

### Smoothish switch

With about 11,000 new lines in MIT's 5ESS telephone system, the switchover produced only about 450 unhappy customers Monday morning, and only about half of them were people whose phones didn't work, according to Morton Berlan, director of telecommunications systems. Problems are being solved rapidly.

Telephone directories, showing new numbers and instructions for using the new system, are scheduled for delivery next week.

### Clip-out inside

On the bottom corner of pages 9 and 10 you will find a clip-out registration form for the Fall Blood Drive that began Monday and will continue through November 9 in the Sala de Puerto Rico. The drive will be open 10am-4pm today (Wednesday, Nov. 2).

Thursday, Nov. 3, through Saturday, Nov. 5, the drive will be open 11am-5pm, and Monday, Nov. 7, through Wednesday, Nov. 9, 1-7pm. Walk-in volunteers are always welcome, but appointments are preferred and will take precedence when the drive is crowded.

The drive is organized by the Technology Community Association in cooperation with the Red Cross and carried out with volunteer help from the MIT Women's League.

### Car show

Have you ever wondered what cars of the future will look like? Drop by the Kresge Oval Wednesday, Nov. 2, and Thursday, Nov. 3, to find out at Tau Beta Pi's prototype car show. Hosted by GM, the show will spotlight a King-of-the-Hill Corvette due for release in 1989-90 and an experimental Blazer XT-1.

A special presentation on the two cars will be given November 3 at 7:30pm in Rm 9-150. Refreshments will be served.

### An invitation

A celebration will be held at MIT on November 19, from 2-5pm, in honor of the 90th birthday of Arthur Robert Von Hippel, Institute Professor Emeritus and professor of electrophysics emeritus. Anyone interested in attending should contact Professor Markus Zahn (Rm N10-203, x3-4688) for details.

### You have reached. . .

Don't throw away those old answering machines. The introduction into service of MIT's new 5ESS and voice mail system obviates the need for some of the telephone answering machines you may have been using. If you no longer need such machines, you may want to turn them in (with instruction manual attached, if possible) to the Property Office, Rm E19-429, to the attention of Earl Fuller and Walter Milne. Mr. Milne, in turn, will make the machines available to charitable institutions which can put them to good use.

## Wilson outlines agenda for engineering

By ROBERT C. Di IORIO  
Staff Writer

Dean Gerald L. Wilson of the School of Engineering, outlining his personal view of a necessary national agenda for engineering education, has called for the abandonment of "the delusion" that four years of undergraduate education can prepare a

student to undertake a professional engineering career.

"The job of the engineer is simply too big," said Professor Wilson, dean of engineering at MIT since 1981 and Vannevar Bush Professor of Electrical and Mechanical Engineering.

He proposed that engineering schools

"not only broaden the undergraduate engineering program, but that we design a new graduate curriculum as well."

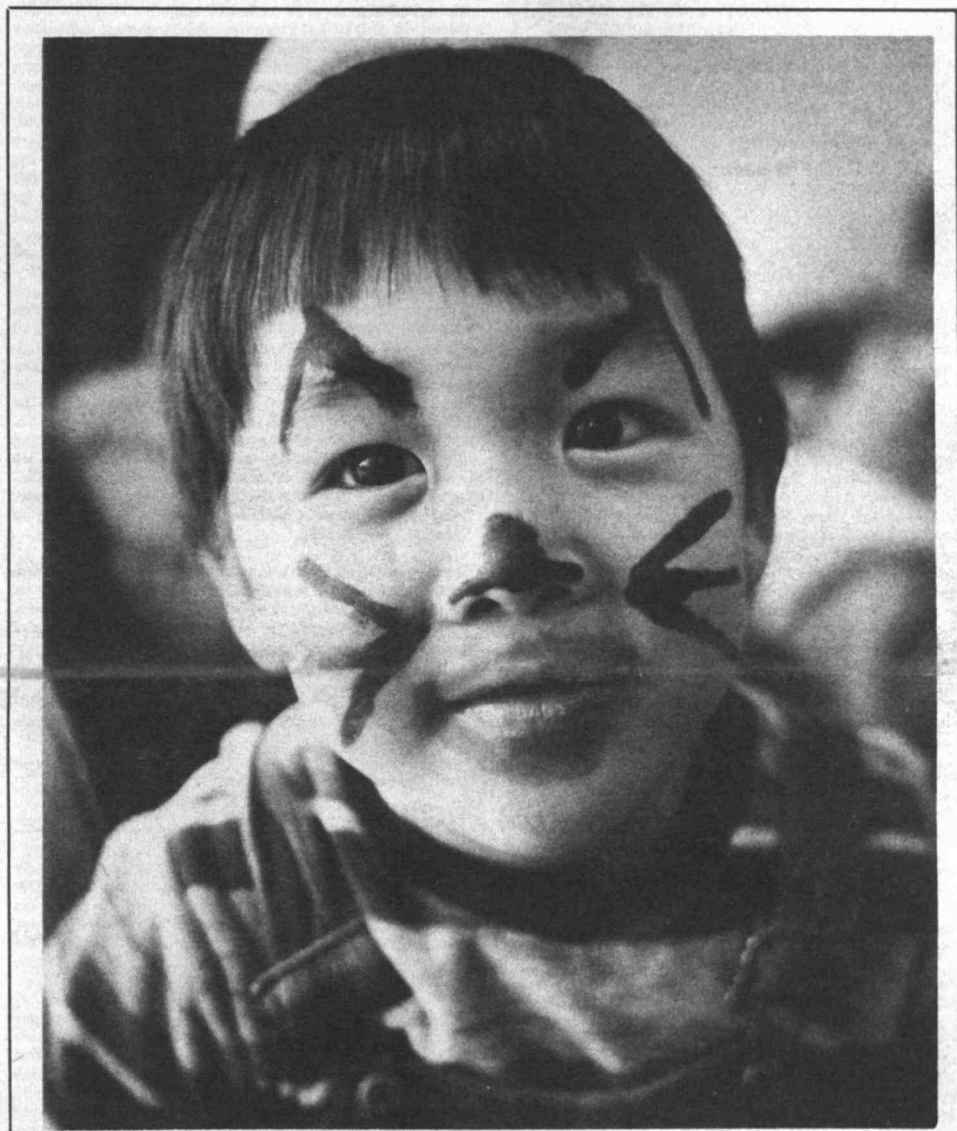
Professor Wilson outlined his views on engineering education as he delivered MIT's annual Robert Bruce Wallace Lecture, sponsored by the Department of Ocean Engineering. The lecture was part of a three-day program on "Automation in the Design and Manufacture of Large Marine Systems," cosponsored by the MIT Sea Grant College Program, the Department of Ocean Engineering, the Industrial Liaison Program, the Department of Mechanical Engineering, General Electric Co., the Office of Naval Research and the National Science Foundation. The conference chairman was Professor Chryssostomos Chryssostomidis, director of the Sea Grant Program.

Professor Wilson said that the program he envisions "will serve as the root of the kind of lifelong learning" needed by engineers.

"Engineers were not meant to be merely analyzers working in isolation. They were meant to be synthesizers, organizers, integrators, and above all, builders.

"What that means is that those of us who

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Timothy Ho, 4, peeks out from his tiger-painted face during the Technology Children's Center trick-or-treat Halloween visits to campus-based parents. See other photo on page 3.

—Photo by Donna Coveney

## Sharp shares Horowitz Prize for RNA work

By EUGENE F. MALLOVE  
Staff Writer

Professor Phillip A. Sharp, John D. MacArthur Professor and Director of the Center for Cancer Research, and Professor Thomas R. Cech of the University of Colorado at Boulder have received the 1988 Louisa Gross Horowitz Prize. Dr. Cech was a postdoctoral researcher at MIT before joining the faculty at Boulder in 1978.

The two researchers, who unraveled unexpected workings of ribonucleic acid—RNA, share the \$22,000 award that is given annually by Columbia University for outstanding research in biology or biochemistry. Dr. Sharp, 44, and Dr. Cech, 40, received the award November 1 in formal ceremonies in the rotunda of Low Memorial Library at Columbia.

They join a select group of recipients of the Horowitz prize, which has been a frequent indicator of future international recognition. More than half of the previous winners—22 of 40—have subsequently won a Nobel Prize.

The Horowitz selection committee cited Dr. Sharp for his discovery that RNA is assembled in some cells by a kind of "cut and paste" method from lengths of DNA that contain numerous "nonsense" segments. Dr. Cech is being honored for his discovery that RNA is not merely a genetic message carrier for DNA, the cell's primary

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## New study to focus on 'context,' define what needs to be done

By CHARLES H. BALL  
Staff Writer

MIT's experiment with "context" offerings has moved into a new phase with the appointment of former provost Francis E. Low to convene a group to study the early experience with the program, focusing on several critical elements.

As identified by Professor Margaret L. A. MacVicar, dean for undergraduate education, at the October faculty meeting, these will be:

1. Defining and developing the intellectual rigor of context courses.

2. Identifying and promoting innovative forms for the program, not necessarily consisting of standard subjects.

3. Confronting the challenge of attracting students and faculty to participate.

This Institute-based "exploration," Dean MacVicar said, will consider MIT's experience with the first 11 context courses—two in the spring of 1988 and nine this year—and be a follow-on to the efforts of two school-based working groups, one from Engineering headed by Professor Elias P. Gyftopoulos, and one from Humanities and

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## Improvement suggested for electoral college

By EUGENE F. MALLOVE  
Staff Writer

A simple change in the present electoral college system could greatly enhance the power of each citizen's vote for president.

So suggests a mathematical theorem about voting developed and proved by an MIT researcher. Moreover, the proposed change would be minor, yet the investigator claims it would guarantee the fairest

possible election of president and vice president.

Since the late 1960s, Dr. Alan Natapoff, a research scientist in MIT's Center for Space Research and the Department of Aeronautics and Astronautics, has pursued the idea of his "Maximum Voting Power" (MVP) modification to the electoral college. Politicians who listened skeptically to his US Senate subcommittee testimony in the

mid-1970s might well wish to take note of the new mathematical support for the idea.

Dr. Natapoff recently submitted to a professional journal an article that proves his theorem about MVP. His article is titled, "More Robust Mathematical Voting Power in Presidential Elections Through Districting: The Overpowering Refinement Theorem."

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# INSTITUTE NOTICES

- \* - Open to public
- \*\* - Open to MIT Community only
- \*\*\* - Open to members only

## Announcements

**Final Examination Notice** - All students should obtain an examination schedule at the Information Ctr, Rm 7-121. Students are responsible for reporting examinations not listed or a conflict in examinations (2 examinations in the same period) to the Schedules Office, Rm E19-338, by Mon, Nov 7, 1988.

**Seniors Wishing to Apply for Graduate Study in the Dept of Electrical Engineering and Computer Science** - Apply by Nov 15. Applications may be picked up in Rms 38-444 and Rm 3-103.

**MIT Campus Police Auction\*\*** - Auction of unclaimed property, Nov 14, 11am-3pm, Rm W31-215. Items for sale include: jewelry, radio and stereo equipment, sports equipment, camera equipment. All items sold as is. Items on display beginning 10am.

**Career Planning and Placement Company Recruitment Presentations\*\*** - Mobile R&D Corp - Nov 2, Presentation 4-5pm, Rm 66-110, Reception 5-7pm, Rm 66-201. Mobay Corp - Nov 2, 4:30-6:30pm, Rm 8-105. Intel Corp - Nov 2, 5-7pm, Rm 4-159. Monitor Co - Nov 2, 7-9pm, Rm 4-149. First Boston Corp - Nov 2, 7-9pm, Rm 4-153. S.D. Warren Research - Nov 3, 4:30-6:30pm, Rm 4-145. Shearson Lehman Hutton - Nov 3, 4:30-6:30pm, Rm 8-105. General Electric - Nov 4, 10am-2pm, Lobby 13. Peace Corp - Nov 7, 10-2pm, Lobby 13. Strategic Planning Assoc - Nov 7, 4:30-6:30pm, Rm 4-163. Analog Devices - Nov 7, 4:30-6:30pm, Rm 1-135. Peace Corp - Nov 7, 4:30-6:30pm, Rm 8-105. Lord Corp - Nov 7, 7-9pm, Rm 4-149. Ford Aerospace - Nov 7, 7-9pm, Rm 2-146. Anser - Nov 8, 7-8:30pm, Rm 8-105. National Semi Conductor - Nov 8, 7-9pm, Rm 8-205. Northrop Corp - Nov 9, 4:30-6:30pm, Rm 4-159. Goldman Sach - Nov 9, 7:30-9pm, Rm 4-163.

**Dept of Athletics Children's Skating Classes** - For children ages 6-14, Saturdays through Dec and Jan. Beginners: 10-11am; intermediates, 11-12noon. 1988-89 athletic card required. Registration forms available at the Murphy Equipment Desk in the du Pont Athletic Ctr lobby. Fee: \$25/child (checks payable to MITAA). Proper fitting well sharpened single blade hockey or figure skates for all children are required, and a helmet is recommended for those in the beginner class. Register by Dec 7, 1988.

**Orientation/Registration for New Foreign Faculty, Staff, Visiting Scientists** - International Visitor's Office orientation, Weds, 11-12:30pm, Rm 5-233. Information on MIT services and facilities; US Immigration regulations distributed. Temporary MIT ID cards also available. Sign-up: Tara, x3-2851.

**Hosts to International Students Program** - MIT Women's League program to host foreign students coming to MIT for the first time. Provide a welcome, occasional hospitality and friendship. All financial and academic problems handled by specific MIT offices. Info/volunteer forms: Kate Baty, 861-6725 or Pam Daveta, x3-3656.

**MIT Language Conversation Exchange\*\*** - Medical Dept program to assist members of the MIT community to practice a language with a native speaker. Applications accepted throughout the year. To exchange English or another language and be matched with someone with your interests, call the secretary of the Language Conversation Exchange, x3-1614.

**MIT Student Furniture Exchange\*\*** - MIT Women's League store, Tues/Th, 10am-2pm, 25 Windsor St (N52), x3-4293.

**Free Museum of Science Admission for MIT Students** - With MIT student ID, provided by Mass Beta chapter of Tau Beta Pi, the National Engineering Honor Society. Reduced admission to special exhibits.

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

**Nightline\*\*** - a student-run campus 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 Television Channel 36\*\*** - Seeks people interested in programming the cable television network. Info: Eric McDonald, x5-7461 dorm.

**MIT Radio Society and UHF Repeater Association Monthly Ham Exams\*\*** - All classes, Novice to Extra, Wed, Nov 23, Dec 21, Jan 18, 1989, Feb 15, March 22, April 19, May 24, June 21, July 19, Aug 23, Sept 20, Oct 18, Nov 22, Dec 20, Rm 1-150. Reservations requested 2 days in advance. Contact Nick Altenbernd, 437-0320. Exam fee: \$4.50. Bring copy of current licence (if any), 2 forms of picture ID and completed form 610 available from FCC, Quincy, MA, 770-0423.

**MIT/DL Bridge Club\*** - Duplicate bridge, Tues, 6:30pm, Student Ctr Lobby balcony. ACBL masterpoints awarded; come with or without partner, newcomers always welcome. Handicap game, 3rd Tues every month. Info call Gary Schwartz, x8-2459 Draper, or Mark Dulcey, 868-5518. Admission for regular games: \$1/students, \$2/non-students.

**MIT Student Bridge Club\*** - Free duplicate bridge every Sat & Thurs, 7:30pm, Student Ctr 3F West. Team game follow regular game. Come with or without partner. Free lessons, 7pm. Novices especially welcome. Refreshments. Info: Moses, x3-4528 or David, x5-7522 dorm.

**MIT Chess Club\*** - Anybody interested in chess, whether novice or expert, is invited, Sat, 2pm, Rm 5-232. Info: Fred, x5-6493 dorm.

**MIT Go Club\*** - Meets every Wed, 5-7pm, Rm 24-612 (ESG Lounge). Info: John Cox, x3-7887 eves.

**MIT Science Fiction Society\*** - The world's largest open collection of science fiction books and magazines is located in Student Ctr Rm 473. Meetings, Fri, 5:30pm. Info: x5-9144 dorm.

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

**COCA (Committee on Central America)\*\*** - Meets at least once a month to plan activities relating to events in Central America. Info: Charlie Welch, 783-1668 eves/messages.

**MIT Table Tennis Club\*** - Competition and training for all levels from beginner to advanced, Fri, 8-10pm; Sat, 6-9pm, DuPont T-Club Lounge. Info: Albert Tam, x3-2211 or x5-9866 dorm.

**MIT Nautical Association\*\*** - Recreational and Competitive sailing on the Charles and coastal cruising. Sailing Pavilion open every day, 9am to sunset. Sailing cards on sale at Cashier's Office (Lobby 10): \$5 students, \$15 staff/faculty; \$20 alumni. Free basic sailing classes Mon/Thurs, 5:30pm. Board-sailing classes, Thurs, 5:30pm. Info: x3-4884.

**MIT Outing Club\*** - Camping, cycling, climbing, canoeing, cabins. Meets 1st Mon of month, 6pm, W20-461. Rental hours, M/Th, 5-6pm, W20-461. Also, see our bulletin board in "Infinite Corridor" next to Athena. Info: Dave Campbell, x5-9623 dorm.

**MIT Soaring Association\*** - Weekend Soaring - Learn the exciting sport of soaring. We fly from the Mansfield airport every weekend and some holidays (weather permitting). Mansfield is 45 minutes south of Cambridge, off Rt 95. Student membership: \$175; typical flight: \$16. Contact: Bob De Saro, 264-4426 eves.

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

**MIT Aikido Club\*\*** - Non-competitive martial discipline, meets M-F, 5:30pm, DuPont Exercise Rm. Beginners always welcome. Info: Mitch Hansberry, 258-1272.

**MIT Judo Club\*\*** - Meets M/Th, 5:30-7pm, Dupont Gym Wrestling Rm. Info: Donna Duffy, x3-5773 or 661-9469.

**MIT Wu Tang Martial Arts Club\*\*** - Learn Northern Chinese kung fu. Long fist and praying mantis styles, short sabre and sword. Meets T/Th, 8-10pm; Sat, 9am-12noon, Burton Dining Hall. Info: Jeff, Cohen, x3-6204 or 621-0559.

**MIT Karatedo Doshinkan Club\*** - Classical (noncompetitive) Okinawan-Japanese karate, teaching a system for lifelong good health as well as self defense. MWF, 5-6:30pm, lawn between Bldgs W23 and W33. Men and women of all ages encouraged to participate. Beginners welcome. Info: Jim, x3-0472 or 491-1931.

## Religious Activities

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

**MIT Hillel Services** - Wed, Nov 2: *Kibbutz, Study or Travel in Israel*, Students interested, call Hillel, 10am-1pm for informational interview with David Leichman; *Texts and Traditions: Honoring Parents* - Rabbi Dan Shevitz, 7-8pm, Hillel (first session). Thurs Nov 3: *Inter Hillel Basketball Game*, 7:30pm, DuPont Gym. Fri, Nov 4: *Torah and Chocolate*, Rabbi Dan Shevitz, 12-1pm, Hillel; *Community Shabbat* with BU Hillel and Generations Program: Orthodox Services, 4:15pm, Burton Conf Rm; Conservative/Reform services, 5:30pm, Hillel; Shabbat Dinner, 6:45pm, Walker Hall Blue Rm; "The Elections and the Jewish Vote," 8:15pm. Sat, Nov 5: *Orthodox services*, 9am, Walker 50-101. Sun, Nov 6: *Bagel, Brunch and General Meeting*, 11:30am, Student Ctr West Lounge. Wed, Nov 9: *Texts and Traditions: Honoring Parents 2* - Rabbi Dan Shevitz, 7-8pm, Hillel. Fri, Nov 11: *Orthodox Services*, 4:05pm, Burton; *Shabbat Dinner*, 6:45pm, K kosher Kitchen. Sat, Nov 12: *Orthodox Services*, 9am, Walker; *Games Night*, 7:30pm, Hillel. Reserve for Shabbat dinners by the preceding Thursday. Hillel: x3-2982.

**Tech Catholic Community\*** - Roman Catholic Masses: Sats, 5pm, Suns, 10am & 5pm, MIT Chapel. Tues & Thurs: 5:05pm (school days only), MIT Chapel. Fri, 12:05pm, MIT Chapel. Info: x3-2981.

**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.

**United Christian Fellowship\*\*** - Large group meetings. Join us for worshipful singing, prayer, sharing and Bible teaching, and small group Bible studies during the week in various dorms, Fri, 7pm, Student Ctr Mezzanine Lounge. Info: Tracy, x5-9688 dorm.

**Graduate Christian Fellowship\*\*** - Come join other grad students, faculty and staff as we meet in small groups to learn about and grow in the Christian faith. Activities open to both Christians and those interested in learning more about Christianity. Info: Curt Bronkhorst, x3-4414 or Rox Picard, x3-7314.

**Baptist Campus Ministry\*\*** - Tues night supper and Bible study, 5:15pm & 6pm, 312 Memorial Dr (W2A).

**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 Vedanta Society\*** - Meditation and Discourse on the Bhagavad Gita, Swami Sarvagatananda, minister, Ramakrishna Vedanta Society, Fri, 5:15pm, MIT Chapel.

**Christian Science Organization at MIT\*** - Weekly Testimony meetings, Thurs, 7pm, Rm 8-205.

**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 Wed, Rm 66-154, bring lunch. Ralph Burgess, x3-8121. (Since 1965.)

**MIT Campus Crusade for Christ\*** - Fridays, 7:17pm, Marlar Lounge, Rm E37-252, TGIF weekly meeting of MIT Campus Crusade for Christ. We "thank God it's Friday" every week with singing, biblical input, discussion and fun. Info: x5-9153 dorm.

## Graduate Opportunities

**Harry S. Truman Scholarship Awards.** Made to current sophomores interested in a career in public service who are US citizens or nationals. Three MIT students will be nominated. Two out of three MIT students nominated last year were recipients of Harry S. Truman Scholarships. The awards are for \$7,000 per year and are renewable for the senior year and for up to two years of graduate study. Any sophomore wishing to be considered should contact Jocelyn Kalajian, Rm E51-228, x3-4044 no later than Nov 10, 1987.

**Ford Foundation Predoctoral and Dissertation Fellowships for Minorities.** 55 Predoctoral and 20 Dissertation Fellowships available. For research towards the doctorate (PhD or ScD) in the behavioral and social sciences, engineering, mathematics, physical sciences, biological sciences, and for interdisciplinary programs combining any of the above. Predoctoral program provides annual stipend of \$10,350 and \$6,000 institutional grant towards tuition and fees, renewable. Dissertation Fellows provided stipend of \$18,000 but no tuition grant. Request form for applications available in the Dean of the Graduate School Office, Rm 3-138. Deadline: Nov 14, 1988.

**National Science Foundation Graduate Research Fellowships.** Three-year fellowships awarded for study and research in the sciences or in engineering leading to master's or

doctoral degrees in the mathematical, physical, biological, engineering, and social sciences, and in the history and philosophy of science. Applicants must be US citizens or nationals. They must not have completed, by the beginning of the fall 1988 term, more than 20 semester hours, 30 quarter hours, or equivalent, of study in the science and engineering fields listed above following completion of the last baccalaureate degree. Except for courses toward, and completed while enrolled for an additional baccalaureate degree, this guideline is applied to all course work earned after Oct 1, 1978, regardless of purpose or whether credit for those hours is available for study toward another degree. Stipend is \$12,300 for a 12-month tenure with a cost-of-education allowance of \$6,000. A \$1,000 Special International Research Travel Allowance is also available. Applicants are expected to take the Graduate Records Examinations (GRE). GRE information is available from the Dean of the Graduate School Office, Rm 3-138. Application deadline: Nov 14, 1988.

**National Science Foundation Minority Graduate Research Fellowships.** Three-year fellowships awarded for study and research in the sciences or in engineering leading to master's or doctoral degrees in the mathematical, physical, biological, engineering, and social sciences, and in the history and philosophy of science. Applicants must be US citizens or nationals who are members of one of the following ethnic minority groups: American Indian, Black, Hispanic, Native Alaskan (Eskimo or Aleut), or Native Pacific Islander (Polynesian or Micronesian). They must not have completed, by the beginning of the fall 1988 term, more than 30 semester hours, 45 quarter hours, or equivalent, of study in the science and engineering fields listed above following completion of the last baccalaureate degree. Except for courses toward, and completed while enrolled for an additional baccalaureate degree, this guideline is applied to all course work earned after Oct 1, 1978, regardless of purpose or whether credit for those hours is available for study toward another degree. Stipend is \$12,300 for a 12-month tenure with a cost-of-education allowance of \$6,000. A \$1,000 Special International Research Travel Allowance is also available. Applicants will be expected to take the Graduate Records Examinations (GRE). NSF Applications and GRE information available from the Dean of the Graduate School Office, Rm 3-138. Application deadline: Nov 14, 1988.

**Howard Hughes Medical Institute Doctoral Fellowships in Biological Sciences.** To students engaging in full-time study toward the PhD or ScD in biochemistry, biophysics, cell biology and regulation, developmental biology, genetics, immunology, microbiology, molecular biology, neuroscience, pharmacology, physiology, structural biology (of macromolecules), and virology. Applicants must be at or near the beginning of graduate study. No citizenship requirements; US citizens may study abroad; others must study in the US. Medical, dental, and veterinary students or professionals are eligible if they are at or near the beginning of PhD or ScD degree studies. Students receiving full tuition via MD/PhD programs not eligible. The awards are for 3 years with an option to extend to 5 years. The annual stipend is \$12,300 with a \$10,700 annual cost-of-education allowance. Applications available from the Dean of the Graduate School Office, Rm 3-138. Application deadline: Nov 14, 1988.

**Winston Churchill Foundation Scholarships.** The Winston Churchill Foundation of the US awards approximately 10 scholarships each year for one year of graduate study in engineering, mathematics, and science at Churchill College, Cambridge University, England. Only two candidates may be nominated from MIT, however. Applicants must be citizens of the US and between the ages of 19-26. The Foundation pays all tuition and fees (comes to more than \$12,000), a \$2,500 living allowance, and a travel allowance of \$500. Applications are available from the MIT campus representative, Dr. Isaac Colbert, Associate Dean of the Graduate School, Rm 3-140, x3-4846. Completed applications must be returned to Dean Colbert by 5pm, Fri, Nov 18, 1988.

**Ford Foundation Postdoctoral Fellowships for Minorities.** Awards (25 available) to be made in engineering, mathematics, the physical and biological sciences, the behavioral and social sciences, and for interdisciplinary programs combining any of the above. Non-renewable. Provides stipend of \$25,000 for one year, \$3,000 travel/relocation allowance, \$2,000 cost-of-research allowance, and \$2,500 research grant-in-aid for use after fellowship tenure. Request form for applications available in the Dean of the Graduate School Office, Rm 3-138. Application deadline: Jan 13, 1989.

## International Opportunities

**National Academy of Sciences, Committee on Scholarly Communication with the People's Republic of China. Visiting Scholar Exchange Program** - Supports short-term visits to initiate and conduct research by American and Chinese scholars in the natural sciences, engineering, social sciences and humanities. Application deadline: Nov 15, 1988. For application requests contact Lillian Whelpley, x3-1939, Rm 4-237.

**MIT-Japan Science and Technology Program.** A unique opportunity to science and engineering students to spend a year working at a major Japanese company or laboratory. Students are trained in Japanese language and culture at the Program's expense before being placed in Japan. Placement is tailored to the student's background and experience. Travel to/from Japan and living expenses will be covered. For further information, call Patricia Gericik, x3-3142, Ctr for International Studies, MIT-Japan Science and Technology Program, Rm E38-656.

## Student Jobs

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

**Special Note:** The Student Employment Office has many "one time only" jobs. Many students find these jobs a good way to earn money fast.

### On Campus: Non-Technical

The Association of MBA Executives Inc seeks students to work as campus representatives. Campus reps market consumer products and services on campus via poster placement and other means of distribution. Hours: a few each week. Salary: a monthly stipend, plus commission. Applications at Student Employment Office desk. Contact: Shaun J. King, Hiring Coordinator, 1-800-821-1543.

### Off Campus: Non-Technical

Mt Auburn Hospital in Cambridge has a variety of part-time positions available: days, evenings, nights, and weekends. Examples: nursing assistants, computer clerks, receptionists, telephone operators and secretaries. Located on the MBTA. Contact: Marion or Ruby, Mt. Auburn Hospital, 330 Mt. Auburn St, Cambridge, 02138, 499-5066.

The Massachusetts Public Interest Research Group (MASPIRG) seeks students who are articulate and concerned with environmental issues to help promote community awareness, etc. Hours: flexible, afternoon and evening. Salary: \$45-70/day. Contact: Laurie Reeves, Davis Square, Somerville, 776-9431.

### Off Campus: Technical

Assembling digital/analog circuitry and voltage amplifiers. Near Watertown Sq. Hours: full or part time. Salary: \$10/hr. Contact: Mark, Physicon Co. 491-7997.

## UROP

**MIT and Wellesley students are invited to join with faculty members in pursuit of research projects of mutual fascination. Further project listings and fall guidelines (outlining proposal procedures) are posted on the bulletin boards located in the main corridor and in the UROP Office. Faculty supervisors wishing to have projects listed should send project descriptions to the UEO Office. Questions? Contact UEO, x3-7909, Rm 20B-141.**

**Joel M. Orloff Undergraduate Research Prize.** Nominations from faculty are invited. A cash award will be presented in early November to the undergraduate who has demonstrated the most outstanding ability and creativity in physics-related research (conducted in any department) during the past summer and/or academic year. Nominations should be made by the student's faculty supervisor, and should be sent to the UROP Office by Nov 4.

**Dean A. Horn Awards.** An award of \$750 and a certificate will be presented to an undergraduate for the most deserving marine-related project. Nominations should be made by the student's faculty supervisor, and should be sent to the UROP Office by Nov 4.

**Biotechnology.** Project involves separation of proteins and antibodies from the complex mixture with the help of membrane technology. For this separation a recently developed rotary configuration with Ultrafiltration(UF)/Microfiltration (MF) is used. Student will get a chance to work on this system as well as some of the analytical techniques like protein analysis, FPLC, coulter counter etc. Faculty supervisor: Prof Cooney. Contact: Dr. Agarwal, x3-8167, Rm 16-018.

**High Pressure Triaxial System.** UROP student needed to help in finalizing the control system and experimental details for a high pressure triaxial system. Knowledge and interest in computer programming and in doing hands on mechanical work is required. Contact: Faculty supervisor, Prof H. H. Einstein, Rm 1-330, x3-3598.

**Neural Networks for Adaptive Control.** This research investigates neural networks of the human brain. Their remarkable characteristics include a self-organizing mechanism, noise immunity, damage tolerance, and massive parallelism. We are working on their applications to adaptive control in a wide range of manufacturing. Our study stands mainly on software simulation and needs one UROP student capable of C programming. Faculty supervisor: Steven Kim, x3-2249. Contact: Hiroshi Shibazaki, x3-3814.

**Computer Simulation of Manufacturing Systems.** At the Lab for Manufacturing and Productivity, development is proceeding on a computer simulator capable of evaluating and optimally configuring any flexible manufacturing system. An opportunity exists for a student to join the simulator development team. The student should have a strong background in LISP (at least 6.001). Work will be done in LISP on a VAXstation II. Faculty supervisor: Prof George Chryssolouris; Contact: Jim Pierce, 35-332, x3-3518 or x3-1811.

**Biomechanics.** Immediate need for UROP students who wish to conduct experiments with spinal cord injured subjects at the West Roxbury VA hospital. Experiments involve making paralyzed limbs move electrical stimulation. Requires a car (for getting to the VA) and free Thursday afternoons. Ability to work in a hospital environment with human subjects a plus. Credit only. Contact Prof Will Durfee, Rm 3-455, x3-6237, wkdurfee@athena.

**EXAFS Spectroscopy.** Student needed with VAX and FORTRAN programming experience to reactivate a set of curve fitting programs used in EXAFS (an X-Ray) spectroscopy. No physics or chemistry knowledge required, but would be helpful. Also, opportunities available for student to learn EXAFS spectroscopy and travel to the Brookhaven synchrotron. Faculty member: William H. Orme-Johnson, x3-1862, Rm 18-025. Contact: Andrew Kolodziej, x3-1857 or 876-9767, Rm 18-050.

## Cable Television Schedule

**MIT Cable Television serves the MIT campus. For connection and programming information, call x3-7431. This schedule is subject to change. For up-to-date information, call Randy Winchester, x3-7431.**

### Wednesday, November 2

Channel 8:  
9-10pm - 6.013 Demonstrations 8.2.1

### Thursday, November 3

Channel 8:  
9-10pm - 6.013 Demonstrations 8.2.1

### Friday, November 4

Channel 8:  
9-10pm - 6.013 Demonstrations 8.5.1

### Saturday, November 5

Channel 8:  
9-10pm - 6.013 Demonstrations 8.5.1

### Sunday, November 6

Channel 8:  
9-10pm - 6.013 Demonstrations 8.5.1

### Monday, November 7

Channel 8:  
9-10pm - 6.013 Demonstrations 8.5.1

### Tuesday, November 8

Channel 8:  
4-5:30pm - Live coverage of the MIT VLSI Seminar  
9-10pm - 6.013 Demonstrations 8.5.1

### Wednesday, November 9

Channel 8:  
9-10pm - 6.013 Demonstrations 8.6.2, 8.6.1

### Thursday, November 10

Channel 8:  
9-10pm - 6.013 Demonstrations 8.6.2, 8.6.1

### Friday, November 11

Channel 8:  
9-10pm - 6.013 Demonstrations 8.6.2, 8.6.1

## TECH TALK (USPS 002157)



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## Gray signs international pact

MIT President Paul E. Gray is among 45 university leaders from around the world who are organizing a force for disarmament through education.

The leaders expressed their hope "that the 60 million students and two million teachers engaged in higher education throughout the world will join us in our endeavor."

At a meeting in September in Talloires, France, the participants adopted a resolution to develop common curriculums on disarmament and the theory and practice of international conflict management.

"We are committed as educators to prevent global death," their declaration said, adding that "the universities of the world have profound moral responsibilities to increase understanding of the awful risks of the nuclear age."

Hosts for the five-day conference, which was held at the Tufts University European Center in Talloires, were Tufts President Jean Mayer and President Justin Thorens of the International Association of Universities.

The participants came from the United States, the Soviet Union, China, Japan, western Europe, the Pacific Rim and the Middle East.

They included the Rev. Theodore M. Hesburgh, president emeritus of Notre Dame University; James O. Freedman of Dartmouth College, I.A. Medvedev of the Kalinin State University in the Soviet Union, Shigeyoshi Matsumae of Hokkaido Tokai University in Japan and Xie Xide of Fudan University in Shanghai.

The declaration recommended several steps that could be taken to achieve the group's goals.

They urged that language, history and culture be made integral parts of a curriculum addressing arms control and negotiation. They also said that regional centers,

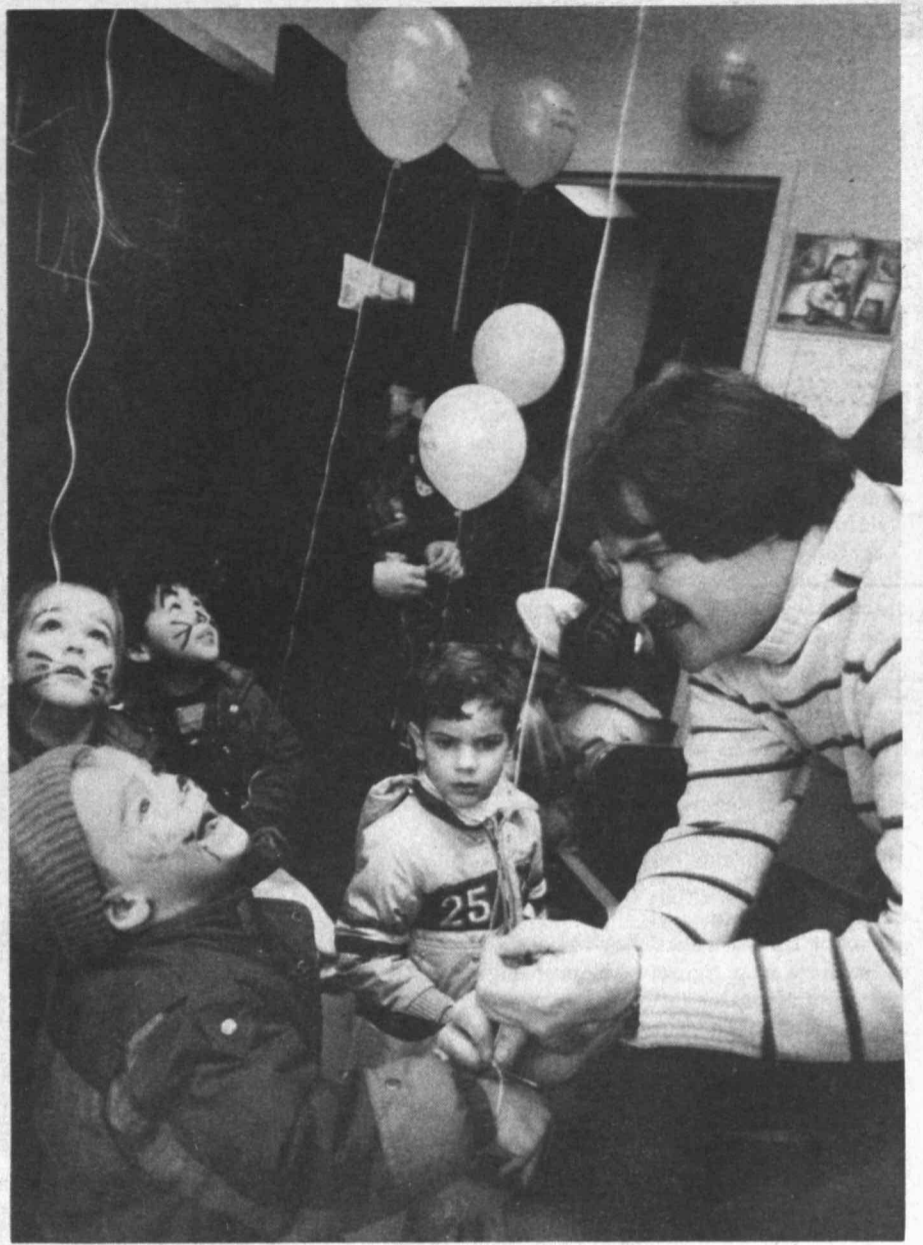
satellite links and faculty exchanges should be developed by universities to further the exchange of information and to improve education on disarmament.

"Most people don't know what arms control means, and what negotiations mean," said President Mayer of Tufts. "Unless there is an informed opinion there will never be arms control. We may not be able to do anything about war breaking out tomorrow, but if war broke out in 20 or 30 years it would be our students who started it."

The Soviet academic, Mr. Medvedev, said he would "like to see our movement develop into something very active and not remain purely academic."

MIT's Center for International Studies has had an active graduate program in defense and arms control for years and, in addition, for the past six summers, with the Center for Science and International Affairs at Harvard University, has conducted a workshop for college professors involved in teaching courses related to nuclear weapons and arms control.

Professor Jack Ruina, director of the Defense and Arms Control Program at MIT, commenting on the initiative by the university presidents, said: "It has taken many years for leaders in education to put their weight behind efforts to educate the citizens of the world about the technological and political dimensions of nuclear weapons. The unfortunate delay in educating a broad community has restricted involvement in these issues to an elite group. Now we look forward to the opportunity to communicate with educators worldwide as they become more involved with international security and arms-control efforts. Only as the public understands will they be able to participate effectively in the political process."



Smiling gleefully at balloons provided by his dad, postdoctoral associate Gary Doll, is Joshua Doll, 4, during the Technology Children's Halloween visits to parents on Monday. Behind him are Andy Cyders, 4, Timothy Ho, 4, head teacher Olga Slocum, and Teddy Offner, 4, (center). TCC has a number of spaces available in the full-time program (daily 8am-5:30pm) at Eastgate. To inquire about enrollment, call TCC at x3-5907  
—Photo by Donna Coveney



Mr. Johnson



Ms. Stowe



Mr. Lundberg



Dr. Wilson

## Resource Development names 4

Four appointments in Resource Development have been announced by Vice President and Treasurer Glenn P. Strehle.

Eric C. Johnson, who has been assistant dean for development in the School of Engineering since 1983, was appointed director of corporate relations. Mr. Johnson has assumed responsibility for MIT relations with corporations, including solicitation and stewardship of gifts, the Industrial Liaison Program and assistance to faculty soliciting gifts. He is working with the Provost, the academic deans and Resource Development to integrate corporate activities within MIT.

Barbara G. Stowe has returned to Resource Development as director of foundation relations following two years as assistant dean for development in the School of

Humanities and Social Science. Ms. Stowe has responsibility for MIT relations with charitable foundations.

David L. Lundberg has succeeded Ms. Stowe as director of development in the School of Humanities and Social Science. He is working with Dean Ann Friedlaender to expand endowment and operating support for the School. Prior to coming to MIT Mr. Lundberg was associate dean for faculty development at Tufts University.

John S. Wilson, who has been an associate in the Financial Operations Group at MIT since 1986, has become assistant director of corporate development. Dr. Wilson has particular responsibility for corporate stewardship and for developing corporate support for programs relating to the education and training of students.

## Interdisciplinary Goody Prize offered

Applications for the Marvin E. Goody Prize, a \$5,000 award for a graduate thesis in the building arts, are available in the Graduate School Office, Rm 3-134.

The aims of the award are to extend the horizons of existing building techniques and use of materials, to encourage links between the academic world and the building industry and to increase appreciation of the bond between good design and good building. The award is given to a graduate student preparing a thesis for the SM, M.Arch or MCP degree to be completed not later than September 1989.

The Prize was established by Joan E.

Goody, as a memorial to Marvin E. Goody, an MIT alumnus and faculty member. It is administered by a committee consisting of John P. de Monchaux, dean of the School of Architecture and Planning; Professor David H. Marks, head of the Department of Civil Engineering; Professor Frank E. Perkins, dean of the Graduate School, and William R. Dickson, senior vice president of MIT.

Application forms and further information are available from Debbie Roebuck in the Graduate School Office. Deadline for application is Monday, Dec. 19, with the winner to be announced Wednesday, Jan. 11, 1989.

## CPSR honors Weizenbaum

MIT professor Joseph Weizenbaum, a pioneer in computer science who has warned against over-reliance on computers, has won the 1988 Norbert Wiener Award for Professional and Social Responsibility.

The award was established in 1987 by Computer Professionals for Social Responsibility to recognize "extraordinary and exemplary practice of the highest standards of social responsibility in the computing field." It was named after the late Norbert Wiener, the famous MIT mathematician and cyberneticist, because of Wiener's concern for the responsible use of computers and his opposition to the militarization of science and technology.

It is given to someone in the field of computing "who makes a significant personal sacrifice for, or contribution to, public safety, the reduction of risk and the maintenance of the highest standards of professional conduct."

Dr. Weizenbaum, professor emeritus of computer science and engineering and a member of the Laboratory for Computer Science, is known for his research into the

structure of computer languages and the understanding of natural languages by computers. He also has become a leading critic of what he once described as "our dangerous love affair with computers."

He began his career with computers in about 1950 when he worked on the Bush Differential Analyzer, an analogue computer, and later helped to design and build a digital computer at Wayne University.

Professor Weizenbaum set out his objections to the misuses of computers, and to society's growing dependence on computer technology, in his book, *Computer Power and Human Reason: From Judgment to Calculation*. In it, he argued that the typical assumption that computers will be able to do anything given enough processing power and clever programming not only is wrong but dangerous and, in some special cases, immoral. The book is considered a fundamental work for ongoing debates concerning the social implications of computing technologies.

The announcement of the award by Computer Professionals for Social Responsibility (CPSR) said Professor Weizenbaum "has been a tireless activist for peace in his long career." In the 1960s, it said, he was a founder and leader of Computer Scientists Against the ABM, a group that argued against the deployment of an anti-ballistic missile system.

Professor Weizenbaum has been a longtime member of CPSR and a founding member of its West German equivalent. He is a fellow of the American Association for the Advancement of Science and has served on the advisory board of the Fellowship for Reconciliation.

## Randomness talks

The Center for Intelligent Control Systems (CICS) will hold a workshop on Randomness in Computation Saturday, Nov. 5, 9am-5pm in Rm NE43-512A.

Organized by Professor Silvio Micali of electrical engineering and computer science, the workshop will feature several talks on the use of randomness for increasing reliability, accuracy of approximations and speed of computation. There will also be talks of a more general nature. Novel and practical application of the ideas discussed will be emphasized.

Scheduled speakers include Persi Diconis and Michael Rabin of Harvard; Manuel Blum of UC Berkeley, and Shafi Goldwasser, Baruch Awerbach and Daniel Stroock of MIT as well as Professor Micali.

To register, call Betty Lou McClanahan, x3-2142 or e-mail bl@lids.mit.edu. CICS is a unit of the Laboratory for Information and Decision Systems.

## United Way update

We have reached 46 percent of our United Way goal of \$270,000. Some 1,286 people have contributed \$125,226. The campaign will continue through November.



## Admissions officer helps MIT increase minority enrollment

(This article noting MIT's success in attracting minority students appeared in the September 14 Chronicle of Higher Education. Mr. DeLoughry is an assistant editor of the Chronicle.)

By THOMAS J. DeLOUGHRY

"Can we get a picture of everyone who's going to MIT next year?" Eduardo Grado jokes as he enters a classroom here at the Massachusetts Institute of Technology, where about 40 camera-toting high school juniors are marking the last day of a summer engineering program for minority-group students.

Smiling broadly, Mr. Grado, the coordinator of minority admissions at MIT, steps to the platform at the front of the room where he is greeted warmly by students anxious to include him in their group photos.

Like many already enrolled at MIT, these black, Hispanic, and American Indian students have been befriended by Mr. Grado, a 30-year-old Mexican American known for his taste in fine clothes and good food, and—above all—for his extraordinarily strong commitment to minority students.

During the six weeks they've been enrolled here in a rigorous science, engineering and mathematics program, each of these students has had a chance to talk about MIT—and about college in general—over dinner or dessert with the man they all call "Eddie."

If the past serves as precedent, about half of the 49 students in the most recent MITES program—otherwise known as Minority Introduction to Engineering and Science—will enroll at MIT in 1989, says Mr. Grado, who is also the institute's associate director of admissions. MIT will need them if it is to surpass the total of 198 black, Hispanic and American Indian students who have been recruited for this fall's class—a record number for the Institute and one that represents nearly 20 percent of the freshman class.

Minority enrollments have been rising steadily since 1985, when Mr. Grado took over as coordinator of minority-student admissions here. The class he recruited for the fall of 1986 included 119 minority students, and 150 enrolled in 1987.

Mr. Grado says his trips across the country, which typically last six to eight weeks, have helped him establish valuable networks in minority communities. In many cases, he has had the chance to speak to prospective students as early as their sophomore year in high school.

He says he is most pleased with the fact that this fall's entering minority students will be among the poorest, financially, that MIT has ever enrolled—proof that his efforts are providing opportunities for students not previously served by highly selective colleges.



Eduardo Grado

While proud of his work and that of his colleagues in the admissions office, Mr. Grado is also quick to give credit to MIT's president, Paul E. Gray, whose administration has made minority-student admissions a top priority. Mr. Gray's \$4-million, seven-year program to increase financial aid to low-income students, which began this year, includes \$280,000 to supplement the budget for minority-student recruitment programs.

The numbers at MIT are important for minority groups overall because they are figures that other predominantly white universities can strive for, Mr. Grado says.

A native of El Paso, Mr. Grado came to MIT in 1976 as an undergraduate. A popular student and football player in high school, he had trouble adjusting to life at MIT after being shut out of all the fraternities he sought membership in. Looking back on the rejections, which he

attributes to racism, Mr. Grado recalls that he felt out of place at MIT and began to socialize with minority students from other Boston-area colleges. The partying became excessive, Mr. Grado says, and in 1978 the dean asked him to take a semester off for academic reasons.

After spending two years as a manager and disco-dance instructor at a nightclub in El Paso, he returned to MIT in 1980 and graduated with a degree in management in 1983. "I sort of felt at that time that I had been a failure without my MIT degree, so I came back," he says. Mr. Grado also credits his older sister with having set an example for him by graduating with an engineering degree from the University of Texas at El Paso.

Mr. Grado, whose father has a ninth-grade education and whose mother attended school only until the sixth grade, has an older brother with an English-literature degree from the US Military Academy and a younger sister who has attended the University of Texas at El Paso.

"I wasn't a student—I struggled," Mr. Grado says, of his years at MIT. But his experience, he says, has helped him empathize with the students he has counseled since he turned an internship in the admissions office into a full-time job in 1983.

In the past five years, he says, he has been thrilled by the opportunity to help students, and, at times, frustrated by the factors that contribute to the high turnover rate among administrators in the field of minority-student admissions.

"There's a lot of pressure, there's a lot of politics, there's a lot of expectations that aren't met, and there's a lot of wondering whether you're making the right decisions by bringing students to campuses that have not moved as fast as you would have liked to see them move in the direction of making themselves more available or accessible to a different group of students," Mr. Grado says.

Despite his success in recruiting record numbers of minority students, he says he seriously considered leaving MIT last spring. The weeks on the road, the hours spent telephoning prospective students and their parents, and the counseling sessions with current students make for "a tremendous pace," he says.

But friends and colleagues here say Mr. Grado has handled the pace and the politics very well.

Michael C. Behnke, director of admissions at MIT, credits Mr. Grado with having "inexhaustible energy." He has

made many minority students aware of the opportunities for them at MIT—a factor most critical for admissions, Behnke says.

Nelson Armstrong, Mr. Grado's predecessor as coordinator of minority-student admissions here, says Mr. Grado's strongest attribute is that he is sincere in his concern for the students he recruits.

"The most important thing that comes across when Eddie talks to a student or a family is, 'If you want to take this shot, I'll do all that I can do to help you,'" says Mr. Armstrong, who is now associate director of the annual fund at Dartmouth College.

Mr. Grado's unpretentious personality and his knack for communicating with people help to convey his sincerity, Mr. Armstrong says. "He has a style that makes people like him real real quick," Mr. Armstrong says. "It's a great door-opener for him."

Says Clinton H. Elliott, a former admissions officer who left MIT last month: "I think a great many of the students enrolled at MIT owe the success of their educational and career experience directly to efforts that he set forth on their behalf, not specifically, but just by going after the right people at the right time with an abandon that was somewhat reckless with respect to his own career path."

"Eddie says what he feels without concern for the political ramifications," Mr. Elliott says. "The guy does not toe the line."

Mr. Grado acknowledges that he is sometimes less than diplomatic in fighting for programs for minority students, but he says that is because he has no interest in a career at MIT or in the admissions field.

"I've never intended to do this," he says. "I came to MIT to be an engineer and make lots of money, and I've had to postpone this and take a little detour."

"I have an opportunity that nobody from El Paso has ever had—to influence decisions and admissions to one of the top universities in the world, and for that I'm thankful," he says.

When he leaves, Mr. Grado says, it will be to open a Mexican restaurant in Boston or to return to El Paso, where he foresees getting involved in local politics.

He refuses to speculate about how long he'll stay at the institute.

"Some people do things for financial gratification and power gratification. I'm in this for the students," he says. "The minute I stop doing that is the time for me to leave."

## Isaac Asimov: Leaders know very little about science

Science popularizer and science fiction author Isaac Asimov visited MIT last week to receive an award from the Lord Foundation at its Third National Symposium on Technology and Society. At a press conference held by Dr. Asimov, a question posed by News Office science writer Eugene Mallove received a particularly timely Asimovian response:

"Dr. Asimov, one goes into an average book store—not a science book store or a science fiction shop—and a very tiny fraction of the total volume of books are about science. The science fiction section is much larger still than the general science section. This seems to indicate something about society's interests. What do you have to say about that?"

Asimov: Science—real science—is hard. It asks a lot of concentration on the part of the student. It can't be read while you're half asleep. You can't read it properly while you have your legs propped up on a hassock, leaning backward. I'm afraid that the average person follows the line of least resistance. It's easier to read science fiction than to read science. It's easier to read science popularizations than professional science, complete with mathematics. It's still easier to read romances. And it's still easier to watch television.

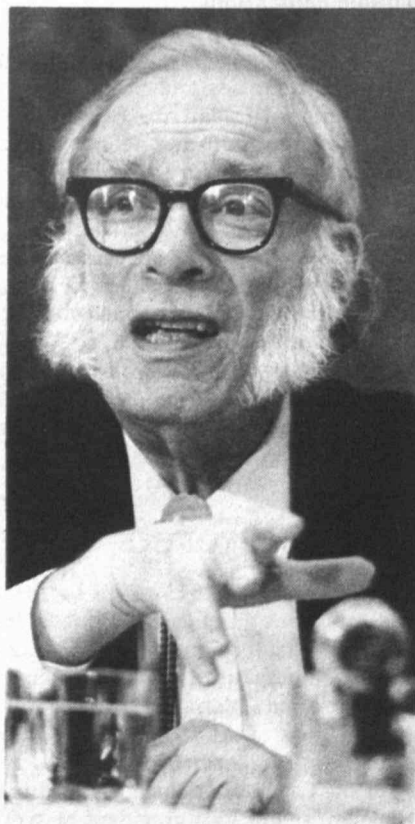
If you listed the number of people who will do this and the number of people who will do that, you will find that they increase always in the direction of the lesser demand that it makes on the person.

Well, in a way this isn't fatal. We don't all have to be scientists. Science can be a minority activity. If one person out of a hundred understands science really well, the human species can still progress. The figure might even be less than one percent.

However, in one respect it is dangerous. If we live in a democracy, as we do, we have to depend on people's votes. These days our leaders ought to be able to understand science. They ought to be able to make scientific decisions, sensible ones which would be backed by the popular will because they are sensible decisions. As a matter of fact, I would say that the large majority of our leaders know very little about science—are very little interested in science. The general population knows even less perhaps, so they don't bother to put pressure in a sensible direction. They let things drift, with the result that there may be a catastrophe.

In my own small way I try. I have written literally at least 200 books on various phases of science for the general public—who in many cases fear science—in the hope that enough people will read them, will become interested in science, and could carry on, or at least could gain enough interest to be intelligent spectators.

This is the sad part of our society in particular. I suppose that the percentage of the American population who can play baseball with something approaching pro-



Isaac Asimov

fessional elegance is even smaller than the number of Americans who can do science with something approaching pro-

fessional elegance. And yet so many millions of Americans know just enough about baseball to be able to watch baseball games with at least some understanding of what's going on. They know when to cheer, when to groan. And yet, how few can make any sense at all out of science! And science, of course, is of infinitely greater importance—not just because I say so, on account of I happen to like science, but because science through its misuse may destroy the human race. And science through good use may solve our problems.

Now baseball or any other sport, while important for amusement and for excitement—and I don't belittle that—nevertheless, whether one team wins or another team wins or whether the games are played at all is neither going to save nor destroy society. But science can. So that you'd think that out of self-protection or love of their children people would say, "Well, sports are fun, but let's understand science." They don't do that. And there is nothing in our society to persuade them to do that either.

So that I can't help but feel at some point that I'm pursuing a useless aim and that I'm doing it only because my total conscience tells me that the only way I could possibly sleep at night is to feel I'm doing the right thing. Unfortunately, I also make money out of it, so it spoils the great idealism of my intention. On the other hand, I am not sufficiently idealistic to refuse the money!



## Ferrochromium project begins

MIT researchers will lead a technology program designed to make the US ferrochromium industry self-sufficient and competitive on the world market. Ferrochromium is designated a strategic material, an adequate supply being important to national security.

Ferrochromium is an essential material that goes into stainless steel, cast iron, and super-alloy production—so vital in the defense, aerospace, chemical, power generation, and transportation industries. Ferroalloys are added in the production of finished steel and cast iron to clean and purify the metal as well as to add strength, ductility, and other desirable properties, such as hardness and corrosion resistance.

The ferrochromium "plasma arc smelter" research program will receive initial funding, according to a bill passed last month by the House-Senate Conference Committee on the Defense Appropriations Bill. The project will be a cooperative venture among the South Carolina Research Authority, MIT, Clemson University, the Arthur D. Little Corporation of Cambridge, and Macalloy Corporation of Charleston, SC. Members of MIT's Mining and Minerals Resources Research Institute, directed by Professor John F. Elliott, will provide technical leadership for the project.

Presently, 85 to 90 percent of the US ferrochromium is imported, most from South Africa. Moreover, US ferrochromium production capacity is only 138,000 metric tons per year, yet is far from being used to its fullest extent. At the same time, US annual consumption was recently 350,000 tons (1987). US production costs are the highest in the world—200 percent above those of South Africa, the lowest-cost producer.

The only ferrochromium production technique now used in the US is the "submerged arc" process. Large electrical currents are passed through carbon electrodes into chromite ore and other materials within the smelting furnace.

Plasma arc technology is now emerging in the production of ferroalloys, because it allows the use of potentially available domestic "fine" ore, lowers energy costs, and generates higher product yield. It also reduces dust, creating a cleaner manufacturing environment. The plasma arc furnace heats materials by converting electrical energy into a high-temperature plasma which is brought into contact with materials to be smelted.

Proponents of the research effort have claimed that the technology will be transferable to other metals processing and could stimulate mining in Oregon, Montana, and Alaska—areas that are not economical to mine with current technology.

The technical approach of the program is first to perform a detailed plasma-arc technology assessment and analysis. Then the program will engineer, construct, and evaluate a 2 megawatt pilot plant. Subsequently, a 25-30 megawatt prototype furnace will be built. The total program is to be completed in 3.6 years at a cost of less than \$13 million.

Last month, the House-Senate Conference Committee on the Defense Appropriations Bill approved the expenditure of \$3.5 million, secured by Senator Fritz Hollings of South Carolina, for a Strategic Materials Research Facility to be located in Charleston, S.C.

"I'm particularly pleased that this funding has been approved, because it is imperative that the US ferrochromium industry become self-sufficient," said Senator Hollings.

## Chvany, Kramsch cited

Two faculty members in foreign languages and literatures have been recognized by their colleagues for their professional contributions.

Professor Catherine V. Chvany was one of eight to receive a medal for outstanding scholarly contributions to Russian studies at the Tenth Congress of Slavists held in Bulgaria in September.

Professor Claire J. Kramsch will receive the Nelson Brooks Award for outstanding research in the teaching of language and culture at the upcoming convention of the American Council of Teachers of Foreign Languages in California.



Scott Federhen, a graduate student in biology, helps one of the ubiquitous MIT squirrels stock up for the winter.

—Photo by Donna Coveney

## Language Exchange brings friendships, support

By ELIZABETH A. THOMSON  
Staff Writer

Virginia Gonzales moved from Brazil to Cambridge when her husband decided to pursue his doctorate here in Ocean Management Systems.

Once at MIT, however, "I found it very difficult to make contact with Americans," she said.

Then she found out about the Language Conversation Exchange sponsored by the Medical Department. Before long she was matched with Susanna Hinds, who is a staff assistant in the Student Affairs Office, and the two began meeting for weekly lunches.

"We discuss Brazil, America, and sometimes the news," said Ms. Gonzales. "Now I know a lot of things about American people and the country that I didn't know before, such as customs and habits."

Ms. Hinds has also been enjoying the lunches. "I've always loved foreign languages," she said. "Virginia's been going over basic phrases in Portuguese, and I'm also learning about the people and culture of Brazil."

Virginia and Susanna are representative of the many people who have used the Language Conversation Exchange since its inception about five years ago. Last year the program touched 250 people and covered at least 15 languages, including Chinese, French, Farsi (from Iran) and Nepalese.

"The program was conceived as a support system for internationals coming to MIT," said Dr. Charlotte G. Schwartz, a clinical sociologist and psychologist at the Medical Department and director of the program.

"Much of life here in the States is not known to these newcomers," she said. "We have many ways of expressing ourselves—idioms, slang, gestures—that aren't necessarily taught in books. The newcomer really needs someone they can have a personal conversation with. It's also a way of exchanging their language—a way to give something back."

Kazutomo Yunokuchi is sure to agree. Mr. Yunokuchi is a visiting scientist from Kagoshima University in Japan, and is currently working at the Francis Bitter National Magnet Laboratory.

"When I arrived at MIT I found out about the Language program and said to Dr. Schwartz that I would like to get some help with English," said Mr. Yunokuchi. The secretary to the Language Conversation Exchange promptly set him up with Robert Miller, a division administrator and part of the technical staff at Draper Laboratory.

"[Mr. Miller] helps me with English and also simultaneously I learn about American culture, American industry, American society, etc.," said Mr. Yunokuchi. "Fortunately, he is also in-

involved in electrical engineering—like me—so he also helps me with technical terms."

Mr. Yunokuchi is the third Japanese visitor that Robert Miller has worked with through the Exchange. Though Mr. Miller is interested in the Japanese language, he is more interested in helping people get adjusted to the States. "It becomes more of a social situation," he said. "I've developed some very good friendships along the way."

Mr. Miller's experience brings up an important point: volunteers don't have to have a burning desire to learn a particular language. "The program is set up as an exchange," said Dr. Schwartz, "but it doesn't have to be an exchange—say if you don't particularly want to learn a language, but would just like to help somebody."

Though the main purpose of the Language Conversation Exchange is to support newcomers, "the program is also used to help people in the Institute with their work," said Dr. Schwartz. These people include professors and even other doctors in the Medical Department.

"I use the program every time I give an advanced German conversation-composition class," said Claire Kramsch, a professor in foreign languages and literature. Professor Kramsch matches each of her students—sometimes up to 20—with a native speaker of German.

## Public service initiative to begin

A three-year pilot effort to coordinate public-service activities at MIT should be launched by Thanksgiving, according to Dean for Student Affairs Shirley M. McBay.

This umbrella initiative, according to Dean McBay, is the outgrowth of discussions and surveys dating back to 1986 and has been encouraged in recent meetings with representatives of a number of service groups within the MIT community. The effort is being spearheaded by Virginia Sorenson, assistant to the dean for student affairs, and Keith Roberts '89.

Until now, "there has been no central place at MIT where students could learn of community service projects," said Ms. Sorenson. As a result, it is difficult to match interested volunteers with needy agencies.

For example, Ms. Sorenson said, "the student president of the national engineering honor society came in to ask if I could help come up with a service project for 150 new initiates who could each volunteer 10-15 hours of community service." Since the Institute doesn't keep organized files on appropriate agencies, Ms. Sorenson couldn't help him. "He had to go out and find the projects himself," she said.

The new center will not only handle such requests, but will also help publicize the

"The student must call up his or her contact and make an appointment for an interview," said Professor Kramsch. After the interview—which must be in German—students report on every detail of their exchange. "One of the main points is to observe cultural differences," said Professor Kramsch, "so I ask them to note the things they talk about, the things they don't, body movements, etc."

Professor Kramsch has also used the Language Conversation Exchange to develop a textbook on German communications strategies. "I needed some native speakers to record a cassette that goes with the book," she said.

The program can also be a valuable resource when doctors in the Medical Department need a translator.

Dr. Schwartz remembers a pregnant Arab woman who came over to the Medical Department and needed someone to explain her pregnancy to her. The nervous woman didn't understand English, however, so Dr. Schwartz consulted the roster of people in the Exchange and eventually found a person who spoke Arabic and could translate for the doctors.

At its most basic, then, "the aim of the program is to provide somebody for someone to talk to," said Dr. Schwartz. If you are interested in getting help with English or learning about another language and country, call Carmen Houser at X3-1614 and ask about the Language Conversation Exchange.

efforts of various service groups on campus and coordinate projects that might mix faculty, staff and student volunteers. Ms. Sorenson stresses that these are just a few of the services that will be offered.

Although the initiative is being supported through the Office of the Dean for Student Affairs, it will receive guidance and direction from student service organizations on campus and from a small steering committee of students, faculty and staff. The intent is to make volunteer service opportunities better known to students and others in the MIT community and to assist in matching volunteers with appropriate agencies.

"I think there are a lot of needs out there that are not being filled," said Ms. Sorenson, "but students simply don't have the time to look into them."

"We are excited by the possibilities of the center and by the broad interest in public service that exists at MIT," said Dean McBay. "We are especially pleased that Mrs. Priscilla Gray has agreed to work with us and that the Technology Community Association has offered to let the initiative operate temporarily out of its office (W20-450) until more permanent quarters can be found."



# THE INSTITUTE CALENDAR

November 2 - November 13

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

## Events of Special Interest

**TBP and GM Cars of Tomorrow Show Off\*** - Tau Beta Pi/GM prototype car show, Nov 2-3, Kresge Oval. Spotlights: King-of-the-Hill Corvette and an experimental Blazer XT-1. Special presentation on the vehicles, Thurs, Nov 3, 7:30pm, Rm 9-150. Refreshments served.

**TCA/Red Cross Fall Blood Drive\*** - Technology Community Assn/Red Cross Drive, Nov 3-5, 11-5pm; Nov 7-9, 1-7pm, Student Ctr Sala de Puerto Rico. Appointment preferred; call x3-7911 or Rita, x5-6425 dorm.

## Seminars and Lectures

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.

### Wednesday, November 2

**Selective Epitaxy of III-V Semiconductors by Organometallic Chemical Vapor Deposition\*\*** - Kei May Lau, Dept of Electrical and Computer Engineering, UMass-Amherst, Heterostructure Device Seminar, 10am, Rm 34-401B. Coffee and donuts, 9:45am.

**Short Pulses from Semiconductor Lasers: Characteristics and Applications\*\*** - R.S. Tucker, AT&T Bell Laboratories, Electrical Engineering and Computer Science/Research Laboratory of Electronics Seminar on Optics and Quantum Electronics, 11-12noon, Rm 36-428.

**Regionalism in Architecture and Development\*\*** - Pliny Fisk III, director, Ctr for Maximum Potential Building Systems, Austin, TX, Ctr for Real Estate Development Rose Lunchbox Seminar, 12:30pm, Rm W31-301. Bring bag lunch.

**Digital Control Strategies for 3-D Reactors with Thermal-Hydraulic Feedback\*\*** - Brian Aviles, Dept of Nuclear Engineering Seminar, 3-4pm, Rm 24-213.

**Nonlinear Motions of Planing Craft\*** - David Kring, Dept of Ocean Engineering Seminar, 3:30-5pm, Rm 5-314.

**Numerical Modeling of Crack Tip Chemistry\*\*** - Maureen Psaila-Dombrowski, Nuclear Engineering Dept Reactor Engineering Section Doctoral Seminar, 4pm, Rm 24-121.

**A Numerical Method for Smooth Sphere Diffraction\*\*** - Dr. M. Shatz, Electromagnetic Wave Theory Group Seminar, 4pm, Rm 36-272.

**Field Portable Mass Spectrometry: An Update\*\*** - M. Ernst, Ralph M. Parsons Laboratory Aquatic Sciences Seminar, 4pm, Rm 48-316.

**Poetry\*\*** - Prof Robin Becker, MIT Writing Program, MIT Council for the Arts/Residence and Campus Activities Office/UASO/School of Humanities and Social Sciences/School of Architecture and Urban Planning Lecture on the Arts, 7:30-9pm, Tau Epsilon Phi Fraternity.

**Advertising/Politics\*** - Richard Bolton, artist; Stuart Even, author, *Captains of Consciousness*; other media TBA, List Visual Arts Ctr Panel Discussion in conjunction with The Bear in the Marketplace Exhibit (see Exhibits, below), 7:30pm, Bartos Theater.

### Thursday, November 3

**An Airport Operator's View of Airline Access to Busy Airports\*** - George Howard, asst director, Policy and External Affairs, Aviation Dept, Port Authority of New York and New Jersey, Flight Transportation Lab Seminar, 2:30-3pm, Rm 33-319.

**Metropolitan Area Networks: How Soon?\*** - James Mollenauer, Computerization, a division of Prime Computer; Paul Chisholm, Teleport Communications, Boston; TBA, Communication Forum Seminar, 4-6pm, Rm E25-111.

**Heat Transfer Measurements in the VT903 Diesel Engine\*\*** - FuQuan Gau, graduate student, Dept of Mechanical Engineering, Sloan Automotive Laboratory Seminar, 4pm, Rm 31-161.

**Conservation Laws, Polymatroid and Optimal Scheduling Control of Multiclass Queueing Systems\*\*** - David D. Yao, Columbia University, Operations Research Ctr Seminar, 4-5pm, Rm E40-298.

**Trapped Neutral Atoms\*\*** - Prof David E. Pritchard, MIT, Physics Colloquium, 4:15pm, Rm 20-250. Refreshments, 3:45pm, Rm 26-110.

**Entrepreneurs in the Marine Field: What are the Engineering Problems? What are the Management Problems?\*** - Edward van Dusen, president, Composite Engineering; Peter Quigley, president, Fiberspar, MIT International Shipping Club/Society of Naval Architects and Mechanical Engineers Seminar, 4:15pm, Rm E51-144. Refreshments served.

**Management Issues Relating to General Electric\*** - Jack Welch, chairman and CEO, General Electric, Sloan School of Management Distinguished Speaker Series, 4:30-6pm, Rm E51-329.

**Molecular and Genetic Engineering for Space Travellers\*** - Chris Fry, MIT Nanotechnology Group, Students for the Exploration and Development of Space Seminar, 8pm, Rm NE43-512A.

### Friday, November 4

**Modelling of Supersonic Chemically Reacting Flow Fields\*** - Dr. J. Philip Drummond, research scientist and

leader, Combustion Group, NASA Langley Research Ctr, Dr. Claude Deutsch, University of Paris, Orsay, Plasma Fusion Ctr Seminar, 11am, Rm NW17-218.

**Micro, Quasi-, and Other Crystals: An Overview of Experimental Work on Quasicrystals at Harvard\*** - Prof Frans Spaepen, Harvard University, Ctr for Materials Science and Engineering Seminar, 12:15pm, Rm 12-132. Lunch served, 12noon.

**Military Traffic Management in a Deregulated Transportation Environment\*** - General John H. Stanford, Major General, US Army Commanding, Military Traffic Management Command, Ctr for Transportation Studies Luncheon Seminar, 12:45-2pm, Rm 1-236. Optional luncheon, 12-12:45pm, \$2/students, \$4/non-students.

**Molecular Disorder, Frustration and Helicity in Discotic Liquid-Crystals\*** - Dr. Ernest Fontes, Jr., Physics Dept, University of Pennsylvania, Ctr for Materials Science and Engineering Seminar, 2pm, Rm 8-302.

**Product Distributions of the Fischer-Tropsch Synthesis on Iron Catalysts\*\*** - Timothy Donnelly, Chemical Engineering Seminar, 2pm, Rm 6-110.

**Fundamentals of Hazardous Solid Waste Incineration and Soil Cleanup\*\*** - Prof David W. Pershing, Chemical Engineering Dept, University of Utah, Chemical Engineering Seminar, 3pm, Rm 6-110.

**Some Geochemical Constraints on Mass Transfer Processes in the Earth\*\*** - Dr. S.J.G. Galer, Scripps Institute of Oceanography, CONOCO Lecture, 4-5pm, Rm 54-915.

**The Making of Fine Books by Hand: Engraving, Papermaking, Printing and Binding\*** - Deborah and Benjamin Alterman, The Married Mettle Press, MIT Museum lecture in conjunction with *Billy Budd, Sailor*, Bound to Vary Exhibit, 7pm, MIT Museum.

### Saturday, November 5

**Randomness in Computation\*\*** - Persi Diaconis, Harvard; Manuel Blum, UC-Berkeley; Michael Rabin, Harvard; Shafi Goldwasser, MIT; Baruch Awerbuch, MIT; Silvio Micali, MIT; Daniel Stroock, MIT, Ctr for Intelligent Control Systems Workshop, 9am-5pm, Rm NE43-512A. Registration: Betty Lou McClanahan, x3-2142 or email bl@lids.mit.edu.

### Monday, November 7

**Drowning in the Typing Pool: Contemporary Workplace Issues for Women Office Workers\*** - Kristine Rondeau, director, Harvard Union of Clerical and Technical Workers, affiliate of AFSCME, Women's Forum Seminar, 12-1pm, Rm 6-321.

**Recent Trends and Features in Unemployment\*** - Aris Accornero, University of Rome, Italy, Ctr for International Studies Political Economy Seminar, 1-3pm, Rm E38-714.

**The Regulation of Multiproduct Firms: Theory and Policy Analysis\*** - Jean-Jacques Laffont, Toulouse/MIT, MIT Industrial Organization Workshop, 2:30-4pm, Rm E52-321.

**Passive Damping Enhancement for Space Structures\*\*** - Bubba Hagood, MIT, Dept of Aeronautics and Astronautics Materials, Structures and Aeroelasticity Seminar, 3pm, Rm 33-206. Refreshments.

**Thermohaline Stratification and Mixing in the Dead Sea\*\*** - Prof Donald Harleman, MIT Dept of Civil Engineering, Dept of Mechanical Engineering Fluid Mechanics Seminar, 3-4pm, Rm 5-134.

**AIDS: Challenge to Management\*\*** - Mary Rowe, Sloan School of Management, Undergraduate Education Office Context Subjects Lecture, 3:30-5pm, Rm 6-120.

**Autonomous Mobile Robots\*** - Prof Rodney Brooks, MIT, Dept of Electrical Engineering and Computer Science Colloquium, 4pm, Rm 34-101. Refreshments served, 3:30pm.

**Penetrative Convection in Ice-Covered Lakes\*\*** - Dr. P. Matthews, MIT Dept of Mathematics, Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments, 3:30pm, Rm 2-349.

**Water Quality of the Potomac Estuary\*\*** - Dr. Norman Jaworski, director, EPA Laboratory, Narragansett, RI, Division of Water Resources and Environmental Engineering/Dept of Civil Engineering Seminar, 4pm, Rm 48-316.

**Traffic Problems in a Congested City: Tokyo\*\*** - Dr. Kiichi Yoshida, professor of Traffic Civil Engineering and Traffic Planning, Institute of Science and Engineering/faculty of Science and Engineering, Nihon University; representative director and executive vice president, Tobishima Corp, Japan, Macro-Engineering Research Group Lecture, 4pm, Rm E51-332.

**Theory of Motion of an Artificial Earth Satellite: Past, Present and Future\*\*** - Dr. Paul Cefola; Dr. W. McClain, Draper Laboratory, Joint MIT/Draper Dynamics, Guidance and Control Seminar, 4:15pm, Rm 33-206. Refreshments.

### Tuesday, November 8

**Microchip Lasers\*\*** - Aram Moordadian, MIT Lincoln Laboratory, George R. Harrison Spectroscopy Laboratory/Research Lab of Electronics/Schools of Science and Engineering/Plasma Fusion Ctr/Industrial Liaison Program Seminar on Modern Optics and Spectroscopy, 11-12pm, Rm 37-252. Refreshments follow.

**Opportunities for Gigascale Integration (GSI)\*\*** - James D. Meindl, Rensselaer Polytechnic Institute, Troy, NY, VLSI Seminar, 4pm, Rm 34-101. Reception, 3:30pm.

**The Making of the Atomic Bomb\*** - Richard Rhodes, Pulitzer Prize-winning author; visiting Sloan Fellow, Defense and Arms Control Studies Program, 4-6pm, Rm E38-615.

**State of the Art in Lower Limb Prostheses\*\*** - Dr. David Krebs, Massachusetts General Hospital Institute of Health Professions, Rehabilitation Engineering Research and Practice Seminar, 4-5:30pm, Rm 1-114.

**The Coordinate Control of Sex Determination and X Chromosome Dosage Compensation in the Nematode *Celegans*\*\*** - Dr. Barbara Meyer, MIT Dept of Biology, Biology Colloquium, 4:15pm, Rm 10-250. Coffee served, 3:45pm, outside Rm 10-250.

**Blow Ye Winds! Mass Loss in Pre-Main-Sequence Stars\*** - Prof Suzan Edwards, Smith College, Ctr for Space Research Seminar, 4:15pm, Rm 37-252. Refreshments served, 3:45pm.

**Application of the Finite Iterative Method to Non-Local Fracture at Interfaces\*\*** - Dr. Roshdy Barsoum, Army Materials Lab, Applied Mechanics Seminar, 4:15pm, Rm 3-343.

**Space Colonies: The Prospect of Extending Civilization Beyond the Earth\*** - Bruce Mackenzie, Space Studies Institute, Students for the Exploration and Development of Space Seminar, 7pm, Student Ctr Rm W20-400.

### Wednesday, November 9

**Interaction with Ultrastrong Fields: Propagation and X-ray Generation\*\*** - C.K. Rhodes, University of Illinois, Electrical Engineering and Computer Science/Research Laboratory of Electronics Seminar on Optics and Quantum Electronics, 11-12noon, Rm 36-428.

**Heavy Ion-Dense Plasma Interactions of ICF Interest\*** - Dr. Claude Deutsch, University of Paris, Orsay, Plasma Fusion Ctr Seminar, 11am, Rm NW17-218.

**An Optimal Control: Adjoint Equations Approach to Studying the Oceanic General Circulation\*** - Dr. Eli Tziperman, Weizman Institute for Science, Rehovot, Israel, Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915.

**Growing Your Own Tenants\*\*** - Arthur Nelson, president, The Nelson Companies, Ltd, Waltham, MA, Ctr for Real Estate Development Rose Lunchbox Seminar, 12:30pm, Rm W31-301. Bring bag lunch.

**Numerical Ship Hydrodynamics: A Personal View of its Status\*** - Prof J.N. Newman, Dept of Ocean Engineering Seminar, 3:30-5pm, Rm 5-326.

**Simplification of Nuclear Power Plant Construction through Design and Process Innovation\*** - Chris Lapp, Nuclear Engineering Dept Reactor Engineering Section Doctoral Seminar, 4pm, Rm 24-121.

**Women's Political Organizing and the State in Mexico: The Case of Oaxaca\*** - Margarita Dalton, special advisor to the Governor of Oaxaca, Mexico, Ctr for International Studies/Political Science Dept/Women's Studies Program Seminar, 4pm, Rm E38-615.

**Amino Acid Utilization by Phytoplankton: A New Mechanism\*\*** - B. Palenik, Ralph M. Parsons Aquatic Sciences Seminar, 4pm, Rm 48-316.

**Radiation Emission by Ballistic Electrons in Semi-Conducting Superlattices\*** - Dr. M. Batton, Technion, Israel Institute of Technology, Plasma Fusion Ctr Seminar, 4pm, Rm NW17-218.

**Achieving High Resolution Through a Turbulent Atmosphere\*\*** - Dr. W. Beavers, MIT Lincoln Laboratory, Electromagnetic Wave Theory Group Seminar, 4pm, Rm 36-372.

**Swedenborg's Flying Machine\*** - Henry Soderberg, former vice president, Scandinavian Airline System, MIT Museum Lecture in conjunction with Emanuel Swedenborg: 18th-Century Scientist Exhibit, 7pm, MIT Museum.

**TBA\*\*** - Vin Grabill, video artist, MIT Council for the Arts/Residence and Campus Activities Office/UASO/School of Humanities and Social Sciences/School of Architecture and Urban Planning Lecture on the Arts, 7:30-9pm, Zeta Beta Tau Fraternity.

### Thursday, November 10

**Modeling Asymmetric RF Discharges for Materials Processing\*** - Prof Michael Lieberman, University of California, Berkeley, Plasma Fusion Ctr Seminar, 2pm, Rm NW17-218.

**Dial "Entertainment"\*** - Andrea West, AT&T; Robert Lorsch, Teeline, Inc; Sherry Bellamy, Esq, Jones, Day, Reavis and Pogue, Communications Forum, 4-6pm, Rm E25-111.

**Nuclear Astrophysics: Why is There Oxygen\*\*** - Prof Steven Koonin, California Institute of Technology, Physics Colloquium, 4:15pm, Rm 10-250. Refreshments served, 3:45pm, Rm 26-110.

### Friday, November 11

**Ionospheric Plasma Bubbles at the Equator\*** - Dr. Roland Tsonoda, Stanford Research Institute, Plasma Fusion Ctr Seminar, 4pm, Rm NW17-218.

## Readings

**Robert Pinsky Reads His Poetry\*** - MIT Writing Program Reading in conjunction with the release of Pinsky's latest book *Poetry and the World* (Ecco Press), Nov 10, 8pm, Rm 6-120. Question-and-answer period follows reading. Reception, 9pm, Rm 14E-304.

## Films

**Monday Night Film Series\*** - MIT Film/Video Dept, Mons. (exc holidays), 7pm, Wiesner Bldg Bartos Theater (E15). This term's focus will be the filmmaker's perspective of America.

**The Passion of Remembrance\*\*** - MIT Program in Women's Studies Multiple Exposures: Gender/Race/Community/Identity Film directed by Maureen Blackwood and Issac Julien, Fri, Nov 11, 7pm, Bartos Theater. The story of Maggie Baptiste, young Black British woman in search of cultural identity. Speaker: Coco Fusco, film critic.

## Community Meetings

**Alcoholics Anonymous (AA)\*\*** - Meetings every Tues, 12-1pm; Thurs, 12-1pm, Rm E23-364. For info call Sarah, x3-4911.

**Al-Anon\*\*** - Meetings every Fri, noon-1pm, Health Education Conference Rm E23-297 and every Tues, noon-1pm, Rm 1-242. The only requirement for membership is that there be a problem of alcoholism in a relative or friend. Call Sarah, x3-4911.

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

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

**Overeaters Anonymous (OA)\*** - Meets Thurs, 1-2pm, Rm E23-364. On requirement for membership is the desire to stop eating compulsively. Info: Sarah, x3-4911.

**MIT Faculty Club\*\*** - Summer hours: Mon-Fri, buffet luncheon, noon-2pm. Info: x3-4896, 9am-5pm daily.

**Evaluating Nursery Schools and Day Care Centers for Threes, Fours and Fives\*\*** - Child Care Office Parent Workshop, Thurs, Nov 3, 12-1pm, Rm 4-148. Information and discussion on such issues as developing a sense of your child's needs, identifying your own values, research on quality in programs, how to be a good observer. Registration/info: x3-1592. Juice provided; bring a lunch.

**MIT Wives' Group\*\*** - Morning Group: Nov 2 - Museum of Science; info: Yukari Yamaguchi, 247-6415, Shoshana Zur, 237-7848 or Yvonne Von Estorf, 868-5712. Nov 9 - John F. Kennedy Museum; info: Claire Chevaier, 577-8429 or Anne-Sophie de Haut de Sigy, 876-6480. Afternoon Group: Nov 2 - "The Boston Area National Parks" - Slide show by Park Ranger Mike Bradford. Nov 9 - "The Most American Holiday: Thanksgiving" - Preparation and Tasting - Debra Samuels, Eats Meets West. Afternoon group meets 3-5pm, Ashdown House Hulsizer Rm. Babysitting provided in Ashdown House West Dining Rm; bring diaper if necessary.

**Women's Support Group\*\*** - For wives and companions of graduate students working on dissertations or attempting to cope with over-demanding work pressures. Group will meet weekly Tues, 7-8:30pm, E23. Those interested in joining should contact Dr. Charlotte Schwartz, MIT Medical Dept, x3-2916.

**Working Mothers Support Group\*\*** - Meets every other Wednesday, 12:15-1:15pm (drop in any time), Rm E25-202. Next meetings: Nov 9 & 23. Join an ongoing support group to help with the hassles of being a working mother with young children. We discuss the usual problems, including daycare, work conflicts, siblings, summer camps, awful behavior of kids in public, coping with sleep deprivation, etc. New members and potential parents always welcome. Info: Janette Hyde, x3-4290.

**Informal Embroidery Group\*** - MIT Women's League Group meets Nov 9, Nov 30, Dec 14, 10:30am-1pm, Rm 10-340. Tea and coffee served.

## Health Education

**Women and Fitness\*\*** - Medical Dept Health Education Service Class, Nov 7 & 14, 12-1pm, Rm E23-297. Fee: \$20/2 sessions. Advance registration required; call x3-1316 or visit Rm E23-205.

## MITAC

MITAC, the MIT Activities Committee offers discount movie tickets for General Cinema (\$3) and Showcase (\$3.50). **Please Note:** Due to the recent purchase of USA Cinema by another cinema chain, USA Cinema tickets are not longer available. 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. Tickets are sold in Lobby 10 and Lobby E18 on Fridays, 12-1pm. Lincoln Lab employees may purchase tickets in Rm A-263 from 1-2pm, Tues thru Fri only.

Check out our table of discounts for dining, musical and cultural events available to you through MITAC.

Tickets are still available for:

**Auto Show.** Sat-Sun, Nov 5-13, Bayside Expo Center. Is that '68 Chevelle gurgling its way through the Merge? Perhaps it's time to wander over to the Auto Show at the Bayside Expo Center. Explore the driver's seats of some of the sleekest and smoothest modes of modern transportation. All kinds of new '89 vehicles view: everything from Buicks to BMWs... Mazdas to Mercedes... plus light trucks, too - both domestics and imports. Tickets \$4/ea (reg \$7/ea), available in 20A-023.

**Forbidden Broadway.** Sun, Nov 20, 3pm, Terrace Rm, Boston Park Plaza Hotel. Immerse yourself in parody. Enjoy a highly-rated afternoon of spoofs of well-known Broadway shows and stars - including *Les Mis*, *Phantom of the Opera*, *Annie*, *Ethel Merman*, *Streisand*, and more! A show "... hilariously laced with zingers, digs, jabs, and insults" (Nancy Tuttle, Lowell Sun)! All in a charming cabaret setting. "... the funniest, and wickedest show in Boston" (Carolyn Clay, Boston Phoenix). Joyce Kulhawik & Kevin Kelly loved it, too! Cost: \$11.50/ea (reg \$16/ea). Reservations in MITAC office.

**Dog Show.** Sun, Nov 20, 9am-approx 4pm, Bayside Expo Ctr. Admire the grace, pomp, and unique character of springers, dalmations, retrievers, and more, at the North Shore Kennel Club's Dog Show. Over 120 recognized breeds, judged on their inherent & learned canine abilities. Tickets \$5/pp, & are avail. in the MITAC office.

And the new December events:

**Boston Bruins vs. Minnesota North Stars.** Thurs, Dec 1, 7:35pm, Boston Garden. Cradled on the edge of victory, the puck makes its way with incremental and aggressive velocity - to the net, and the goal! Tickets \$21/ea.

**Messiah.** Sat, Dec 3, 7:30pm, Symphony Hall. Don the patent leathers and finest winter wools and stroll to an evening of inspirational choral mastery. The *Messiah*, a Boston tradition since 1815, is the quintessential holiday treat. Tickets \$27.50/pp (reg \$32/pp).

**Scrooge!** Sun, Dec 4, 2pm, New England Life Hall. Bah humbug! Join Ebenezer Scrooge, "... a host of hilarious and horrifying ghosts, and a line-up of lively Londoners as they embark on a spine-tingling and heart-warming adventure." A true toast to the season. By the Boston Children's Theatre. Tickets \$3.50/each (reg \$4).

**Boston Classical Orchestra.** Wed, Dec 7, 8pm, Faneuil Hall. Embrace the holiday season with a joyous celebration of classical music by the BCO. Selections include: Rossini, "La Scala di Seta" Overture; Haydn, Symphony No. 60 ("Diabatta"); and Mozart's Serenade No. 1 in D, K. 100. Tickets \$8/ea (reg \$12); available in the MITAC office.

**Christmas in Newport.** Sat, Dec 10, Glimpse Bellevue Avenue, in all its holiday finery, on a day trip to historic Newport. Visit 2 stunning mansions, the 1852 Chateau-sur-Mer, and The Elms. The afternoon is free for lunch and browsing around Newport. Bus leaves West Garage 8:30am; returns approx 5:30pm. Cost: \$18.50/adult; \$15.50/child (under 12). Reservations in the MITAC office. *One non-smoking bus.*

**Boston Ballet's The Nutcracker.** Sun Dec 11, 6:30pm, Wang Ctr. Join Clara, a host of corpulent mice, the Sugar Plum Fairy, and more in an enchanting and enduring holiday tradition. Pure and delightful magic, with music by Tchaikovsky. Tickets \$26.50/ea (reg \$29/ea), available in the MITAC office.

**Christmas Revels.** Sun Dec 18, 8pm, Sanders Theatre. Toast to the holidays and the arrival of the solstice as the Christmas Revels perform, through traditional dances, songs, & drama, the rites and rituals of the holiday season - this year in storytelling form "charting the magical, timeless journey of a boy on a mid-winter quest..." Tickets \$16/adult; \$13/child (under 12). *Tickets are limited.*

**First Night: New Year's Celebration of the Arts.** Sat, Dec 31. A fond adieu to 1988, and warm salutations to 1989. Greet the New Year with theatrical/artistic fanfare with Boston's First Night activities. Everything from vaudeville & theatre to jazz and the martial arts. A First Night button on the lapel is admittance to all programs. Buttons are \$4/ea; available in the MITAC office.

**Phantom of the Opera/NYC Day Trip.** Sat, Feb 25, 1989. Treat yourself to one of the most talked about shows on Broadway. The Phantom, a gothic romance, explores the unsatisfying and tormented relationship between Christine, Raoul, and the Phantom. A magnetic, mystifying performance - perched on the cusp of suspenseful drama. At the Majestic Theatre, Sat, Feb. 25, 2pm. Also, a limited number of spaces are available for round-trip NYC fare only. Tickets: \$73/pp/bus + show (\*a perfect holiday treat!); \$23/pp/bus only. *Ticket sales for the Phantom begin Nov 8, 10am. Limit 2 tks/pp/with MIT ID.* Reservations in MITAC office. 2 non-smoking buses; 1 smoking bus.

**Warning.** Don't make any plans for the weekend of Jan 13-16! Ed is back and he is planning a fabulous SKI TRIP - bigger, better, and wilder than the last! More info later.

**F.Y.I.** Put your bowling shoes away in storage and try something different on a Friday night. Fri, Nov 4, 6-10pm, the Broomstones of Wayland will be sponsoring a demonstration of the sport of curling. "Throw a few rocks," skate on ice w/out ice skates and learn what makes this sport unique. Call Ethan Bradford, x4048 (L. Lab) for more info.

**Greater Boston Books(\$25/ea), City Books (\$1/ea), & Ski Cards (\$15/ea) are Here.** Offering savings and discounts on a variety of goodies. Great holiday treats!

**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 and \$1/pp/child. And... Stegosaurus admirers - take note! The Return of the



# i/s

News about information systems throughout MIT

## Macintosh or IBM: Which Is Right For The Job?

Gary Welsh and Susan Jones • Information Services

When choosing a microcomputer, the prevailing wisdom has been to select the software first and then get the hardware that runs it. A few years ago that usually meant some kind of DOS machine – an IBM PC or compatible. Today, you can meet your general software needs (spreadsheets, word processors, graphics, databases, and file managers) with fully-functional packages for either a Macintosh or IBM platform.

### Specialized Software

If your needs are specialized, you may still need to be concerned about matching software with a particular machine. Specialized software is generally created by small companies to do a specific task for one well-defined industry – for example, simulation software for engineering applications.

Because of the limited resources of these small developers, they often target their software for whichever system has the largest share of a given market. For this reason, if you need to use specialized software, be sure to buy the computer that runs it.

### Looking at Your Office Environment

If you don't have specialized needs, the process of choosing your computer becomes more subjective. A common situation at MIT involves an IBM- or compatible-based office that wants to buy Macintoshes because of their easy-to-use interface or graphics capabilities.

To begin making a decision, analyze the work situa-

tion in which you plan to use the computer. Do you need to share computerized information with others in your office? How much and how often? If you don't need to exchange information between different machines, then you could have a Mac in an office full of IBMs – compatibility is not an issue.

If, at the other end of the spectrum, the need to exchange data justifies installing a network, having an office of IBM computers doesn't force you to stay with IBMs when buying new computers. The recent availability of inexpensive and easy-to-use hardware and software (such as TOPS) to connect IBMs and compatibles to Macintosh computers means that an office can take advantage of the relative strengths of each platform.

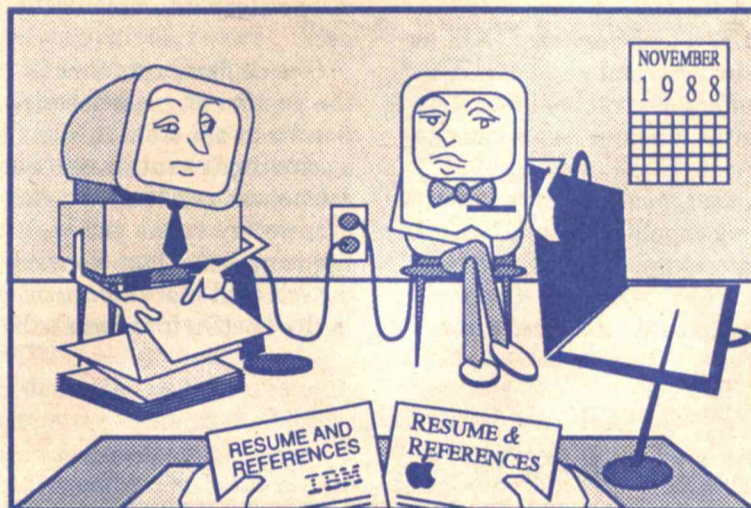
In any case, don't let an office full of older equipment determine your computer acquisition strategy. For example, owning several 1981-vintage IBM PCs shouldn't compel you to buy 1988 IBM PS/2s. Those PCs, which should probably be considered functionally obsolete, make a poor foundation for planning your next purchase.

### Relative Strengths

Macintosh and IBM microcomputers have different strengths. For now, Macs dominate the market in graphics-based applications and IBMs take the lead in business applications. Below we evaluate how the two platforms shape up in five key areas.

**1. Database Software.** Although an increasing number of relational database products are available for the Macintosh, if you need to develop a large custom database, you'll benefit from the maturity and greater capability of databases in the IBM environment. It's also harder to find programmers doing custom database work on the Macintosh.

**2. Desktop publishing.** Most users find the Macintosh a more powerful and cost-effective platform for desktop publishing than the



IBM. Advantages include the Mac's consistent user interface and the wealth of graphically oriented software that's been developed for it. Another plus is that you can easily link the Macintosh to a va-

riety of PostScript printers.

**3. Printer and File Sharing.** The Macintosh has a built-in network interface that makes sharing printers with other Macs as simple as connecting them

with phone wire. Macintoshes were designed to include networking capability which, among other things, means that several users can share a printer. The addition of wiring and networking software such as AppleShare (dedicated server required) or TOPS lets users share files easily.

IBMs and compatibles, unfortunately, aren't designed that way. Sharing printers is invariably more expensive and technically more problematic. The IBM options include an array of mechanical and electronic switch boxes that require bulkier cable or more complicated local area network alternatives.

(continued on page 3)

## New Hardware at MIT Microcomputer Center

Virginia Gilbertie Williams • Microcomputer Center

The Microcomputer Center is expanding its product line. Recent additions include the IBM Personal System/2 Model 30 286, the Macintosh IIX, and the Apple Scanner, as well as new configurations of the Macintosh SE and II.

### IBM PS/2 Model 30

In September, IBM introduced the PS/2 Model 30 286. It's up to twice as fast as the original Model 30, and uses many of the adapter cards available for the IBM PC/AT. It has the Intel 80286 microprocessor, and the IBM PC/AT bus combined with many of the advanced, built-in features of the PS/2 line: a video graphics array, serial and parallel ports, disk controllers, and a 1.44-MB high-density 3.5" diskette drive. The Micro Center sells the Model 30 286 with a 20-MB fixed disk drive, 640K of random access memory (RAM), color monitor, and IBM Enhanced Keyboard for \$2300.

### Macintosh IIX

Apple also announced a new computer in September, the Macintosh IIX. It has the

Motorola 68030 microprocessor with a Motorola 68882 math co-processor, and 4 MB of RAM, that lets you run memory-intensive programs like *MultiFinder* and *HyperCard*. For Apple UNIX users it has the built-in Paged Memory Management Unit needed to run the A/UX operating system.

The Mac IIX has a 1.44-MB disk drive called the Floppy Disk High Density (FDHD), which can read and write to all Mac disks. When used with Apple's File Exchange software, the FDHD can read and write to MS-DOS and Apple II formatted diskettes. The Micro Center sells the Mac IIX with an 80-MB hard disk, a FDHD, 4 MB of RAM, color monitor, enhanced video card, and Apple Extended Keyboard for \$7400.

### Apple Scanner

The Microcomputer Center now sells the Apple Scanner, which lets you import graphics to the Macintosh and save them in a variety of formats. It can scan images at a resolution of up to 300 dots per inch, and operates in one of three modes: line art (for line

drawings), half tone (for photographs) and gray scale (for graphics with shading).

The Apple Scanner has a "flat bed" and works like a copy machine – your original stays in place while the scanning mechanism moves below the glass. This lets you use material of an irregular size or shape; the cover adjusts for thick originals such as books and magazines. The scanner comes with *Apple Scan* and *HyperScan* software. *AppleScan* lets you preview an image, enlarge or reduce it, and edit it bit by bit. *HyperScan* places an image directly into a *HyperCard* stack; you can use *HyperCard's* tools to make adjustments. The Micro Center sells the Apple Scanner with software for \$1350 (cabling sold separately).

Recently, the Microcomputer Center began carrying two new Mac configurations: the SE with a 40-MB hard disk, 2 MB of RAM, and Apple Keyboard for \$3350; and the Mac II with 40-MB hard disk, 4 MB of RAM, color monitor, enhanced video card, and Apple Extended Keyboard for \$6500. ●

### IN THIS ISSUE:

- Athena Update
- MIDAS Means Data-to-Go
- Q&A and PC-File+
- Page Numbering Tip



## Highlights from the Seybold Desktop Publishing Conference

September brings the end of summer, a new school year, and the annual Seybold Desktop Publishing Conference in California. People from around the world are drawn to Seybold to hear industry leaders talk about new and future developments in desktop publishing, and to see the latest products. Several IS writers attended the conference this year. The following report is compiled from their notes.

Although most of the talk at Seybold was not directed at those of us using word processing packages to create simple newsletters and brochures, we will be affected by the issues discussed by industry developers and executives. Leaders from companies such as Adobe, Aldus, Apple, Microsoft, NeXT, and Sun talked about the future of desktop publishing; industry watchers questioned them on how they plan to settle issues of standards and compatibility.

Some of the discussion was visionary: universal compatibility, the move beyond paper-based communication, expanded software and hardware power. Much of the discussion focused on the controversy around standards for workstation operating systems and user interfaces: will UNIX become the standard, as favored by high-end workstation developers, or will the IBM OS/2 and Macintosh operating systems maintain their dominance?

### Industry Standards

Industry analysts, like Jonathan Seybold, and industry leaders, such as AT&T, DEC, and Sun, see UNIX as the eventual winner. UNIX offers several benefits: it runs multiple tasks simultaneously, allows multiple users, has extensive networking capabilities, and can operate completely "behind the scenes" of an easy-to-use graphical interface. How-

ever, other companies, including Adobe, Apple, and Microsoft, continue to support the Macintosh and IBM OS/2 operating systems.

Many speakers, lobbying for software and hardware compatibility across the board, made analogies to audio equipment and cars. A record, tape, or CD plays on any properly configured audio system — regardless of the component manufacturer; all cars have the accelerator on the right and the brake on the left. In an ideal computer world, any piece of software could run on any computer system, and all would present a consistent interface to the user.

One *de facto* standard is the PostScript page description language from Adobe. In a sometimes heated exchange, Adobe was challenged on its proprietary terms and high licensing fees. Many observers felt that more competition in the PostScript arena will

lead to innovation, better performance, lower prices, and a wider variety of products on the market.

### New Directions

Over the last few years, desktop publishing has expanded beyond its initial realm of simple page layout to include complex graphics support, complete pre-press preparation, and high-resolution printing, all in one system. To support these functions, the emphasis is shifting to powerful workstations, including Suns, Macintosh IIs, and IBM PS/2 Model 80s.

Meanwhile, in the area of text processing, vendors debated where to draw the line between page layout and word processing. Ventura defined word processing as an authoring tool and desktop publishing as a finishing tool, two distinctly different processes. According to Aldus, word processing and

page layout will be fully integrated one day. MicroPro held that most users will want word processors with strong formatting features, but won't need the layout capabilities.

Many product developments discussed at Seybold may not have an impact on the average user for a few years, but they are definitely in the future of computer-aided publishing and will probably supplant today's widely used products. These developments include the move toward 600+ dot-per-inch printers, the push for color printing, CD-ROM technology, enhancements in typography, and networked publishing environments.

By the way, don't get used to "desktop publishing," a phrase that's on its way out as electronic publishing becomes more sophisticated. The phrase being touted at Seybold was "computer publishing." ●

## Athena Continues To Grow

Catherine Avril • Project Athena

In its sixth year, Project Athena continues to make a significant contribution to undergraduates' MIT experience, as shown by statistics and a June 1988 survey of students. The numbers alone present an impressive picture of how Athena is used. There are more than 7,000 active accounts; on an average day, users send 8,000 to 9,000 mail messages from Athena machines. Some of these messages are directed to Athena's On-Line Consulting service, whose consultants answered about 12,000 questions over the '87-'88 academic year. Printers, particularly, were put to the test

during that same period, with more than 3,000,000 pages printed.

An indication of how students are using Athena comes from the June 1988 survey of 25% of MIT's undergraduates. Of the 35% who responded to the survey, about half made use of the Athena mail and message facilities. Nearly 60% used it for word processing, while 40% applied Athena to required homework during the Spring semester. Other significant uses included programming, storing personal data, and, of course, playing games. Overall, 80% of the responding students said they used Athena facilities regularly, and that such

use averaged out to more than 7-1/2 hours per week. Students continue to place



heavy demands on Project Athena's facilities, especially as semesters draw to a close.

Project Athena maintains thirty-three clusters with a total of over 750 worksta-

tions. Twelve clusters are open to all undergraduates; the remaining clusters are located in departments, developmental areas, living groups, and an Athena staff area. Four facilities, including the "electronic classroom" in Building 37, contain projection equipment. A special visual workstation facility occupies the Building 11 "fishbowl," where students can make use of interactive videodisc courseware. On a more mundane level, five new DEC LN03 PostScript printers have recently been deployed, and there are plans to add more before this semester ends.

Over 30 new courses have

begun using Project Athena resources this fall, bringing the total to over 100. Based on the June 1988 survey, 30% of undergraduates took one course requiring the use of Athena during the past academic year, while an additional 10% took two or three courses requiring Athena.

Initially set up as a five-year experiment, Project Athena was granted a three-year extension last January. As it continues to grow, students' demands and expectations for computing facilities at MIT will also increase. Athena looks forward to helping meet these demands and to enriching the educational experience at MIT. ●

## E-Mail Clinic

**Q:** If I have a CMS file that I want to send via electronic mail, how do I get it into an outgoing mail message?

**A:** When you enter the mail command, include the option `FILE filename filetype`. For instance, to send a status report to your boss, the mail command would be as follows:  
mail boss (file status report

Remember: all options in CMS commands must be preceded by a left parenthesis.

Mail prompts you for a subject and then displays the mail file containing the CMS file you requested as the mes-

sage text. You can add, delete, and edit the text before giving the `SEND` command.

If you forget to use the `FILE` option, you can use the `XEDIT GET` subcommand to insert a file while you are in `MAIL SEND` mode. To do this, enter at the prompt:

```
get status report
When the file appears in the message area of your mail, you can edit the file before giving the SEND command.
```

**Q:** Can I find out whether a recipient of one of my mail files has looked at it?

**A:** You can't verify that a recipient reads mail

from you, but you can find out if he or she has opened it. Include `ACK` as an option in the mail command, and you'll receive a message of acknowledgement when the mail file has been opened. For example, when sending the status report to your boss, your mail command would be:

```
mail boss (file status report ack
```

If you decide that you want an acknowledgement after you start writing your message, return to the prompt and enter:


```
options ack
ACK only works between CMS systems running Rice Mail. This includes the MIT-VMA, C, and D machines. ●
```

## Statgraphics Patch Is Here

**S**TSC recently provided MIT with corrections for version 2.6 of *Statgraphics*. The patch is available, free of charge, at the Microcomputer Center; bring a 5.25" double-sided, double-density blank disk and proof of purchase when you come for the patch.

The corrections affect the analysis of variance and data import procedures. Two files have been fixed, one each on program disks 1 and 3; a third file on the startup disk has been updated.

If you have questions, contact IS Consultant Art Anger at x3-7044. ●

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## Meet Jack Donahue

Susan B. Jones



In an ancient tale, King Midas's touch turned everything to gold. Jack Donahue has the MIDAS touch, but his precious resource is up-to-date, timely information. Donahue, Associate Comptroller, is custodian of a large portion of the Institute's financial and accounting information. He has been a key figure in the development and deployment of MIT's Information Distribution and Access System (MIDAS; see "MIDAS: Data-To-Go For MIT Administrators" on this page).

Last spring, Donahue came to the Comptroller's Accounting Office from Lincoln Lab, where he was in charge of the fiscal office. While there, he was responsible for creating a mainframe application that transferred fiscal office accounting data to separate departmental accounts.

Users could access the data on a terminal and create reports by running programs maintained by the central accounting office. Donahue's Lincoln application did not include a way to download data to a workstation or personal computer.

When he arrived on campus, Donahue set out to provide similar software for the

Comptroller's Accounting Office (CAO). He heard about the MIDAS project, and seized the opportunity to develop the "MIDAS CAO Application." This program lets authorized administrators access and download accounting information for their departments.

Donahue's association with MIT began in 1952 when he worked as an accountant in the Research Fiscal Office. In 1969 he moved to the newly created Mass. Health and Education Facilities Authority, which was founded to finance construction of hospitals and educational institutions in the state. In the early seventies he went to work at Draper Lab, during its divestment from MIT, and then in 1979 he headed west to Lincoln Lab.

Although he jokes that nothing is more fun than working at MIT, Donahue admits to enjoying downhill skiing and tennis. And while he makes no claims to royalty, he does serve as a member of the Arlington Town Meeting and as Chairman of the Board of Minuteman Regional Vocational Technical High School. ●

## Mathematica Developer to Visit Institute

At the December 7 meeting of the BCS MacTechGroup, Steve Wolfram will present his ground-breaking program, *Mathematica*. The program is like a real-time blackboard that lets you enter and compute equations in numeric or symbolic forms.

At MIT, *Mathematica* has been compared to MAC-SYMA, an algebraic manipulation system developed by the Lab for Computer Science to run on mainframe computers. However, MACSYMA lacks *Mathematica's* graphic capabilities and the easy-to-use Macintosh interface.

*Mathematica* converts expressions into 3-D, shaded-surface plots. It operates on

400 different math functions and incorporates about 300 built-in utility commands. With these capabilities, the program is quickly attracting the attention of MIT researchers, professors, and graduate students.

Wolfram will demonstrate the Macintosh version of his creation. Other versions are in the works, including those for Sun, IBM, and NeXT workstations.

The user group meeting, which is open to all members of the MIT community, will be held in Room E51-329 (Sloan School) at 7pm. A copy of *Mathematica*, generously donated by Wolfram Research, will be raffled off at the meeting. ●

## MIDAS: Data-To-Go For MIT Administrators

Tim McGovern • Architecture and Strategic Technology

MIT administrators may soon find they can do their work with greater speed and dexterity, thanks to a new system called MIDAS.

MIDAS stands for MIT's Information Distribution and Access System. MIDAS lets authorized users retrieve data from central administrative offices, such as the Comptroller's Accounting Office (CAO), via a file server on the IS mainframe, MITVMA.

### A Central Place for Data

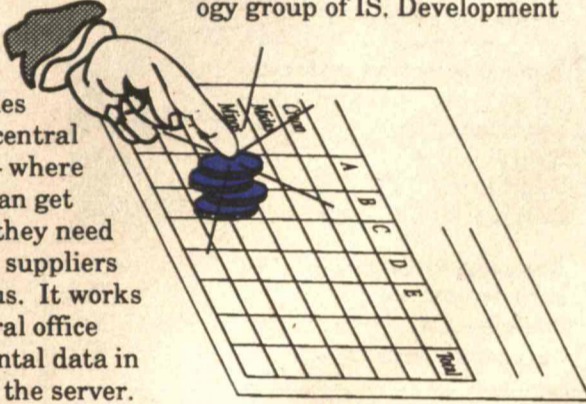
MIDAS provides one convenient, central place — on-line — where administrators can get the information they need from the various suppliers of data on campus. It works like this: a central office places departmental data in separate files on the server. An administrator connects to MIDAS via a workstation — a Macintosh or IBM microcomputer — and, using simple commands, downloads the appropriate files to his or her workstation. The data in the downloaded files can be imported immediately into selected programs on the local workstation, such as *Microsoft Excel* and *Lotus 1-2-3*.

Because the data are moved electronically from one machine to another, there is no need to rekey the data. This translates into fewer errors and greater timeliness — once the central office puts the files on MIDAS, they are available for the taking.

### Development and Testing

MIDAS is being defined, developed, tested and en-

hanced by a team of representatives from several MIT departments. Prime movers for the creation of a prototype were John Hynes, in the Provost's office, Jack Donahue in the CAO, and a number of research department administrative officers, including Bob Davine, Dee Dow-Chase, Jean Dzengeleski, and Kathleen O'Sullivan. The mainframe software for MIDAS is being developed by the Architecture & Strategic Technology group of IS. Development



of microcomputer-based applications is in the hands of IS Consulting Services.

The "MIDAS CAO Application," developed by Jack Donahue, is now being tested. This application offers a menu of choices from which an administrator selects either all of a departmental file, such as a chart-of-accounts, or subsets, such as a worksheet file similar to the summary statement for an individual account. Before downloading, the administrator can run CAO-maintained mainframe programs that display the data in various report formats.

### Looking Ahead

A group of administrative officers is defining other

microcomputer applications, geared toward the functions they perform, that can take advantage of MIDAS. These applications are being developed for packages recommended for the Administrative Work Station (AWS) and supported by IS. Jules Hurwitz, an IS consultant, is working on an *R:Base* database application for the IBM PC, while Carolyn Fuller, in the CAO, is designing one in *4th Dimension* for the Macintosh. Administrators will be able to use these applications to receive data that is downloaded from MIDAS.

MIDAS will continue to change and incorporate features suggested by those who use it. Plans include the addition of a function that will let administrators deposit the data they generate into MIDAS. The appropriate central office can then collect it for processing.

### Getting Access

To gain access to MIDAS, you will need a workstation that is equipped with a communications package, a connection to the MITVMA mainframe, and an MITVMA account. Experiments are now under way to make MIDAS accessible via the campus network. You will also need to contact the central administrative office whose data you need and ask to be added to its MIDAS subscription list. The office can tell you what data is distributed and how often.

For more details about MIDAS, call Tim McGovern at x3-0505 or send electronic mail to TJM@MITVMA. ●

## Mac or IBM?

(continued from page 1)

**4. Large Local Area Networks (LANs).** On LANs of 20 or more nodes with lots of traffic, IBMs and compatibles perform better than Macintoshes. The IBM world boasts powerful high-capacity file servers, robust LAN software (including Novell and Banyan), and topologies such as Ethernet and Token Ring. With these advantages, IBM networks can handle the heavy volume of traffic created by multiple users of data-intensive programs such as large databases, accounting systems, and computer-aided design tools.

However, the increasing popularity of the Macintosh is encouraging vendors like Novell and Banyan to develop products that will integrate Macintoshes into networked environments.

**5. Ease of Use.** The Macintosh's graphic interface and consistency of commands between applications makes it, in general, an easier system to learn and use. For many people, a shorter learning curve is one of the Mac's strong suits. In some cases, using a Macintosh means never having to read a manual. In addition, the Mac's graphic interface has led to the development of drawing and painting programs that weren't available until recently on the IBM side.

In some cases, though, software available on the IBM and compatibles combines extensive capabilities and high performance with relative ease of use, resulting in products some offices feel they can't do without. Two examples are *WordPerfect*

and *R:Base*, word processing and database management packages, respectively. Since many offices use computers primarily for word processing and database management, a preference for these packages could dictate the purchase decision.

### Still Need Help?

While this article provides pointers for choosing between Macintoshes and IBMs or compatibles, each office environment has its own idiosyncrasies. If you would like further help in thinking through your microcomputer needs, call the Help Line, x3-0001, to set up an appointment with an IS consultant. The consultant can discuss your computer needs with you. There is no charge for this initial consultation. ●



## Two File Managers Make the Recommended List

Jules Hurwitz • Information Services

Two file managers were recently added to the list of recommended software for the IBM PS/2 Administrative Work Station: *PC-File+* and *Q&A*. These products are less functional than more powerful database software such as *R:Base*, but they are easier to learn and use, and are usually quite adequate for most routine office needs. You can use them for record-keeping, mailing labels, mail merge, and report generation.

*PC-File+* is one of the best known shareware packages for IBM PCs and compatibles. Instead of spending money on advertising, the vendor allows copies to be made and distributed at no charge. If you use a copy and are satisfied with the program, you can send in payment and become a registered owner. This entitles you to a copy of the *PC-File+* documentation, notices of updates, and access, by phone, to *PC-File+* technical support.

*Q&A* is a commercial product from Symantec Corp. It has greater size parameters than *PC-FILE+* (see checklist), and a price tag which reflects that greater capacity.

Features Checklist		
	<i>Q&amp;A</i>	<i>PC-File+</i>
<b>Size parameters</b>		
Max. no. characters per field	1,678	200
Max. no. characters per record	16,780	3,000
Max. no. fields per record	2,400	70
Max. no. records per file	16,000,000	65,000
<b>Data types</b>		
Text	Yes	Yes
Integer	Yes	Yes
Date	Yes	No
<b>Input screens</b>		
Defaults provided	No	Yes
Create customized screens	Yes	Yes
<b>Record selection criteria</b>		
Select using "wild card" characters	Yes	Yes
Select using NOT	Yes	Yes
Select using AND	Yes	Yes
Select using OR	Yes	Yes
Selection criteria can use parentheses	No	Yes
<b>Report generation</b>		
Form letters	Yes	Yes
Mailing labels	Yes	Yes
Save report formats	Yes	Yes

*Q&A* provides extensive documentation, including instruction manuals, as well as product upgrades, technical support, and a quarterly newsletter.

Both products are similar in what they can and can't do (see checklist). Some of the salient features of these two

file managers include:

**File import and export.** Both *Q&A* and *PC-File+* can import files from other packages such as *1-2-3*, and files in DIF or ASCII format. *PC-File+* has a particular advantage for *WordPerfect* users: it can export or import files to and from that package.

**Networking.** *Q&A* can be used on a local area network by several users at once; however, this option carries an additional cost — \$200 for each group of three workstations. *PC-File+* does not have networking or multi-user capability.

**Other features.** Both packages are menu driven. Both also provide basic word processing features for producing form letters and text reports. *PC-File+* can generate five different types of graphs and charts if your computer is equipped with an IBM or compatible graphics display.

You can buy *PC-File+* and *Q&A* in the MIT Microcomputer Center. *PC-File+* sells for \$65; payment registers you as an owner. *Q&A* sells for \$210. Before you buy one of these products, we recommend that you talk with an IS Consultant. You and the consultant can look at the packages in more detail, and compare them with a more powerful database manager like *R:Base*, to see which best suits your needs. Call the Help Line, x3-0001, to set up an appointment. ●

## Consultant's Hotline



Consultant's Hotline features some of the questions heard most often by Microcomputer Center consultants. If you have microcomputer questions, call x3-0001 or stop by the Micro Center, Room 11-209.

**Q:** On my Mac, how do I move *Microsoft Excel* spreadsheet data and charts to *Microsoft Word*?

**A:** In the spreadsheet, click and drag across the range of data you wish to move. Select **Copy** from the **Edit** menu; your selection is now in the clipboard. Select **Quit** from the **File** menu; if the **Save Large Clipboard** dialog box appears, click **OK**. Open the *Word* document and place your cursor where you want the spreadsheet data to appear. Select **Paste** from the **Edit** menu to insert the contents of the clipboard into your *Word* document.

*Word's* default tabs separate the data where the worksheet column changes occurred. To see the tab arrows, click **Show ¶** in the **Edit** menu. Align the columns as you want them by setting tabs in the ruler. You can also edit the data in *Word*.

To move an *Excel* chart, be sure it is complete — you cannot edit it once it's in *Word*. Activate the chart in *Excel* and choose **Copy Chart** from the **Edit** menu. Select **As Shown On Screen** from the dialog box and click **OK**. Quit *Excel*, open your *Word* document, and position your cursor where you want the chart to appear. Select **Paste** from the **Edit** menu. You can resize the chart once it's pasted into *Word*. Hold down the **SHIFT** and **⌘** keys and click on the chart, then click and drag the sizing handles on the border. ●

## The Art of Page Numbering

Gail Garfield • Information Services

Consider this scenario. You have a report with a cover page and table of contents. The report really starts on the fifth page and you want the first page number, a numeral 2, to appear on the sixth page. How can you do this?

Assuming that you are using *Microsoft Word* or *WordPerfect* on either a Macintosh or DOS machine, and have indicated where the page number will be placed on the page, follow the appropriate procedure below.

If you have other questions about page numbering or want to suggest a topic for a similar column, call IS word processing consultant Gail Garfield at x3-0878.

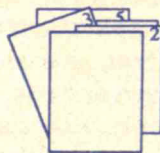
### Macintosh Word Processors

#### *Microsoft Word 3.01/3.02:*

1. Press **⌘-G** and type 5 to get to the fifth page.
2. Click **OK**.
3. Press **⌘-Enter** to insert a section break at top of page.
4. Be sure the cursor is positioned in the second section. Go to the **Format** menu and choose **Section**.
5. In the **Format Section** dialog box:
  - Click on **Page Numbering**.
  - Click on **Restart at 1**.
  - Click on **First Page Special**.
6. Click **OK**.

#### *Word Perfect 1.0.1:*

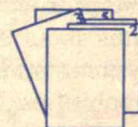
1. Press **⌘-G** and type 6 to get to the sixth page.
2. Go to the **Format** menu and choose **Page**.
3. Click on **Page Numbers**.
4. In the **Page Numbers** dialog box:
  - Type 2.
5. Click **OK**.



### DOS-Based Word Processors

#### *Microsoft Word 4.0:*

1. Press **Alt-F5** and type 6 to get to the sixth page.
2. Press **Ctrl-Enter** to insert a division break at the top of the page.
3. Press **Esc**, then type **F, D, P**.
4. In the **Format Division Page-Numbers** command:
  - Choose **yes** for page numbers.
  - Choose **Start** for numbering.
  - Type 2 at the **at:** prompt.
5. Press **Enter** to return to your document.



## Questions about the 5ESS?

By now, you've had a couple of days to get used to the new telephone system. If you have a problem or a question about this new service, call the appropriate number below.

Repair	x3-HELP
Customer Service	x3-3670
Billing	x3-3651
Voice Mail	x3-3677



MIT Information Systems

### Microcomputer Center

#### We're Moving!

Come visit our new store! We open at our new location in the lower level of the Stratton Student Center (W20) on Monday, November 28. The new Micro Center will feature a more spacious showroom, in-store hardware support, and improved availability on most items.

Business hours and phone number will remain the same: Weekdays: 10am to 4pm  
253-7686

Our last day of business in our present location (11-209) is Friday, November 18. We will be closed the week of November 21.

Room 11-209  
Hours: Monday-Friday, 10am-4pm

Hardware & Software Info: 253-7686  
Technical Questions: 253-0001

Computer questions?  
Call the Help Line  
x3-0001

PC Repairs  
MIT PC Support  
All IBM and Macintosh PCs  
Certified Technicians  
W91-103 x3-0815



Dinosaurs exhibit is at the Museum through November 27. Don't miss the Special Effects exhibit, thru Jan 1!

**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

**Tropical Night Party\*** - MIT Club Latino/GSC Party, Sat, Nov 5, 9pm-1am, Thirsty Ear Pub (Ashdown House). Admission: \$2.

**Japanese Lunch Table\*\*** - Every Tues, 1pm, Walker Rm 220. Bring bag lunch and speak Japanese with native speakers. All levels welcome.

## Movies

For the latest Lecture Series Committee movie and lecture information, call the LSC Movieline, 258-8881.

**Loves of a Blonde\*\*** - Lecture Series Committee Classic Movie, Nov 4, 7:30pm, Rm 10-250. Admission: \$1.50, MIT/Wellesley ID required.

**Brazil\*\*** - Lecture Series Committee Movie, Nov 4, 7 & 10pm, Rm 26-100. Admission: \$1.50, MIT/Wellesley ID required.

**Wall Street\*\*** - Lecture Series Committee Movie, Nov 5, 7 & 10pm, Kresge Auditorium. 26-100. Admission: \$1.50, MIT/Wellesley ID required.

**Jean de Florette\*\*** - Lecture Series Committee Movie, Nov 6, 8pm, Rm 26-100. Admission: \$1.50, MIT/Wellesley ID required.

**Meet John Doe\*\*** - Lecture Series Committee Classic Movie, Nov 11, 7:30pm, Rm 10-250. Admission: \$1.50, MIT/Wellesley ID required.

**Hope and Glory\*\*** - Lecture Series Committee Movie, Nov 11, 7 & 10pm, Rm 26-100. Admission: \$1.50, MIT/Wellesley ID required.

**Manon of the Spring\*\*** - Lecture Series Committee Movie, Nov 12, 7 & 10pm, Rm 26-100. Admission: \$1.50, MIT/Wellesley ID required.

**On Her Majesty's Secret Service\*\*** - Lecture Series Committee Movie, Nov 13, 8pm, Rm 26-100. Admission: \$1.50, MIT/Wellesley ID required.

## Music

**Noon Chapel Concert\*** - The Mystic Consort performs 16th & 17th century vocal and instrumental music, Thurs, Nov 3, 12:05pm, MIT Chapel.

**MIT Guest Artist Series\*** - Muir String Quartet performs Kreisler, Bartok and Mozart, with Marcus Thompson, viola, Fri, Nov 4, 8pm, Kresge Auditorium.

**MIT Chamber Orchestra\*** - Premier concert, Richard A.A. Laraga, conductor, performs Handel, Wagner, Mozart and Beethoven, Sat, Nov 5, 8pm, Killian Hall.

**Noon Chapel Concert\*** - Wendy Greene, mezzo-soprano and Robert Paul Sullivan, vihuela & guitar perform Spanish music of the 13th & 16th century, Thurs, Nov 10, 12:05pm, MIT Chapel.

**MIT Women's Chorale\*\*** - Meets Thurs, 8-10pm, Rm 10-340. All women of the MIT community welcome. Info: Jane Howard, 648-1936.

## Theater

**South Pacific\*** - MIT Musical Theater Guild, Nov 11-13, 17-19, 8pm, Kresge Auditorium. Tickets: \$8/general, \$6/students & seniors; \$7/faculty & staff; \$5/MIT students. Reservations: x3-6294.

**The Pirates of Penzance\*** - MIT Gilbert and Sullivan Players, Nov 11-13, 8pm, Rm 54-100. Tickets: \$3/MIT students; \$4/other students; \$5/MIT community; \$6/general. Info: 494-1618.

## Dance

**MIT Ballroom Dance Club Workshops\*** - Sun, Nov 6: Beginning Quickstep, 1-2pm, \$50/members, \$75/non-members; Intermediate Polka, 2-3:30pm, \$75/members, \$11/nonmembers; Professional Tango, 4:30-5:30pm, \$3/members, \$4/non-members. General dancing, 3:30-4:30pm, Lobby 13. No partner necessary. Info: 258-6554.

**MIT Dance Workshop\*\*** - Beginning Modern Technique, M-W, 3:30-5pm, Dupont Ctr T-Club Lounge; Intermediate Modern Technique, Tues-Thurs, 5:30-7pm, Walker Rm 201; Composition/Improvisation, Tues, 3-5pm, Dupont Ctr T-Club Lounge.

**MIT Dance Club Aerobics and Jazz Aerobics Classes\*** - Julia Halprin, instructor. Aerobics - Mon, 8-9pm, T-Club Lounge; Fri, 6:30-7:30pm, Dance Studio. Jazz Aerobics - Tues, 6-7pm, Dance Studio. Info: Julia, 492-1369 eves.

**MIT Folk Dance Club\*** - weekly dancing-Sun, International Dancing, 7:30pm, Lobby 13; Tues, Balkan and Western European Dancing, 7:30pm, Rm 16-310; Wed, Israeli Dancing, 7:30pm, Lobby 13.

**Rhythmic Gymnastics Classes for Women\*\*** - MIT Women's League classes, Thurs, 12-1pm, Rm 10-340. Info: Helena, 596-2396 eves.

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

## Exhibits

### LIST VISUAL ARTS CENTER

**Nancy Spero: Works Since 1950.** The first major US exhibition to examine the work of one of the most significant feminist artists working today. Paintings, mixed-media drawings, collages and hand-prints in both intimate and epic scale. Through Nov 27. **Carl Cheng: Visual Impressions of an Invisible Sculpture.** Santa Monica artist Carl Cheng, in residence during October, makes mechanical sculptures and environmental sculptures which explore the relationships between nature and technology, often involving organic elements such as wind, water, air currents, vapor and sand. Through Nov 27. **Richard Bolton - The Bear in the Marketplace: Anticommunism and Patriotism in Recent American Advertising.** Boston artist Richard Bolton creates an unconventional visual essay analyzing the influence of superpower politics on the rhetoric and imagery of advertising, incorporating actual print ads, tv commercials, photographs, charts and texts. (See related panel discussion, Nov 2). Through Nov 27. Weekdays, 12-6pm, Weekends, 1-5pm. Closed holidays.

### THE MIT MUSEUM

**MIT Museum Bldg (N52) - Billy Budd, Sailor: Bound to Vary.** Build of Book Workers exhibition of unique bookbindings created by 17 guilt members for copies of the married Mettle Press limited edition of the Melville classic. Nov 5 through Dec 31. **Exhibit Opening** - Nov 4, 5-7pm. (See related lecture, Nov 4.) **In Gratitude and Admiration: A Celebration of Walter Gropius.** Irreverent, playful and affectionate birthday cards sent to Walter Gropius on his 60th and 70th birthdays from many important 20th century artists, on exhibit to celebrate the 50th anniversary of the Gropius House. Through Dec 31. **Heinrich Hertz: The Beginnings of Microwaves.** Replicas of the original apparatus used by Hertz to prove James Maxwell's theory of electromagnetism (1864). The instruments are on loan from London's Science Museum. Catalogue available for \$7.95 at Museum Shop. Through Dec 31. **Goin' Fishin': Boston Fisheries 1900-1920.** An exhibit of photographs, models and equipment examining Boston's fishing industry. Through Jan 15, 1989. **Light Sculptures by Bill Parker, MIT '74.** Changeable, touchable plasma sculptures by the artist who developed this medium, ongoing. Hours: Tues-Fri 9am-5pm. MIT Museum closed to the public on Mondays; Open 12-4pm Sat-Sun; \$2 donation requested.

**Compton Gallery - Progetti Per Napoli.** Architectural designs for Naples, Italy, focusing on the complex problem of change in a historic setting. Organized by the University of Naples Architecture Dept. Through Nov 11. Co-sponsored by the MIT Museum, MIT Architecture Dept and Banco di Napoli. Gallery hours: Weekdays 9am-5pm, closed Saturdays.

### 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. **Half Models in Naval Architecture and Ship Building** - Half-models, ship drawings and photographs illustrate how the half model has aided ship and yacht designers and builders.

**Edgerton's Strobe Alley** - Exhibits of high speed photography. Main corridor, 4th floor.

### 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 - 1887: The Founding of the Lawrence Experiment Station.** Second in a series of three exhibits in commemoration of the Lawrence Experiment Station's 100th anniversary. **1904-05: A Pivotal Year for MIT.** Chronicles alumni and staff reaction to the most serious of several attempts to merge Harvard and MIT. Hall exhibit cases in 14N, 1st floor.

**Staying Healthy** - MIT Health Services Ctr Exhibition of drawings by the youngest members of the MIT Health Plan. Bldg E23 Atrium. Through Dec 2.

## Wellesley Events

**Jewett Arts Center\* - Entering the Picture.** 19th & 20th Century photographs from the Wellesley College Collection including works by Atget, Kertesz, Brandt, Cartier-Bresson, Abbott and Winogrand, Main Corridor Gallery, through Jan 8.

**Catholicism and Sexuality\*** - Rev. Paul O'Connell, pastor, Christ the King Church, Worcester, MA, Wellesley College Newman Catholic Ministry, Nov 2, 7:30pm, Davis Lounge Schneider Ctr.

**Jews and Christians in the Roman Empire: Roots of the Present\*** - Barbara Nathanson, asst professor of religion, Wellesley College Peace Studies Program, Nov 2, 7:30pm, Clapp Library Lecture Rm.

**The Different Faces of Motherhood\*** - Beverly Birns, PhD, Stone Ctr Colloquium, Nov 2, 8pm, Science Ctr 277.

**Allocation of Breadwinning Responsibilities in Dual-Earner Families\*** - Jean L. Potuchek, visiting research scholar, Wellesley College Ctr for Research on Women Seminar, Nov 3, 12:30-1:30pm, Cheever House, 828 Washington St, Wellesley.

**My Love Has Been Burning\*** - Japanese film directed by Mizoguchi, 1949, based on the life of Eiko Kageyama, leader of Meiji period women's movement, shown in conjunction with the Museum exhibition of Japanese photographs, Nov 3, 4:15pm & 7:15pm, 377 Science Ctr.

**Concert\*** - Wellesley College Blue Notes, a cappella ensemble with guest male singing groups, Nov 4, 8pm, Houghton Memorial Chapel.

**Poetry Reading\*** - George-Therese Dickenson, author, Wellesley College English Dept Program, Nov 9, 4:15pm, Clapp Library Lecture Rm.

**Election '88: What Happened and Why\*** - Prof Barbara Hickey, New York University, Lecture, Nov 9, 7:30pm, Clapp Library Lecture Rm.

**Friendship Among Older Women\*** - Ruth Jacobs, visiting research scholar, Wellesley College Ctr for Research on Women Seminar, Nov 10, 12:30-1:30pm, Cheever House, 828 Washington St, Wellesley.

**Concert\*** - Wellesley College Choir, Worcester Polytechnical Institute and Union College Glee Clubs performing Honegger's *King David*, Nov 13, 3pm, Houghton Memorial Chapel.

**MIT Cable Listings** - Submit announcement in writing to Rm 9-050. We prefer a day's warning, but faster action may be possible. Useful also for correcting errors, notifying about cancellations, and dealing with emergencies. If you have met the Tech Talk deadline, your announcement is automatically put on cable (except for exhibits and some multi-meetings programs).

We are now accepting requests via e-mail. Announcements are shown on MIT Cable channel 12, which is displayed on the receivers in Lobbies 7 and 10. Announcements should be of interest to the general MIT community. Classified ad type messages will not be accepted. Messages should include: date, title of event, speaker or sponsor, time and location. MIT Cable reserves the right to edit your message to fit the screen. Include your MIT phone number. E-mail your announcements to: tv-messages@telecom.mit.edu. Messages will usually be posted within 24 hours of their receipt.

Send notices for Wednesday, November 9 through Sunday, November 20 to Calendar Editor Rm 5-111, before 12noon Friday, November 4.

# MIT and the United Way: a volunteer profile

Last year the MIT community contributed more than a quarter of a million dollars to the United Way. This year's campaign began September 26 and will continue through the end of this month. But where do those dollars go? Who are we helping?

The profile below is the fourth in a series of articles on MIT volunteers your dollars help. These articles are based on interviews with people at MIT who volunteer for the United Way or one of its 198 affiliated agencies.



John Currie has been a Boy Scout for some 40 years.

More specifically, Mr. Currie, who is director of finance here at MIT, became a Scout as a kid and has been involved with Scouting ever since. Currently he is district chairman of the area covering Needham, Dedham, Dover and Westwood.

"The best part is just watching a boy come in and be a little klutzy and not too self-assured, and grow up into a man with leadership capabilities, etc.," said Mr. Currie. "You see that happen in almost all the boys. It's particularly rewarding to see in boys from broken homes."

The main vehicle for this transformation, he says, is the Boy Scouts' outdoor program and advancement through the ranks. Here boys go on day hikes or attend summer camp, all the while working to amass "Scoutcraft skills" such as backpacking, first aid and swimming that help promote the boy to the next Scout level.

As district chairman, Mr. Currie helps pull together large events that many different troops attend. For example, last October his district organized a "Jamboree on the Air" where "40 ham radio operators set up their rigs and Scouts got together for the weekend to use the

radios and talk to other Scouts in England, and anyone else they could get," said Mr. Currie.

While talking about the club, Mr. Currie threw out a kicker that caught this writer by surprise: "Did you know that there are girls in the Boy Scouts?"

"There are three levels in Scouting," he explained, "Cub Scouting, Boy Scouting, and Explorer Scouting." Though the first two levels are only for boys, "Explorer Scouting is designed for young people—boys and girls—in senior high school. It focuses around careers, and has some sort of focal point," said Mr. Currie.

For example, he said, "this summer at Boston University there was a law-enforcement Explorer conference that attracted 1500 boys and girls from across the country. At the conference there were presentations from police officers, lawyers and others."

The United Way helps make all of these programs possible by contributing "almost a quarter of our income," said Mr. Currie. The Greater Boston Council of the Boy Scouts of America, to which Mr. Currie's district belongs, has an operating budget of about \$968,000; the United Way allocation for 1987 was \$236,300.

—Elizabeth A. Thomson

## Rowe: Beware of billion-dollar scam

MIT personnel should be on guard against a continuing billion-dollar sales scam by out-of-state stationery and office-supply companies, according to Barry Rowe, director of purchasing and stores.

Representatives of these companies contact Institute personnel by telephone and offer brand-name office, copier and computer supplies at substantial reductions in prices. In some cases they offer a promotional gift as an inducement to place an order.

These companies concentrate on large, decentralized organizations like MIT. Techniques used vary, but share a common approach: An initial contact is made, a prominent MIT name is dropped, and a "special deal" is offered. Supplies are sometimes described as a liquidation, cancellation of a large government order, or salvage merchandise. Shipment follows, sometimes even without agreement by the recipient. This is followed by an invoice and subsequent, often intimidating calls.

In most cases the supplies delivered are unknown brands of substandard quality. In many cases the shipments received contain greater quantities than ordered or additional items not ordered. Usually, the delivered goods are grossly overpriced.

To avoid problems, Mr. Rowe suggests:

—Tell all such callers that MIT Purchasing is the only agency authorized to make purchases for MIT and give the caller Mr. Rowe's number (253-7243). Don't transfer the call. Legitimate firms will pursue the

lead, others will be discouraged.

—Do not provide the caller with a shipping address. Providing an address can be construed as an authorization to ship goods. Again, refer the caller to Purchasing.

—When possible, refuse receipt of unordered goods. If this is not possible, avoid opening or using the goods and notify Mr. Rowe immediately. Arrangements will be made for return or disposal of the merchandise.

## Fitness program

Women and Fitness, a new two-session information and discussion program, will be offered by the Medical Department on Mondays, Nov. 7 and 14, noon-1pm in the Health Education Conference Room, E23-297.

What fitness is and isn't will be addressed along with individual goals and expectations. Specific topics will include attitudinal barriers, types and benefits of various exercise, injury avoidance, caloric expenditure and getting started on a program.

Connie Bean of the Health Education Service will lead the sessions. Advance registration is required. Call x3-1316 or visit the Health Education Office, Rm E23-205, to sign up. The fee is \$20.

**Look for listings of all health-related offerings in the Health Education section of the Institute Calendar.**





Do you recognize this Boston skyline? Photojournalist Donna Coveney succeeded in shooting sailboats on the river with none of the 'New Boston' skyscrapers.

## Wilson outlines agenda for engineering

(continued from page 1)

educate engineers must prepare them for that broader role—whether it be in industry, in designing a public highway system, or even in the last bastion of individual achievement, the research laboratory, where today, most of the work is done not by individuals, but by teams.”

Dean Wilson cited two signs of trouble in the field of engineering education:

—The difficulty American manufacturing is having building products that are competitive in the world marketplace.

—The increasingly adversarial relationship between science and technology on the one hand, and society on the other. He said this, in part, can be traced to engineering education that concentrates on technological issues “while disdaining the social and economic factors” involved with chemical plants, nuclear power plants and other facilities that spark public fears.

“Our failure is in developing engineers who are too narrow in their understanding, engineers who... are strong on analytical skills; who rate high on individual achievement, but who are not prepared or inclined to be members of multidisciplinary teams, let alone to lead them, as I believe they should.”

He stressed, however, that he was not saying that “we stop expecting students to acquire knowledge of one engineering discipline in depth.



“What I am advocating is that we stop calling that kind of knowledge ‘enough.’ It is not enough. At MIT we are not clear yet as to exactly how we should proceed. We have enormous strengths as an institution—faculty and student body that are internationally renowned; programs based on decades of experience; a deep commitment to engineering and scientific principles. We are blessed with a richness and diversity that are the envy of the world.

“But this institution is also renowned for recognizing when there is a need for

change—and for its willingness to step out front.

“The new agenda I have proposed today would require a considerable shift in our teaching and research environment—one that the School of Engineering could not undertake in isolation, even if everyone were convinced today of the need to undertake it. It would require a true collaboration with those (in other areas of MIT) in humanities, the arts, and the sciences... But I propose that we begin.”

## Wilson excerpts

Following are excerpts from an address by Dean Gerald L. Wilson of the School of Engineering on “Engineering Education: A National Agenda.”

I think it's fair to ask what could be wrong with engineering education when we're graduating 70,000 engineers a year who have very little trouble finding jobs. Some of us—MIT, Stanford and Carnegie, to name a few—charge amazingly high tuitions, but have no difficulty at all filling our dormitories and classrooms.

Yet, much as I would love to stand here and say I believe things are going very well indeed for engineering, I can't.

There are many signs of trouble in our field. Today I would like to address two that

particularly concern me, and many of my colleagues.

The first is the difficulty American manufacturing is having building products that are competitive in the world marketplace.

The second is the increasingly adversarial relationship between science and technology on the one hand, and society on the other.

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The problem of American manufacturing capability is not limited to the high-tech and automotive industries. It also affects our infrastructure—the investments made by cities, states and the federal government on tunnels, dams, highways, bridges and communication systems. And it involves the reliability and serviceability of everything we build.

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Some believe the answer lies in technology—in computer-integrated manufacturing, perhaps, which would link all the myriad entities involved in manufacturing in such a way as to solve the problems of cost, quality, and time to develop. Some say we need a commitment from the federal government to manufacturing productivity. Some think we need to revive our national will to excel, as we did after Sputnik. Some blame the high cost of capital, or the unions, or Wall Street, with its fanatical emphasis on short-term, quarter-by-quarter profitability.

I don't discount any of these factors, but I also place a large measure of the responsibility for the lack of American manufacturing competitiveness on poor engineering—in the definition, design, production and delivery of products. And if it's true that our engineering is poor, then part of the blame must lie with the way we educate our engineers.

## Sharp shares Horowitz Prize for RNA work

(continued from page 1)

repository of genetic information, but has surprising abilities to catalyze biochemical reactions. The findings of the two scientists and their research groups have raised important questions about the molecular origin and evolution of life.

Dr. Sharp's research in the late 1970s led to his major discovery that caused a great upheaval in the world of biology. Dr. Sharp and his colleagues discovered that genes in cells that have a nucleus (eukaryotic cells) are in a significant way unlike bacterial cells (prokaryotes) that had previously been the principal subject of DNA research.

Genes in bacterial cells form a continuous sequence along their strand of DNA, but in the nucleated cells of higher organisms—and in the viruses that infect them—genes are distributed among widely spaced segments separated by apparently “surplus” DNA (called introns) that bear no apparent protein message. Since then, Dr. Sharp and others have found that nucleated cells selectively remove great quantities of this surplus or “nonsense” DNA and splice together the remaining intelligible sequences, which are then translated into proteins—the building blocks of all life.

Dr. Sharp has headed the Center for Cancer Research since 1985. He also teaches courses on animal virology and cell biology. Dr. Sharp has been a member of the Center and of the Department of Biology since 1974, and served as associate director of the Center for two years before becoming its director. The Center, numbering about 175 people, does research on the molecular biology of cancer, virology, immunology, and cellular and developmental biology.

In the work for which the Horowitz prize was given, Dr. Cech and colleagues found that certain RNA molecules can “self-splice” and therefore function like protein enzymes—catalysts for various biochemical reactions. In fact, the function of enzymes was previously thought to be limited to proteins. It was believed that a strict division of labor existed in the cell: DNA and RNA stored genetic information, proteins served as enzymes to catalyze cellular reactions.

The discovery that RNA can also act as an enzyme has altered fundamental views of molecular evolution. Some have suggested that life may have originated with catalytic RNA and functioned for a while without DNA or proteins.

## Obituaries

### Warren S. Hall

Warren Stanley Hall, an electrical supervisor at Lincoln Laboratory from 1954 until his retirement in 1980, died October 18. A resident of Sudbury, he was 71. Survivors include his wife, Charlotte M. Hall.

### John E. Jordan

Dr. John E. Jordan of Great Falls, Montana, who received the PhD degree in physical chemistry from MIT in 1958, died October 19. He was a postdoctoral research associate here for several years before joining the National Bureau of Standards in the late 1960s. He returned to MIT as administrative officer in chemistry and left in 1976.

### Robert M. Leonard

Robert M. Leonard, 79, of Milbridge, died on October 13. Mr. Leonard was a machinist in mechanical engineering from 1950 until his retirement in 1972. He leaves his widow, Mary.

### Gladys Nichols

Word has been received of the October 6 death of Gladys Nichols, 92, of Concord, N.H. Miss Nichols was a secretary in civil engineering from 1951 until her retirement in 1962.



# Improvement suggested for electoral college

(continued from page 1)

"The way we vote for president is a subtle disaster for 10 million Americans, more or less, who vote in states dominated by one party or the other," Dr. Natapoff said. "The disaster is for all these voters—of both parties." He concludes that not a single vote in these states "can make any appreciable difference in the expected final result."

The small change that he suggests is simple and has "no pernicious side effects," he says. "Give states electoral votes in proportion to their total popular vote, not in proportion to their number of congressmen, as the present system does." (Presently, the electoral vote given to a state equals its number of representatives plus two senatorial votes.) So a state's voting power would be measured by its popular vote not its census-determined population.

With Dr. Natapoff's Maximum Voting Power system, each state would receive as electoral votes the sum of its popular vote (e.g., 2,200,001 votes for all candidates) plus an additional approximately 420,000 "senatorial" votes, representing the fraction of the total voting electorate:  $2/436 \times$  National Popular Vote (=420,000 in 1984), where 436 is the present number of population-based congressional electoral votes. The state in this example would have a total electoral vote of 2,620,001. It would still be "winner-take-all electoral votes" in each state.

A few of the many benefits that Dr. Natapoff touts for his proposed modification to presidential voting: (1) The leading candidate would be forced to campaign to assure a large turnout, or risk having his or her victory deflated; and (2) Voter turnouts would likely increase as dominant-party state voters exercised real national voting power for the first time.

Not long ago, many national political leaders believed that the presidential election process could be perfected by choosing the candidate with the most popular votes nationally. Among the supporters of "Direct Voting" have been the American Bar Association and the League of Women Voters. The House of Representatives once voted for a Direct Voting Constitutional amendment, and the Senate came within a handful of votes of doing the same.

But Dr. Natapoff says, "It is arguable that this powerful support would have evaporated if the relevant technical information had been accessible to the legislators and legal scholars who believed that Direct Voting delivered the one-man, one-vote ideal."

Many have come to believe that direct

voting would, indeed, have adverse consequences—an electorate possibly fragmented into many weak political parties and the "ignoring" of small states by presidential candidates. Dr. Natapoff's analysis establishes a quantitative statistical framework to understand these issues. Unfortunately, the analysis is not easy to understand intuitively, so the mathematically uninitiated must focus on its conclusions.

Dr. Natapoff cites evidence that the present electoral college system is already doing a fairly good job of balancing large vs. small states, even without MVP:

—Winning candidates have always (except in 1888) won a plurality of the raw popular vote, suggesting that the system is fair to the vote-rich large states.

—Winning candidates have also always (except narrowly in 1960 and 1976) carried at least half of all the states, suggesting that the system is fair to vote-poor small states.

—The two senatorial electoral votes for each state were decisive only in 1916, the closest election so far in the electoral vote.

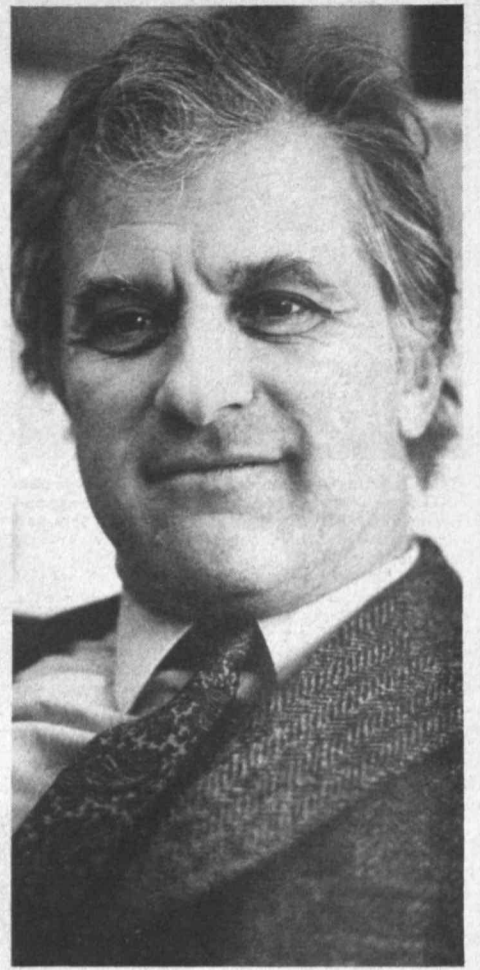
On the other hand, Dr. Natapoff finds much to criticize in the perennial proposal to have a direct popular vote for president: "Where there are blocs (e.g., states), it delivers unequal power per vote, and where there are no blocs its vulnerability encour-

ages their formation. Thus, except in small, closely contested and bloc-free electorates, the direct-voting system is a poor embodiment of the 'one-man, one vote' ideal."

Dr. Natapoff says, "There is one combination of simple voting devices, the Maximum Voting Power system—a compromise between raw voting and the present Madisonian system—that averts all of these bloc effects. MVP, therefore, constitutes the best one-man, one-vote approximation among those systems using simple devices."

"The majoritarian MVP system encourages—as raw voting does not—candidate efforts spread over many states. It protects close-, and small-state voters (as our present system does, and raw voting does not) and poorly-contested-state voters (now powerless). By nurturing the two-party system (as our present system does, and raw voting does not) it enhances both voting power and stability. It does not give precisely equal voting power (as a lottery might), but it does assure the largest available fair power over the long run of any simple voting system."

Dr. Natapoff notes that founding father James Madison intuitively understood many of these issues and wrote about them in the Federalist Papers (Number 10, 1788) exactly 200 years ago. Yet Madison's ideas have generally been overlooked until now.



Alan Natapoff

## Electoral college could produce skewed result

By CHARLES H. BALL  
Staff Writer

Given the quirks of the electoral college, it is theoretically possible to win the presidency with 21.6 percent of the popular vote in a two-candidate race, an MIT professor has found.

Under the electoral college's winner-take-all custom, the victor in this "worst-case scenario" would get virtually no votes in the states that he loses and a bare majority in those that he wins, says Dr. Arnold Barnett, professor of operations research at MIT's Sloan School of Management.

Based on 1984 patterns, a winning electoral majority of 270 out of 538 votes could result from getting just over half the vote in the District of Columbia and 36 states. These 37 victories would produce 270 electoral votes at a price of 19.2 million popular votes, which represent 21.6 percent of the 89.1 million votes cast in 1984. The 36 states used in Professor Barnett's scenario include all but the following 14 states: Missouri, Pennsylvania, Minnesota, New Jersey, Massachusetts, California, Ohio, Illinois, Wisconsin, Indiana, Connecticut,

Michigan, New York and Virginia.

"Most of the 36 states in the victory column are small, because winning such states is often less costly in terms of popular votes needed per electoral vote," Professor Barnett explained.

"But there are exceptions to this trend," he said. "Because of its low voter turnout, Texas is relatively cheap on this dimension and is included in the victory column. By contrast, Wisconsin's high voter turnout gave it the nation's highest ratio of popular to electoral votes in 1984."

Professor Barnett acknowledged that his "worst-case scenario" would "never materialize in an actual election."

However, he said, his analysis raises certain qualms that coincide with suggestions from a number of quarters that the electoral college system may need some fine tuning.

"Even in the 20th-century elections considered landslides—Roosevelt-Landon in 1936, Johnson-Goldwater in 1964, Nixon-McGovern in 1972 and Reagan-Mondale in 1984—the loser got roughly 40 percent of the popular vote," Professor Barnett noted.

"Since that figure is twice the absolute minimum required in the worst-case scenario, it does not seem outlandish that some future candidate could be buried in such a landslide and yet be sworn in the following January."

## Lander receives Packard fellowship

Dr. Arthur D. Lander, assistant professor in the Department of Brain and Cognitive Sciences and in the Department of Biology, has received one of 20 fellowships in science and engineering from the David and Lucile Packard Foundation.

Each fellowship provides funding of \$100,000 per year for five years for research expenses such as scientific instruments, research supplies and scholarship support for graduate students.

The fellowships are awarded to talented young faculty members to support basic scientific research being conducted at universities in the United States and to encourage these faculty members to continue productive university careers.

## Ice skating lessons begin in December

Enrollment is open for MIT children for a series of eight elementary group skating lessons to be offered mostly on Saturday mornings in the Johnson Athletics Center ice rink beginning December 10. Classes will be held December 10, 17, 27 (Tuesday), and 29 (Thursday). They will continue on January 7, 14, 21 and 28. If a make-up session is necessary, it will be held Saturday, Feb. 4. Children will be divided into beginners and advanced groups. The beginners group will consist of children with very limited or no previous experience. Those considered advanced skaters should be able to do some backward skating and crossovers. Classes will meet for beginners at 10am, with advanced lessons at 11am. Each class will be limited to 30 children, ages 6-14.

Proper-fitting, well-sharpened, single blade skates are essential in learning skating skills. Parents should pay particular attention to this detail. Also, parents who are lacing their children's skates should lace them quite tightly. It is suggested that a helmet be worn by beginning skaters.

A 1988-89 Athletic Card is required. There is a \$25 instruction fee for each child enrolled in the classes, payable at the time of registration. Checks should be made payable to MIT and returned with the registration form to the Department of Athletics, Murphy Equipment Center, before Wednesday, Dec. 7. For further information, call x3-2914.

### FALL 1988 MIT - RED CROSS BLOOD DRIVE

Monday, October 31 - Wednesday, November 9

Please fill out this form completely, giving all requested information. Return this form to TCA, Room W20-450, as soon as possible. You will be sent a card in the mail notifying you of your scheduled appointment time. If you would like to change your appointment, have any questions about medical requirements, or would like to help, please call TCA at x3-7911 or x3-4885. Please print.

Name \_\_\_\_\_  
Last, First, MI

Living group (undergrads) or Department (everyone else) \_\_\_\_\_

Local Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Home Phone \_\_\_\_\_

Institute Address \_\_\_\_\_ MIT Ext. \_\_\_\_\_

MIT Affiliation: Undergraduate Graduate Faculty Staff

Is this your first donation? \_\_\_\_\_ If not, date of last donation \_\_\_\_\_

Please circle the blocks of times which your appointment can be scheduled to begin on each day. Be sure to allow at least one hour for the entire process. To be scheduled for the same time as someone else, please clip your forms together.

Donors must be at least 17 years old (17-year-olds must have written parental permission, given on forms supplied by the Red Cross and TCA), sleep at least six hours the night before, eat within four hours before donating and weigh at least 110 pounds. You must wait eight weeks between donations.



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MIT-owned equipment may be disposed of through the Property Office.

Deadline is noon Friday before publication.

## For Sale

RT United Air tckt, Boston-Spokane, WA, lv 12/23, rtn 1/10, \$360 or bst. Peter, x5-9466 dorm.

Used ski eqpmnt: skis & boots, jr & adlt. Call x3-2772 or 396-4221 eves.

Btfl pine ktchn tbl, 2 mtching laddr bck chrs, rmy cbnt, fridge, sevr curtains & misc itms, prices nego. Call x3-6970/6835 aftrnoons or 661-9375 AMs or eves.

24" Univega Sportour bike, grt for touring or beginning cycling, exc cond, \$150; Thule rftop rack for car w/rain guttrs, exc cond, \$75. Jim, x3-7322 or 536-7853.

Advent loudspkr, 12" woofr, exc cond, \$150/pr. Call 497-1479 aftr 4pm.

Magnavox stereo component, AM/FM/cass, trntbl, \$100; 2 lrg spkrs, \$45; 2 sm spkrs, \$25; teak stereo cbnt, \$50; 9x12 Rya rug, 100% wool, \$45; sm tbl w/drwr, \$15; Westend humidifr, \$25; Kenmore sewing mach w/tbl, dbls as desk, \$55; chrs, \$10-35; Burberry coat, 12-14 usd 2X, \$100. Call x3-3175 or 332-8251.

"Total Gym" excrcise mach, \$250; L's glf clbs, full set, \$75; L.L. Bean M's insulatd boots, sz 8, \$50; wrn 4X. Jane, x3-4478.

2 Sears Dynaglass snow trs & rims, sz F78-14 w/5-hole rims, exc cond, \$50. Steve, x8-4251 Draper or 449-2136.

Tandy DMP 130, IBM compatbl, 3 printing modes w/cabl, like nw, \$180. Yong, x3-6855 or 577-9593.

4 trs for '79 Ford (Duster, Volare, etc), 2 Kelly ice radial 75R13 w/studs, perf cond; 2 Uniroyal steelbltd radial BR78-13, gd cond, all 4/45. Susan, x3-2285 or 646-0181.

Br nw prom drss, sz 7/8, \$25; nw 4-pc showr curtain, \$30; twin & full-sz bedspreads, sheets & blnks, \$5-15; various styls of drapes. Cheryl, x3-0574 or 628-5439.

Sleek Italin design torchiere, 500W halogen w/dimmr, mat blk, br nw, \$95; Eastern butchr blk tbl, 30x48"x1 1/4" thick solid oak, 10 mos old, \$140. Han, 276-6736.

Hoover hvy duty upr vac, Concept One mdl, perf cond, about 8 yrs ols, \$30. Louise, x3-7607 or 391-8045.

## Vehicles

'73 VW Campr, exc cond, PDP 11/34, RK05 drvs, disks. Roger, x3-6199 or 592-9972.

'76 Buick Skylark, gd cond, 4-dr, rfrck, 1 ownr, no accidnts, \$225. Call x5-8995 dorm or x3-8761 lv msg.

'78 Olds Cutlass sta wgn, v gd cond, 53K, 260 V8, rfrcks, \$1,500 or bst. Dick, x7177 Linc.

'79 Audi Fox, 98K, rms well, nds wrk on reverse, some rst on back. Shuguang, x3-4710 or 876-5304 eves.

'80 Honda Accord, superb eng, 57K, nw muff, exc cond, sunrf, AM/FM/cass stereo, mst sell, \$2,000. Call 783-4769.

'80 Datsun 310GX htchbck, 4-spd, AM/FM/cass, rms well, some rst, orig ownr, bst offr. Marilyn, x3-6776 or 508-635-0993.

'82 BMW 320i, 2-dr, std, exc cond, nw cltch, 90K, \$5,000 or bst. Call x3-4871 or 492-4297.

'83 Renault Alliance, 2-dr, 60K, 5-spd, a/c, Chapman alm/lock, \$400 stereo sys, rstprfd, snw trs, \$2,800. Bonnie, x3-1696 til 11/18; Ken, x3-5751 til 11/10.

'85 Nisan Sentra wgn, 4-dr htchbck, 71K, AM/FM/tape, rently tund, nw parts, grt shape, can't make paymnts, \$3,850 or bst. Call x3-5656.

'85 Dodge Daytona, 2-dr htchbck, blk w/red clth int, auto tran, ps, pb, rear wndw defog, intrmittent wiprs, 4-sprk AM/FM stereo, Z-lock, rstprfng, nw brks, \$4,500. Michelle, x7476 Linc or 508-443-7027.

'85 Dodge Ram Charger SE (Blazer type), V8, 318 2bbl, auto, 4 whl drv, pwr wndws, a/c, Pioneer stereo, fully tintd, blue & wh 2-tone bdy & int mnt, 2 sets sports rims, \$9,000. Peg, x7120 Linc or 762-7455 eves.

'88 Mazda 626 lux turbo, blue, 8K, 5-spd, a/c, Z-lock, 4 yr warr, mint, relocating, \$13,400. Stmos, x3-3871 or 595-4740.

## Housing

Newtonville, lrg sunny apt, 4 rms w/bclny, 3rd flr, off-st prkg, 2-fmly bldg, wlk to train, \$850/mo unhtd, avlbl 11/15. Call x3-4679 or 527-0057.

Sunny cozy 4 rm unfurn apt, 2nd flr of Victrn in Auburndale sectn of Newton, grg prkg, yrd, 3 min wlk to Green Line T, \$800/mo inc ht & utils. Travis, x3-6771 or 783-2871.

VT, nr Killington, Woodstock, sleeps 10, lux 3-lvl condo, 3R & loft, all appliances, sauna & jacuzzi in unit, priv dwnhill ski area, X-entry trails at dr, rntl avlbl, rsbl rates. Call x3-1661.

Real Estate office has: Wellesley, Cliff Est area, 8 rm Cape, 4BR, frplc, eat-in ktchn, hdwd flrs, 3 baths, 2 car grg, ez access to Rt 9 & nr twn amenities, \$400,000; Topsfield, lrg 3+BR cntry farm hse surrounded by meadows & active farm fields, avlbl immed, \$1,000/mo+ utils, 1+ yr lease offered. Call x3-4306/1483.

Yarmouthport, nw 2000 s.f 3BR, 2 1/2 b cape, cathedr ceiling fmly rm, custm ktchn, ctrl vac & lwn sprnklr, \$244,900. Bill, x3-3409 or 643-8974.

## Wanted

Nd apt/hse for visting prof & 2 chldrn, approx 8/189-1/190, poss xchange for hse in Honolulu. Call x3-5728/2818.

MIT employee sks studio/1BR apt nr MIT (Camb), neat, quiet & rspnsbl. Call x3-0773.

## Carpool

Vanpool sks nw membrs, Shoppers World Framingham to Ctrl/Kendall Sq, & MIT, 8-5. Micky, x3-8478 or 508-877-9344 or Bill, x8-3294 Draper.

## Miscellaneous

Peter Dilworth, contact Bob Goeke, x3-1910.

# New study to focus on 'context,' define what needs to be done

(continued from page 1)

Social Science headed by Professors Arthur Steinberg and Merritt Roe Smith.

In paying tribute to these groups, Professor MacVicar told the faculty, "With boldness and considerable argument and debate, a set of pilot experiences were developed toward illuminating the human contexts within which science and engineering are pursued."

She continued, "The working groups sought to give flesh to the contexts idea, to try out models for contexts, to encourage faculty and student participation."

These groups now have been dissolved, she said, leaving to the new group headed by Professor Low the task of attempting to

define the ultimate program's intellectual rationale and fitting it into the Institute's four-year overall academic experience, a task she described as "very, very difficult."

"It is time to take the next step in our exploration," she said. "We have learned enough to be ready to organize the deliberations and work now as an Institute-based enterprise."

Joining Professor Low in the study will be Professors Gyftopoulos, Steinberg and Smith, to provide continuity; Professors Maurice S. Fox of biology, David H. Marks of civil engineering, Lawrence M. Lidsky of nuclear engineering, who also serves as chair of the Committee on Curricula, and Arthur Kaledin of history; and a student member yet to be named. Margaret S. Richardson, assistant dean for curriculum support, will continue to provide operational support.

Professor Low, in an interview, said he expects the new group to work initially for two or three months and then possibly to come back to the Committee on the Undergraduate Program for a charter as a regularly established Institute committee.

At the moment, he said, his group does not have a formal charge. "We want to take off from the point that the school committees had reached and to review the experience we've had with planning and presenting these subjects," he said. "We will, of course, consult with faculty members and students who have participated in the first context offerings."

"We want to determine what a reasonable next step would be, what the community can do to contribute to the process," he continued. "We have to understand that this idea can't work if everyone sees it as something that someone else can do. Those who want it to happen must work to make it happen."

Professor Low, reiterating a point made by Dean MacVicar, said his group would "by no means be thinking of a context program solely in terms of formal subjects." He said an example of an alternate approach would be the recent "How to be Good" colloquium dealing with ethical values.

During its tenure, Professor Low said, the study group would serve as an approval committee for context offerings.

In her remarks to the faculty, Dean MacVicar noted that the original goal of the program was to provide "an experience for our students, at the interface of science, engineering and the humane aspects of these enterprises."

Out of the desire for this context experience, she said, came the 11 pilot subjects with such titles as "Automation, Robotics and Unemployment"; "AIDS: Scientific Challenge and Human Challenge"; "Engineers, Scientists and Public Controversies," and "Does Technology Drive Politics?: The Decision to build the H-Bomb."

The new subjects are often the work of several faculty members from widely different disciplines and most often are taught by two or more professors, usually from different departments.

An example of this approach is one of this year's offerings in the spring term, "Engineers, Scientists and Public Controversies," taught by Professors James A. Fay of the Department of Mechanical Engineering, Bernard T. Feld of the Department of Physics and Charles Weiner of the Program in Science, Technology and Society.

In a brochure that went out to students last May, the CUP said of the need for context experiences:

"Science and Technology provide a powerful means by which we might achieve a more humane society—a society free of hunger, illness, illiteracy and misery. However, the relationship between science and society is by no means unidirectional. The development of science and technology is both influenced and constrained by political and social forces which may fall outside the domain of technocratic expertise.

"Consequently, we believe that all students should have the opportunity to consider critical questions about the interplay between science and technology and the social, cultural, environmental and economic contexts in which new scientific knowledge and technological applications are pursued."

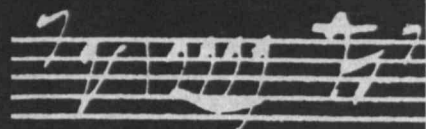


Major General John Stanford, commander of military traffic management, will speak at MIT Friday on the effects of deregulation on military transportation. The seminar is sponsored by the Center for Transportation Studies and is open to the public free of charge. It will begin at 12:45pm in the Spofford Room (1-236). General Stanford is responsible for the movement of all US military personnel and cargo throughout the world, a \$3.5 billion dollar operation annually.

Mon. Oct. 31	Tues. Nov. 1	Wed. Nov. 2	Thurs. Nov. 3	Fri. Nov. 4	Sat. Nov. 5	Mon. Nov. 7	Tues. Nov. 8	Wed. Nov. 9
10:00a	10:00a	10:00a	11:00a	11:00a	11:00a	1:00p	1:00p	1:00p
10:15a	10:15a	10:15a	11:15a	11:15a	11:15a	1:15p	1:15p	1:15p
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10:45a	10:45a	10:45a	11:45a	11:45a	11:45a	1:45p	1:45p	1:45p
11:00a	11:00a	11:00a	noon	noon	noon	2:00p	2:00p	2:00p
11:15a	11:15a	11:15a	12:15p	12:15p	12:15p	2:15p	2:15p	2:15p
11:30a	11:30a	11:30a	12:30p	12:30p	12:30p	2:30p	2:30p	2:30p
11:45a	11:45a	11:45a	12:45p	12:45p	12:45p	2:45p	2:45p	2:45p
noon	noon	noon	1:00p	1:00p	1:00p	3:00p	3:00p	3:00p
12:15p	12:15p	12:15p	1:15p	1:15p	1:15p	3:15p	3:15p	3:15p
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1:30p	1:30p	1:30p	2:30p	2:30p	2:30p	4:30p	4:30p	The drive will be given after 4:00p
1:45p	1:45p	1:45p	2:45p	2:45p	2:45p	4:45p	4:45p	
2:00p	2:00p	2:00p	3:00p	3:00p	3:00p	5:00p	5:00p	
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2:45p	2:45p	2:45p	3:45p	3:45p	3:45p	5:45p	5:45p	
3:00p	3:00p	3:00p	4:00p	4:00p	4:00p	6:00p	6:00p	no appts.
3:15p	3:15p	3:15p	4:15p	4:15p	4:15p	6:15p	6:15p	will be
3:30p	3:30p	3:30p	4:30p	4:30p	4:30p	6:30p	6:30p	given
3:45p	3:45p	3:45p	4:45p	4:45p	4:45p	6:45p	6:45p	after
								4:00p
Mon. afternoon	Tues. afternoon	Wed. afternoon	Thurs. afternoon	Fri. afternoon	Sat. afternoon	Mon. evening	Tues. evening	Fri.

**Schedule your appointment. Scheduled appointments will have priority when the drive is crowded.**





# THE ARTS

## November at MIT

### 2 Wed

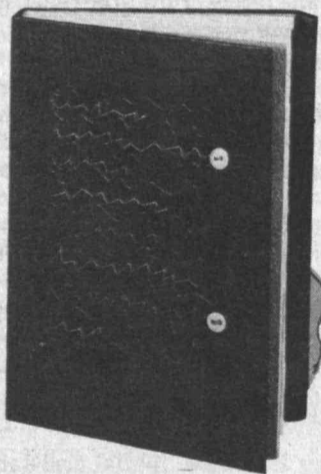
**Ads Relating to Anticommunism**  
Panel discussion between Boston artist Richard Bolton and media representatives including Stuart Ewen who wrote *Captains of Consciousness*, related to the artist's List Center exhibit treating anticommunism, patriotism and advertising. Bartos Theater, Lower Level, E15. 3-4680

### 3 Thurs

**Chapel Gets Mystical**  
Thursday noon Chapel Concert. The Mystic Consort performs 16th and 17th-century vocal and instrumental music, with soprano Wanda Osborn, and these instruments: bass, lute, theorbo, gamba, harpsichord, organ. 12:05pm, MIT Chapel. 3-2906

### 4 Fri

**Billy Budd Exhibit Opens**  
"Bound to Vary" Opening Reception at MIT Museum. Exhibit of 17 unique bookbindings created for copies of a limited edition of Melville's final masterpiece, *Billy Budd Sailor*. Showing style, structure and interpretation in contemporary hand book-binding. 5-7pm, MIT Museum. 3-4444



**Billy Budd Lecture**  
"The Making of Fine Books by Hand: Engraving, Papermaking, Printing and Binding." Deborah and Benjamin Alterman, The Married Mettle Press. 7pm, MIT Museum. 3-4444

**Thompson Plays With Muir Quartet**  
The award-winning Muir String Quartet will present a concert with MIT's distinguished violist Marcus Thompson. Concert Coordinator Clarise Snyder redrew the Muir's trademark silhouette to show the addition of Thompson, extreme left below, for this unusual occasion of the MIT Guest Artist Series. 8pm, Kresge, 3-2906



### 5 Sat

**Chamber Orchestra Debuts**  
The MIT Chamber Orchestra, a new enterprise founded by conductor Richard A.A. Larraga, presents its first concert. Mr. Larraga works in the Foreign Languages and Literature office, as does the concert's featured flutist Cynthia Woolley. 8pm, Killian Hall. 5-8972

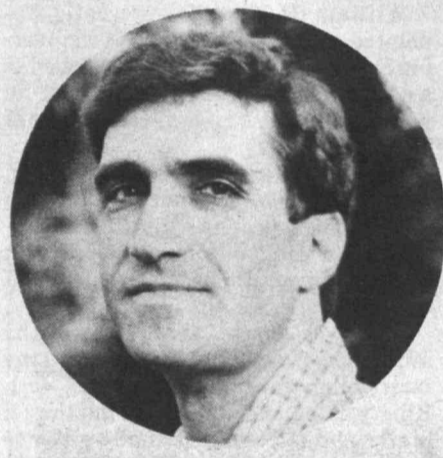
### 9 Wed

**Museum Opens Swedenborg Show**  
Reception, 5-7pm. Lecture, "Swedenborg's Flying Machine." Henry Soderberg, vice president, Scandinavian Airlines. 7pm, MIT Museum. 3-4444

### 10 Thurs

**Singer and Strings in Chapel**  
Thursday Noon Chapel Concert. Mezzo-soprano Wendy Greene and Robert Paul Sullivan, vihuela and guitar. 12:05pm, Chapel. 3-2906

**Pinsky Reads His Poetry**  
Robert Pinsky, below, award-winning poet, visiting professor at Boston University, and Professor of English at University of California-Berkeley presents a reading of his works, in connection with the release of his latest book, *Poetry and the World*, from Ecco Press. 8pm, Room 6-120. Reception follows, 9pm, Room 14E-304. 3-7894



### 11 Fri

**Last Day to Visit Naples**  
"Progetti Per Napoli." Exhibit of 22 architectural designs for the city of Naples, Italy, focusing on his complex problem of change in a historic setting. Compton Gallery, Weekdays 9-5. 3-4444

**Women Studies Film Series Begins**  
*The Passion of Remembrance*, presented by Multiple Exposures, a film series exploring gender, race, community and identity. This one tells the story of Maggie Baptiste, a young Black British woman in search of a sense of cultural identity, directed by Maureen Blackwood and Issac Julien. Speaker: New York City film critic Coco Fusco. 7pm, Bartos Theatre. 3-8844

### 11-12 Fri/Sat

**Soll Dances Shaker**  
MIT Arts Off-Campus. "A Shaker Dance," by Beth Soll, inspired by the dance, art and music of the Shaker community in Harvard, Massachusetts. Also, three repertory pieces. Usually described as New England's most original choreographer, Ms. Soll is director of MIT's Dance Workshop. 8pm, Cambridge Rindge and Latin School's Fitzgerald Theater. \$12, senior/student discounts available the day of the performance. 492-7578 or 547-8771.

### 11-13 Fri/Sun

**Guild Plays "South Pacific"**  
MIT Musical Theatre Guild production of the Rodgers and Hammerstein classic. \$8 general, \$6 students/seniors, \$7 MIT faculty/staff, \$5 MIT students. 8pm, Kresge. 3-6294

**Harvard Event Related to MIT Art**  
"Anticommunism and the US: History and Consequences" conference at Harvard University organized by the Institute for Media Analysis in connection with artist Richard Bolton's exhibit at MIT's List Visual Arts Center. Information: John Demeter, 628-6585

### 15 Tues

**Goin' Fishin' Slides**  
"The Decline of New England Fishing Industry." David Boeri, writer and TV reporter/producer, related to the exhibit at the MIT Museum. 7pm, MIT Museum. 3-4444

### 17 Thurs

**MIT Composer Played by Ariel**  
A quintet written by Peter Child of MIT's Music Faculty will be featured in a Thursday Noon Concert by the Ariel Quintet, below, described by the Boston Globe as "sound, attractive, and unfailingly musical." 12:05pm, Chapel. 3-2906



**Black Women Writers Series**  
"Toni Morrison and Her Critics" discussed by Nellie McKay, editor of a recent book on the subject, also Professor of Afro-American Studies, University of Wisconsin. 7pm, Room 66-110. 3-8844

### 17-19 Thurs/Sat

**O'Neill Honored by Dramashop**  
MIT student directors will stage one-acts devoted to the Provincetown Theatre Movement, including *In The Zone* by Eugene O'Neill. These Dramashop plays will be followed by stageside talks and coffee with the audiences following each performance. 8pm, Kresge Little. 3-2877



**Come Back to South Pacific**  
See 11-13 Thurs/Sat above.

### 18 Fri

**Women's Film Series Continues**  
Boston Premieres of *Woman Cry*, weaving together interviews with two disabled women living in rural Zimbabwe; and *Beyond Today*, examining government efforts to combat the urban problem of unemployed youth, both directed by Miriam Patsanza, who will speak. (See 11 Fri above) 7pm, Bartos Theatre. 3-8844



### 20 Sun

**Curator Speaks About Spero**  
Assistant curator Dana Friis-Hansen speaks on the retrospective exhibit by Nancy Spero. 4pm, List Center. 3-4680

**List Center Exhibits Thru Nov 27**  
**Nancy Spero: Works Since 1950**  
This major feminist artist, based in New York is featured in her first major US exhibition. (See related event 20 Sun above).

**Carl Cheng: Visual Impressions**  
Santa Monica artist Carl Cheng creates an installation while in residence at the List.

**Richard Bolton: Bear in the Marketplace**  
Anticommunism and Patriotism in Recent American Advertising. Visual essay

analyzes the influence of superpower politics on the rhetoric and imagery of advertising. (See related events 2 Wed and 11-13 Fri/Sun above.)

All three in the List Center. Weekdays noon-5, Weekends 1-4. 3-4680

### 22 Tues

**Learn About Watercolors at Rotch**  
Opening reception, 1pm, for an exhibition of recent watercolors by Lawrence B. Anderson, Dean of the School of Architecture and Planning, Emeritus, as an introduction to his IAP '89 activity: *Experiencing Watercolors*. Party and exhibit in the Rotch Visual Collections, 7-304. Exhibit continues through January.

### 29 Tues

**Slide Show for Goin' Fishing**  
Slide lecture related to MIT Museum Exhibit: "Commercial Fishing Technology in the 1980's." Cliff Goudey, MIT Seagrant. 7pm, MIT Museum. 3-4444

### All Month

**Billy Budd, Sailor: Bound to Vary**  
Unique bookbindings, along with materials relating to wood engraving, papermaking, printing, marbling, and binding in this unusual project. (See opening events on 4 Fri.)

**Emanuel Swedenborg**  
Models of the inventions of this 18th century Swedish visionary include a flying machine and an underwater ship. Commemorating the 300th anniversary of his birth. (See opening 9 Wed.)

**In Gratitude and Admiration**  
A celebration of Walter Gropius. Irreverent, playful and affectionate birthday cards sent to Walter Gropius on his 60th and 70th birthdays.

**Goin' Fishin'**  
Boston Fisheries 1900-1920. Photographs, models, and equipment examining Boston's fishing industry. (See related slide lectures: 15 Tues, 29 Tues.)

**Heinrich Hertz**  
The Beginning of Microwaves. Replicas of the original apparatus used by Hertz to prove James Maxwell's theory of electromagnetism (1864).

Museum Hours: Tues-Fri 9-5, Weekdays 10-4. 3-4444

All events are free except where prices are noted.



## United States has need for economic retuning

By **LESTER C. THUROW**

Dean, Sloan School of Management

Historically, successful economies have been blended out of very different mixes of individualism and collective effort. In ancient Egypt the individual mattered almost not at all. In contrast, individualism was the key ingredient in the rise of Greece. Rome used the initiative of the state to conquer Greek individualism and create the world's longest-lasting empire. Individualism was central in leading Britain first into the industrial era.

In American mythology, collective effort played no role in America's economic success in the second half of the 19th and first half of the 20th centuries. In fact the Erie Canal and the cross-continental railroads needed government backing. America's first industrial success, interchangeable parts, came from government military musket contracts. Compulsory public education gave us a better-educated work force than that of the competition. The truth is different from the mythology, but individualism was central to our success.

In the latter days of the 20th century America's economic position is being challenged by Japan and Germany, societies where individualism plays a much smaller role and the state a much larger role than here. In Germany government holds large equity positions in what would be private firms in the United States. German government spending, measured as a fraction of the GNP, is two-thirds larger than that of the United States.

Japan is a society where the distinction between public and private has little meaning. Joint cooperative efforts between public and private interests are launched to create formidable competitors.

We, as citizens of the United States interested in prolonging the period when the American standard of living is second to none, might well ask whether there is a message to be found in the success of Germany and Japan. America invests about half as much as Japan and two-thirds as much as Germany in plant and equipment. It doesn't take a genius to know that we cannot hope to compete in the long run, investing so much less. To in-

vest more we must save more.

We will save more only if we collectively restructure our society to transform it from a consumption-led society to an investment-led society. Figuratively, as a society we must send ourselves to the fat farm. In theory we could individually control our appetites; in practice we need social help.

There are many ways from a low saving-low investment society to a high saving-high investment society: limit consumer credit, construct real tax-free savings accounts where you actually have to save to get the tax benefits, run surpluses in government budget. But all of the routes rely on some collective restraints on individual spending behavior.

Comparisons reveal that America's work force, particularly workers who do not graduate from college, is not the equal of the work forces found in Germany and Japan when it comes to job skills. Relying simply on individualism does not lead to the education and skill investments necessary to run a successful modern economy.

What was true a century ago is even more true now. Modern management techniques such as statistical quality control and just-in-time inventories require ordinary production workers to have math skills far above those of the past. Successful modern economies require some system of post-secondary skill training for the noncollege bound. Letting everyone do their own thing, the American way, isn't working.

No static society can be successful over long periods of time. Societies with long histories of success learned to retune their economies as times changed. Societies decline when they lose the ability to retune themselves.

America doesn't need to reject its brilliant individual entrepreneurs, but it does need to give them the collective tools—a well-educated work force, adequate supplies of capital—that they need to be successful.

*(This column originally appeared in the Business Section of The Boston Globe Tuesday, Oct. 18, and is reprinted here with the author's permission.)*

## Renovations begin at Faculty Club

Extensive renovations of the Faculty Club bar and Riverside Lounge areas are under way.

As announced by the Housing and Food Service Office in conjunction with the Faculty Club Advisory Board, the bar and lounge are being redesigned for both MIT dining and catering use at lunch and din-

ner. March 1 is the target date for completion.

The bar and lounge renovation is the first of two construction phases at the Faculty Club; the lobby area will be completely remodeled next summer in the second phase.

During renovation all existing services will be available to Faculty Club members and guests with the sole exception of dining-room dinner meals. This service will be discontinued tomorrow, November 3, until the first phase of the remodeling process is completed. Evening catering services will remain available. All services will resume in the renovated area on March 1, 1989.

For evening meal services, Club members are encouraged to visit Networks, scheduled to open November 15 on the first floor of the Stratton Building. Networks is a contemporary restaurant featuring fresh seafood specialties as well as classic menu selections.

The renovations are being conducted in two phases to minimize inconvenience to Club members. During the first phase, the existing bar and Riverside Lounge areas will be closed off from the areas in use at the Club.

Bruner/Cott, the architectural firm that redesigned the Student Center, will also be in charge of the Faculty Club renovation. Blueprints and architectural renderings will be displayed to give Faculty Club members a preview of the remodeling results.

## —Here & There—

MIT may well be responsible for **Frederick "Rick" Hauck's** career as a Navy pilot and NASA astronaut, although not quite in the way one might expect.

Capt. Hauck, commander of the Space Shuttle Discovery, graduated from Tufts University and received the SM degree from MIT's Department of Nuclear Engineering in 1966.

His experience at MIT, he told the newspaper, Newsday, led him to make the decision that changed the course of his life.

"I was not an outstanding student at Tufts," he said. "I had about a 2.9 average. But when I graduated and put in two years on surface ships and the Navy gave me the opportunity to go to graduate school, I worked real hard and went on to MIT. But at MIT I realized I didn't have the motivation or the thought processes that would lead me on to being a thermonuclear physicist, which I thought I wanted to do. So I finally decided I'd like to be a pilot. The Vietnam War was going hot and heavy and I thought I could make a contribution there, so I went to Pensacola (Fla.) and found I loved flying."

As the saying goes, the rest is history.

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**William H. Ramsey**, recently appointed executive director of Engineering Special Programs at MIT, recalled in a newspaper interview the first time he met the late civil rights leader Martin Luther King, Jr.

Ramsey (SB in electrical engineering, 1951) said he was a senior at MIT and a member of the Alpha Phi Alpha fraternity when King, a graduate student at Boston University, became a pledge in the inter-college black fraternity.

King was shorter than most of the other college men, Ramsey said, "but the interesting thing that happened with King was no one wanted to impose on him" the dirty tasks normally given to pledges. King's "presence" was such, Ramsey said, that "nobody wanted to fool with him." He added, "He had a maturity much greater than the other pledges, so he got off light. I didn't run into anyone else like that afterwards."

Ramsey told the newspaper he has worked to fulfill King's vision through his life.

In his new involvement with the Minority Introduction to Engineering and Science (MITES) program at MIT, Ramsey is helping to stimulate interest among minority students in careers in science and engineering and to increase minority enrollment at MIT.

"So the dream lives on," he said.

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**John D. Sterman**, associate professor of management in the Sloan School of Management, has received the 1988 Jay W. Forrester Award given by the System Dynamics Society, an international organization of scholars who use the system-dynamics approach developed by Professor Forrester at MIT for the study of complex systems.

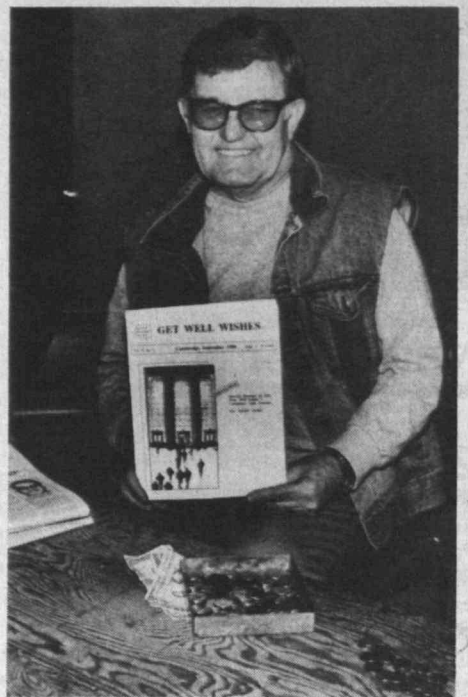
The prize, awarded for the best published work in system dynamics in the previous five years, went to Dr. Sterman for two papers published in 1987.

The prize committee said the papers "exemplify your wide range of research activities," adding: "By combining gaming strategies with a deep knowledge of behavioral decision making, and with your own and other's modeling work on the economic long wave, you have created an effective research design for rigorously investigating the linkages between behavioral decision making and the dynamic behavior of a complex system."

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### CLIPS AND QUOTES:

—The Eagle Tribune in Lawrence, Mass., spoke to **Oliver R. Smoot, Jr.**, about what is to become of the "Smoot" marks on the Massachusetts Avenue bridge, which is now undergoing reconstruction. Mr. Smoot (SB in economics, 1962) was the MIT fraternity pledge whose body was used to measure the



Following a recent bout with kidney stones, news vendor **Jim Bowers** returned to his Lobby 7 stand to find a unique get-well card made by **Terri Priest** of the Information Center and signed by upwards of 100 of his regular customers.

bridge in "smoots." He told the newspaper, "They may have to roll me out again."

—Alas, the problems of real life intrude even at Disneyland, according to **John E. Van Maanen**, professor of organizational psychology and management at the Sloan School. At the annual conference of the Academy of Management held in Anaheim, Calif., reports the Los Angeles Times, Professor Van Maanen told his colleagues there's as much scheming and plotting at the Magic Kingdom as at any corporate bastion. Dr. Van Maanen, who once worked as a Jungle Cruise captain at the amusement park, said a definite pecking order exists among park employees. For example, he said, "The tour guides almost never talk to the street sweepers and food servers."

—The catamaran Stars & Stripes owed part of its success in defending the America's Cup to an MIT graduate, according to the Waterbury (Conn.) Republican. The newspaper said that members of the team with Connecticut connections included **David W. Hubbard** of Stanford (SB in mechanical engineering, 1951), who worked on the hull and wing designs. The newspaper also quoted Sail Magazine as saying an MIT computer had been used in a velocity prediction program for the US boat.

—**Mary P. Rowe**, special assistant to the president and adjunct professor of management, told The Boston Globe that Red Sox manager Joe Morgan exemplifies the tactful, supportive New Age corporate leader. "In Morgan, I absolutely see an example of a manager who respects his people and achieves results by negotiating with his human resources to encourage their best," she said. Agreeing with her was Sloan lecturer **Arline H. Golden**, who commented, "It's no longer enough to be the old-style big shot, the manager who rolls in to say, 'I'm the boss. Do what I tell you.' Rather, the increasing complexity of today's business requires flexibility and communication as much as strong control and giving orders."

—**James McKellar**, director of the Center for Real Estate Development, told the Worcester Telegram that workers will be involved in molding their own work environment in the office of the future—choosing their own type of computer, whatever they're most comfortable using. The key will be computer compatibility. "The office will become more like your kitchen," he said, where there may be an Amana refrigerator, GE stove and Maytag dishwasher. —Charlie Ball

## More courses

Because of heavy demand, Information Systems will hold additional sections for the following hands-on micro-computer training courses: Introduction to DOS—November 30; Advanced Excel—November 29; Advanced MS Word for the Mac—December 12.

Spaces are still available in many of our November and December courses, including advanced courses on DOS Techniques—November 8; Lotus 1-2-3—November 14 and 15, and File-Maker—November 28. Introductory courses will be offered on PageMaker—November 16 and 17; R:Base—November 21 and 22; dBase—December 5 and 6, and the two-hour Institute Business Modules on Hard Disk Management for the IBM PC—November 18, and PC to Macintosh File Transfer—December 2.

Call Tawney Wray, x3-7685, for complete descriptions of any of the above-mentioned courses, enrollment status of any of the fall '88 courses, and details on fees and registration.