MIT and Wellesley undergraduates are invited to join with faculty members in pursuit of research projects of mutual fascination. Faculty supervisors wishing to have projects listed should send project descriptions to the UROP Office. Questions? Contact us, x3-5049, Rm 20B-141.

Fracture Characterization of Fibre-Reinforced Cementitions Composites. Assistance in preparing and casting of fiber reinforced concrete specimens. FRESHMEN please apply. 5-10 hrs/week. Faculty supervisor: Prof Victor C. Li, Rm 1-229, x3-7142. Contact: Christopher Leung, Rm 1-034, x3-0528.

Deparment of Urban Studies and Planning (Course IX), Computer Assisted Site Planning Project (Project Athena). Requirements: LISP/SCHEME programmer, interested in design and graphic issues. (C Programmer also considered). Responsibilities: Work with faculty and maintenance of programs used by students in Site Planning. Work under MS-DOS (PCSCHEME) & UNIX. Develop interface to other programs (AutoCAD, Lotus 123, etc.). PAY or credit. Hours negotiable. Contact: Stephen Ervin (servin@aphrodite) Rm 9-532, x3-5187.

Whitehead Institute. Project concerned with genetics and molecular biology of mouse development. Project involves: constructing and handling cosmidlibraries, deletion mapping, identifying transcripts in embroynal cells of mice, and breeding mice for genetic analysis. Contact: H. Shin, Rm 467D, x8-5187 Whitehead.

Scientific Computing: Department of Mathematics at MIT. Research on numerical solutions to smooth and discontinous systems of differential/algebraic equations with applications in Fluid Mechanics and Electrical Power Network Theory. Scientific computing experiments performed utilizing a carefully chosen set of test problems and a very sophisticated package of FORTRAN subprograms. PAY or credit. Contact and faculty supervisor: I.M. Mack, Rm 2-367, x3-2857.

Stress management

Dr. Scott Borrelli, a licensed psychologist in private practice, will lead a five-week stress management workshop beginning Tuesday, Oct. 7, under auspices of the MIT Medical Department.

Participants will learn to recognize stress warning signals, to be aware of their body's response to stress and to use relaxation techniques that work best for them. They will be challenged to look at ways they may be creating their own stress and at how their attitudes and beliefs can interfere with their own happiness and quality of life. Relaxation techniques will be taught and practiced.

The fee for the course is $45; $35 for students and MIT Health Plan members, and includes a workbook and a relaxation tape. Advanced registration is required. Call the Health Education Service, x 3-1316 for further information and registration.

Cable Television Schedule

MIT Cable Television serves the MIT campus. For connection and programming information, call x3-7431.

Wednesday, September 24
Channel 8:
5pm—Physics 8.01 Help Session 2. Program will repeat until 9am, 9/25.

Thursday, September 25
Channel 11:
10:30-12noon—12.975J Principals of Remote Sensing. Live from WHOI.
1-2:30pm—12.790 Introduction to Observational Physical Oceanography. Live from WHOI.

Friday, September 26
Channel 8:
5pm—Physics 8.01 Help Session 3. Program will repeat until 9am, 9/29.

Channel 9:
12-1pm—Live coverage of 12.950 General Circulation of the Oceans.

Saturday, September 27
Channel 8:
Physics 8.01 Help Session 3. Program will repeat until 9am, 9/29.

Sunday, September 28
Channel 8:
Physics 8.01 Help Session 3. Program will repeat until 9am, 9/29.

Monday, September 29
Channel 8:
5pm—Physics 8.01 Help Session 3. Program will repeat until 9am, 9/30.

Tuesday, September 30
Channel 8:
5pm—Physics 8.01 Help Session 3. Program will repeat until 9am, 10/1.

Channel 10:
4-5:30pm—Live coverage of the MIT VLSI Seminar.

Channel 11:
10:30-12noon—12.975J Principals of Remote Sensing. Live from WHOI.

Wednesday, October 1
Channel 8:
5pm—Physics 8.01 Help Session 3. Program will repeat until 9am, 10/2.

Thursday, October 2
Channel 8:
5pm—Physics 8.01 Quiz Review. Program will repeat until 9am, 10/3.

Channel 11:
10:30-12noon—12.975J Principals of Remote Sensing. Live from WHOI.
1-2:30pm—12.790 Introduction to Observational Physical Oceanography. Live from WHOI.

Friday, October 3
Channel 8:
5pm—Physics 8.01 Quiz Review. Program will repeat until 9am, 10/6.

Channel 9:
12-1pm—Live coverage of 12.950 General Circulation of the Oceans.

Saturday, October 4
Channel 8:
Physics 8.01 Quiz Review. Program will repeat until 9am, 10/6.

Sunday, October 5
Channel 8:
Physics 8.01 Quiz Review. Program will repeat until 9am, 10/6.

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Swanson endows professorship

The cofounder and chief executive officer of Genentch, Inc., Robert A. Swanson, has established a professorship fund in the life sciences at his alma mater, MIT, and Dr. David H. Raulet has been named the first holder of the Robert A. Swanson Assistant Professorship in the Life Sciences in recognition of his work in immunology.

Mr. Swanson, a 1969 graduate of MIT, received both a bachelor of science degree in chemistry and a master's degree in management. He founded Genentech in 1976 in partnership with Herbert Boyer of the University of California. The California company is one of the nation's leading biotechnology firms. Mr. Swanson has served as chief executive officer of the company since its founding.

Mr. Swanson had made several earlier gifts to MIT, two of which established a graduate fellowship in molecular biology and an undergraduate scholarship fund.

MIT Chairman David S. Saxon, in announcing the establishment of the Robert A. Swanson Assistant Professorship in the Life Sciences, noted that endowed professorships are one of the Institute's key needs.

"We are deeply grateful for Mr. Swanson's generosity," he said. "We are certain he will find great satisfaction in seeing a succession of talented and able people serve the Institute and the biological sciences as Swanson Professors."

Mr. Swanson was elected a member of the MIT Corporation for a five-year term in 1985. He also is director of the MIT Alumni Clubs of Northern California, a member of the Department of Biology Visiting Committee and a member of the Corporation Development Committee.

Professor Raulet was appointed to the Swanson professorship by Provost John Deutch, who took note of his "outstanding work in immunology, in particular the expression of genes for the T cell receptor during development of the immune system."

Professor Raulet received a bachelor of science degree in microbiology from the University of Michigan in 1976 and a PhD in biology from MIT in 1981. After serving as a postdoctoral fellow at the University of Pennsylvania, he joined the MIT faculty in 1983 as an assistant professor of immunology in the Department of Biology and the Center for Cancer Research.

Middle East seminars planned

The 1986-87 Harvard-MIT Joint Seminar on the Political Economy of the Middle East will open on Tuesday, Oct. 7, with a talk by John Elting Treat, the executive publisher of Petroleum Intelligence Weekly. Mr. Treat will speak on "Current Issues in the World Oil Market: Implications for the Middle East."

The seminar will meet at MIT in the fall semester and at Harvard University in the spring, with all the MIT sessions held on Tuesdays, from 4-6pm, in Rm. E40-298.

The sessions consist of an hour-long presentation by a guest speaker, followed by an hour of discussion. All scholars and students with an interest in the contemporary Middle East, as well as specialists in fields such as economic development, comparative politics, international relations and public policy, are invited to attend.

The seminar, which was inaugurated in 1985, is sponsored jointly by Harvard's Center for International Affairs and MIT's Technology and Development Program. It is the first academic forum on the Middle East in the Boston area devoted exclusively to developmental issues and, more generally, to questions that lie at the intersection of politics and economics.

MIT's chairperson for the seminar is Nazli Choucri, professor of political science and associate director of the Technology and Development Program.

Other fall sessions and the speakers are as follows:

October 28—Asians in the Gulf: Employment and Remittances; Professor Myron Weiner, MIT.

November 4—Development of Commercial Banking Systems in the Middle East; Hussein Choucri, principal, Morgan Stanley & Co., Inc.

November 25—USAID Strategies and Priorities in the Middle East; Robert A. Bell, deputy assistant administrator for the Asia/Near East Bureau, United States Agency for International Development.

December 9—Fund Adjustment Program and the World Debt Situation; Shakour Shaalan, director, Middle East Department, International Monetary Fund.

Astronaut Chang-Diaz to speak

Astronaut Franklin Chang-Diaz, who was a mission specialist on the six-day flight of the Space Shuttle Columbia, launched January 12, will speak at the MIT Plasma Fusion Center on Friday, Oct. 3.

Dr. Chang-Diaz has been a visiting scientist at the Plasma Fusion Center since 1983. His research there, with Dr. Tien-Fang Yang, explores plasma propulsion for rockets. He holds the PhD from MIT (1977) in applied plasma physics.

He will discuss "Plasma Experiments in Space," exploring past, current and future space experiments, concentrating on the use of high temperature—but not fusion grade—plasmas for rocket propulsion. He will focus on the proposed Hybrid Plume Plasma Rocket.

On the January Space Shuttle mission, Dr. Chang-Diaz participated in deployment of the SATCOM KU satellite, conducted experiments in astrophysics and operated the materials processing laboratory. More recently, he was honored by President Reagan with the Medal of Liberty, presented during the rededication of the Statue of Liberty.

After receiving his degree from MIT, Dr. Chang-Diaz joined the Charles Stark Draper Laboratory staff and worked on the design and integration of control systems for fusion reactors. In 1979 he developed a novel concept to guide and target fuel pellets in an inertial fusion reactor chamber. More recently, he has been engaged in the design of magnetic divertor systems for energy recovery and impurity control in fusion power plants as well as new concepts in rocket propulsion based on high temperature plasmas.

IAP luncheon to focus on new directions

A discussion of new directions for this year's Independent Activities Period (IAP) will highlight the annual IAP Coordinators' Luncheon today at noon in La Sala de Puerto Rico.

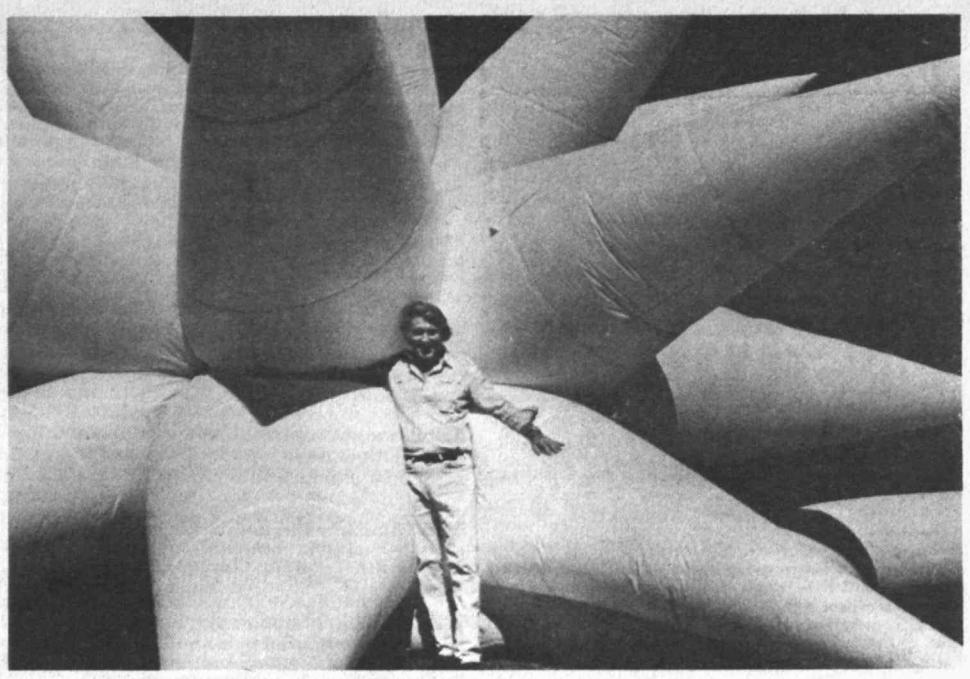
The new directions, outlined by the IAP Policy Committee, are designed to strengthen the quality of January programming and to boost participation and interest in specific areas. This year's goals emphasize creating a special focus on programs for freshmen; encouraging departments to experiment with new teaching methods, learning formats, and subject matter; stimulating more Institute-wide activities; and promoting greater student-faculty interaction. IAP will be held January 5-28, 1987.

IAP coordinators are appointed by departments, centers, and laboratories to oversee the planning of IAP activities. Professor David Gordon Wilson, chairman of the IAP Policy Committee, said coordinators' enthusiasm is central to the success of IAP.

"Coordinators are sometimes organizers, but especially catalysts," Professor Wilson said. "Most people have an idea for IAP, but are reluctant to come forward with it. A coordinator can unleash this torrent of energy."

Along with the discussion of new directions, coordinators will receive advice from administrators, policy committee members, and veteran activity organizers. Speaking at the luncheon will be Professor Wilson; Professor Samuel Jay Keyser, associate provost; Professors Joseph Haritonidis, Keith Nelson, and James Higginbotham, members of the policy committee; Andrew Chabelal, undergraduate and former activity leader; Mary Jasinski, Schedules Office representative; and Mary Z. Enterline, Elaine Konopka, and Leslie Rome, IAP staff in the Undergraduate Academic Support Office.

The MIT community is invited to join in the kick-off of IAP Planning Month with the third annual IAP T-shirt raffle. Red and blue IAP shirts will be raffled every five minutes in Lobby 7 on Wednesday, Oct. 1, 11:30am-1:30pm.



Sky Artist Otto Piene, Director of the Center for Advanced Visual Studies, in Killian Court with his inflatable, Iowa Star. This study was made as Mr. Piene was being photographed for a feature on Cambridge artists and intellectuals, scheduled to run in the October issue of Town and Country magazine. *—Photo by Paula M. Lerner*

Sky Art schedule announced

By CHINA ALTMAN
Staff Writer

Artists who create events, installations, illusions and meditations for the sky will gather at MIT September 29-October 3 to demonstrate their works and to plan for a future in which such art may become a part of daily life.

The 1986 Sky Art Conference of the Center for Advanced Visual Studies will feature one big demonstration day, Wednesday October 1, 10am-10pm, on the Kresge Oval, at Briggs Field and outside of the CAVS Building (W11) at 40 Mass Ave. The other four days will be devoted to special indoor presentations, discussions, and collaborative sessions among artists and presenters, who will come from many parts of this country and from Europe.

Among various media to be used and examined: steam, giant inflatables, kites, poetry, fireworks, skywriting, laser projection, electronic music, and translations of flight.

This fourth Sky Art Conference represents a return to its origins. Artist Otto Piene gave the movement its name when he said, "Sky Art is that art which is expressive of the sky." He organized the first international conference at MIT in September, 1981. Others have been held in Linz, Austria, 1982 and Munich, Germany, 1983. Mr. Piene is Director of the Center for Advanced Visual Studies and Professor of Visual Design at MIT.

Though the 1986 Sky Art Conference begins next Monday morning at the CAVS Building, the most visible day will be Wednesday. Four artists who are candidates for the Master of Science in Visual Studies (MsVs) will be among those presenting at one of the three outdoor sites that day. Lees Ruoff will demonstrate inflatable sculpture. Shawn Brixey, whose medium is environmental molecular transmission; dancer Laura Knott, and David Atherton, multimedia artist, present Photon Voice, a multimedia performance-installation created for a special CAVS art event filmed last spring in a desert near Lone Pine, Calif.

Other demonstrations/installations Wednesday will be from three former CAVS Fellows: Joan Brigham, whose medium is steam; Mark Mendel, a poet/mason of Monterey, Mass.; and Joe Moss, sculptor, University of Delaware.

Visiting artists also presenting Wednesday will be: Peter Payak, poet, of Cambridge; Steve Poleskie whose medium includes skywriting, Cornell University; Howard Woody, sculpture and sky art, University of South Carolina; and Tal Streeter, whose medium includes kites. He is head of sculpture at the State University of NY, Purchase, N.Y.

Outside the CAVS Building at 8pm Wednesday night there will be a "Surprise Event" from P.A. Hubert of Marseille, France, an artist whose medium is personal fireworks.

At 8:30 that night there will be a concert in the CAVS Building by cellist Charlotte Moorman, founder and director, Avante Garde Art Festival, New York. She will present Slow-Scan Study No. 1.

Among the MIT students of the MSVS program participating in Sky Art '86 will be: George Numrich, solar sound sculpture, and Sarah Dickinson, telecommunications.

Presiding at opening events and other ceremonies will be Mr. Piene and Elizabeth Goldring, poet, Exhibits and Projects Director and Fellow of the CAVS.

Other CAVS Fellows collaborating for this Sky Art Conference will be: Research Fellow Paul Earls, whose media include lasers and electronic music; Lowry Burgess, conceptual space art, CAVS fellow, Director, Fine Arts and Design Programs, Massachusetts College of Art, Boston; Rus Gant, media artist, and Chris Janney, multi media, performance, sound, music, computer artist.

Among the Monday speakers for Sky Art discussions will be Harald Reiche, MIT Professor of History and housemaster of Baker House.

On Tuesday, Sept. 30, the afternoon session will be welcomed by Todd Siler. The first visual artist to receive a doctorate from MIT, in June, '86. Mr. Siler, based in Cambridge and New York, can be described brieffy as an art/science visualizer/artist.

Although all the events are expected to be provocative, entertaining and perhaps occasionally visionary, two of Thursday's occasions will have a special kind of interest for the MIT community.

At 3:30pm that day Harold J. (Doc) Edgerton, Institute Professor Emeritus, Professor of Electrical Measurements, will be in charge of an event in Strobe Alley. At 5 pm the same day the MIT Museum and the CAVS will host an 80th birthday reception for artist Gyorgy Kepes, Institute Professor Emeritus, Professor of Visual Design Emeritus, Founder and Director Emeritus of the Center for Advanced Visual Studies. This will take place in the Museum's Compton Gallery off the Infinite Corridor, near Lobby 10.

Artists taking part throughout the Conference include: Bill Bell, neon/visionary illusions, of the Boston area, recently artist in residence at The Exploratorium, San Francisco; and New York based Stephen s'Soreff whose medium is the future, including sending of messages into outer space.

Among those coming from far away: Rolf Lieberknecht, professor of design, Academy of Fine Arts, Berlin; Bill FitzGibbons, sculpture, Visual Arts Center, Anchorage, Alaska; Ken Gray, sculpture, University of Alaska.

Also: Chris Robinson, artist on leave from the Air Force; his medium is translation of flight into art, of Columbia, S.C.; Leila Daw, mapping earth surfaces from the sky, St. Louis, Missouri; David Bermant, entrepreneur, director: Art In Public Spaces, headquartered in Rye, N.Y.; Howard Rosenthal, New York based sculptor; Irene Pittman, fiber sculpture, Tampa, Florida; Steve Poleskie, flier, skywriting, Cornell University.

From the Greater Boston area: journalist Jack Borden, from For Spacious Skys, a national awareness group; Don Burgy, media, Massachusetts College of Art; Peter Payack, poet, Cambridge; Ben Davis, media artist, Cambridge.

Former CAVS Fellows returning to take part include: Mel Alexenberg, computer graphics and computer/bio feedback, of New York; Jurgen Claus, sky, ocean and media artist, of Munich, Germany; Michio Ihara, metal kinetic sculpture, former MIT graduate student and former CAVS fellow, of Concord, Mass., and Michael Bernard of Cambridge, writer, poet, lawyer, planner, space law, editor/publisher of Reflections on Space, a monthly newsletter.

The Sky Art Conference concludes with a seminar on "Tomorrow," on Friday, Oct. 3, at 2pm in the CAVS Building, followed at four by a reception.

THE INSTITUTE CALENDAR

September 24-October 4

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.

MISS THE TECH TALK DEADLINE?

Put your announcement on the MIT Cable System. "Today at the Institute" runs 24 hours a day and can be viewed in Lobby 7, Lobby 10 and anywhere the cable is connected.

Simply submit announcement in writing to Rm 9-030. 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 cable (except for exhibits and some multimeetings programs).

Events of Special Interest

The Worlds of Philip Morrison—Symposium with papers presented in three areas: astrophyics, education, and disarmament,** Fri, Sept 26, John Quincy Adams Ballroom, Registration & coffee 8am, Hyatt Regency Hotel; **Banquet,** Sept 26, Walker Memorial with speaker, Prof Thomas Gold, Cornell University; **All-Institute Symposium,** Sept 27, registration & coffee 8:15am, Kresge Auditorium with speakers Carl Sagan and Hans Bethe, Cornell University and Prof Morrison; **Picnic/Festival,** Sept 27, 12:45pm, Kresge Oval. Festival with kites and other airborn objects. Preregistration/info: Gayle Fitzgerald, Office of Conference Services, x3-1703, Rm 7-111.

The Intimate PDQ Bach*—Peter Schickele, Lecture Series Committee concert, Wed, Oct 8, 8pm, Kresge Auditorium. MIT/Wellesley ID required. Admission: $5,7,9; tickets go on sale Wed, Sept 24.

Sexually Speaking with Dr. Ruth—Dr. Ruth Westheimer,** Lecture Series Committee Lecture, Mon, Oct 20, 8pm, Kresge Auditorium. MIT/Wellesley ID required. Admission: $2; tickets go on sale Mon, Oct 6.

Seminars and Lectures

Wednesday, September 24

Defining Your Leadership Style—**Campus Activities Office Leadership Education and Development (LEAD) Program, 12:30-1:30pm, Student Ctr Center Lounge. Bring your lunch.

Direct Passive Navigation—Shahriar Nagahdaripour,** Mechanical Engineering Doctoral Thesis Presentation, 2pm, Rm 1-114.

Special Joint Seminar with the Underwater Acoustics Group*—Overviews by Prof Baggeroer & Newman and the Overlap Between the Two Fields, Depts of Ocean and Civil Engineering, 3:30-5pm, Rm 5-314.

The SAXPY 1M: Architecture and Algorithms*—Robert Schreiber, Rensselaer Polytechnic Institute, SAXPY Computer Corp, Dept of Mathematics Numerical Analysis Seminar, 4pm, Rm 4-163. Refreshments served, 3:30pm, Rm 2-349.

An Overview of AI Activities at GTEmdDr. Shri Goyal, GTE Laboratories, Waltham, MA,** Dept of Civil Engineering Intelligent Engineering Systems Lab Seminar, 4-5pm, Rm 6-120. Donuts & coffee served, 3:30pm.

Internal Processes in the Ice Planets—Dr. Jon Lunine, Lunar and Planetary Laboratory, University of Arizona,** Dept of Earth, Atmospheric and Planetary Sciences Conoco Lecture, 4-5pm, Rm 54-915.

Tense Moments: A Structural and Functional Review of English Verb Tenses—**The Writing Program ESL seminar, 6:15pm, Rm 14N-317.

Harold "Doc" Edgerton—**Lecture Series Committee Lecture, 8pm, Rm 26-100. MIT/Wellesley ID required. Free.

▫014Thursday, September 25

Safety Seminar—**School of Science seminar, 9am, Rm 2-390.

Microcellular Foams Prepared by Phase-Separation of Polymer Solutions*—Dr. James H. Aubert, Sandia National Lab, Program in Polymer Science and Technology Polymer Seminar, 12-1pm, Rm E25-119. Refreshments served. Info: Rosalie Allen, x3-3115.

Materials for High Field Superconducting Magnets: Status and Prospects of Chevrel Phases*mdDr. B. Seeber, University of Geneva, Francis Bitter National Magnet Laboratory Topics in Superconductivity Seminar, 12:15pm, Rm NW14-2209. Bring bag lunch.

Laser Trapping of Atoms*—Dr. Steven Chu, AT&T Bell Laboratories, Physics Colloquium, 4pm, Rm 10-250. Refreshments served, 3:30pm, Lobby 10-250.

A Simple Method for Modeling and Interpreting Switching Data: New Insights from Old Matrices*—Donald G. Morrison, Columbia University, Operations Research Center Seminar, 4-5pm, Rm E40-298. Coffee & cookies follow.

Preserving the Past*—Prof Tom Gunning, SUNY-Purchase; Peter Williamson, Museum of Modern Art, New York, MIT Communications Forum, 4-6pm, Rm 26-100.

Managing Growth in the Business World—J. Willard Marriott, Jr, chairman of the board & president, Marriott Corporation,** Sloan School of Management's Distinguished Speakers Series, 4:30pm, Rm E51-329.

My Work—Gunter Behnisch, German architect,** School of Architecture and Planning Lecture, 6:30pm, Rm E25-111.

Friday, September 26

Cartesian Grid Finite Element Solutions to the Euler Equations—Richard Shapiro, Aero & Astro graduate student,** Mechanical Engineering Informal Fluid Dynamics Seminar, 12-1pm, Rm 33-206. Coffee & refreshments served.

Activation of the Neu Oncogene*—Cori Bargmann, Cell Biology Seminar, 12:15pm, Whitehead Auditorium.

Fractal Nature of Rocks—Dr. Po-Zen Wong, Schlumberger-Doll Research,** Ctr for Materials Science and Engineering Colloquium, 12:15pm, Rm 12-132. Lunch provided, 12noon.

Characterization of Micro-Mixing in a Jet-Stirred Turbulent Combuster by Laser Rayleigh Scattering—Robert B. Barat,** Chemical Engineering Seminar, 2pm, Rm 66-110.

Social Study of Computer Use—Prof Sherry R. Turkle, MIT Program in Science, Technology & Society,** Sloan School Management in the 1990s Seminar, 2:30pm, Rm E51-332.

On the Kinetic or Thermodynamic Stability of Dispersions—Prof Eli Ruckenstein, Dept of Chemical Engineering, SUNY-Buffalo,** Chemical Engineering Seminar, 3pm, Rm 66-110.

Active Control of a Flexible, Two-Mass Rotor: The Use of Complex Notation*—Bruce G. Johnson, Mechanical Engineering Doctoral candidate, Dept of Mechanical Engineering Thesis Presentation, 3pm, Rm 3-442.

Monday, September 29

Energy Regeneration and Its Application to Active Above Knee Prosthesis*—B. Seth, graduate student, Dept of Mechanical Engineering Doctoral Thesis Defense, 10am, Rm 1-273.

Flow Over Orography in Association with ALPEX—Dr. William Blumen, University of Colorado,** Ctr for Meteorology and Physical Oceanography Seminar, 11am, Rm 54-915.

Random Recursive Constructions*—Prof R.D. Mauldin, North Texas State University-Denton, Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served, 3:30pm, Rm 2-349.

Puzzles in Program Proving*—Prof Albert R. Meyer, MIT, Electrical Engineering and Computer Science Colloquium, 4pm, Rm 34-101. Refreshments served, 3:30pm.

Coastal Charts and Coastal Wrecks: A Panel Discussion on Coastal Mapping and Research*—Shoreline Change Maps—Jeff Benoit, Mass Office of Coastal Zone Management; The Explorer's Map and Directory of the New England Coast—David Weaver, independent cartographer; Tales of Boston Harbor and the Charles: Is There Really a Wreck in the Charles Basin?—Prof Harold "Doc" Edgerton, Institute Professor Emeritus; Diane Jarock, design manager, MIT Press, Coast Week at MIT sponsored by the Lindgren Library, 4pm, Rm 54-915. Refreshments follow.

Parsons Lab Review: An Overview of the Research Interests of the Faculty—Penny Chisholm, Phil Gschwend, Don Harleman, Francois Morel, Keith Stolzenbach,** Dept of Civil Engineering Division of Water Resources and Environmental Engineering Seminar, 4pm, Rm 48-316.

Tuesday, September 30

Nonlinear Optical Experiments on Interfaces—Yuen-Ron Shen, University of California-Berkeley,** Laser Research Center Spectroscopy Laboratory/Research Laboratory of Electronics/School of Engineering and Plasma Fusion Center Seminar on Modern Optics and Spectroscopy, 11-12pm, Rm 37-252. Refreshments follow.

Structured Process Flow for Integrated Design, Manufacturing, and Test—Paul Losleben, Stanford University, Stanford, CA,** VLSI Seminar, 4pm, Rm 34-101. Refreshments, 3:30pm.

Resonance-Raman Spectroscopic Identification of a Transient-Intermediate(s) in the Native Ternary Complex Formed with Thymidylate Synthase—Dr. Anthony Fitzhugh, Frederik Cancer Research Facility, Frederik, MD,** Biology Colloquium, 4:15pm, Rm 10-250. Coffee served, 3:45pm, outside Rm 10-250.

Turbine Performance Prediction and New Guidelines for Preliminary Design*—Prof David Gordon Wilson, MIT, Gas-Turbine-Lab Seminar, 4:15pm, Rm 31-161. Refreshments, 4pm.

The Evolution of Interacting Binary Stellar Systems*—Prof Saul A. Rappaport, MIT Dept of Physics & Ctr for Space Research, Ctr for Space Research Seminar, 4:15pm, Rm 37-252. Refreshments served, 3:45pm.

What Makes Syria Tick: Arabism or Nepotism?*—Dr. Yahya Sadowski, Brookings Institution, Washington, DC, Emile Bustani Middle East Seminar, 4:30-6:30pm, Rm E51-332.

Wednesday, October 1

A Time-Dependent Theory for Squall Lines—Dr. Richard Rotunno, NCAR,** Ctr for Meteorology and Physical Oceanography Seminar, 11am, Rm 54-1411.

Techniques of Effective Communication—**Campus Activities Office Leadership Education and Development (LEAD) Program, 12:30-1:30pm, Student Ctr Center Lounge. Bring your lunch. Info: Barbara Chuck, x3-7975.

Time-Domain Techniques for Solving Ship-Motion Problems*—Prof R.F. Beck, visiting professor, Ocean Engineering, Depts of Civil & Ocean Engineering Seminar, 3:30-5pm, Rm 5-314.

COMPASS: An Expert System for Telephone Switch Maintenance—Dr. David Prerau, GTE Laboratories, Waltham, MA,** Dept of Civil Engineering Intelligent Engineering Systems Lab Seminar, 4-5pm, Rm 6-120. Donuts & coffee served, 3:30pm.

Accelerator Radiocarbon Measurements: The Ventilation Rate of the Ocean During Glacial Time—Prof Wallace Broecker, Lamont-Doherty Geological Observatory, Columbia University,** Dept of Earth, Atmospheric and Planetary Sciences Conoco Lecture, 4-5pm, Rm 54-915.

From Chaos to Control: An Exploration of Methods and Patterns for Organizing Writing: part of the Writing Center's ESL series—**The Writing Program, 6:15pm, Rm 14N-317.

Thursday, October 2

Air Safety and Economics*—Ronald Ashford, director-general, Airworthiness, British Civil Aviation Authority, Flight Transportation Laboratory Seminar, 2-3:30pm, Rm 33-319.

Distributed Asynchronous Relaxation Methods for Linear Network Flow Problems*—Dimitri Bertsekas, MIT, Operations Research Center Seminar, 4-5pm, Rm E40-298. Coffee & cookies follow.

Milli-Second Pulsars and General Relativity—Prof Donald Backer, University of California-Berkeley,** Physics Colloquium, 4pm, Rm 10-250.

Matthew Scott, '84, a graduate student in aeronautics and astronautics, prepared a special exhibition for the Wiesner Art Gallery to introduce newcomers to basic concepts of modern/abstract art in a way that is thoughtful, entertaining and accessible. He is shown in front of his own painted panel, entitled "Negative." His exhibition on the second floor of the Student Center runs through October 5.

—Photo by L. Barry Hetherington

The Future of US Maritime Posture for National Defense and Economic Security—Charles Bookman, National Research Council, Washington, DC,** International Shipping Club Seminar, 4:15pm, Rm E51-328.

US Nuclear Non-Proliferation Policy: Vie ws of a Recent Washington Returnee*—Marvin Miller, MIT, MIT Defense and Arms Control Studies Program Seminar, 4:15-5:45pm, Rm E38-615.

Interorganizational Systems: Public or Private?*—Michael Marcus, MIT; Carl E. Code, GM Corp; Benn R. Konsynski, Harvard Business School, MIT Communications Forum Seminar, 4-6pm, Wiesner Bldg Bartos Theatre.

Advanced Materials in the Automotive Industry—Prof Kent Bowen, director, Materials Processing Ctr, MIT,** MIT Japan Science and Technology Program Forum on the US Automotive Industry: Crises and Lessons from Japan, 5:30pm, Student Ctr Mezzanine Lounge.

High Speed Photography and X-ray Flash Technology—Dr. Frank Frungel,** Lecture Series Committee Lecture, 8pm, Rm 34-101. MIT/Wellesley ID required. Free. An Edgerton Series lecture.

Friday, October 3

Transcriptional Control in Rous Sarcoma Virus*—Pamela Norton, Cell Biology Seminar, 12:15pm, Whitehead Auditorium.

The Success of UPS Air Operations*—John Alden, vice president, Sales and Marketing, United Parcel Service, Ctr for Transportation Studies/Transportation Research Forum of Boston Luncheon Seminar, 12:45-2pm, Faculty Club. Optional luncheon, 12-12:45pm; luncheon fee: $2/students; $6/non-students. Info: x3-5320.

New Bioreactor Systems Using In-Situ Solvent Extraction for Organic Acid Production—Vijay Yabannavar,** Chemical Engineering Seminar, 2pm, Rm 66-110.

Contextual Contrasts: Recent Trends in the History of Technology*—Prof M. Roe Smith, MIT Program in Science and Technology, Sloan School Management in the 1990's Research Program, 2:30pm, Rm E51-332.

A Comparison of Experimental and Numerical Results Describing the Natural Convective Drag Force on a Heated Sphere Suspended in an Electrodynamic Balance—David R. Dudek,** Chemical Engineering Seminar, 3pm, Rm 66-110.

Coordination and Control of Movement in Man and Machine*—Neville Hogan, associate professor, MIT Dept of Mechanical Engineering, Dept of Mechanical Engineering Seminar, 3pm, Rm 3-270.

Convective Boundary Layers Over the Ocean—Dr. Alan Betts, West Pawlet, VT,** Ctr for Meteorology and Physical Oceanography Seminar, 4pm, Rm 54-915.

Films

Rheological Behavior of Fluids; Cavitation**—Fluid Mechanics Films, Sept 25, 4-5pm, Rm 3-270.

Low Reynolds Number Flows; An Interview with G.I. Taylor**—Fluid Mechanics Films, Oct 2, 4-5pm, Rm 3-270.

Community Meetings

Alcoholics Anonymous (AA)—**Meetings every Tues, 12-1pm, Rm E23-364. For info call Gene, x3-4911.

Al-Anon—**Meetings every Fri, noon-1pm, Health Education Conference Rm E23-297. The only requirement for membership is that there be a problem of alcoholism in a relative or friend. Call Gene, x3-4911.

Alcohol Support Group—**Meetings every Wednesday, 7:30-9am, sponsored by MIT Social Work Service. For info call Gene, x3-4911.

Narcotics Anonymous*—Meetings at MIT, every Mon, 1-2pm, Rm E23-364 (MIT Medical Dept). Call 569-0021.

Overeaters Anonymous*—Meetings every Mon, 12-1pm, Rm E23-297. This is not a lunch time meeting, so please do not bring any food.

MIT Faculty Club—**The Club is open Mon-Fri. Luncheon hours: noon-2pm; dinner hours: 5:30-8pm. For dinner and private party reservations, call x3-4896, 9am-5pm daily.

Commodore Users Group—**meets monthly at noon time. For more info, call Gil, x8-3186 Draper.

MIT Wives' Group—Morning Group:** TBA. **Afternoon Group: Sept 24,** Getting Settled in Boston and How to Deal with Culture Shock: Discussion by Wives' Group members; **October 1,** How to Survive the American Supermarket—Janet Van Ness, director, Health Ed Dept. All Afternoon Group meetings, 3-5pm, Student Ctr, Rm 491. Babysitting provided during meeting in Student Ctr Rm 407. All women in the MIT community welcome.

Feminist Reading Group—**Meets every Wed, 12-1pm, Rm E51-310. Info: Sharon, x3-3622.

Nanotechnology Study Group*—discussions of nanotechnology and related topics such as AI, robotics, space development, miniaturization, life extension, first Tues and third Thurs of each month, 7:30pm, Rm NE43-773. Pizza, $1/slice. Info: David Forrest, x3-3222.

MIT Women's League Informal Needlework Group—**Wednesday lunchtime gatherings, 10:30am-1:30pm, Rm 10-340. Meeting dates: Sept 24, Oct 8 & 22, Nov 12 & 26, Dec 10. Come during your lunch hour. Coffee & tea served. For more info, call Lillian Alberty (491-3689).

MIT Activities Committee

MITAC, the MIT Activities Committee offers discount movie tickets for General Cinema, Showcase and Sack (USA Cinemas) Theaters ($3 ea). Tickets are good 7 days a week, any performance.

Tickets may be purchased at MITAC Office, Rm 20A-023 (x3-7990), 10am-3pm. Mon through Fri Ticket sales in the Lobbies 10 and E18 on Fri, 12-1pm. Lincoln Lab employees may purchase tickets in Rm A-270 from 1-2pm, Tues through Fri only. Check out our table of discounts for camping, dining, musical and cultural events available to you through MITAC and MARES (Mass Assoc of Recreation and Employee Services).

Apple Picking at Smolack Farm. Sat, Oct 4. Spend a day at a farm in North Andover, pick apples, view a cider press, take a walk on one of the farm trails, and more. Also, a farm stand, Indian corn, baked goods and 2 goats. Brown bag a lunch and spread a blanket for a picnic. Containers/bags provided for apples by Smolack Farm. Children welcome. Bus leaves West Garage, 9:15am; returns approx 3pm. Cost: $7/pp. Reservations, Rm 20A-023.

Ringling Brothers & Barnum & Bailey Circus. Sat, Oct 18 & Sun, Oct 19, 11am, Boston Garden. The lions and tigers and bears are back! Delight in the glitter and pagentry of "The Greatest Show on Earth"—from the tiger-taming mastery of Gunther Gebel-Williams to the fiction-turned-real "living unicorn." Tkts, $9.50/pp (reg $11.50/pp), available in Rm 20A-023.

Fall River Shopping Madness. Sat, Oct 25. Stock up on jeans, linen, chamois shirts, handbags, cosmetics, children's clothing and more, all at factory outlet prices on MITAC's fifth annual Fall River Shopping Outlet Spree. First stop (and lunch stop too; bring your own or stand in line at the cafeteria) is in "the heart" of the district—51 outlets. Stop 2 is Vanity Fair with nearly 2 dozen outlets. Bus leaves West Garage, 8:30am; returns to MIT approx 6pm. Tkts, $8.50/pp, available in Rm 20A-023.

Council for the Arts Museum Passes. On campus, there are 10 passes employees may borrow for free admission to the Museum of Fine Arts. To check on availability, call x3-5651. At Lincoln Lab, passes are available in the Lincoln Lab Library, Rm A-150.

Museum of Science Tickets. Available for only $1. Pay another $1 at the door, for a total savings of $3/pp/adult; $1/pp/child (reg $5/pp/adult; $3/pp/child). Don't miss tyrannosaurus rex and the dinosaur exhibition, through Nov 30.

Greater Boston Books are coming. Look for them in mid-October. The 2-volume, 820+ page discount coupon book offers discounts on fine and casual dining, theatre, opera, ballet, museums, and more for the Greater Boston area and beyond. Only $20/ea (reg $30/ea).

City Books are coming. Look for them in mid-October.

Parent Connection Book is coming. Offers savings on everything from juvenile furniture to children's clothing to pre-and post-natal services, and more. The discount coupon book is only $2/ea (reg $7.95/ea). Look for it in early October.

Important! To avoid disappointment, purchase tickets and make reservations early as we are limited by ticket availability and transportation. All MITAC events and ticket purchases are non-refundable due to the non-profit nature of our organization.

Social Activities

Japanese Table—**MIT-Japan Science and Technology Program/Wellesley-MIT Exchange Program lunch table, every Tues, 1-2pm, new Japanese Lounge and Meeting Rm, Walker 220. Bring bag lunch; all levels of Japanese welcome. Hosted by Japanese wives.

Hebrew Table—**MIT Hillel Hebrew Table to practice your Hebrew, every Tuesday at 5:30pm in the Kosher Kitchen (Walker Rm 50-007). Dinner available for $5.75.

Movies

Destry Rides Again*—LSC Movie Classic, Sept 26, 7:30pm, Rm 54-100. $1 MIT/Wellesley ID required.

The Color Purple**—LSC Movie, Sept 26, 6:30&10pm, Kresge Auditorium. $1 MIT/Wellesley ID required.

Young Sherlock Holmes**—LSC Movie, Sept 27, 7&10pm, Rm 26-100. $1 MIT/Wellesley ID required.

Being There**—LSC Movie, Sept 28, 6:30&9:30pm, Rm 26-100. $1 MIT/Wellesley ID required.

On the Waterfront*—LSC Movie Classic, Oct 3, 7:30pm, Rm 10-250. $1 MIT/Wellesley ID required.

The Spy Who Loved Me**—LSC Movie, Oct 3, 7&10pm, Rm 26-100. $1 MIT/Wellesley ID required.

Kiss of the Spider Woman**—LSC Movie, Oct 4, 7&10pm, Rm 26-100. $1 MIT/Wellesley ID required.

Sleeping Beauty**—LSC Movie, Oct 5, 3,6:30&9pm, Rm 26-100. $1 MIT/Wellesley ID required.

Music

Noon Hour Chapel Series*—Glorianne Collver-Jacobson and Robert Ward, guitarist perform works of Albeniz, Grandos, De Falla, Scarlatti and others, Thurs, Sept 25, 12:05pm, MIT Chapel. Free.

Noon Hour Chapel Series*—Jane Lewis, Baroque oboe; Daniel Ryan, Baroque cello; Peter Sykes, harpsichord perform works of Bach, Couperin and Handel, Thurs, Oct 2, 12:05pm, MIT Chapel. Free.

Massachusetts Institute of Technology

MIT POSITIONS AVAILABLE

September 24, 1986

MIT Personnel Office, E19-239
400 Main Street
Cambridge, Massachusetts

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 outside (10-215) and in the Personnel Office (E19-239).

Information on openings at Lincoln Laboratory (Lexington, MA) is available in the Personnel Office (E19-239).

Persons who are NOT MIT employees should call the Personnel Office at 253-4251.

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

Virginia Bishop	253-1591
Ken Hewitt	253-4267
Appointments:	
Therese McConnell	253-4274
Sally Hansen	253-4275
Oveta Perry	253-1594
Appointments:	
Maureen Howard	253-4268
Kim Bonfiglioli	253-4076
Appointments:	
Nancy Collins	253-4077

ADMINISTRATIVE AND ACADEMIC STAFF

PERSONNEL OFFICER, Personnel Services and Employment (two positions), to coordinate personnel and employment matters. One Officer will handle the School of Engineering; the other will handle the Offices of the President, Vice President and Provost. Will interpret and advise on personnel policies and procedures to all categories of employees; interview and refer candidates for non-academic positions; participate in recruitment efforts; provide guidance to supervisors on transfers, promotions and terminations; provide information on salary reviews; assure compliance with M.I.T. policies including Affirmative Action policies; counsel employees and supervisors in resolution of problems and grievances; and provide liaison between organizational units and other specialized services in Personnel. Requirements: bachelor's degree or equivalent combination of education and experience. Excellent administrative and human relations skills are essential, as is the capacity to handle detailed and sensitive information with discretion. A minimum of two years experience in the personnel field is desirable. **A86-826, A86-718**

ASSISTANT TRANSMISSION MANAGER II, Telecommunications Systems, to provide engineering, design and operational management support to the Transmission Manager. Will assist in the planning, development and implementation of telecommunications networks; participate in negotiations with common carriers, vendors and contractors; study applications of new technology and submit recommendations; and assist in the design of special circuits and equipment. Requirements: B.S. in electrical engineering or computer science or equivalent combination of education and experience; 2 - 3 years experience in data communication and networking; and familiarity with LANs, packet switching, telecommunications protocols, and network architectures. **A86-824**

SLOAN SCHOOL OF MANAGEMENT DIRECTOR OF INFORMATION SYSTEMS, to manage the full range of information system facilities and services which support the Sloan School's teaching and research programs and its internal administrative functions and staff. Will develop the annual information systems plan; make major policy and personnel decisions; handle matters involving relations with other MIT academic or administrative units; and advise on planning and implementing office automation and related systems. Master's degree or equivalent combination of education and experience and prior information systems project management experience, knowledge of university environment and familiarity with microcomputers and/or mainframe technologies required. Excellent written and oral communicational skills and demonstrated effectiveness in team-oriented work necessary. **A86-818**

SPONSORED RESEARCH STAFF

POSTDOCTORAL GEOPLASMA PHYSICIST, Center for Space Research, three positions to conduct basic research in wave-particle interactions and plasma turbulence in Earth's ionosphere and magnetosphere. Will also interact with fellow experimentalists engaged in satellite and rocket research. Requirements: Ph.D. in physics or applied mathematics with strong background in theoretical plasma physics. Knowledge of space physics desirable but not required. **R86-089, R86-088, R86-087**

THEORETICAL GEOPLASMA PHYSICIST, Center for Space Research, to conduct independent theoretical research in wave-particle interactions and plasma turbulence in Earth's ionosphere and magnetosphere. This position also involves interaction with fellow experimentalists engaged in satellite and rocket research. Requirements: Ph.D. in physics or applied mathematics with strong background and several years of research and postdoctoral experience in theoretical plasma physics, particularly in the area of kinetic theory of plasmas, and space physics. **R86-086, R86-085**

RESEARCH ENGINEER, Energy Laboratory, to join the Aerosol Characterization Group, a multidisciplinary team involving chemical engineers, materials scientists and inhalation toxicologists in research on the physical and chemical characterization of inorganic combustion-generated aerosols. Requirements: master's degree in physical sciences or mechanical or chemical engineering and at least 2 years experience in high temperature catalysis studies or chemical characterization. Must have a strong background in coal combustion technology, aerosol science and instrumentation. Effective written, oral and interpersonal skills essential. **R86-084**

RESEARCH ENGINEER/SCIENTIST, Center for Transportation Studies, to develop decision support systems. Emphasis will be on network optimization algorithms, decomposition methods and statistical analyses. Will work with both faculty and students on the development of planning and operations control systems for railroads, trucklines, airlines and logistics networks. Requirements: master's degree in operations research, good programming skills and programming work experience. **R86-083**

TECHNICAL ASSISTANT, Harvard-MIT Division of Health Sciences and Technology, to work with a group investigating messenger RNA translational efficiency, RNA secondary structure and RNA-protein interactions in plant and animal systems. Will prepare DNA and RNA samples, perform in vitro transcription and translation experiments and handle routine maintenance of laboratory supplies. Requirements: bachelor's degree in biology or chemistry. Familiarity with molecular biology techniques desirable. **R86-082**

TECHNICAL ASSISTANT, Center for Cancer Research, to work in a laboratory investigating the molecular biology of animal viruses. Will maintain animal cell lines in tissue culture; prepare and titer virus stocks; collaborate in experiments on the molecular biology and biochemistry of animal viruses and mammalian cells; and maintain some laboratory supplies and equipment. The techniques involved are nucleic acid biochemistry, hybridization and general analysis of macromolecular components of mammalian cells. Requirements: bachelor's degree in basic science and a working understanding of current research in molecular biology. Experience in research in a modern biological laboratory, particularly experience with tissue culture techniques, nucleic acid or protein biotechnology, helpful. Should be able to work well with others on a common problem. **R86-079**

LIBRARY SUPPORT STAFF

JUNIOR MICROFILMER, Microreproduction Laboratory, to perform elementary tasks in the production of microforms and receive instruction in additional technical disciplines. Will be responsible for meeting production goals, while observing quality standards, and help to maintain equipment. Will be expected to work in one or more of the following activities: operation of a planetary microfilm camera in the production of roll film or microfiche; operation of a rotary camera; darkroom work; operation of microfiche step and repeat camera; operation of a microfiche printer/processor; and operation of binding equipment. Graduation from high school preferred. Mechanical ability desirable. **L86-684, L86-683**

LIBRARY ASSISTANT III, RetroSpective Collection (part-time, 17.5 hours/week, mornings), to perform circulation routines: charge and discharge books, retrieve materials from stacks, receive telephone requests on renevals and collect statistics. Will also perform general stacking routines: clear tables and book trucks; sort, distribute and reshelve material; shelfread and search for missing items; and perform other related duties as assigned. Requirements: graduation from high school or equivalent and minimum one year direct/related experience; post high school education may count toward experience. Familiarity with typewriter keyboard desirable. Must have good organizational skills and ability to work with minimal supervision. Punctuality and regular attendance are essential. Physical stamina needed for stacking duties. **L86-680**

LIBRARY ASSISTANT IV, Acquisitions Department (part-time, 25 hours/week), to order, process and route materials received in the Libraries' Exchange and Gifts programs. Will handle correspondence and requests in foreign languages from exchange partners, process exchange orders and invoices, keep statistics and maintain mailing lists; route donated materials to appropriate subject libraries; process materials with orders; maintain donor records; and prepare acknowledgments and donor list for the Director of Libraries. Additional responsibilities include bibliographic searching; delivering gift materials to library departments; assisting in the storage room and at book sales; typing correspondence; word processing for lists; maintaining files; answering phone and handling the office in the absence of the librarian. Minimum 2.5 years direct/related experience and 45 wpm typing skills required; post high school education may count toward experience. Foreign language skills necessary; reading knowledge of Russian or Chinese desired. Previous library experience helpful. NON-SMOKING OFFICE. **L86-652**

LIBRARY ASSISTANT III, Rotch Library (part-time, 21 hours/week), to work as a general processing assistant. Will process new monographic materials; perform pre-order searches and prepare orders for titles included in New Title Announcements Services; search and prepare orders for gift materials; assist in manual and on-line catalogue maintenance, including updating local holdings information; participate in shared library routines; and assist in special projects as assigned. Graduation from high school, basic typing skills and minimum one year direct/related experience required; post high school education may count toward experience. Some knowledge of French, German, Italian or Arabic desirable. NON-SMOKING OFFICE. **L86-642**

LIBRARY ASSISTANT IV, Rotch Library, to carry out technical processing procedures, with primary responsibility for serials, including government documents. Will maintain the serial holdings of the library in art, architecture and planning; search and type serial orders; process claims and replacement orders; perform check-in routines and maintain holdings information in manual and automated systems; identify and prepare volumes for binding; and act as liaison between Rotch and the Libraries serials acquisitions and cataloguing offices. Will also participate in processing monographic materials and in shared routines of the Processing Section; and participate in catalogue maintenance and assist with special projects. May train and direct the work of student assistants. Graduation from high school or its equivalent, accurate typing skills and minimum 2.5 years direct/related experience required; post high school education may count toward experience. Experience with personal computers and automated library systems and knowledge of one or more foreign languages desirable. NON-SMOKING OFFICE. **L86-641**

LIBRARY ASSISTANT IV, Laboratory for Computer Science, to maintain journal collection, including processing and initiating claims as necessary. Will process and pre-catalogue books and technical reports; maintain circulation files; send out overdue notices; file catalogue cards; discharge and shelve library materials; assist in on-line cataloguing; answer reference questions and provide other user services; assist in shared library routines such as typing correspondence, shelf reading and preparing materials for binding; and provide support for the publications unit. Minimum 2.5 years direct/related experience required. Ability to work independently and good interpersonal skills important. Knowledge of or willingness to learn computer-based editing system necessary. NON-SMOKING OFFICE. **L86-635**

LIBRARY ASSISTANT III, Hayden Circulation (part-time, 17.5 hours/week), to provide circulation services: charging, discharging, renewing library materials and other circulation functions. Will also be responsible for closing library on Thursdays and Fridays; shelving, shifting and shelfreading in Hayden; searching for missing materials; training student stackers; and other miscellaneous duties as assigned. Most transactions will be done on an online (GEAC) computer system. High school diploma or equivalent, 30 wpm typing and minimum one year direct/related experience required; post high school education may count toward experience. Physical stamina for stacking necessary. Dependability, accuracy, attention to detail and ability to work with a minimum of supervision essential. The work schedule for this position is Wed, 6:30 - 12 p.m.; Thurs, 4 - 12 p.m.; Fri, 2 - 7 p.m. NON-SMOKING OFFICE. **L86-609**

SECRETARY/STAFF ASSISTANT

ADMINISTRATIVE SECRETARY, Office of the Dean for Student Affairs, to provide a variety of support services. This position will involve considerable interaction with students, parents, faculty and staff. Some overtime may be necessary. Requirements: excellent typing skills; knowledge of word processing (preferably DECmate); and a minimum of 4.5 years of direct/related experience. Excellent communicational and organizational skills, ability to work both independently and as part of a team and ability to handle confidential information essential. Must have good judgment, patience, understanding and tact. Knowledge of M.I.T. helpful. **B86-688**

ADMINISTRATIVE SECRETARY, Project Athena, to support the Technical Director. Will compile information and construct reports associated with the administration of the technical development staff; type and format using word processing software; maintain task assignments and other files using a personal computer database system; use electronic mail; schedule meetings and appointments; handle the Technical Director's calendar, files, copying, telephone and travel arrangements; review mail and initiate reply when appropriate; and perform other related duties as required. Requirements: excellent typing and word processing skills and minimum 4.5 years direct/related experience. Good organizational skills and the ability to work with minimal supervision are essential. Must be able to learn use of experimental office automation equipment. Familiarity with M.I.T. desirable. NON-SMOKING OFFICE. **B86-676**

ADMINISTRATIVE SECRETARY, Residence and Campus Activities, Office of the Dean for Students Affairs, to support the Associate Dean and Section Head and the Assistant Dean for Administration. Will assist with the faculty/graduate resident and tutor programs and other residence programs; insure confidential handling of sensitive information; and anticipate and initiate actions in the implementation of overall Office operations. Requirements: graduation from high school or equivalent, 65 wpm typing, knowledge of word processing (preferably DECmate or IBM) and minimum 4.5 years direct/related experience. Ability to work under pressure and with frequent interruptions essential. Must have excellent communicational, interpersonal and organizational skills as well as good attention to detail and discretion in handling confidential information. Knowledge of MIT helpful. **B86-671**

ADMINISTRATIVE SECRETARY, Brain and Cognitive Sciences, to support a busy research neuroanatomy laboratory office including one professor and several postdocs, graduate students and technical staff members. Will type reports and manuscripts on IBM word processor (using Final Word) and prepare correspondence from dictaphone tapes; maintain and review files and records for office operation; coordinate and schedule meetings and appointments; act as information source on established department and Institute procedures; prepare requisitions, travel vouchers and other Institute forms; and order and maintain inventory of supplies. Requirements: excellent typing and proofreading skills and minimum 4.5 years direct/related experience; post high school education may count toward experience. Must be well organized and able to work calmly and with very little supervision. Excellent interpersonal and communicational skills essential. Ease with scientific terms or some knowledge of neuroscience desirable. NON-SMOKING OFFICE. **B86-670**

ADMINISTRATIVE SECRETARY, Resource Development, to support two staff members. Will handle busy telephones; route mail; photocopy; maintain files; make travel arrangements and prepare itineraries; analyze monthly detail transaction reports and prepare budgets; prepare various financial reports such as requisitions for supplies and requests for payment of bills; and schedule appointments and help coordinate on-campus visits and luncheons. Will work extensively on the DEC VT-100. Excellent typing skills and minimum 4.5 years direct/related experience required. Good communicational skills essential. Experience using a transcribing machine and knowledge of M.I.T. helpful. **B86-647**

ADMINISTRATIVE SECRETARY, Office of the Dean of the Graduate School (part-time, 25 hours/week), to support the Associate Dean/Assistant Provost. Will type, proofread and edit; review mail and initiate replies; monitor monthly statements; process vouchers, invoices and financial awards; maintain filing system and mailing lists; answer phones and direct visitors; arrange complex travel and heavy appointment schedules; assist with meetings and special programs; coordinate reproduction of various student brochures; assist in organizing minority student forums; and assist minority graduate students organizations. Excellent typing skills and minimum 4.5 years direct/related experience required. Excellent organizational skills and knowledge of or willingness to learn word processing and IBM PC essential. Flexibility and ability to work as part of a team important. MIT experience helpful. NON-SMOKING OFFICE. **B86-628**

ADMINISTRATIVE SECRETARY, Laboratory for Manufacturing and Productivity, to support the Director, Administrative Officer and the Assistant to the Director. Will maintain and review files and records, including records on personnel, budgetary and purchasing transactions; read, sort, distribute and review mail; handle considerable telephone contact and provide information; type and proofread reports, manuscripts, examinations and correspondence; reproduce reports and manuscripts; coordinate and schedule appointments, meetings and special events including large groups; and arrange travel. High school diploma or equivalent, excellent typing skills and minimum 4.5 years direct/related experience required; post high school education may count toward experience. Experience with word processing essential. Must be able to exercise discretion in obtaining and providing sensitive information. **B86-585**

SR. SECRETARY, Personnel, to support the Manager of Labor Relations, the Manager of Personnel Services and Employment and associated staff. Will type and proofread correspondence and reports, answer phones, arrange conference participation and travel, monitor expenditures against Institute accounts, take minutes at meetings, compose routine correspondence, review labor relations publications for articles of interest to department, maintain complex filing system, arrange meetings, carry out independent projects and do research on various topics (statistics, summary reports, etc.). Overtime may be necessary during periods of high activity. Requirements: excellent typing skills, knowledge of (or willingness to learn) use of dictaphone and computer terminal and a minimum of 2.5 years direct/related experience. Strong organizational skills and ability to work with detail important. Good judgment and ability to set priorities essential. Knowledge of word processing preferred; willingness to learn necessary. **B86-690**

SR. SECRETARY, Earth, Atmospheric, and Planetary Sciences, to support the Administrative Officer and a small group of faculty in the Center for Meteorology and Physical Oceanography. Will type manuscripts, correspondence and proposals; answer busy telephones; arrange travel; maintain files; and sort and deliver mail. Requirements: good typing skills and a minimum of 2.5 years direct/related experience. Must be able to work well with a diverse group of faculty, students and staff and be able to set priorities to handle workload for a number of supervisors. M.I.T. experience helpful. **B86-686**

SR. SECRETARY, MIT Libraries - Catalogue Department, to support the Head, Catalogue Department and three associate heads. Will type and proofread correspondence, reports and other documents; answer telephone; make appointments; photocopy; sort and distribute mail; use microcomputer for word processing, spreadsheets, etc.; maintain staff records and prepare weekly support staff and student payroll reports; prepare paperwork related to student assistant hiring; schedule student training sessions; maintain office files; order equipment and maintain inventory; monitor operating expenses; and perform other related assignments as required. Requirements: graduation from high school, excellent typing skills and a minimum of 2.5 years direct/related experience; post high school education may count toward experience. Good organizational skills and the ability to work efficiently with minimal supervision essential. Experience with microcomputers highly desirable. **B86-682**

SR. SECRETARY, Sloan School of Management, to support three members of the Marketing faculty. Will help administer research projects (coordinate meetings, distribute materials, monitor accounts, etc.); edit manuscripts; coordinate course preparation (assemble readings packet, type handouts and create visual aids); maintain calendars and schedule; and arrange travel. This position involves daily interaction with faculty, students and outside visitors as well as busy telephones. Requirements: excellent typing skills (preferably including some technical typing), word processing experience and a minimum of 2.5 years secretarial experience. Excellent organizational skills necessary; knowledge of MIT helpful. Desire to learn about office automation and computers essential; training on the computer equipment will be provided. NON-SMOKING OFFICE. **B86-681**

SR. SECRETARY, Office of the Dean for Student Affairs, to support the Assistant Dean, Residence and Campus Activities, the Advisor to Fraternities and the Administrative Officer. Will greet visitors, answer telephones, and direct students and visitors to appropriate offices. Serves as an information source on established Dean's Office and Institute procedures, especially related to residence concerns. Requirements: high school graduation or equivalent, 50 wpm typing, knowledge of word processing (preferably DECmate or IBM) and minimum 2.5 years direct/related experience. Excellent communicational, interpersonal and organizational skills are essential, as is the ability to work under pressure with frequent interruptions in a very busy environment. Attention to detail and ability to handle several tasks simultaneously very important. Knowledge of M.I.T. helpful. **B86-673**

SR. SECRETARY, Alumni Association (part-time, 20 hours/week), to support the Coordinator for Reunion Programs and assist in the preparation and production of the publicity for 13 reunion classes. Will act as liaison between printer, mailer and Alumni Class Programs office; handle reunion housing and transportation arrangements; and tabulate reunion responses. Responsibilities also include typing, travel and meeting arrangements and providing support during reunion week. Overtime sometimes necessary. Requirements: excellent typing and minimum 2.5 years direct/related experience. Word processing experience helpful. Good interpersonal and organizational skills, a good command of English and a pleasant telephone manner are essential. The ability to work well under pressure with an even disposition and a good sense of humor is very important. **B86-672**

SR. SECRETARY - TECHNICAL, Ocean Engineering, to support two professors. Will answer telephone, maintain calendar, maintain office files, open and route mail, arrange office purchases, use IBM PC to type and proofread documents, transcribe dictation, maintain research contract files and course materials, and arrange travel and meetings. 50 wpm typing skills and minimum 2.5 years direct/related experience required. Technical typing skills or willingness to learn necessary. Word processing experience helpful. NON-SMOKING OFFICE. **B86-665**

SR. SECRETARY - TECHNICAL, Ocean Engineering, to support three professors. Will type, proofread and reproduce reports, manuscripts, exams and correspondence; answer telephone and receive visitors; maintain and originate files and records as necessary; handle moderately complex schedule of appointments, meetings and seminars; make travel arrangements with advances and prepare expense vouchers; prepare Institute forms; and maintain course and schedule records for students. Requirements: 50 wpm typing skills, including some technical typing, and minimum 2.5 years direct/related experience. Knowledge of word processing on IBM PC and compatible computers helpful. **B86-664**

SR. SECRETARY, Civil Engineering (part-time, 24 hours/week), to support one professor and research assistants. Will type general office correspondence, technical manuscripts and theses; arrange travel, conferences and research meetings; answer telephones; photocopy; and file. Will share office and work with laboratory director's secretary. Requirements: good typing skills and minimum 2.5 years direct/related experience. Knowledge of or willingness to learn word processing on IBM computer necessary. Excellent organizational ability and good rapport with students and visitors essential. NON-SMOKING OFFICE. **B86-663**

SR. SECRETARY, Civil Engineering (part-time, 21 hours/week, to support one professor and research assistants. Will perform general and heavy technical typing from handwritten copy of correspondence, class notes, theses and technical manuscripts; photocopy; answer telephone; process mail; maintain files; monitor accounts and make travel arrangements. Will also maintain reference room, including shelving new material and arranging for binding of theses. Requirements: excellent typing skills and minimum 2.5 years direct/related experience. Technical typing experience helpful; word processing experience or willingness to learn necessary. Must have good organizational ability and ability to work independently. **B86-662**

SR. SECRETARY, Harvard-MIT Division of Health Sciences and Technology, to work in the administrative office. Will type, edit and sometimes prepare correspondence; formulate, type and proofread technical and non-technical proposals and reports; organize meetings; answer phone; assist in preparation of course budgets and statistics; maintain files; conduct library research; keep calendar; transcribe machine dictation; and handle incoming mail. Will also assist with the development of new consortium, multi-project proposals and assist with other projects as directed. Requirements: excellent typing skills and minimum 2.5 years direct/related experience. Must be able to synthesize information from a variety of sources and be able to perform duties at different levels. Good command of English grammar and syntax necessary. College experience preferred. NON-SMOKING OFFICE. **B86-661**

SR. SECRETARY, Media Laboratory, to support the Office of the Director. Will handle extensive phone contact including receiving and screening messages; proofread and edit correspondence and documents; use electronic mailing system; file and maintain accurate office records and maintain database; make travel arrangements; and handle petty cash. This position involves frequent contact with faculty, Institute offices and outside agencies and sponsors. Good typing skills and minimum 2.5 years direct/related experience required, as is word processing experience. Strong organizational skills, good attention to detail and the ability to work well under pressure and with interruptions important. Some overtime will be required. Knowledge of MIT helpful. NON-SMOKING OFFICE. **B86-655**

SR. STAFF ASSISTANT, Personnel - Services, to support three Personnel Officers. Will handle busy telephones; schedule interviews for applicants and transfers; insure proper documentation of changes in employee status; refer resumes to departments; assist in processing paperwork for new hires; maintain Personnel Officers' calendars, coordinate meetings and set up appointments; use IBM 3279 terminal to gather data from Personnel database system; check references on all prospective hires; route office mail; type memos, letters, reports, office forms and occasional statistics and compose some letters and memos; share key operator duties for office photocopier; keep weekly record of voucher payroll; and copy and file personnel data as necessary. Good typing skills and minimum 2.5 years direct/related experience required. Must be able to deal in sensitive and tactful manner in interactions with Institute personnel and outside applicants. Ability to work well under pressure and attention to detail very important. Knowledge of existing personnel and payroll systems and familiarity with word processing preferred. **B86-654**

SR. SECRETARY - TECHNICAL, Plasma Fusion Center, to support the Division Head and other members of the Fusion Systems Division. Will type/word process and proofread technical research reports, manuscripts and general correspondence; arrange travel; monitor office supplies; maintain files; arrange meetings; schedule appointments; answer telephones; receive and screen visitors; photocopy; and interact with other fusion laboratories and MIT operations. Will also support the Journal of Fusion Energy, including corresponding with the authors, publishers and referees to insure consistent and timely publication. Excellent (60 wpm) typing skills and minimum 2.5 years direct/related experience required. Willingness to learn word processing necessary. Scientific equation typing experience preferred but not essential. Must have good interpersonal and organizational skills. **B86-650**

SR. STAFF ASSISTANT, Sloan School of Management, to support Deputy Dean and his Administrative Assistant. Will interact with faculty and staff within and outside the Institute; coordinate and schedule appointments, meetings, seminars, meals, etc., sometimes involving large groups; disseminate materials and organize agendas as needed; type, proofread and reproduce reports, manuscripts, correspondence and similar material from rough draft; maintain extensive confidential personnel files of faculty; sort, distribute and review mail; prepare and issue calendar of seminars; arrange travel and prepare expense vouchers; and order supplies. Excellent typing skills required. 4 to 5 years of secretarial experience preferred. Should be familiar with word processing and office automation systems. Excellent telephone manner and interpersonal skills essential. **B86-644**

SR. SECRETARY, Center for Information Systems Research, to support CISR seminars, special projects and accounting activities and to support Associate Director. Will prepare correspondence and reports, often using word processor; answer phones and screen calls; make travel arrangements; help arrange seminars and meetings involving CISR's corporate sponsors; and assist in accounting-related tasks, such as preparing requisitions and reconciling monthly statements. Will have frequent contact with industry and government and with faculty, students and administrators at MIT. Excellent typing skills and minimum 2.5 years direct/related experience required. Excellent interpersonal and organizational skills and ability to handle detail with accuracy important. Bookkeeping experience helpful. Some word processing experience and desire to learn more about office systems essential. NON-SMOKING OFFICE. **B86-639**

SR. SECRETARY, Political Science (part-time, 20 hours/week), to handle heavy manuscript typing and word processing for professor. Will also handle some editing, file, answer phones and photocopy. Excellent typing (80 wpm) and minimum 2.5 years direct/related experience required; post high school education may count toward experience. Knowledge of word processing desirable; must be willing to learn Word Perfect, DEC Rainbow and DECmate II. **B86-637**

SR. SECRETARY, Civil Engineering, to support the Undergraduate Officer and the leader of the Robotics Laboratory for Construction. Will type class notes, technical reports, proposals and research papers; arrange meetings, conferences and travel; and interact with students. Excellent typing skills and minimum 2.5 years direct/related experience required. Word processing and strong interpersonal skills highly desirable. **B86-634**

SR. SECRETARY, Chemical Engineering, to support Department Headquarters. Will answer busy telephones, provide general information and refer callers to other offices when appropriate; arrange for visitors to meet with professors and students; type correspondence, including technical proposals and reports, for Department Head; sort and distribute a large volume of mail; maintain inventory of office supplies; prepare requisitions and vouchers for signature; and order coffee and supplies for seminars and luncheons. This position will occasionally require additional irregular hours. Excellent typing skills and minimum 2.5 years direct/related experience required, as is ability to use word processing equipment, preferably DECmate II. Good organizational skills and ability to handle heavy visitor contact essential. Knowledge of MIT helpful. **B86-618**

SR. SECRETARY, Sloan School of Management, to support three faculty members. This busy group is looking for someone to coordinate course preparation (assemble readings packet, type handouts, create visual aids, etc.); type and edit manuscripts; and help administer research projects (coordinate meetings, distribute materials, monitor accounts, etc.). Position will also involve daily interaction with faculty, students and outside visitors; busy telephone contact; maintaining calendars and schedules; and arranging travel. Technical typing and general office work will be done on personal computers. Excellent typing skills and minimum 2.5 years direct/related experience required. Training will be provided on the PC, but prior word processing experience and/or willingness to learn essential. Must have excellent organizational skills. Knowledge of MIT helpful. NON-SMOKING OFFICE. **B86-606**

SR. SECRETARY, Brain and Cognitive Sciences, to serve as secretary to the Undergraduate Brain and Cognitive Sciences Major Program and assist its director. Will type, handle telephone and in-person contact with students and faculty, schedule regular meetings and the special open-house, and take notes at regular monthly meetings. Will also support two faculty members, including use of word processor and handling telephones; provide information to people entering building E10; supervise use of building facilities such as postage meter and photocopier; and handle petty cash. Good typing skills and minimum 2.5 years direct/related experience required; post high school education may count toward experience. Experience with or willingness to learn word processing necessary. College graduate preferred. NON-SMOKING OFFICE. **B86-604**

SR. SECRETARY, Applied Biological Sciences, to provide general office support to the International Food and Nutrition Program and branch office of the United Nations University (UNU). Will act as liaison between geographically separated administrative and editorial staff for UNU and handle considerable national and international telephone contact; maintain computerized address files, publication lists and other databases; coordinate worldwide distribution of UNU publications and books; arrange travel and meetings; schedule appointments; process mail; order supplies; and type and proofread correspondence. Excellent typing skills and a minimum of 2.5 years direct/related experience required. Computer experience with word processing and electronic mail preferred. Must be able to work with minimal supervision and frequent interruptions. **B86-603**

SR. SECRETARY, Materials Processing Center, to support two faculty members, research staff member and research group. Will type class material, correspondence, memos, forms, reports and proposals; organize and maintain files; handle telephone inquiries; interact with faculty, staff and students; and perform other clerical and secretarial duties as required. High school diploma, good typing skills and minimum 2.5 years direct/related experience required. Must be self-motivated, versatile, innovative and able to work both independently and as part of a team. Good organizational and interpersonal skills essential. IBM word processing skills desirable. NON-SMOKING OFFICE. **B86-597**

SR. SECRETARY, Aeronautics and Astronautics, to support three faculty members and one research associate in the Gas Turbine Laboratory. Will type and proofread reports, examinations, correspondence and other materials from rough draft; answer telephones and receive laboratory visitors; maintain files; arrange travel; prepare vouchers; distribute mail; maintain office supplies; issue keycards; and prepare and distribute laboratory reports. Will use word processing system on Corvus computer. Excellent typing skills, including technical typing, and minimum 2.5 years direct/related experience required; post high school education may count toward experience. **B86-596**

SR. SECRETARY, Applied Biological Sciences, to support two faculty members. Will type and proofread lab-tying grants, budgets, papers and reports; assist faculty members in preparing documents and lists for the department's seminar series; and assist in coordinating UROP projects. Excellent typing skills and minimum 2.5 years direct/related experience required. Must be well organized, able to work independently and efficiently in a busy office and able to keep track of several duties at once. Good attention to detail essential. NON-SMOKING OFFICE. **B86-595**

SR. STAFF ASSISTANT, Materials Science and Engineering, to support the Department Head and the Administrative Officer. Will assist in preparation of candidates files for faculty searches; type correspondence, technical papers, proposals and talks; assist with faculty mailings; assist with preparation for faculty meetings; process mail; handle telephones; maintain inventory of office supplies; maintain mail machine; and perform other related duties as necessary. Excellent typing skills and minimum 2.5 years direct/related experience required. Experience with IBM AT and dictaphone necessary. Should be able to work well with many distractions. NON-SMOKING OFFICE. **B86-586**

SR. SECRETARY, Laboratory for Information and Decision Systems, to support one senior faculty member and two senior research staff members. Will prepare and type course materials, articles for publication, proposals, correspondence and technical reports; keep and maintain student records; arrange international and domestic travel; make extensive conference arrangements; and act as liaison with all levels of faculty and staff. Good typing skills, including some technical typing,

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i/s

News about information systems throughout MIT

Project Athena: What It's Not

Susan Jones
Information Services

Articles about Project Athena have appeared in journals as disparate as *The Economist* and *Rolling Stone*. Yet on campus many misconceptions remain about Athena's goals. One way to clarify these goals is to outline what Athena is *not*. William Hogue, Assistant to the Director of Project Athena, did just that in a recent presentation.

Mr. Hogue stresses that Athena is *not* a service; it is an experiment in education. This can be hard to remember, especially since Athena sometimes appears to be an experiment in deploying hardware and software. But the true Athena experiment involves weaving computer technology into the existing academic life of the Institute.

Key points of Mr. Hogue's presentation are summarized below.

Athena is *not* interested in "skill and drill" software. Athena's commitment is to innovative uses of computer technology. It believes in bringing together experts to build the learning forms of the future. The *Poltergeist* software, for example, provides a model for an interactive language lab. Developed by Janet Murray of the Writing Program and her associates, *Poltergeist* uses sophisticated artificial intelligence programs to manipulate large vocabulary lists and general language rules, in order to test a student's understanding of task-oriented speech.

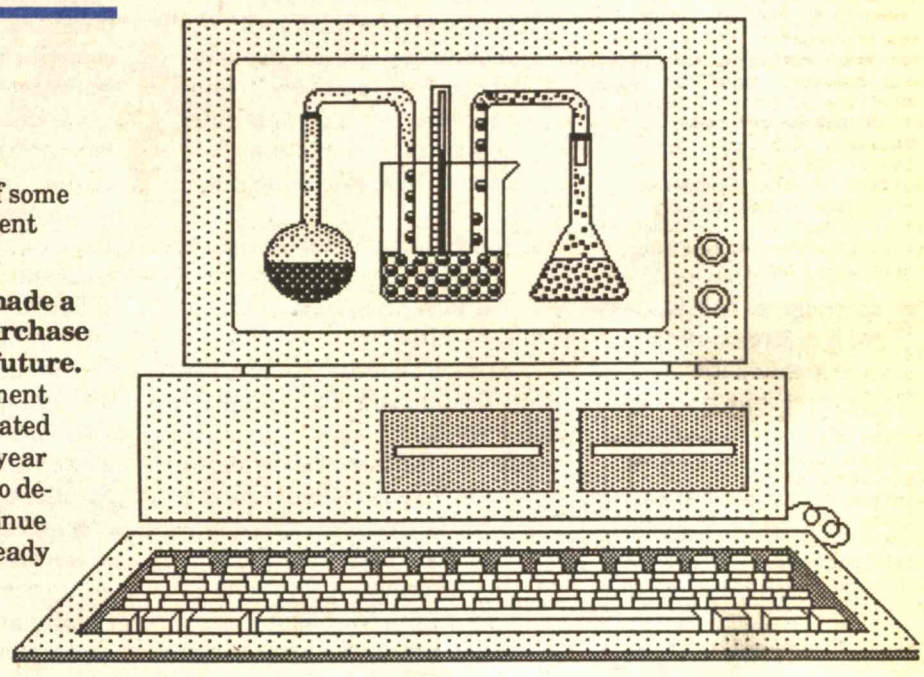
Athena has *not* made a commitment to place a workstation in every faculty office and student room. But Athena has made a commitment to understand the impact on students of having easy access to computers. The Project Athena Study Group, chaired by Dean John de Monchaux, was created to study how the project affects social and academic life at MIT.

Athena has also made a commitment to assist faculty in exploring new educational uses for advanced computer technology. This does not require that every professor become a programmer or be moored to a computer. Project Athena staff provide technical expertise to those faculty whose curriculum development proposals have been accepted by one of two Resource Allocation Committees.

Athena has *no* proprietary agreement with IBM or Digital on software development projects. It is MIT's and Athena's policy that all software developed by paid employees of the project is the property of MIT. However, the work of a student who is not directly paid for that work is the property of the student. MIT is still developing policies that will allow faculty, staff, and students working for pay to share in the economic benefits of their creations. A Committee on Software Rights, chaired by Professor Michael Dertouzos, has issued a report entitled "A Proposed MIT Software Policy." This report is available from Professor Dertouzos' office, NE43-104.

Athena is *not* trying to increase the amount of computer programming in the MIT curriculum. Athena views computers and software applications as tools. As these tools become increasingly available they can be used to enrich the learning experience. A tour of the Demo Center (see accompanying article) provides a glimpse of some of Athena's 96 different educational projects.

Athena has *not* made a commitment to purchase equipment in the future. Athena is an experiment which must be evaluated at the end of its five-year run. MIT will need to decide whether to continue supporting what already exists, expand the project, or bring it to a close.



IN THIS ISSUE:

Lab Report: Athena Demo Center

Elissa Weitzman
Information Services

We all know about Project Athena, MIT's large-scale computing experiment. Many, though, haven't heard of Project Athena's Demo Center, in E40-302. There Athena operates an open-to-the-community laboratory for trying out Athena hardware and software.

If you want to see a videotape explaining the goals and origins of Project Athena, you can do so at the Demo Center. If you want to experiment on a DEC VAXstation II (VSII), the advanced Athena workstation, you can. The Demo Center also contains other Athena equipment, a sampling of faculty development projects, and examples of lab and business computing applications.

At first glance the Center looks like a meeting hall with centralized conference tables. A longer look shows you the variety of equipment and demo programs lining the walls. The Demo Center contains a VHS hi-fi VCR, a 26" color hi-fi monitor, videotapes introducing the Project, and several taped system tutorials and minicourses. Also available are DEC VSIIs, used to access several faculty-developed applications in Aeronautics and Ocean, Civil, and Electrical Engineering. Visitors are invited to login to the DEC VSIIs to gain access to faculty-developed software. Information on how to do this is available at the Demo Center.

The DEC IVIS videodisk system, an interactive videodisk teaching system, is on display at the Demo Center. It runs on an IVIS PC with a touch-sensitive screen. Several audio and visual applications run on it. For example, you can try out the IVIS with *Decision Point*, a business simulation that asks you to make corporate decisions based on information the program supplies. You analyze your decisions and project their results within the program.

The Center also has computer-aided lab experiments running. The experiments demonstrate the value of using a computer in the lab to track chemical or mechanical changes; the computer monitors experiments, allowing students to maximize the amount of "thought time," as opposed to "manipulation time," they spend in the labs.

Recently, the Demo Center has been reconfigured to resemble Athena Phase II coursework clusters. Phase II is the distributed workstation model toward which Athena has been working. This reconfiguration lets faculty and teaching assistants learn the Phase II system for the fall semester.

Since the Center opened in May of 1986, it has hosted many seminars showcasing Athena's hardware and software. Visiting scientists and educators regularly come to view the most up-to-date Athena technology. Members of the MIT community are also encouraged to visit the Center; stop by for a complete listing of what's available. Hours are 9am to 6pm, Monday through Friday. The best time for individuals to have a look around is Friday afternoon. Groups must schedule beforehand by calling Jacqueline Stewart, Athena's Manager of User Services, 253-5226.

Demonstrations of equipment and software should be scheduled in advance by calling Mark Levine, Athena's Application Development Manager, 253-1528. Although many of the demos are designed to let you run them yourself, several are most beneficial with some explanation.

Strategic Plan: Summer Accomplishments

Cecilia d'Oliveira
Information Systems

Lots of energy was exerted this summer by staff from across the Institute in starting up the Administrative Information Systems Strategic Plan. As a result, several people are reported to have forgone the annual "World's Best Tan" competition held on Maui last month. This column highlights recent progress on the plan.

Maybe you know someone in your office who's part of one of the two pilot programs that started this summer. Teams for the Administrative Workstation (program 3) and Accessible Employee Database (program 4) pilots were formed in June from those who responded to a Request for Proposals process begun in March. These teams, representing a variety of organizational perspectives, have been hard at work all summer. Work plans now exist for each pilot and are available from Katherine Allen (x3-3103). The program managers, Ike Colbert and Marilyn McMillan, welcome feedback and questions on the work plans. Both pilots are planning field tests this fall in a number of Institute offices.

The Strategic Plan Working Group (SPWG), charged with managing overall implementation of the plan, has been formed. SPWG's major task over the next few months will be development of a detailed five-year project plan. As part of this activity the group has been considering how to monitor progress and evaluate success, and how to communicate with the Institute community. Members of the working group include:

Katherine Allen Assistant to the Vice President for Information Systems, x3-3103;
James Bruce Vice President for Information Systems, x3-3103;
Isaac Colbert Assistant to the Vice President - Financial Operations, x3-7339;
Cecilia d'Oliveira Director of Information Systems Planning, x3-0893;
Barbara Durland Assistant to the Vice President and Treasurer, x3-8260;
Donald Heller Assistant to the Senior Vice President, x3-3926;
Marilyn McMillan Director of Administrative Systems, x3-1347; and
Stephen Scarano Assistant to the Vice President and Secretary of the Corporation, x3-1706.

Plans for the fall include formation of a council to advise SPWG and the development of a microcomputer training center. The council will include representatives from academic departments and research laboratories. The training center, under the direction of Jeanne Cavanaugh, Training Manager in Information Systems, is slated to open this fall.

Communication—keeping the community informed and incorporating feedback—is recognized as a critical element of the Strategic Plan. SPWG plans to use a combination of one-on-one meetings, group presentations, and regular articles in *i/s* to accomplish this. If your group would be interested in a presentation on the status of the plan, please call Katherine Allen at x3-3103.

More next month. ●

The Telecommunications Connection

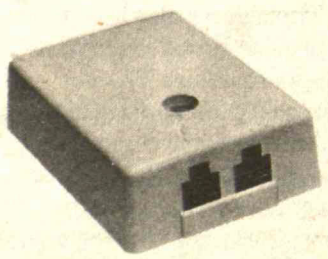
Karen McCarty
Telecommunications Systems

As announced in the June issue of *i/s*, the summer of '88 will introduce a new digital switching system to MIT. Although the system is two years away, preparations have begun. Interior wiring was started by AT&T technicians this past June, and will continue through January 1988. This wiring will take place with little disturbance to the MIT community beyond moving furniture for outlet installation.

MIT's current interior wiring ranges from 6-pair wires for single-line phones up to 75-pair wires for multibutton phones. The wiring scheme now being installed is uniform in design: two 4-pair wires will terminate on dual modular jacks or "information outlets." Only one of these outlets will be needed to connect your phone to the digital switching system. The second outlet will be available for other applications, such as local area networks (LANs) that use twisted-pair technology.

Some of you have expressed concern that "thin" wiring implies a reduction in the services derived from multibutton phones and "big" wires. In fact, service will be enhanced by "thin" wiring and digital phones. Those of you who use both 253 phone lines for voice applications and 258 lines for dial-up data applications will be able to merge these applications on a single line with the use of a digital phone.

This simultaneous voice/data capability, combined with other advanced features, reflects the sophistication of the software in the MIT digital switch and "smart" phones, which will be available in 1988. Existing phones rely on local intelligence in the apparatus boxes found in many MIT offices, and on lots of copper wiring to those boxes. The new digital phones will have some local intelligence and will require only "thin" wire connections back to the digital switching module. The apparatus boxes now in use will be removed after cutover to digital switch service.



The "information outlet" for the digital phone system looks simple, but incorporates advanced thin-wire technology.

Each jack being installed will be labelled with a discrete number. This number reflects the building, room and position where the jack is located. This jack number and your extension number will be part of your telephone address. Following cutover to the new switch, customer orders for changes in phone service will be handled largely through software changes, either at the serving switching module or in the set. Faster order processing will be yet another benefit of the digital phone system. ●

Project Athena: Where It's At

This fall Athena deploys the first of its Phase II workstations. These and other clusters are listed below.

Room	Phone	Description
1-142	x3-2019	Timesharing
1-111		Printer room
1-107	x3-1612	Entrance to 1-111
2-225	x3-0106	Workstation (IBM AT)
4-167	x3-0105	Workstation (IBM AT)
4-035	x3-5660	Workstation (DEC VSII)
6-218M	x3-0104	Workstation (IBM AT)
9-550	x3-7091	Workstation (IBM RT, AT)
11-113	x3-2061	Timesharing
11-116		Workstation (DEC VSII-RC)
11-124		Development (DEC VSII-RC)
11-124a		IS/Athena Training
16-034	x3-0152	Workstation (IBM RT)
37-312	x3-0180	Electronic Classroom (DEC VSII)
37-332	x3-0182	Development (DEC VSII)
37-318	x3-0179	Workstation (DEC VSII)
37-324		Printer room
38-344	x3-4650	Timesharing
66-080	x3-4474	Timesharing
E40-3**	x3-1300	Athena Offices
E51-007	x3-0173	Workstation (IBM AT)
W20-500	x3-0103	Timesharing

Cluster Tour

One bright morning we took a walking tour of the Athena clusters to confirm that they were where Athena says they are. (See the Athena Cluster Chart.) Happily, they mostly are. We did meet with some difficulty in four locations: Buildings 1, 4, 6 and 37. In Building 1, the printer room is 1-107. Enter through 1-107, not 1-111; the two rooms are at present separated by a metal grate. The phone is probably in 1-111, which appears to be a storage or repair room.

The door to Room 4-167 is out of sequence. As you take the Building 4 hallway off the Infinite Corridor, pass 4-169 and take a left at the next corner. It's the last door on your left, just before you enter Building 2.

The Building 6 cluster is where it says it is: 6-218M. But if you don't know that the M stands for Mezzanine or where the mezzanine is, the sign on the door of 6-218 won't help. As you face the door, an arrow labelled with an N points right. The mezzanine staircase, however, is to the left. When we went exploring, no arrow pointed us this way and no words directed us south. This may have been corrected by now.

Arriving at the Building 37 cluster, we found Rooms 312 and 322. Rooms 37-318 and 37-324 must be internal: they aren't on the corridor nor are they listed at any of the doorways. Helpful staff in nearby offices were unable to provide information on their whereabouts. We checked with Athena and were told that 37-318 won't be open until at least November, anyway, so don't worry.

One last note—for all clusters except W20, students must go to their instructors for lock combinations. ●

New DEC Drop-Off

The drop-off point for non-warranty service on DEC microcomputers and other DEC equipment has changed to Room E40-014A, from Room 24-021. Hours remain unchanged: Tuesdays and Thursdays, from 9am to 5pm. For more information about DEC service, call 253-8822 during those times, or call DEC directly at 623-7420. ●

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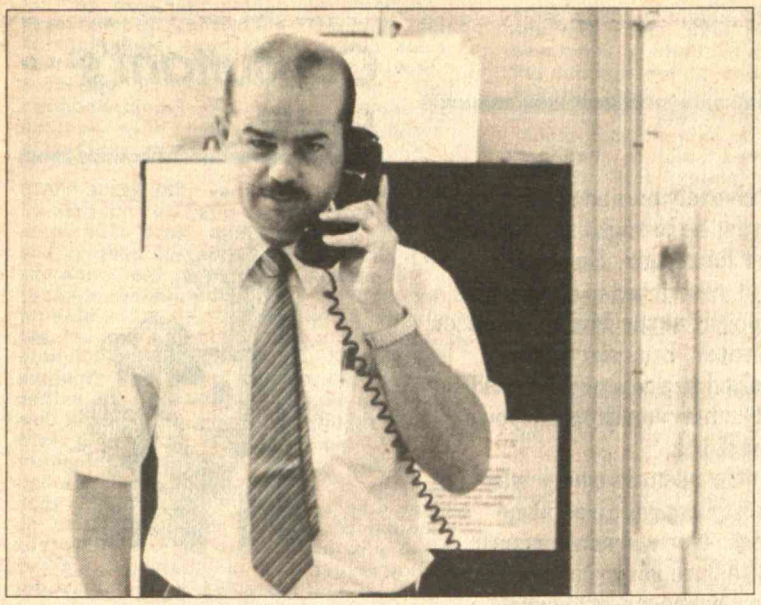
Meet Jerry Burke

Susan B. Jones



Jerry Burke has made the microcomputer rounds at MIT for four years—on his way to install communications software in an administrative office or to help a client get a new system operating smoothly. Currently, Jerry pools his skills with five other staff members at the MIT Microcomputer Center.

In the beginning Burke's micro-related consulting was an unofficial duty, for which he volunteered in his position as program librarian for Academic and Research Computing Services, a division of the former Information Processing Services. He started by connecting Apples to mainframes and soon found himself doing general consulting on personal computers. These duties became official when he joined the newly opened Microcomputer Center as a senior consultant in October, 1984.

During Center hours, most of Jerry's time is spent answering client questions, many of which deal with communications—for example, how to link microcomputers to mainframes. Other popular topics, reports Jerry, include what computer, word processor, database, or spreadsheet to purchase for a particular lab or office. Needs analysis and planning account for most Center consulting, but the staff also handles installation and contract work.

An early bird, he is often conducting product research by 8am (usually completed after hours). He typically borrows products from vendors for 30-day free trials, to evaluate and compare them. For example, Jerry is now studying tape backups and graphics boards. MIT users provide him with another important source of product information.

Although his days are long, Burke enjoys his balance of client contact and research. He especially likes the appreciation he gets from clients when he solves their problems. That's his greatest satisfaction. ●

Coming Events

October 2: *Interorganizational Systems: Public or Private?* Sponsored by the MIT Communications Forum. Bartos Theater (E15, Lower Level), 4-6pm. Info: 253-3144.

October 24: *Desktop Publishing Conference.* Sponsored by New England Regional Computing Program (NERCOMP). Trinity College, Hartford, CT. Info: (617)848-6494.

October 31: *Artificial Intelligence Conference.* Sponsored by NERCOMP. Babson College, Wellesley. Info: 848-6494. ●

User Groups Can Help

Personal computers are powerful but complex tools. It can be difficult to learn new functions or pick up shortcuts on your own. User groups—organized around a particular PC or piece of software—provide a forum for the exchange of information, through meetings, educational programs and newsletters. Most groups provide help for beginners and for more experienced users, with a focus on practical applications. They are also a place to learn about new products and developments.

The organization of a user group depends on the needs of its members. Some meet on-line; others feature guest speakers at regular meetings. The table below lists user groups that meet on campus. If your computer or software package isn't represented, think about starting a group. Information Services can help too—by providing a meeting room, publicity, and organizational tips. For more information about starting a user group, call Joni Bubluski at 253-1744 (Bubluski@MIT-Multics). ●

User Groups on Campus

Group	Description	Contact Person	Meeting Place and Time
Amiga (MITAUG)	On-line	Ralph Vinciguerra 494-9035 Ralph@MIT-cipg	AMIGA@MIT-cipg, all hours
Atari 8-bit	All levels Speakers	John Faber (603)888-2389 (eves)	4-270, 2nd Wednesday, 7 pm
Atari ST	All levels Speakers	Alan Glick 296-8286	4-270, 2nd Tuesday, 7pm
MIT Mac	All levels Speakers	Becky Waring 253-1588	26-100, 2nd Wednesday, 6:30pm
MacTech Group	Technical	Jim Sulzen 862-5935	35-225, 1st and 3rd Wednesday 7pm
microVAX	All levels Speakers	Shava Nerad 253-7438 Nerad@MIT-Multics	1-390, 1st Monday, 7pm Call for date of October meeting
VAXSym	System managers	Shava Nerad 253-7438 Nerad@MIT-Multics	E25-401, 1st Wednesday, 2pm
DECUS MITLUG	Hardware-oriented	Tom Provost 183-268 Provost@MAX	NW14, 2nd floor Conference Room, 2nd Wednesday, 1:30pm
DECUS VAXLUG	VMS/software-oriented	Vladimir Ivanovic 482-2700 x2364	NW17-275, 2nd Tuesday, 1:30pm
WordPerfect	Now forming	Rosalie Allen 253-3115	Call for information

Fall Session

Project Athena's fall minicourses are under way. Taught in Room 4-163, two are given each evening: one at 7pm, and one at 8pm. For complete descriptions, see the *Athena Minicourse Index.*

SEPT21	22 Workstation 7:00 pm Blackboard 8:00 pm Room 4-163	23 Blackboard 7:00 pm Workstation 8:00 pm Room 4-163	24 Emacs 7:00 pm Scribe 8:00 pm Room 4-163	25 Scribe 7:00 pm RS/1 8:00 pm Room 4-163	26	27
28	29 Workstation 7:00 pm X Window System 8:00 pm Room 4-163	30 Emacs 7:00 pm Scribe 8:00 pm Room 4-163	OCT1 RS/1 7:00 pm X Window System 8:00 pm Room 4-163	2 Scribe 7:00 pm Scribe (reports) 8:00 pm Room 4-163	3	4
5	6 Prochart 7:00 pm Emacs 8:00 pm Room 4-163	7 Scribe 7:00 pm Prochart 8:00 pm Room 4-163	8 X Window System 7:00 pm Emacs 8:00 pm Room 4-163	9 Scribe 7:00 pm Scribe (reports) 8:00 pm Room 4-163	10	11

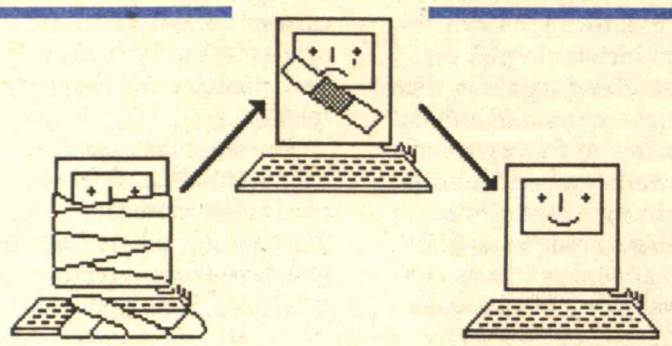
In October, Information Services will present another series of free noontime seminars on various aspects of computing. The presentations are informal (bring your lunch), and questions are welcome. During the fall, Information Services will also offer hands-on training sessions and a course on ergonomics. Advance registration and payment are required for these longer courses. Pick up a copy of the fall course brochure in the Micro Center (11-209) or the Information Services Office (11-315), or call 253-1744.

ALL INFORMATION SERVICES SEMINARS MEET AT 12:00 NOON

12	13	14 Intro to the MIT Micro Center Room 9-150	15 MacWrite and Microsoft Word Room E40-298	16 MathCAD equation solving Room 37-252	17	18
19	20	21 PC's for Administrative Users W20 West Lng	22 MacDraw and MacDraft Room E40-298	23 Freelance PC Graphics Room 37-252	24	25
26	27	28 Chinese Language Word Processing Room 9-150	29 Excel and Helix data management Room E40-298	30 Inside Your IBM PC Room 9-150	31	NOV1
2	3	4 UnkelScope and data acquisition Room 10-105	5 PageMaker desktop publishing Room E40-298	6 Professional DYNAMO Room 10-105	7	8

MICROCOMPUTER CORNER

Micro Repair



Computer stores are scarcer than they once were, and that can limit options when it comes to microcomputer repair. Where would you go if your computer called it quits? Fortunately for owners of Apple and IBM micros, there's a service center right here on campus. MIT's PC Support Center is located in Building W91 (next door to the Hyatt Regency), although repairs are arranged through the MIT Microcomputer Center.

Trained and licensed by Apple and IBM, PC Support Center staff provide installation, diagnostic, warranty and repair services to MIT. They handle most IBM PCs and PC printers (call about your model), as well as the Apple Macintosh, Imagewriter (I and II), and LaserWriter. They also service Project Athena computers.

Business has been booming, in part because the staff tries to have the machine back in the customer's hands by the next business day, if all needed parts are in stock. Hours are 8am to 10pm, Monday through Friday.

If your department purchases a system through the MIT Micro Center, the installation service provided by the PC Support Center can be a timesaver. For a nominal fee, Support Center staff test the system before it reaches your office. Any parts found to be defective are replaced. PC Support Center staff then deliver the tested system to your office and set it up for you.

Free pickup and delivery are available for department-owned computers. Privately owned micros must be brought to the Center for repair. Service is *not* restricted to computers bought at the Microcomputer Center, but you will be asked to present your MIT ID when you drop off your machine.

Computers under warranty are repaired at no cost. Nonwarranty repair rates are very reasonable, and estimates are available on request. Payment is expected when you pick up your machine.

To arrange for service, contact the MIT Micro Center at 253-7686. That's a number worth keeping handy. You never know when your micro might call it quits. ●

Notebook II Evaluated

She sat surrounded by countless 3-by-5 index cards, broken rubber bands and paper clips. Each card, an island unto itself, contained an abstract of some article in the history of photography. In her attempt to produce a reference volume on these abstracts she had spent the last week sorting cards by author and typing the list. Now she was sorting by key words. "There must be another way," she moaned.

Indeed there is: a software package for the IBM-PC called *Notebook II*.

If you keep abstracts of articles, construct bibliographies or reading lists, maintain research and lab notes, or file client records, then *Notebook II* may be just what you need. It reduces the drudgery of compiling, filing, sorting, and reworking research notes or bibliographies.

Notebook II is a database management system especially designed for storing and retrieving text. You don't need to reserve space in advance since fields and records expand dynamically as you enter text. The number of records is limited only by disk space, and each record can hold about 10 pages of text and 50 different fields. Once entered, records are easily modified. You can even add new fields to existing records.

To enter records you can either use *Notebook II*'s full-screen text editor or read in existing files. *Notebook II* reads and writes files compatible with most word processors, databases and features such as mail merge.

While it is possible to browse through the database to locate particular records, *Notebook II*'s powerful selection function lets you capture records containing any combination of specified words or phrases—in the same or different fields. A full range of selection conditions and operators can be saved for later use.

Sorting can be done on any field. A sort can then be kept separate from the main database. A bibliography compiled for a particular paper in no way limits the way data can be used in other projects.

You can use the full-screen custom report editor to print reports in any format you choose. The output can be sent directly to the printer or saved on disk to be incorporated in documents prepared using your word processor.

When *Notebook II* is combined with its companion, *Bibliography*, the two become a powerhouse for researchers. References need only be entered once; then each time you write an article, *Bibliography* will construct a bibliography of all entries cited in your manuscript.

Notebook II and *Bibliography* are available in the Microcomputer Center together for $189. ●

Microcomputer Center Happenings

* **Revised Price List:** The latest price list for the Microcomputer Center has the date **September 2nd** in the upper right hand corner of the front page. Copies are available in the Center, Room 11-209. Please discard price lists with any other date.

* **New System of Charges:** We apologize for any inconvenience caused by the recent suspension of charges to computer accounts. As a result of changes required by the audit division, a new system of charges will be put in place. Unlimited charging will be allowed for mainframe publications and magnetic tapes. Supplies will be limited to a total dollar value of $75. All other items will require a purchase requisition.

* **New Products:** *LaTeX*, an add-on macro building package for *MicroTeX*, is now available at the Publications and Software desk for $8. *PageMaker*, a desktop publishing program for the Apple Macintosh computer, and *Lotus 1-2-3*, Release 2.01, are available for $387 and $217.80, respectively.

Micro Center Reorganizes

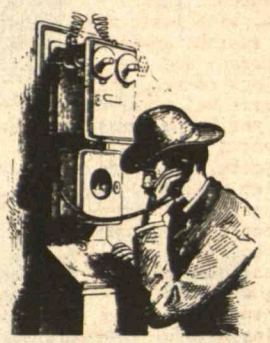
On August 8 the MIT Microcomputer Center opened with a new look. The demonstration area has been rearranged to include examples of all the IBM and Apple hardware sold by the Center, as well as several products from third-party vendors. Consulting tables have been added to provide space for the Micro Center consultants to meet with customers and discuss their personal computing needs.

The IBM system units on display come with an enhanced keyboard and the ability to accept up to 640K on the motherboard. The IBM PC Convertible (a 12-lb portable which uses 3.5-inch diskettes) runs a fully compatible version of Microsoft Word. Apple hardware on display includes the Macintosh Plus, Macintosh 512K/E, LaserWriter Plus and various accessories.

New peripherals include the IBM Quietwriter II printer, the AST line of memory expansion and graphics boards, and Princeton Graphics monitors. The Center is also expanding its in-stock software. Recent additions include *Microsoft Windows, MacEqn* and *PageMaker*.

The recent reorganization of the Microcomputer Center is part of an effort to make it more accessible and responsive to the MIT community. You're invited to come down and see what's new. The Micro Center is located in Room 11-209, and is open weekdays from 10am to 4pm. ●

Consultant's Hotline



Microcomputer Center consultants often hear similar questions from different people. This column features a few such questions and their answers, gleaned from our consulting logs. For answers to your micro questions, call 253-7686.

Q: I have a Macintosh 512K with a single-sided disk drive; what do I need in order to read double-sided disks?

A: You can add an 800Kb external drive, which reads and writes double-sided disks. You'll also need to add a special system file, called HD20, to your system disk; we can provide this for you at the Micro Center.

Q: What are some of the differences between DOS 3.2 and DOS 3.1 for the IBM PC?

A: DOS provides all of the functions contained in DOS 3.1, plus support for 750Kb (3.5 inch) diskette drives. DOS 3.2 is a prerequisite for connecting IBM PCs to the IBM Token-Ring Network.

Q: Can I format a 360Kb disk on the 1.2Mb drive of my IBM PC/AT?

A: Yes, by giving the following command from your DOS directory (where A is the high-capacity drive):

format a:/4

If you are formatting a system disk, type:

format a:/s/4

Q: How do I put extra Macintosh LaserWriter fonts on my Microsoft Word disk?

A: Use the Font/DA Mover to move fonts from the disk containing them to the Word disk; see the Macintosh manual for instructions. LASERFONTS, from Apple, contains several fonts for the LaserWriter; it's available from the Micro Center. ●

and minimum 2.5 years direct/related experience required. Experience with or willingness to learn technical word processing on an IBM PC necessary. Must have good attention to detail and work well independently. Good knowledge of Institute procedures very helpful. **B86-583**

SECRETARY, Environmental Medical Service, to provide general support, including typing, filing, record keeping and delivery of materials within the Institute. Requirements: graduation from high school or equivalent, good typing skills and a minimum of one year related experience. Knowledge of DECmate II preferred. Good communicational skills and poise in dealing with people and emergency situations essential. **B86-689**

STAFF ASSISTANT, Personnel - Compensation, to support the retirement administration area, with other assignments in program and systems development. Will use word processor and typewriter to generate various correspondence and form letters; provide editorial assistance in redesigning various benefits summary plan descriptions; assist staff members in special projects, including the conversion of office records to an automated database and maintaining benefits information via direct entry on an IBM terminal. Other responsibilities will include assisting in redesigning current procedures; corresponding with Institute employees on a variety of benefits-related issues; and communicating with other departments on a daily basis. Requirements: good typing and word processing (preferably DEC II) skills and minimum one year direct/related experience. Must have good organizational skills and ability to work independently with accuracy and attention to detail. NON-SMOKING OFFICE. **B86-677**

SECRETARY, Applied Biological Sciences, to support the administrator of the Student Office and the Graduate Admissions/Registration Officer. Will receive visitors and provide information about the Institute and Department; respond to written requests for information on academic programs, etc.; type correspondence, brochures, departmental manuals, catalogue copy and memos on typewriter or word processors; maintain Department lists and student files; answer telephone and screen calls; handle mailings, photocopying, filing and ordering of office supplies; schedule meetings; and provide support for activities related to admissions, registration, doctoral exams and the undergraduate open house. Requirements: good typing skills and minimum one year direct/related experience. Strong organizational and interpersonal skills essential. Familiarity with or willingness to learn word processing (DECmate, Finalword) necessary. Must be able to work independently and under pressure. **B86-668**

STAFF ASSISTANT, Office of the Dean for Undergraduate Education, to support the Undergraduate Research Opportunities Program office and the office of the Writing Requirement and the Assistant Dean for Curriculum Support. Will support and encourage intra- and inter-office communication; use DECmate and IBM equipment for word processing and computer entry; greet students, faculty and other visitors; supply program information; make arrangements for special events such as symposia and seminars; prepare weekly campus newspaper column; do routine counseling and referral; maintain phone coverage; provide secretarial support to office operations; and participate in special projects as needed. Requirements: good typing skills and minimum one year direct/related experience. Excellent organizational skills essential. Ability in or desire to learn computing necessary. **B86-667**

STAFF ASSISTANT, Physics (part-time, 25 hours/week; 9 month position), to operate Kodak and Ricoh copying machines for the Undergraduate Office during the academic year. Will keep machines running smoothly, call for maintenance and supplies when necessary and collate class work. This position is in a very busy office and involves some pressure due to time constraints. Minimum one year direct/related experience required. Some mechanical ability helpful. Ability to work under occasional pressure important. The work schedule for this position is 9 a.m. - 2 p.m., Mon - Fri, September through May. **B86-657**

SECRETARY, Political Science, to type letters and manuscripts, answer telephones, photocopy, maintain files and records, schedule meetings and sort mail. Graduation from high school, good typing skills and one year direct/related experience required. Knowledge of DECmate II or willingness to learn necessary. **B86-636**

SECRETARY, Environmental Medical Service, to perform receptionist and clerical duties for the Biohazard Assessment Office. Will type regular and technical documents, file, keep records and deliver materials within the Institute. Will also act as secretary to Committee on Biohazards. Good typing skills and minimum one year direct/related experience required. Knowledge of DECmate II word processor preferred. Excellent written and oral communicational skills and excellent poise in dealing with people essential. Must be able to act independently. **B86-627**

TECHNICAL SUPPORT STAFF

LEAD DIET AIDE, Medical Department - Dietary Service, to prepare the afternoon and evening meals for the 18 bed Inpatient Unit and staff, including coordination of dinner production and service. Will write and calculate modified diets; visit patients to determine menu choices; assist in menu planning; receive and stock deliveries; and wash and sanitize dishes and work area. Will follow guidelines developed by the Dietary Service manager. May be required to work weekends, holidays and overtime. High school education and at least one year experience in institutional food service or in a home setting required; culinary arts training preferred. Must exhibit competence in food preparation skills and have familiarity with or ability to learn diet modifications. Must enjoy patient contact. **T86-620**

OFFICE ASSISTANT/ADMINISTRATIVE ASSISTANT

ADMINISTRATIVE ASSISTANT, Alumni Association, to provide logistical support and assistance to the Associate Secretary of the Alumni Association in the following programs: the Boston Seminars Series, Alumni Council Program, AMITA, BAMIT, the Stein Club, Technology Day and National Alumni Conference. Duties and responsibilities include publicity and mailings; maintaining membership lists; arranging and attending committee meetings; arranging food and beverages; and providing on-site registration for on-campus events. Involves some typing of general correspondence and general office support. Requirements: good typing skills and minimum 4.5 years direct/related experience. Must have excellent interpersonal skills, flexibility and ability to take initiative. Word processing skills highly desirable. **S86-669**

ADMINISTRATIVE ASSISTANT, Humanities - History, to coordinate administrative details for several History faculty activities, including the MIT catalogue, book orders, monthly posting of bills and research grants. Will type and proofread correspondence, reports and scholarly manuscripts using DEC and/or IBM PC equipment; maintain accurate financial records; and handle some confidential projects. Requirements: 4.5 years office experience, 60 wpm typing and knowledge of and/or willingness to learn word processing. The ability to set priorities and juggle several projects at once is essential, as are attention to detail and strong interpersonal skills with the ability to relate well to students and faculty. **S86-660**

ADMINISTRATIVE ASSISTANT, Media Laboratory, to support the faculty member directing the Movies of the Future project. Will handle all administrative and secretarial aspects of this project including directing the work of temporary staff. Will independently reply to correspondence; schedule appointments; keep track of seminars, reports and sponsor interactions; maintain files; handle considerable telephone contact; monitor funded research programs; check monthly statements and monitor expenses; and provide assistance to other groups when necessary. Minimum 4.5 years direct/related experience required. Experience with word processing and knowledge of computing very helpful. Excellent interpersonal and organizational skills and the ability to work in a busy environment with frequent interruptions necessary. Post high school education and MIT experience very helpful. Some overtime required. **S86-656**

ADMINISTRATIVE ASSISTANT, Telecommunications Systems, to act as a customer service representative and process orders for equipment and services. Will prepare, issue and follow up on orders for telecommunications equipment, facilities and systems; interact with vendors about orders; make recommendations to departments regarding their communications needs and explain the capabilities of various systems; train departments in the use of 5ESS terminal equipment and feature activation; and answer telephones and perform other office tasks as needed. High school diploma and 4.5 years of experience and/or post high school education, including at least two years of telecommunications or related experience, required. **S86-631**

ADMINISTRATIVE ASSISTANT, Plasma Fusion Center, to support the principal investigator for the Tara Tandem Mirror project. Will coordinate all office activities and direct the work of two other support staff employees; type technical documents; support internal purchasing; prepare correspondence and other documents; arrange travel; allocate space; provide personnel support; and interact with other labs, federal sponsors and other MIT departments on behalf of the PI. Will also be required to learn the office automation systems currently in effect and train new employees on these systems; may implement additional systems to improve efficiency. Excellent typing skills and minimum 4.5 years direct/related experience required. Excellent spelling, proofreading and organizational skills essential, as is a willingness to learn Digital's WPS-Plus word processor. Should be able to work independently and exercise independent judgment. **S86-611**

SR. OFFICE ASSISTANT, Telecommunications Systems, to handle office mail and telephones, provide message answering service and filter electronic mail. Will also maintain files and inventory of equipment; process standardized forms or correspondence; provide information on procedures within area of responsibility; schedule meetings, events and programs; compose and type routine correspondence; and perform other related clerical, financial and secretarial duties. Requirements: graduation from high school or equivalent, 40 wpm typing skills, and minimum 2.5 years direct/related experience; post high school education may count toward experience. Ability to handle detail important. Proficiency with adding machines, calculators and computer terminals helpful, as is some bookkeeping and accounting experience. **S86-674**

SR. OFFICE ASSISTANT, Industrial Liaison Program (full- or part-time), to serve as office receptionist for busy office. Will receive, screen and assist visitors; answer incoming telephone calls; assist callers and visitors concerning inquiries regarding the services of the Program; distribute mail; maintain petty cash; order and maintain office supplies; update weekly travel calendar; distribute library cards to Program members; and perform other clerical duties as assigned. Requirements: accurate typing skills and minimum 2.5 years direct/related experience. Ability to learn word processing necessary. Excellent interpersonal skills and ability to take initiative essential. Should be flexible and able to relate well with diverse group of professionals, faculty, students and visitors. **S86-659**

SR. OFFICE ASSISTANT, Laboratory for Computer Science (part-time, 17.5 hours/week). Will handle inquiries and correspondence and fill orders for LCS publications; prepare and distribute all Laboratory technical reports and memoranda; maintain and update mailing lists, bibliography, files, inventory and associated records using computer systems; type; photocopy; and perform other related duties as necessary to insure the smooth operation of the publications function. Will occasionally assist Reading Room staff. Minimum 2.5 years direct/related experience or equivalent combination of education and experience required. Attention to detail and desire to work in an automated environment necessary. **S86-653**

SR. OFFICE ASSISTANT, Telecommunications Systems, to prepare purchase orders, process invoices and keep appropriate records. Will maintain and update the master file of telecommunications lines and equipment and other databases; process and distribute telecommunications charges to appropriate departments; field questions and resolve billing problems; maintain inventory and sales records, including monitoring inventory and generating orders to maintain stock at proper levels; receive and stock shipments; interact with customers when making sales and concerning questions of price and capabilities of items. Other duties include typing, answering phones and general clerical tasks. High school diploma and minimum 2.5 years direct/related experience required. Telecommunications background/experience preferred. **S86-633**

SR. OFFICE ASSISTANT, Bursar's Office, to handle the lobby reception area and general inquiry telephone lines. Will explain policies, charges and credits to students; refer student inquiries to other staff members or offices as appropriate; type correspondence, maintain files and handle incoming and outgoing mail; receive cash payments and generate receipts and daily balances using IBM PC; maintain journal vouchers; process student refund requests; record receipt of Guaranteed Student Loan checks in the student financial aid database; and perform other related duties as required. High school diploma or equivalent, good typing skills and minimum 2.5 years direct/related experience required. Excellent verbal and written communicational skills and facility and accuracy with numbers essential. Must be able to work well under pressure. **S86-613**

SR. OFFICE ASSISTANT, Plasma Fusion Center, to provide reception, computer input and general support for the headquarters office of the Mirror Confinement Division. Will handle phones, assist visitors, type correspondence and short reports, proofread and file general correspondence, order office supplies, arrange travel and process travel vouchers, enter data into computer, photocopy, deliver mail messages and information, and mail correspondence and other announcements. High school diploma or equivalent, 40 wpm typing and minimum 2.5 years direct/related experience required. Good interpersonal and organizational skills important. **S86-584**

SR. OFFICE ASSISTANT, Sloan School of Management. The Sloan Management Review seeks a Circulation Assistant to manage reprint department and assist circulation manager. Responsibilities include updating and entering computerized subscriber records, marketing and fulfilling reprint orders, and answering phones and customer inquiries. This position has excellent potential for growth and expansion into the publishing field. Requirements: 50 wpm typing skills and minimum 2.5 years office experience. Good organizational and interpersonal skills and ability to work without supervision essential. Word and data processing experience desirable. Exposure to printing, publishing or graphic production environment preferred. **S86-502**

RECEPTIONIST, Center for Technology, Policy and Industrial Development (part-time, 20 hours/week), to answer telephones, greet and assist visitors and provide some secretarial support. Will take messages, sort mail, type, file and run errands. Will also assist other Center support staff as necessary. Requirements: basic typing skills and a minimum of one year of direct/related experience. Must have good interpersonal skills. **S86-687**

OFFICE ASSISTANT, Resource Development, to support one assistant director and the business and personnel manager. Will answer telephones and greet visitors; photocopy correspondence and act as key operator for photocopiers; type memoranda, letters and other documents; arrange appointment calendar; file; and assist in processing of payroll, invoices and requisitions for payment. Requirements: graduation from high school or equivalent, good typing skills and a minimum of one year of direct/related experience. Experience with or willingness to learn word processing necessary. Must have pleasant telephone manner, ability to handle details and good interpersonal skills. NON-SMOKING OFFICE. **S86-678**

OFFICE ASSISTANT, Medical Department, to coordinate paper and data flow in MIT Health Plan claims unit. Will open, route and process mail, including data entry in claims database, using IBM PC; handle extensive telephone contact with hospitals and other medical providers, verifying inpatient admissions and insurance data; maintain and update manual and electronic claims files including photocopying and distribution of approved claims; type correspondence and daily reports; work on special projects; and perform other related duties as assigned. Requirements: graduation from high school or equivalent, good typing skills and minimum one year direct/related experience. Excellent telephone skills and attention to detail necessary. NON-SMOKING OFFICE. **S86-675**

OFFICE ASSISTANT, Division of Comparative Medicine, to provide a variety of administrative support functions including filing, computer data entry, word processing and typing, answering phones, preparing interdepartmental purchasing requisitions and running errands. Requirements: high school graduation or equivalent, 45 wpm typing and minimum one year direct/related experience. Must be willing to learn word processing and data entry. **S86-666**

OFFICE ASSISTANT, Registrar's Office, to assist in the registration of students. Will maintain student permanent records, use record keeping terminals (IBM), handle student requests and registration corrections, type form letters and file. Good typing skills and minimum one year direct/related experience required. Accuracy with figures and good attention to detail essential. College experience desirable. Should be versatile and able to work in a busy environment. **S86-649**

OFFICE ASSISTANT, Plasma Fusion Center, to assist in the preparation of various payrolls. Will also perform verification and record keeping tasks associated with those payrolls; handle petty cash and billings for supplies and services; order and maintain office supplies; assign keys and process certain travel documents; and maintain and implement records on DECmate II word processing system. Good typing skills and minimum one year direct/related experience required. Should have the ability to handle detail accurately. Facility with figures and excellent interpersonal skills essential. Good organizational skills and willingness to learn record keeping on a word processor necessary. **S86-646**

OFFICE ASSISTANT, Graphic Arts Service, to provide clerical support to the Audio-Visual office. Will process requests for equipment, operators and repairs; process invoices and prepare vouchers; type forms and correspondence; maintain records of accounts, assignments and billing; and answer telephone. This position involves considerable contact with other M.I.T. areas and occasional handling and moving of audio-visual equipment. High school graduation or equivalent and minimum one year direct/related experience required. Ability to communicate effectively essential. Must have ability to set priorities and work with frequent interruptions. Strong organizational skills, good judgment and excellent interpersonal skills necessary. **S86-645**

OFFICE ASSISTANT, Purchasing and Stores, to work in the Purchasing Field Office. Will type purchase orders using an electric typewriter; sort, distribute and mail purchase and change orders; maintain files; use a data terminal to screen adjustment forms; answer phone and assist Purchasing Agent with placing and expediting purchase orders. Graduation from high school or equivalent, 50+ wpm typing skills and minimum one year direct/related experience required. Prior experience in purchasing desirable but not necessary. **S86-640**

OFFICE ASSISTANT, Registrar's Office, to assist the supervisor of the Registration Section in the registration of students, verification of student status, preparation of registration data for entry into the CRT visual input terminals and handling registration day activities. Good accurate typing skills and minimum one year direct/related experience required; college experience desirable. Excellent attention to detail and willingness to work with students and faculty necessary. **S86-629**

OFFICE ASSISTANT, Endicott House (two positions: one part-time, Sat and Sun, 8 - 4; one full-time, evenings), to answer main switchboard, transfer and place calls, take messages and perform various clerical tasks which include typing, filing and other related projects. Will also post employee time sheets, prepare weekly payroll sheets, process accounts payable, assist with booking projects and daily planning notices and register and assist conference center guests. High school diploma or equivalent and minimum one year direct/related experience required. Ability to get work effectively with guests and staff, good organizational skills and pleasant telephone manner essential. Interest in bookkeeping and aptitude for figures important. **S86-626, S86-625**

RECEPTIONIST/OFFICE ASSISTANT, Medical Department (part-time, 20 hours/week, afternoons), to work in the MIT Health Plans Office. Will provide information regarding the MIT employee and student health plans; assist with claims and billing questions; handle all telephone and in-person inquiries; and refer complex insurance questions to appropriate individuals. Additional duties will include typing, daily clerical functions and assisting with special projects as necessary. Good typing skills and minimum one year direct/related experience required. Excellent communicational skills and ability to work with frequent interruptions essential. Must be sensitive to confidential matters. **S86-619**

OFFICE ASSISTANT, Laboratory for Nuclear Science (part-time, afternoons), to support the Director, Associate Director, Personnel Officer and headquarters staff. Will type standard forms, requisitions, travel vouchers, interdepartmental and outside memos and letters; type; handle office mail; answer telephones and provide general information; issue and keep track of all keys for LNS personnel; maintain inventory of office supplies, etc., used by headquarters; and photocopy reports, manuscripts, letters and large mailings. Will be required to assist in setting up luncheons for various meetings. High school diploma or equivalent, 40 wpm typing and minimum one year direct/related experience required. Knowledge of or willingness to learn Massll word processing necessary. Ability to handle detail and follow directions essential. **S86-601**

OFFICE ASSISTANT, MIT Press, to take telephone orders and act as customer service representative. Will receive incoming orders from bookstores and individuals; supply customers with book availability information; assist with customer order inquiries; correspond with customers concerning incorrect orders; handle bank charge card questions; and file. High school diploma or equivalent, 50+ wpm typing and minimum 2.5 years direct/related experience required. Must have excellent telephone manner and neat, legible handwriting. Business school graduate preferred. **S86-592**

OFFICE ASSISTANT, MIT Press, to input customer orders, returns, and credits on a computer terminal; maintain customer computer files including assigning new account codes, updating postage tables, etc.; and assist mail room operation with incoming mail as needed and occasionally serve as backup to mail clerk. High school diploma and minimum 2.5 years direct/related experience and accurate 60 wpm typing required. Business school training preferred. Maturity and ability to handle highly procedural, detailed work essential. **S86-591**

OFFICE ASSISTANT, Personnel - Faculty and Staff Information Services, to process and maintain employment information concerning Faculty and Staff, under supervision of the Assistant Manager. Will use word processing equipment and/or typewriter to prepare notification letters; update computer files daily; respond to telephone and written inquiries; assist in salary verification and review process; and assist, as necessary, in preparation of various reports and special projects. High school diploma or equivalent, good typing skills and minimum one year direct/related experience required. Experience with word processing (Digital) and computer terminals highly desirable. Close attention to detail and absolute discretion in handling confidential information essential. **S86-545, S86-588, S86-621**

SERVICE STAFF

LABORATORY ASSISTANT, Haystack Observatory (temporary, up to 11 months), to perform electronic assembly work, chassis wiring, population of digital boards and other similar jobs. Training will be provided. Requirements: graduation from high school or its equivalent. Should have manual dexterity, patience in performance of repetitive tasks and ability to follow instructions carefully and maintain attention to details. This position is located in Westford, MA. **H86-474**

OTHER POSITIONS

MIT's Writing and Communication Center has an immediate opening for a part-time tutor for the 86-87 academic year. The position is one-third time (16 hours/week with two 30 hour weeks in January) and pays $5,000 for the year. May also be available as two one-sixth time positions. Will tutor clients individually on any aspect of writing; develop "fact sheets" on elements of writing; and assist with other Center-related tasks. Bachelor's degree required; master's preferred. Classroom experience teaching writing or experience tutoring writers (preferably in a writing center environment) necessary. Experience tutoring non-native speakers of English and/or technical writers desirable but not required. Must be able to tutor at least 8 of the following hours: Mon, 1-6; Tue, Thur, 3-6; Fri, 10-6. Dependability is crucial. To apply, send resume as soon as possible to Steven Strang, 14N-317, Massachusetts Institute of Technology, Cambridge, MA 02139.

The Technology Children's Center, a campus based child care center, has an opening for an **Administrative Assistant**, 30 hours/week, flexible schedule. Will provide general office support, maintain staff payroll and general ledger, handle parent billing and fee collection and prepare routine financial statements. Fiscal and administrative experience in human service or child care setting desirable. Good interpersonal skills essential. This position offers a conducive work environment and excellent benefits. NON-SMOKING OFFICE. Apply to the Technology Children's Center, 60 Wadsworth Street, Cambridge, MA 02142, 253-5907.

POSITIONS AVAILABLE END LIST

The following positions were still available at Tech Talk deadline. Complete descriptions of all available positions are posted in the Personnel Office (E19-239).

ADMINISTRATIVE AND ACADEMIC STAFF:

A86-821, Administrative Manager, Civil Engineering
A86-820, Staff Assistant, Office of the Dean for Student Affairs
A86-818, Sloan School of Management Director of Information Systems
A86-817, Administrative Officer, Applied Biological Sciences
A86-816, Purchasing Agent, Purchasing and Stores
C86-187, Postdoctoral Fellow, Francis Bitter National Magnet Laboratory
A86-815, Administrative Assistant, Electrical Engineering and Computer Science
A86-812, Planning Officer for Institutional Research, Planning Office
A86-811, Assistant Production Supervisor, Microreproduction Laboratory
C86-186, Postdoctoral Associate, Division of Comparative Medicine
A86-810, Assistant Dean for Administration, Residence and Campus Activities
A86-809, Preventative Maintenance Appraiser, Physical Plant
A86-808, Maintenance Supervisor, Physical Plant
A86-807, Route Supervisor - Ground Services, Physical Plant
A86-806, Director, Alumni Information Management, Alumni Association
A86-804, Assistant for Programs and Publications, Center for Real Estate Development
A86-803, Program Manager, Alumni Association
A86-802, Manager, Academic Computing Facility, Harvard-MIT Division of Health Sciences and Technology
A86-799, Assistant Director, News Office
A86-797, Production Analyst II, Operations and Systems
A86-794, A86-793, Route Supervisor, Building Services, Physical Plant
C86-184, Technical Instructor - Speech and Debate Coach, Office of the Dean for Student Affairs
A86-787, Systems Programmer III, Operations and Systems
A86-786, Systems Programmer II, Operations and Systems
A86-781, Consultant I, Project Athena (pt)
C86-183, Staff Pharmacist, Medical Department
A86-779, Training Manager, Project Athena
A86-778, Senior Consultant, Information Services
A86-770, Consultant I, Project Athena
A86-769, Consultant II, Project Athena
A86-768, Systems Programmer II, Project Athena
A86-754, Executive Director of the Medical Department, Medical Department
A86-752, Director of Communications, Resource Development
A86-751, Director of Major Gifts, Resource Development
A86-748, Auditor II - EDP Specialist, Audit Division
A86-747, General Manager, Endicott House
A86-745, Mechanical Engineer, Physical Plant
A86-740, Technical Writer, Project Athena
C86-181, Postdoctoral Associate, Applied Biological Sciences
C86-180, Assistant Radiation Protection Officer, Environmental Medical Service
C86-179, Postdoctoral Associate, Applied Biological Sciences
A86-728, Retirement Administrator, Personnel - Compensation
A86-725, Systems Programmer III, Project Athena
A86-724, Superintendent for New Facilities, Physical Plant
A86-711, Systems Programmer II, Project Athena
C86-173, Postdoctoral Associate, Applied Biological Sciences
A86-672, Supervisor, Mechanical Services, Physical Plant
C85-169, Postdoctoral Associate, Applied Biological Sciences
C85-168, Librarian IV, Head, Engineering Libraries, MIT Libraries
C85-139, Clinical Veterinarian, Division of Comparative Medicine
A85-516, Assistant Manager, Maintenance, Housing and Food Service
C84-128, Nurse Practitioner (PT), Medical
C84-126, Nurse Practitioner, Medical Department

SPONSORED RESEARCH STAFF:

R86-077, Scientific Programmer, Harvard-MIT Division of Health Sciences and Technology
R86-075, R86-074, R86-073, Postdoctoral Sponsored Research Staff, Spectroscopy Laboratory
R86-069, Technical Assistant, Laboratory for Electromagnetic and Electronic Systems
R86-067, Research Staff Administrator, Sloan School of Management
R86-065, Technical Assistant, Brain and Cognitive Sciences
R86-063, Research Specialist, Energy Laboratory
R86-061, Research Specialist, Plasma Fusion Center
R86-060, Research Associate, Materials Processing Center
R86-059, Technical Assistant, Biology
R86-057, Technical Assistant, Applied Biological Sciences
R86-055, Research Scientist, Laboratory for Nuclear Science
R86-049, Research Engineer, Ocean Engineering
R86-048, Research Engineer, Ocean Engineering
R86-043, Registered Nurse, Clinical Research Center
R86-036, Technical Assistant, Mechanical Engineering
R86-035, Technical Assistant, Division of Comparative Medicine (part-time)
R86-034, Database Programmer, Department of Brain and Cognitive Sciences
R86-033, Statistical Programmer, Department of Brain and Cognitive Sciences
R86-020, Systems Programmer, Laboratory for Computer Science
R86-019, Accelerator Systems Division Head, Laboratory for Nuclear Science
R86-018, Accelerator Physicist, Laboratory for Nuclear Science
R86-017, Space Plasma Physicist, Center for Space Research
R86-015, Technical Assistant, Harvard-MIT Division of Health Sciences and Technology
R86-998, Technical Assistant, Whitaker College of Health Sciences, Technology, and Management
R86-992, Research Associate, Statistics Center
R86-986, Technical Assistant, Laboratory for Computer Science
R86-983, Research Scientist, Applied Biological Sciences
R86-982, Research Specialist - MIT Computer Systems Manager, Electrical Engineering and Computer Science
R86-969, Research Associate, Laboratory for Computer Science
R86-965, Postdoctoral Sponsored Research Staff, Plasma Fusion Center
R86-961, Research Associate, CCREMS
R86-960, Shift Supervisor, Nuclear Reactor Laboratory
R86-956, Postdoctoral Sponsored Research Staff, Plasma Fusion Center (temp)
R86-942, R86-943, Sponsored Research Staff, Lab for Nuclear Science (temp)
R86-931, Postdoctoral Associate, Division of Comparative Medicine
R86-923, Research Technical Staff, Francis Bitter National Magnet Laboratory
R85-854, Research Associate, Earth, Atmospheric, and Planetary Sciences
R85-846, Manager of Computer Services (Research Engineer), Aeronautics and Astronautics
R85-796, Research Scientist, Laboratory for Electromagnetic and Electronic Systems
R85-770, Research Specialist, Center for Materials Science and Engineering
R85-743, Assistant Group Leader-Diagnostics, Plasma Fusion Center
R85-731, Research Engineer, Aeronautics and Astronautics
R84-333, R84-332, R84-331, Research Staff and Principal Research Staff, Electrical Engineering and Computer Science

LIBRARY SUPPORT STAFF:

L86-571, Library Assistant III, Catalogue Department (part-time)

SECRETARY/STAFF ASSISTANT:

B86-582, Sr. Staff Assistant, Artificial Intelligence Laboratory
B86-577, Sr. Staff Assistant, Office of the Chairman
B86-574, Secretary, Office of Sponsored Accounts
B86-573, Sr. Secretary, Earth, Atmospheric, and Planetary Sciences
B86-560, B86-559, Sr. Secretary, Sloan School of Management
B86-558, Sr. Secretary, Mechanical Engineering
B86-554, Sr. Secretary, Brain and Cognitive Sciences
B86-552, Sr. Secretary, System Dynamics Group, Sloan School of Management
B86-538, Administrative Secretary, Alumni Association
B86-537, Administrative Secretary, Chemistry
B86-536, Sr. Secretary, Materials Science and Engineering
B86-532, Sr. Secretary, Center for Materials Research in Archaeology and Ethology (pt)
B86-522, Administrative Secretary, Economics
B86-521, Administrative Secretary, Economics
B86-511, Sr. Staff Assistant, Whitaker College of Health Sciences, Technology and Management
B86-478, Secretary, Office of Sponsored Programs
B86-465, Sr. Staff Assistant, Aga Khan Program, Laboratory of Architecture and Planning
B86-461, Sr. Secretary, Materials Science and Engineering
B86-459, Sr. Secretary, Office of the Secretary of the Corporation
B86-450, Sr. Secretary, Undergraduate Academic Support, ODSA
B86-434, Sr. Secretary, Applied Biological Sciences
B86-423, Administrative Secretary, Resource Development
B86-409, Sr. Medical Secretary, Medical Department
B86-405, Sr. Secretary, Industrial Liaison Program
B86-403, Sr. Secretary, Earth, Atmospheric and Planetary Sciences (pt)
B86-385, Sr. Secretary-Technical, Plasma Fusion Center (part-time)
B86-384, Sr. Secretary/Sr. Staff Assistant, Admissions Office
B86-380, Sr. Secretary, Resource Development
B86-378, Sr. Secretary, Laboratory for Computer Science
B86-368, Secretary, Applied Biological Sciences
B86-338, Administrative Secretary, Alumni Association
B86-334, Sr. Secretary, Materials Science and Engineering
B86-329, Sr. Secretary, Sloan School of Management
B86-291, Sr. Secretary, Aeronautics and Astronautics
B86-180, Sr. Secretary, Materials Science and Engineering
B86-176, Sr. Secretary, Bursar's Office
B85-138, Sr. Secretary, Mechanical Engineering
B85-115, Sr. Secretary, Fiscal Planning and Budget
B85-038, Sr. Secretary, Electrical Engineering and Computer Science
B85-024, Sr. Secretary, Treasurer's Office

OFFICE ASSISTANT:

S86-579, Clerical Assistant, Student Financial Aid Office
S86-575, Administrative Assistant, Applied Biological Sciences
S86-568, Sr. Office Assistant, Sloan School of Management
S86-566, Office Assistant, Admissions Office
S86-564, Office Assistant, Medical Department
S86-557, Sr. Office Assistant, Office of the Secretary of the Corporation
S86-556, Service Assistant, Athletic Department
S86-555, Administrative Assistant, Systems Dynamics Group, Sloan School of Management
S86-553, Office Assistant, Office of the Dean for Student Affairs
S86-544, Office Assistant, Purchasing and Stores
S86-539, Sr. Office Assistant, Alumni Association
S86-530, Sr. Office Assistant, Microreproduction Laboratory
S86-525, Office Assistant, Purchasing and Stores
S86-502, Sr. Office Assistant, Sloan Management Review
S86-476, Administrative Assistant, Graphic Arts Service
S86-472, Sr. Office Assistant, Harvard-MIT Division of Health Sciences and Technology
S86-458, Office Assistant, Graphic Arts Service (temporary)
S86-444, Office Assistant, Physical Plant
S86-406, Administrative Assistant, Energy Laboratory
S86-399, Administrative Assistant, Plasma Fusion Center
S86-367, Office Assistant, Purchasing
S86-352, Sr. Office Assistant, Medical Department

SERVICE STAFF:

H86-439, Patrolman/Patrolwoman, Campus Police
H86-423, Shadeworker, Physical Plant
H86-422, Steamfitter, Physical Plant
H86-383, 2nd Class Watch Engineer, Physical Plant
H86-382, Plumber, Physical Plant
H86-336, Instrument Systems Worker, Automatic Temperature Controls, Physical Plant
H85-241, Sr. Technician (electronic), Laboratory for Manufacturing and Productivity

MIT POSITIONS AVAILABLE

MIT Positions Available is a publication of the Personnel Office, Massachusetts Institute of Technology. It appears as a supplement to TECH TALK 35 times a year and as an independent entity other weeks.
Address inquiries or resumes to the MIT Personnel Office, Room E19-239, MIT, Cambridge, MA 02139. General telephone inquiries are received at (617) 253-4251. Please include the job number(s) when making inquiries.

DEADLINE INFORMATION

To post MIT openings in Positions Available, "Request for Personnel" forms should be submitted to the appropriate Personnel Officer in the Personnel Office. Deadlines for submission are as follow:

12:00 noon on Wednesday (except when the following Monday is an Institute holiday)

12:00 noon on Tuesday (when the following Monday is an Institute holiday).

First Rehearsal MIT Women's Chorale**—Nancy Wanger, conductor, Thurs, Oct 2, 7:45pm, Rm 10-340. Women of the MIT community are invited to sing with us in our 55th season. Info: 484-8187.

Computer Music Series*—California E.A.R. Unit featuring Boston premiere of Morton Subotnik's *The Key to Songs* For ensemble and computer, October 3, 8pm, Kresge Auditorium. Tickets: $7 ($4 students, seniors, MIT ID). Info: x3-7418.

MIT Chamber Players*—Marcus Thompson, director, performs Bartyok, Poulenc and Dvorak, Sat, Oct 4, 8pm, Kresge Auditorium. Free.

Theater

An Evening of One-Act Plays*—MIT Dramashop supervised by Robert N. Scanlan, Oct 2,3,5, 8pm, Kresge Little Theatre. Discussion and coffee hour follows.

Dance

MIT Dance Workshop—Regular Meetings:** Composition/Improv, Tues, 3-5pm, Dupont T-Club Lounge; Intermediate Technique, T/Th, 5:30-7pm, Walker 201; Beginning Technique, M/W, 3-5pm, Dupont T-Club Lounge.

MIT Ballroom Dance Club Workshops*—Sept 28: Beginning Quickstep and Rumba, 1-1:30pm, 1:45-2:15pm; Intermediate Foxtrot, 2:30-3:30pm. **Oct 5:** Beginning Cha Cha and Waltz, 1-1:30pm, 1:45-2:15pm; Intermediate Rumba, 2:20-2:30pm. All classes at Burton Dining Hall. Admission: Beginning—$.25/members, $.50/non-members; Intermediate—$.50/members, $1/non-members. General dancing follows, 4-5pm. Info: x5-9171 dorm.

MIT Folk Dance Club*—weekly dancing-Sun, International Dancing, 7:30pm, Student Center Sala de Puerto Rico; Tues, Balkan and Western European Dancing, 7:30pm, Rm 407 Student Center; Wed, Israeli Dancing, 7:30pm Sala de Puerto Rico.

MIT Contemporary Dance Club*—Instructor, Cynthia Mallick: **Aerobix I,** M/W, 8-9pm, F,6-7:30pm; **Jazz I,** M, 9-10; **Jazz II,** W, 9-10pm, T-Club Lounge (M&W); Dance Studio (F). Fee: $3/MIT; $4/non-MIT.

Yoga*—ongoing classes in traditional Hatha and Iyengar style. Beginners: Mon, 5:15pm; Intermediates: Mon, 6:15pm. For information call Ei Turchinetz, 862-2613.

Western Square Dance*—Tech Squares class starts Sept 23, Tues, 8-11pm Student Center, 2nd floor; runs for 10 weeks. No partner or experience necessary. Caller/instructor: Don Beck; cuer: Veronica McClure. Recorded info: x5-9125 dorm.

Multi-Media Events

Art In The Sky—Multi-media artists from the Center for Advanced Visual Studies present giant inflatables, laser art and other forms of skyart. All-day, one-day, Wed, Oct 1, 10am-10pm, Kresge Oval & Brigg's Field. Free.

Exhibits

COMMITTEE ON THE VISUAL ARTS
Albert and Vera List Visual Arts Center
Jerome & Laya Wiesner Building
20 Ames Street

The Reference Gallery—Victor Burgin: In Residence, British artist and theorist is known for works challenging the conventional notions of photography as it relates to cultural signs and language. Through Nov 2. **Special Lecture Series: The Danaides: Hieroglyph and Reception**—Victor Burgin, Sept 30, 7pm, Bartos Theatre, followed by reception for the artist.

THE MIT MUSEUM

MIT Museum Bldg—Hours: Weekdays 9am-5pm, Saturdays 10am-4pm.

Compton Gallery—Gyorgy Kepes. An 80th-birthday retrospective of the founder of MIT's Center for Advanced Visual Studies. Through October 25. Hours: Weekdays 9am-5pm, Saturdays 10am-4pm.

Hart Nautical Gallery

Ongoing exhibits: George Owen '94: Yacht Designer—Line drawings and half-models designed by one of the early professors of naval architecture at MIT. **MIT Seagrant**—A review of MIT ocean research; **Collection of Ship Models**—Half-models and drawings. Historical view of the design and construction of ships.

Corridor Exhibits

Corridor Exhibits: Building 1 & 5, 2nd floor: **John Ripley Freeman** Lobby, Building 4: **Norbert Wiener, Karl Taylor Compton. Community Service Fund, Ellen Swallow Richards. Women at MIT.** An overview of the admission of women at MIT. Five photographic panels with text documenting the circumstances that increased the number of women in the classroom since Ellen Swallow Richards. Building 6: **Laboratory for Physical Chemistry.**

OTHER EXHIBITS

Institute Archives and Special Collections—Planning the New Technology. Part Two: Constant Desire Despradelle. Part two of a three-part series about the relocation of MIT from Copley Square to Cambridge portrays the impressive design of architect and teacher Despradelle. Though he died before the project began, several of his ideas were incorporated into the ultimate plan by his successor, William Welles Bosworth. Hall exhibit case across from 14N-118.

The Work of Geoffrey Bawa, Architect—School of Architecture and Planning, Aga Khan Program Exhibit, through Oct 10, Bldg 7, 4th flr Exhibition Gallery.

The Architecture of Morocco—School of Architecture and Planning, Aga Khan Program Exhibit, Oct 1 through Oct 15, Bldg 7, 4th flr Exhibition Gallery.

Experimenting...A New Way to Look at Modern Art—Paintings by Matthew Scott, through Oct 5, Jerome B. Wiesner Student Art Gallery.

Jerome B. Wiesner Student Art Gallery—for 1986 scheduling, any MIT student or student group interested in showing or performing art in the Gallery, call Andy Eisenmann, x3-7019 in Rm W20-429, M-F, 9-5.

Wellesley Events

Jewett Arts Center*—Bill Drew: Recent Work 1983-86, through Oct 19. **Old Master Prints from the Wellesley College Museum Collection,** through Oct 26. **Contemporary Prints from the Permanent Collection,** continuing.

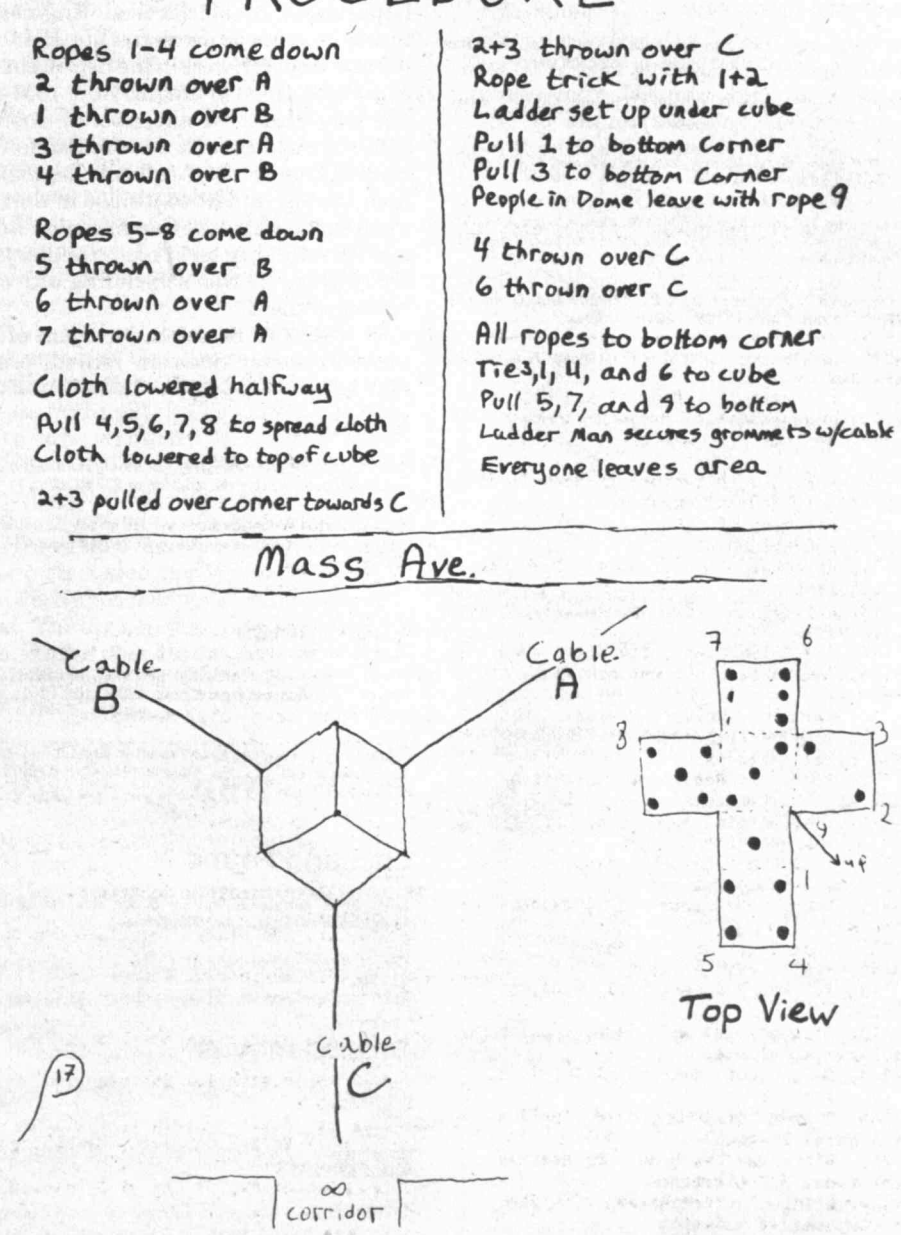
Recent Works 1983-86*—Bill Drew, asst professor of art, Wellesley College ArtBreak, Sept 25, 12:30pm, Main Gallery.

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

Send notices for Wednesday, October 1 through Sunday, October 12, to Calendar Editor Rm 5-111, before noon, Friday September 26.

HACKERS' HEAVEN—A space station module hanging in Lobby 7 was transformed into a giant die—perhaps the world's largest—by MIT pranksters over the weekend. The die was the work of ORK (Order of Random Knights), the Random Hall hacking organization, with help from other MIT hackers. If it looked at first glance like a fairly simple hack, it wasn't. The hackers bought 170 yards of unbleached cotton and spent 10 hours sewing it into a six-sided die Saturday night in the basement of Random Hall. Then they painted the die's black dots onto the cloth, spreading it out on the third floor of the Vassar Street parking garage. Next came the really hard part, one of the organizers said, dropping the cloth with ropes onto the space module from the inside of the Lobby 7 dome, blanketing one corner of the cube and then pulling the flaps around with the ropes—in a pre-arranged procedure (see chart)—to complete the die. "We had over 40 people involved at this point," said the organizer. Lowering and arranging the cloth required "careful calculation and a lot of improvisation," he said. Actually assembling the hack took from 1:30am to 5:30am on Monday morning, he said. Now the hackers are trying to determine from the Guinness Book of World Records whether the 17-by-17-by-17 foot die is the biggest ever. Size-wise, there's still another way to look at it—it would take more than 64 million regular dice to fill the Lobby 7 die, another organizer said.

—Photo by Simson L. Garfinkel



MIT team wins boat design contest

A team of MIT students topped 10 other teams, including three from the US Coast Guard Academy, in a recent national competition to design a Coast Guard patrol boat.

The five-person team of ocean engineering students won first place in the Society of Naval Architects and Marine Engineers' (SNAME) James A. Lisnyk Student Design Competition for 1986. The event was sponsored by the Chesapeake Section of the society.

The students will receive certificates and a total of $500 during the section's meeting in Washington, DC, tomorrow (Thursday, Sept. 25). They are: team leader Howard Stearns '86; Liana Alvarez '87; Charles Thompson '87; George Kriezis '86; and Bryan Freed '87. All are naval architecture and marine engineering majors.

They submitted their design in May. It was reviewed by a panel of judges who analyzed it on the basis of technical content, organization and presentation, originality and practical application and feasibility.

"All of the projects showed exceptional content and maturity," said Donald R. Cebulski, chairman of the Education Committee, SNAME Chesapeake Section, in his congratulatory letter to the Department of Ocean Engineering on Sept. 4.

US Navy Captain Clark Graham, professor of naval construction and engineering at MIT and Nicholas Patrikalakis, assistant professor of ocean engineering here, served as faculty advisors for this year's team.

Last year the MIT team placed third in the competition and the US Coast Guard Academy team placed first. This year the Academy's team placed third and a team from the University of California at Berkeley placed second.

MIT Press initiates internship program

The MIT Press recently hired the first intern for its new minority apprenticeship program.

Kimberly Murray, a 1986 graduate of Villanova University, was chosen in late August to launch the program designed to provide minority candidates with hands-on experience in the publishing industry. The program offers a one-year arrangement in which the person alternately interns in three departments at the Press.

Ms. Murray will spend her first four months in the Editorial Department performing functions such as manuscript editing and proofreading. She will also work with design and production.

Her next four months will be spent in the Journals Department learning the marketing and production characteristics of publishing journals.

Her final months will be spent in the Marketing and Promotion Departments learning about the skills necessary to bring a book to its readership. Those skills include publicity and production procedures.

Frank Urbanowski, director of MIT Press, who instituted the apprenticeship program, said he expects the program to continue in this form for many years to come.

Before joining the Press staff Ms. Murray was one of two fellows sponsored by Metropolitan Life to attend the 1986 summer session of the Publishing Procedures course at Radcliffe. At Villanova she was a feature reporter for the Villanovan.

Modigliani at forum

Institute Professor Franco Modigliani, who won the 1985 Nobel Prize in economics, will appear Sunday, Sept. 28, at the Ford Hall Forum in "A Conversation on the Economy."

Joining Professor Modigliani will be Harvard's famed economist, Professor John Kenneth Galbraith.

The talk will be held in Northeastern's Alumni Auditorium at 8pm and is open to the public free of charge.

CLASSIFIED ADS

Tech Talk ads are intended for personal and private transactions between members of the MIT community and are not available for commercial use. The Tech Talk staff reserves the right to edit ads and to reject those it deems inappropriate. MIT-owned equipment may be disposed of through the Property Office, x3-2776.
INSTRUCTIONS: Ads are limited to one (of approximately 30 words) per person per issue and may not be repeated in successive issues. All must be accompanied by full name and extension. Persons who have no extensions or who wish to list only their home telephones, must come in person to Rm 5-111 to present Institute identification. Ads using extensions may be sent via Institute mail. Ads are not accepted over the telephone.

Deadline is noon Friday before publication.

For Sale

For really grt time, call Lynn. Sunbeam elctrc clock, royl blue w/wh numbrs & secnd hnd, keeps grt time, $5 or bst. Lynn, x3-2701.

Br nw 5" prtbl b&w tv, stll in bx, $65; infnt/toddlr to 5 yrs old car seat, only usd 2X, exc, cst $90, sell for $60; wh tbltop phone w/clock, wrks fine, $20. Demetri, x3-7906.

½-sz fridge, gd for apt/office, $125. Laurie, x3-3324 or 625-5592.

Couch, 7' lng, brwn, gd cond, $65; Yamaha CP30 elec piano, $350. Earl, x3-2795.

Guitar amp, exc cond, 10 mos old, $100. Gus, x5-7581, 494-9262.

Fabiano rck boots, W's 7-½B, wrn 2X, $40; Fabiao hikng boots, 7-½B, $35; W's red Keltypck, $60; IBM Sel I, wide carriage, 6 printing elemnts, $250. Jean, 489-4590.

Clssc guitr, md in Spain, br nw & stll undr warr, $185. Nicholas, 497-4417.

Sgl mttrss, Sears xtra firm w/envelope qltd cvr pad & sheets, v gd cond, $50. Call x3-1631.

Smith Corona elctrc typwrtr, $50. Steven, x3980 Linc or 492-4915.

Mst sell: Emerson Quiet Cool a/c, $200; 3-drwr refnshd vanity & lrg mirror, $75; 4-drwr bureau, $30; wdn ktchn tbl & 3 Bueller chrs, $60. Call x8-4612 Draper.

Exc mtl office dsk, $65; brwn couch, gd shape, $40. Eugene, 536-1750 aftr 7pm.

Ktchn tbl, wh formica w/4 chrs, $90; 3 beds w/mttrsses & frms: 1 xtra long dbl, $25; 2 twns, $25 & $50. Call x3-2994 or 891-5205 eves.

Nw Zenith Z-29 trmnl, $400; nw Incomm modm, $300; btfl pine dsk, $100. Stephanie, 893-6439 after 11pm.

Ski boots, M's sz 12-½, $10; sz 8, $15; rllr skts, girl's sz 4, $5; brandy glsses, $6/doz; sherbet/ice crm glsses, $5.50/doz; forks, $3.50/doz. Call 1-636-2044 eves.

Library tbl, antq mahog, approx 2x5', $125. Connie, x3-1316.

Scenic mdl RR, 4x8' trnsprtbl base w/cvr; train, tunnl, hills, combo rd trnsprtn sys, $125 or bst. Dave, x3-5121 or 876-6326 eves.

90" grn sofa, sits 4, mtchng chr, gd cond, fabrc lttl wrn, $350 or bst; Sears sewng mach, wd cbnt, bttnhole attchmnt, gd cond, $75 or bst; foldng cot, exc cond, $30 or bst. James, x3886 Linc, 658-9840 aftr 5pm.

Brwn sleepr couch, not prtty but cheap, $50; glss tbl, alum tubulr frm, $20. Tom, x8-2909 Draper.

Drftng tbl, 48x72" w/drftng mach, lite, stool, birch surfc. Chad, x3-5407, 783-3725 eves, kp trying.

Fridge, 3 yrs old, gd cond, 9.1 c.f, 24x22x52", $70. Call 489-3715.

Frigidaire fridge, lg, approx 4'-6"x2'x2', $100. David, x3-9812 or x5-9812 dorm.

Sears Scholar elctrc typwrtr, prtbl/case, rcntly clnd, $95. Call 396-9440 eves.

Boston Symphony opn rehrsl tix, ½8, $16. Marty, x3-2846.

Schwinn men's 10-spd bike, $75; 2 bkcases, $25 ea; sm tbls, $5-30; bureau, $18; stereo w/AM/FM/trntbl, 2 spkrs, $65; b&w tvs, 13" & 19", $5 ea; med suitcases, $5-10; lmps, $5-20; 2 strght chrs, $3 & $5; Westinghouse sewng mach w/tbl, $65. Call 332-8251.

Trailr, 6x8', 2,000lb axl w/2' or 4' sides, 2 nw trs+ spr, gd for mvng furn, $350. Call x3-3870, 494-5164.

Br nw 7-pc sec, bge, was $3,600, askg $1,400; 2 snw trs for sm car, exc cond, $20 ea. Call 528-2413 eves.

13 c.f. fridge, almst nw, $200. Joan, x3-1973 or 876-2308.

Compute/wrd prcss in your own hm: Zenith ZT-1 Series trmnl w/blt-in modm & NEC mntr, exc cond, only $185. Bernard, x3-4990 or 491-6752.

Tempwood wd stv, exc cond, $250; wd wrkng bnch w/10" vise $50. Chris, x8-5202 Whitehead or 567-2149.

5-string banjo, gd cond, w/case & access, $100. Dan,x 3-5659 or x5-9834 dorm.

125gal aquarm, leaks but makes grt terrarium, $125 firm. Paul, x4299 Linc.

Llama wool poncho, sft & v wrm, jst dry-clnd, brwn-tan-gr tones, $28 or bst. Lucy, x3-2774.

Q-sz futon & pltrfrm frm, $175. Caia Grisar, x3208 Linc.

Edmund 4-¼" telescope, F-10, 1143mm F.L. 28mm RKE eyepc, pedstl mnt, also inc 2.5 Barlow & orthoscopic zoom lens 8mm-22mm, $300. Ron, x4026 Linc.

Aiwa carry cmpnent sys, CA-30, $150; Bang & Olufson Beogram Rx trntbl, $15; Yamaha natural sound cass dck, K-200, $125; ext amplifd spkrs for Walkman, $30; BIC beam box tund trap FM ant, $25. Call x3-8641 or 492-4830.

Vehicles

'69 Chevy Impala, hi mi, rns well, prtty nw trs, exh, rear coils, shcks, w/hitch, rad nds wrk, $125 or bst, Tom, x3-5923 or 494-8531 eves.

'70 Ford Mustang, 145K, reblt eng & trans, drvn daily, rns well, $250 or bst. Joe, x3-5982 or 926-5214.

'72 VW Superbug, 82K, rns fine, well-maint, not mch rst, 8k on 4 rads, mech's refs, $750 or bst. Henry x8-3424 Draper or 259-9007.

'72 Honda 350F 4 cyl mtrcycl, 13.5K, v gd, xtras, mnls, saddle, batt, chargr, lck, cld wthr suit, $500 nego; also 2 helmts, slightly usd, $100 ea. Robert, 628-4301.

'73 Buick Electra 225, grn, all pwr, gd cond, mnt int, $1,000 or bst. Al, x2582 Linc or 369-6388.

'73 Pontiac Lemans 350 auto, 740K orig, no rst, nw rad, alt, trs, a/c, AM/FM/cass, snws on rims, $700. Jim, x5-9735 dorm or x8-2416 Draper.

'74 Mazda Wagon, frly gd cond, gd cty car, nds some wrk, $175, as is. Judith, x3-5133 days or 661-9630 eves.

'74 Chevy Nova, 2-dr, V8 eng, reg gas, rns well, $515. Call x3-5209.

'74 VW Bug, rns, gd eng, nw trs & brks, crackd frm, sale whole/parts. Doris, x8-5198 Whitehead or 647-0231 eves.

'74 BMW Bavaria, 98K, nw batt, cltch, brks, more, rns well but nds wrk, not registrd, fun car, $3,000 or bst. Call 729-5945.

'74 Dodge Coronet, 4-dr, 8 cyl, 84K, pb, ps, snw trs on rims, exc cond, $1,500. Call x2352 Linc or 935-0719 aftr 5pm.

'75 Ford Maverick, thorough maint rcrd, not w/out probs but gd car. Matt, x3-6878 or 328-4776.

'75 Plymouth Valiant, 2-dr, 8 cyl, a/c, pb, ps, 2 snws on rims, $700. Call x4493 Linc.

'75 Dodge Dart Swinger, clssc car, 2-dr hrdtop, wh, 93K, exc mech cond, some rst, v rlbl transprtn, $600 or bst. Ron, x8-5227 Whitehead or 484-0834.

'76 Plymouth Volare sta wgn, 93K, nw brks, batt, muff, frnt trs, ps, rcpts avlbl, $800 or bst. Anne, x3-0958.

'77 Toyota Corolla sta wgn, 85K, auto trans, AM, bl, v gd rnning cond, $850 or bst. Call 638-4836 9am-5pm or 648-4839 eves/wkends.

'77 Mercury Cougar, all pwr xtras, AM/FM stereo, 109K, gd rnning cond, bdy fair, bst rsnbl offr. Call x3-2772 or 396-4221 eves.

'77 Olds Omega, 82K, 1 ownr, v gd cond, ps, pb, tintd wndshld, radio, snw trs, $850 or bst. Call x2888 Linc or 862-1298 eves.

'77 Mercury Marquis, 4-dr, V8, all pwr, a/c, AM/FM stereo, few scrapes, gd car, $950 nego. Ken, x3-5505.

'78 Honda Civic CVCC, 2-dr, htchbck, 70K, 37mpg, reg gas, wh w/bl int, std 4-spd, gd cond, v lttl rst, $895. Call 494-1768.

'78 Plymouth Horizon, 4-dr, htchbck, ps, rstprfd, bdy in grt shape, 4 nw trs, 35mpg hiway, rns grt, $1,200 nego inc xtras. Stephen, x3-8522 or 494-5144.

'78 Honda Accord htchbck, tape deck stereo, v gd cond, $950. Lita, x3-6966 or 729-8362.

'79 Honda Accord, exc mech cond, bdy rst, $500. Joel x3-6885.

'79 VW Rabbit, 4-dr htchbck, 4-spd, std, nw cltch & brks, nds nw alt, askg $550. Maggie, x3-4392 or 646-7801.

'79 Honda wgn, 81K, jst change brk & exh sys, gd cond, askg $1,500 or bst. Nancy, x3-4690.

'79 Dodge Omni htchbck, 4-dr auto, gd cond, rns well, has stckr, askg $750. Call x4883 Linc or 862-5936 eves.

'80 Plymouth Horizon TC3, 4-spd, 1.7 ltr eng, AM/FM, gd trs, no rst, $700 or bst. Charlie x4298 Linc.

'80 VW Diesl, 4-spd, 40mpg, a/c, nw exh sys, $1,600 or bst. Kwon, x3-3494.

'80 Datsun 310, mnl, bl, a/c, AM/FM/cass w/eqlzr & 4 spkrs, nw brks, trs & muff, 53K, bought anothr car, $2,300. Makoto, 577-8180 eves.

'80 Renault Le Car, exc cond, 50K, nw alt & batt & elec sys, $995, mst sell. Call x3-7128 or 494-1659 eves.

'80 Plymouth Horizon, AM/FM, 90K, gd trnsprtn, askg $900. Call x3-8211 or 491-4584 eves.

'81 Chevy Citation, v gd cond, mny nw prts, nw stckr, $1,500. Call 491-8392.

'81 Pontiac T 1000, 4-dr htchbck, 48K, well maint, $1,700. Call x8-3823 Draper, 729-8896 eves.

'81 Honda Accord, 4-dr, a/c, AM/FM, 5-spd, teak rck, exc cond, $3,750 or bst. Call 527-3646.

'82 Chevy Citation, a/c, AM/FM/cass, v gd cond, rlbl, 4-dr sdn, askg $2,450. Karen, x3-7594 aftr 12noon or 646-4356 lv mssg.

'82 Olds Cutlass Supreme, 4-dr, auto trans, V6, a/c, AM/FM, 58K, exc cond, gd trs, $4,200. Call x7400 Linc.

'83 Subaru GL, 2-dr htchbck, 5-spd, 42K, AM/FM stereo, a/c, rstprf, exc cond, mtl gr, orig ownr, askg $4,900 or bst. Leon, x8-4444 Draper or 246-4547.

'85 VW Golf GTI cnvrtbl, Wolfsburg special ed, 19K hiway, wh, alloy rims, AM/FM/cass stereo, $3,000 below nw price. Peter, x3-3696 or Hubert, 536-4414.

Housing

Brookline, 3BR, 1-½b condo, off Coolidge Corner in 2-fmly hse, lrg, exc cond, 2 prkg spaces, yrd, bsmnt & ampl storage, wshr/dryr, stv, fridge & D/D, $216,000. Call 738-4494.

Malden, W end, spacious 8 rm apt w/3BR, $900/mo+ ht; lrg 4 rm apt w/1BR, $600/mo+ ht, hdwd flrs, exc cond, nr T, no pets, Steven, x3-8966, 324-5904.

Stowe, VT, Trapp Fmly gst hse, 2BR, 2b, sofa bed, sleeps 6, fully furn, 12/15-22, $1,000. Betty x7720 Linc.

Animals

Lving & frndly F calico cat nds hm, spayd. Ida, x3-4765 or 522-7994 aftr 6pm.

Budget shows modest surplus

(continued from page 1)

tinue to be exercised throughout the Institute; and

—research volume does not decline because of legislative or administrative action, such as the Gramm-Rudman bill and an anticipated change in the formula the government uses to reimburse universities for indirect costs of research.

Because of the uncertainty of federal funding, Mr. Culliton said, the Institute is projecting a lower growth pattern in the research base on campus than in the past few years. "These estimates could change considerably depending on the federal administration or Congressional action," he said.

The Institute's fiscal 1986 operating expenses were $790,803,000, a 10.3 per cent increase over the fiscal 1985 expenses of $717,187,000. Meanwhile, the total operating revenues and funds increased 10.5 per cent, from $714,456,000 in 1985 to $789,184,000 in 1986.

The Institute did have some gains during the year as a result of increased income from temporarily invested funds, increased tuition revenue, lower energy costs and a lower demand for unrestricted funds for financial aid," Mr. Culliton said.

However, these gains were offset, he added, by the need to designate operating funds for the purchase of academic plant and by a variety of expense increases and fund losses.

Mr. Culliton said the 1986 surplus was achieved by using $1.6 million from $3.1 million available in unrestricted gifts, grants and bequests.

This represented the third straight year that MIT has not had to use all of its unrestricted gifts to balance the operating budget, Mr. Culliton added, a trend that has yielded an unrestricted gift surplus of $805,000 in 1984 and $1.5 million in both 1985 and 1986.

"While this trend is encouraging," he said, "we must continue to strive to balance operations without any demand on unrestricted gifts."

The total of gifts, grants and bequests received in fiscal 1986, both restricted and unrestricted, was $54.8 million, down 11 per cent from the $61.7 million received in fiscal 1985, Mr. Culliton said. This was due entirely to a reduced inflow from trusts, estates and nonrecurring grants from charitable foundations, he said.

Of this $54.8 million in gifts, Mr. Culliton said, only $3.1 million was available to be used at the Institute's discretion.

The Institute was aided in achieving a surplus, he said, because of "the considerable efforts of faculty and staff to implement the Institute's planning process and to remain within approved budgets," Mr. Culliton said. On the subject of endowment, Mr. Culliton mentioned three circumstances that underscore the need for a major increase in its size through a fund drive:

—The present spending of unrestricted gifts for current operations rather than to increase endowment.

—The reliance on sponsored research for over two-thirds of operating revenues, and the relatively small portion of unrestricted or discretionary funds in the operating budget.

—The need to use operating revenues for the purchase, modification or construction of buildings suitable for academic use.

A larger endowment will provide, among other things, Mr. Culliton said, increased undergraduate and graduate financial aid, faculty chairs, new program initiatives, curriculum development, new facilities and facility renovation.

"While the exact dollar requirement has not been fully developed," he said, "the needs and priorities. . .show a requirement for a major increase."

Crewel classes begin

Priscilla K. Gray will teach beginning, intermediate (Crewel III) and advanced crewel embroidery classes on Tuesdays in the Emma Rogers Room (10-340) this fall, beginning October 7.

Advanced classes will begin at 11:15am; intermediate at 11:30am, and beginners at 12:30pm.

The classes are offered under the auspices of the MIT Women's League. Advanced registration is required and may be made by calling Mrs. Gray at x3-2829.

Professor Emeritus Svenson

Professor emeritus Carl L. Svenson of the Department of Mechanical Engineering, an active member of the faculty from 1919 until his retirement in 1962, died in July, it was learned at MIT recently. He was 89.

Professor Svenson, whose home was in Milton, was associated with MIT and the Department of Mechanical Engineering throughout his professional life. His teaching and research were in the field of thermodynamics. He also taught, from 1951 until his retirement, at the Lowell Institute School. In addition, he was executive officer of the Committee on Academic Regulations from 1951-57 and he continued in that post when that became the Committee on Academic Performance until his retirement. For many years he was scheduling officer for his department.

Dr. Julius A. Stratton, president of MIT when Professor Svenson retired, praised him as a splendid teacher with a profound understanding of the problems of students. "His service to students and to his colleagues on the faculty has been expert, efficient and humane," Dr. Stratton said.

Professor Svenson was born in Buffalo, N.Y., Aug. 15, 1896. He was a member of the MIT Class of 1919, holding both the SB and SM from his alma mater and the SB from Harvard.

He served in the US Navy from September 1918 to June 1919, when he began his teaching career at MIT.

He was a member of the American Society of Mechanical Engineers, the American Society of Heating, Refrigerating and Air Conditioning Engineers and the American Society for Engineering Education.

He is survived by his wife, the former Dorothy May Slader. They were married in 1924.

Wanted

Accompanst for Sun AM worship service, 11am-12noon, $10+ T-fare wkly. Betsy/David, x3-2328 or 227-6236.

Rspnsbl exp'd W to care for 4-mo girl in my Cambridge hm approx 20 hrs/wk, no-smkr, refs req'd. Call x3-3581 or 491-6857.

Roommates

Pro M, 25, sks 2 M/F nonsmkr pro/grad for 3BR N Quincy hse, nr T & beach, inc frplc & prkg, $225+ utils. Chris, x3-4963 or 472-7516.

F prof in 30's sks apt to shr w/same on Red Lin in Camb/Som/Arlington for 10/1, cln, no smk/pets. Call x3-2972 or 625-8106 before 10pm.

Lost and Found

Lost: Bolle sunglsses w/blue & wh nck string in grey sheepskn case. Dottie, x3-8200, lv mssg.

Found: Cross pen nr Bldg 31. Call to ID initls on pen. Eric, x3-3146.

Miscellaneous

Plnning a trip; nd a pet sittr? Teri, x3-2828 or 389-3687 aftr 5pm.

Exprt typng on wrd prcssr, all knds, fst, efficnt, gd rates. Karla, x3-2203.

Invntr's wrkshp sale: misc elctrnc & mech prts, instrumnts, tools, pmps, mtrs, gauges, pricd to sell, opn hse, Sat, 9/127, 9-5pm. Ron, x8-5227 Whitehead or 484-0834 eves or 232-1724 9/27 only.

Trunk Rm sale, Sat, 9/27, 10am-4pm, Burton House, 410 Mem Dr (Amherst Alley), stdnts graduatd & lft treasures in storage for us to sell cheap, clcks, elctrnics, skis, books, course matls, etc.

Tech illustratns, all knds, will pick up & delvr, can be paid thru acct nos, rsnbl rates. Call x3-7303 or 469-4920 eves.

Typng on IBM Corr Sel II or wrd prcssng on Wang, theses, corrspndnce, proposls, books, resumes, tech paprs, trnscrptn, free disk storage, 17 yrs exp. Debbie, x3-3386.

Surplus Property

The Property Office has this excess MIT equipment for transfer within MIT. Unless noted, items are at the Equipment Exchange, 224 Albany St., open Tues & Thurs 11am-3pm. After 30 days, items are sold to individuals. Where noted, bids and offers go to Earl C. Fuller, Institute Property Officer, E19-429, x3-2779, with envelope so marked. Always reference case number on the envelope. MIT reserves the right to reject any and all bids.

Case 1792: T.I. computer

Case 1836: Friden Reader Intel computer, 2 disk drives, programmer, 2 Heath Lab generators, Ampex recorder.

Case 1864—Transfer of funds required. To inspect, call Janice O'Brien, x3-6148: Pitney Bowes inserting machine, Pitney Bowes folder, both recently overhauled.

Case 1865—To inspect and transfer, call Jane McNabb, x3-2281: Cromenco S100 Bus CPU microprocessor sys, Princeton Analog correlator, mdl 101.

Case 1813: Genrad 1608AM cleaner; Narda ultrasonic cleaner; Keithley 147 detector.

Case 1830: 2 DEC video monitors, VT273.

Professor MacVicar has a surplus formica counter top, 45x20", to inspect, see Louise Harrigan, Rm 8-201.

←Here & There→

An MIT alumnus (four degrees) has been named president of Florida International University, becoming the first Cuban-born head of a US university.

He is **Modesto A. Maidique,** an electrical engineer who has blended a career in academics and high technology business management. He received the SB in 1962, SM in 1964, EE in 1966 and PhD in 1970. He also was a teaching assistant and instructor in the Department of Electrical Engineering.

On the management side, Dr. Maidique graduated from the Harvard Business School's Program for Management Development, and he has served on the faculty there, at Stanford University and at the University of Miami.

As president of FIU, a 16,500-student state university with two campuses in Dade County, Florida, Dr. Maidique is the first Hispanic to lead a university in Florida.

He is the cofounder of Analog Devices, Inc., semiconductor division; coauthor of *Energy Future;* and the former president and chief executive officer of a genetic engineering company, among other business ventures.

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Organizational Culture and Leadership, by Professor **Edgar H. Schein** of the Sloan School of Management, has been chosen as the outstanding book for 1986 by the Editorial Board of the American Society of Military Comptrollers. It also was excerpted for an article in the magazine, "Armed Forces Comptroller."

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Dr. **John W. Coleman,** a research scientist in the Plasma Fusion Center who doubles as a member of the Beverly School Committee and president of the Massachusetts Association of School Committees, has been appointed to the newly formed 30-member Advisory Committee to the National School Board Association's Institute for the Transfer of Technology to Education.

The group is chaired by Terrel H. Bell, former US Secretary of Education. It is made up of nationally recognized authorities on the uses of technology—such as robotics, interactive video and computers—for the enhancement of teaching and learning.

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MIT's Quasquicentennial Facts, being distributed to the media via a series of postcards during the 125th anniversary year, have been prominently displayed in the Chronicle of Higher Education. The September 10 issue of the weekly newspaper gave over its entire "Marginalia" column to nine of the "facts," noting the "quieter" quality of MIT's celebration in the midst of Harvard's 350th anniversary "hoopla."

The Cambridge Tab newspaper, meanwhile, reported in its "Update" column that it had received Fact 24, commenting: "It makes one wonder not only what Quasquicentennial Facts 1-23 are, but how many MIT graduates know the meaning of quasquicentennial."

Facts 1-23, in fact, were sent to the Tab, but presumably were overlooked. A new batch is on the way. A total of 125 facts will be distributed, and the News Office would be happy to receive contributions from Tech Talk readers.

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Light sculptor **Beth Galston,** former fellow of the Center for Advanced Visual Studies, installed an environmental light environment, "Tepee," at the Kingston Gallery on Kingston Street in downtown Boston. The large-scale walk-through installation was shown through September 21. Ms. Galston, one among several artists who are employed at MIT, is gallery assistant in the List Visual Arts Center.

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CLIPPINGS AND QUOTES:

—In an article on writing effective memos, Fortune Magazine quotes **JoAnne Yates** of the Sloan School as saying that managers who use electronic mail run a significantly higher risk of getting angry and firing off a memo they later regret. That's because you can hold on to a written memo awhile before sending it out. Ms. Yates, a lecturer at Sloan, established the school's communication program in 1980 to teach prospective management graduates to communicate better both in writing and orally—often cited as a critical need for MBA types.

—Dr. **Lincoln Bloomfield,** professor of political science, told USA Today that the upcoming summit meeting would be a crucial factor in whether a deal was worked out to free American journalist Nicholas Daniloff, accused of spying, from a Soviet prison. "You can either make a big issue out of this transparent outrage or find a fig leaf to put over it. . . when you've got something at stake like the summit," he said.

—In another mention on another topic, syndicated columnist Georgie Anne Geyer ended a column on American problems in dealing with Marxist revolutionary movements this way: "In the words of [Prof. Bloomfield]. . .one of the best foreign-policy minds around, the secrets to future successful policy in these areas are 'anticipation' of events such as these and then, if that fails, 'isolation' of unpalatable regimes instead of this endless and thankless confrontation with them."

—The New York Times credits Dr. **Alan M. Strout,** an agricultural economist and a senior lecturer in MIT's Department of Urban Studies and Planning, with having had a clear crystal ball when he predicted in 1979 that the world would soon have more food than it needed. That came at a time when population experts and crop specialists were speculating about which continent would starve first. "One of the few specialists who saw that these concerns were unwarranted was [Dr. Strout]," said Times reporter Keith Schneider in an article on how scientific advances have led to food surpluses around the world.

How did Dr. Strout know this would happen? "I saw a trend so powerful it could not be ignored," he told the Times. "We were about to enter an age of surpluses. We are now there. It's an enormous achievement."

—**Beth Soll,** director of MIT's Dance Workshop, was featured in a Boston Globe fall preview of the arts. The Globe's dance critic, Christine Temin, characterized Ms. Soll as "the most distinguished and perhaps also the most arcane of Boston choreographers." The story went on to highlight Soll's newly created solos, to be premiered in Kresge October 16. For more information, call 547-8771.

—MIT Arts had a prominent place in a Newsweek magazine feature on "The Return of the Nude." Art critic Douglas Davis discussed the Hayden Gallery's "Nude, Naked, Stripped" exhibition last year. The organizing mind for the Hayden exhibit was **Dana Friis-Hansen,** assistant curator, MIT Committee on the Visual Arts.

Institute Professor Mildred S. Dresselhaus, center, received the honorarium that accompanies the James R. Killian Jr. Faculty Achievement Award from President Paul E. Gray last week. Also attending the ceremony were, from left, Dr. Killian, Professor William L. Porter, chairman of the selection committee, and Professor Mary C. Potter, chairman of the faculty. *—Photo by Paula M. Lerner*

Lincoln Lab develops aircraft collision-avoidance system

(continued from page 1)

than that for airliners because the smaller craft themselves are less sophisticated. For example, they fly slower and they climb and descend at a slower rate than airliners.

The cost for equipping a small plane with the system might be as low as $7,000, Harman said.

While not all small aircraft have transponders, Harman said, studies have shown that, in situations where light aircraft are likely to interact with airliners, 92 per cent of the smaller craft do have transponders. In addition, the FAA has announced that it will set aside additional traffic control areas where private aircraft would have to carry transponders.

The system works best when both aircraft have transponders with the altitude-reporting feature, Harman said. In that situation, he said, TCAS alerts the pilots to the danger of collision and also calculates a recommended maneuver, such as "Climb" or "Descend," displaying it on the cockpit console and giving a voice warning as well.

When one of the planes does not have an altitude-reporting transponder, the avoidance system still works, but simply alerts the pilots to the danger, telling them where to look.

"We have found that pilots will see a threatening aircraft most of the time once they have been alerted," Harman said.

Once again, Harman said, light planes likely to interact with airline traffic are also more likely to have transponders with the altitude feature. He put the figure at approximately 60 per cent, and said it is a number that is constantly increasing.

Would the TCAS system have prevented the Los Angeles crash, Harman was asked.

"Exactly what occurred there is not yet known," Harman said. "We know that the smaller aircraft was transponder-equipped, but without altitude reporting. Under those conditions, our experience with such encounters indicates that it is very probable that TCAS would have successfully alerted the airline pilot."

Harman said the TCAS system provides excellent coverage. "We've flown in many different geometries, and we have reenacted many past mid-air collisions," he said. "In all of these reenactments, TCAS has provided a timely warning."

Harman said the Lincoln program has focused on development of air-to-air surveillance techniques in which radio signals are used to determine an aircraft's range, azimuth and altitude, and on an airborne testing program. A complementary effort by the MITRE Corporation of McLean, Va., has concentrated on the development of the process by which the on-board system determines when a threat exists and when to warn the pilot.

J. Willard Marriott Jr., chairman of the board and president of the Marriott Corporation, will lead off the Sloan School of Management's 1986-87 Distinguished Speakers Series on Thursday, Sept. 25, with a talk on "Managing Growth in the Business World." He will speak in the Bowen Room (E51-329) at 4:30pm. Members of the MIT community are welcome to attend.

CU names Cullinan

Joseph R. Cullinan, assistant to the MIT comptroller, has been named manager of the MIT Employees Federal Credit Union, effective September 1, succeeding Leo T. Green, who retired earlier this year after 30 years with the Credit Union.

Mr. Cullinan, whose appointment was announced by the CU Board of Directors, has been associated with the Credit Union for 25 years. He has been a member of the Board of Directors for 17 years and served as president in 1978 and 1979. For many years he was chairman of the supervisory audit committee, whose responsibility is to assure that CU business practices are in compliance with regulations. Most recently Mr. Cullinan headed the committee that installed the Credit Union's in-house computer system.

A graduate of Bentley College with an associate's degree, Mr. Cullinan joined the Institute in 1957 as an accounting clerk. He later became a programmer, staff accountant and senior accounting officer for payrolls.

Free news

The Laboratory for Computer Science and Project Athena are again offering free, up-to-the-minute news via electronic searching of the full text of the New York Times and the Associated Press.

The system operates by delivering information to IBM personal computers via a digital packet radio system and provides information on world news, local events, finacial reports, business news, editorials, commentaries and features on the arts.

If you have an IBM PC at hand and would like to use a system that can help you find news of interest, call Professor David Gifford's Office, x3-6014.

Sloan Management Review issued

The Sloan Management Review, the Sloan School's quarterly business journal, begins its 28th year of publication this month with a new design and several editorial innovations.

The redesign debuts with the Fall issue (October 1). Editorial changes include the addition of a fifth feature article, a revamped Book Review section and new departments, among them a regular "From the Editors" note.

Rosemary Brutico, managing editor of the Review, said the redesign and other changes were "an important step to ensure the journal's continued growth and editorial vitality."

Among the articles appearing in the Fall issue are:

—The Strategic Importance of Managing Myopia, by Lawrence G. Hrebiniak and William F. Joyce;

—The Hidden Side of Organizational Leadership, by Louis B. Barnes and Mark P. Kriger;

—What Business Are We Really In? The Question Revisited, by William G. McGowan; and

—New Coke's Fizzle—Lessons for the Rest of Us, by Betsy D. Gelb and Gabriel M. Gelb.

Ms. Brutico (x3-7170, Rm E52-325) said she would welcome comments on the new design.

Reagan urged to take stand on South Africa

(The following opinion piece was written by Dr. Robert I. Rotberg, professor of history and political science, appeared earlier this summer on the op-ed page of The New York Times and the Providence Journal, and is reprinted here with the author's permission.)

By ROBERT I. ROTBERG
Department of Political Science

President Reagan should speak out on South Africa. Sanctions, or at least the threat of sanctions, are necessary, but the seriousness of the South African problem also demands a determined American response enunciated by our head of state.

As a conservative Republican President who has often sympathized with the reformist efforts of the white minority Government of South Africa, President Reagan is superbly placed to articulate the outrage of Americans. Enough is enough, he should say. South Africa must decide its own fate, but only by negotiating openly with the authentic representatives of all South Africans, black and white, can Pretoria avoid repetitive cycles of bloodshed and, eventually, the collapse of all white influence.

South Africa's white business community, even many Afrikaans-speaking moguls, is urging its government to bargain with blacks without preconditions. President Reagan could surely associate himself and the United States with such demands. He should condemn the current state of emergency, censorship and accompanying violence.

White businessmen seek the release of Nelson Mandela, the African National Congress leader who has languished in jail for 23 years, and the unbanning of his political organization. So should our President.

So long as Mr. Mandela remains incarcerated, the government of white South Africa can bargain effectively with no other blacks. President P.W. Botha is Mr. Mandela's prisoner.

In order to propel President Botha down this road of common sense and salvation, President Reagan should invite Oliver Tambo, leader of the African National Congress in exile, to the White House. Mr. Tambo is no stranger to official corridors in this country, and such a symbolic step could do more even than sanctions to concentrate the South African Government's mind on its few positive options.

The clampdown on black dissent has succeeded in exacerbating rather than diminishing protest. So long as the emergency and censorship remain, there can be no meeting of black and white minds. Ultimately, whether now or in a few years, whites will have to bargain with blacks if only to keep the fragile economy stable and to arrange a peaceful transition to majority rule. President Reagan needs to help white South Africans help themselves.

By inviting Mr. Tambo to the White House, Mr. Reagan might grasp the idea that the nationalist credentials and aims of the African National Congress are at least as strong as its Moscow connections. Indeed, talking to the ANC would give support to nationalist rather than Marxist tendencies among its leaders.

It may be too much to shift President Reagan away from his opposition to sanctions. He may be perceptive, too, when he suggests that sanctions alone will not compel white South Africa to bargain with blacks. There is abundant intuitive and historical support for such a position.

But the threat of sanctions is demonstrably effective. The fear in South Africa of what the United States (and Britain and the other Common Market countries) can and might do is palpable. Businessmen in South Africa shudder, and their anxieties affect government thinking.

South Africans want to continue selling their coal, steel and uranium in the United States. They want to continue flying on South African Airways to New York. They want renewed investment in their country by American firms. What President Reagan should say in the strongest terms is that he wants what they want but that he cannot advise Americans to continue to invest and reinvest in South Africa so long as political instability so clouds their country's economic future.

President Reagan needs to swing the verbal big stick and warn South Africans that the rage of the Americans is real. He would not want to punish South Africa unnecessarily, and may not like the thought of sanctions, but the mood of the United States is well expressed by the House vote in June [and the House-Senate compromise of September] in favor of comprehensive sanction.

As President and as leader of the free world, Mr. Reagan must advise Pretoria to act before even a person so patient and understanding as himself becomes thoroughly exasperated. What he did in the Philippines and Haiti he should at least try to do in South Africa. It is long past time for him to speak forcefully about this most starkly invidious of injustices.

Managed trade seen as bad economics

(The following op-ed article was written by Professor Paul R. Krugman of economics and appeared last month in The New York Times. It is reprinted here with his permission.)

By PAUL R. KRUGMAN
Department of Economics

The recent semiconductor pact with Japan is the latest step in an accelerating retreat by the United States from its commitment to the principle of free trade. At this rate, within a few years virtually the whole of our trade will be "managed" under agreements that set limits on trade flows and market shares. A naive observer, who believed that governments mostly act in their own national interest, might think that there was at least a reasonable case for this change in policy. Unfortunately, there is nothing good to be said about the drift to managed trade. Managed trade is bad economics and an invitation to political abuse.

Let's start with the economics. Advocates of managed trade see import quotas and market-sharing agreements as ways to protect United States jobs. In fact, however, theory and experience both tell us that limits on trade do not add to employment. The jobs protected in one part of the economy are always matched by jobs lost elsewhere, either because other countries retaliate or because protection causes an overvalued exchange rate. The only net effect of trade restrictions is that we force our economy to do the things it does relatively badly instead of things it does relatively well.

But what about our trade deficit? Is the deficit not evidence that other countries are playing by different rules, and that we need to level the playing field? Here it is important to get our facts straight: The trade policies of foreign governments have not caused or even contributed to our trade deficit.

In fact, our trade balance has deteriorated across the board, with free-market West Germany as well as with allegedly protectionist Japan. Even the Office of the United States Trade Representative, an agency with a vested interest in stressing the importance of unfair foreign practices, admitted in its last annual report that trade restrictions had nothing to do with the rising deficit, which could be explained entirely by the strong dollar, the debt crisis and lagging growth in Europe and Japan.

The most important argument against managed trade is not, however, that it is economically inefficient. The real problem is that managed trade always ends up being managed on behalf of special interests. Quotas and market shares cannot be set on a rational basis, because no such basis exists. On the other hand quota-setting and market-sharing offer excellent opportunities to play politics.

Under managed trade, the Government decides how much import competition an industry will face; foreign governments, negotiating with our Government, decide how much the industry will be allowed to sell in export markets. Governments are thus given an enormous pork barrel to distribute. Better still, the whole process is off-budget. Only a government of saints could manage trade objectively in such a situation, and that we do not have.

Now this is not just speculation. We already have managed trade in four major sectors (as well as many minor ones): sugar, steel, autos and textiles. Our policy in these sectors has been remarkably consistent, exhibiting a degree of political exploitation that has exceeded the expectations of the most hardened cynic. In each case the Government, in effect, has organized American and foreign producers into a cartel that raises prices at the expense of the United States consumers. This makes domestic producers happy and buys off the foreigners, while the rest of the economy pays the price, which is in each case very high.

For example, a report by members of the staff of the Federal Trade Commission finds that in all three industrial sectors, the cost to the rest of the economy per job protected by import limitations is several times the income of the average worker in the industry. In other words, we would be better off retiring steel, textile and auto workers at full pay than protecting their jobs through managed trade. Sugar is even worse: Last year United States sugar prices got so far out of line with world prices that it would have been cheaper to extract sugar from Canadian pancake mix and Israeli frozen pizza than to produce it from domestic sugar cane.

When government policies produce the same adverse results over and over again, it becomes clear that the results are no accident. They are inevitable when we put the detailed management of trade into government hands. Once the Government is in the business of deciding how much sugar is to be imported into the United States, how many voters will be able to keep track of the relationship between their Congressman's votes and the price of soft drinks and ketchup? Naturally, it is the interests of well-organized producers, not the economy as a whole that get served.

In future years, we will see many proposals to extend the pattern of sugar, autos and textiles to other industries. These proposals, like past efforts at managed trade, will serve special interests at the general expense. Lobbyists, and perhaps a few academic hired guns, will deny this and claim that managed trade is good for the country as a whole. It isn't.

Baltimore defends DNA research against critics

Nobel Prize-winning biologist David Baltimore has defended the scientific community against critics who say it is rushing into human gene therapy without considering the ramifications of such treatment.

"The community has thought about the issue for years," said Dr. Baltimore in an interview in the October issue of Technology Review, the magazine of technology and policy published at MIT.

He continued: "The public debate is in the newspapers every week in one form or another. In 1982, a presidential commission studied the issue in depth. . .It seems to me we have developed this new capability in a very deliberate manner. When media people or government officials think something is happening very fast, I think it is often because they are unaware of the extent of the preceding discussion and debate."

Dr. Baltimore, who won the Nobel Prize in 1975 for clarifying the interactions between tumor viruses and cancer, is a professor of microbiology at MIT and director of the Whitehead Institute for Biomedical Research, an independent basic research center affiliated with MIT. He also is on the scientific board of Collaborative Research, a biotechnology company in which he owns stock.

In the interview conucted by Technology Review senior editor Alison Bass, Dr. Baltimore compared one of the leading critics of genetic engineering, Jeremy Rifkin, with religious fundamentalists.

Professor Baltimore termed Mr. Rifkin a "biological fundamentalist" who "is trying to stop everything that's going on in biotechnology."

Dr. Baltimore accused Mr. Rifkin, a Washington attorney who is one of biotechnology's most vociferous critics, of "focusing on trivial considerations instead of legitimate serious issues."

"As far as I'm concerned," Dr. Baltimore said in the interview with Technology Review, "Mr. Rifkin is in the same pot with religious fundamentalists who believe certain things should be done and certain things shouldn't be done. In his own way, Mr. Rifkin is a biological fundmentalist. And I don't see why the whole world has to frame the debate around his particular myopic views."

Dr. Baltimore was one of the first scientists to question the safety of recombinant-DNA research in the early 1970s and to call for public debate on the issue. He told Technology Review that genetic engineering in general remains something people should be concerned about "because molecular biology is extremely potent in what it can do."

He added that there are many groups "who have focused for some time on the ethical, social and legal implications of biology."

"We certainly need to examine every case on its merits to decide when concern is reasonable and when it's not," he said. "But generally I don't think such organisms will pose a problem for a number of reasons.

"First, the manipulations we're doing in the laboratory are minimal compared with what evolution has done. Evolution has made you and me out of a bacterium, and we're not doing anything close to that."

Dr. Baltimore said he considered it "very doubtful" that biotechnology would produce "anything fundamentally different and make an organism that is stronger than anything previously seen or more virulent." He added, "I think the principles of evolution will hold. It takes very stringent selection to produce something that will do better in a natural environnment than what exists before."

He offered as an example "the difference between a domestic dog and a wild dog. The difference. . .is much greater than the differences we're creating in the laboratory—and that difference was created artifically by breeding dogs over generations," he said.

"We've been fooling around with genetics for a long time," he continued. "When we breed, we fool around with all the genetics available to us through evolution, which is much wider in its variation than the simple genes that we manipulate in the laboratory."

Dr. Baltimore said he believed the public could place its trust in the established process for dealing with genetically altered organisms in which experimental manipulations involving recombinant DNA are reviewed on a case-by-case basis before being used in the environment.

"The public is right to say they're not going to believe a specific individual or company who says a particular product is safe," he said. "It's a case of following a regulatory process the public can trust. Because if they trust the process, and something is approved through that process, then they'll know it's okay."

Torah to be dedicated

MIT Hillel will dedicate a new—to it—Torah scroll at Rosh Hashana services Saturday, Oct. 4, in the Sala de Puerto Rico. The Torah is the gift of the family of Laird Melamed '89, of Los Angeles, in memory of his grandmother.

The gift comes at a most appropriate time because Hillel's present Torah is very old, according to Ronald Becker of the Hillel Torah committee.

A celebration of the Torah will be held Sunday, Sept. 28, at 2pm in the Hulsizer Room of Ashdown House. There will be live music, dancing and refreshments. On Tuesday, Sept. 30, 10am-2pm, the Art of the Torah will be held in Lobby 7, including a display of Jewish scribal arts and a demonstration of Hebrew calligraphy by Cynthia Bell.

All events are open to the MIT community, but it should be noted that the dedication ceremony will be held during religious services.