Massachusetts Institute of Technology

TECH TALK

September 19, 1984
Volume 29, Number 8

Faculty meeting

A regular meeting of the faculty will be held today (Wednesday, Sept. 19) at 3:15pm in Huntington Hall (Rm 10-250). Agenda items include:

—Report of the Committee on Graduate School Policy: Recommendation of candidates for advanced degrees.

—Report of the Committee on Academic Performance: Recommendation of candidates for bachelor's degrees.

—Discussion of CEP Report and Motion regarding enrollment imbalance.

Cowen reception

The MIT community is invited to an informal reception for Stuart H. Cowen on Wednesday, Sept. 26, noon-1:30pm in the Bush Room (10-105). Mr. Cowen will retire at the end of the month. Mr. Cowen has been continuously associated with MIT since 1962 when he became director of fiscal planning. He was director of the Division of Sponsored Research (now the Office of Sponsored Research) 1968-70 and comptroller 1970-73, when he was appointed to the position of vice president for financial operations. James J. Culliton, formerly director of personnel, has succeeded Mr. Cowen in that position.

Fall holidays

To assist members of the community in making plans for the upcoming holiday season, Joan F. Rice, director of personnel, has announced the following schedule:

Columbus Day—observed Mon., Oct. 8
Veterans' Day—observed Mon., Nov. 12
Thanksgiving Day—Thurs., Nov. 22
Christmas Eve—Mon., Dec. 24—special holiday closing
Christmas Day—Tues., Dec. 25
New Year's Day—Tues., Jan. 1

The usual pay practices applying to recognized Institute holidays and special holiday closings will be in effect for employees providing essential services who are required to work on these holidays.

Office hours

President Paul E. Gray will open this year's series of open office hours Tuesday, Sept. 25, 3:30-5:30pm. Open office hours provide an opportunity for individuals in the community to visit with Dr. Gray directly to discuss issues of concern.

Appointments may be made only on the day of open office hours by calling x3-4665 or stopping by the reception area in Rm 3-208.

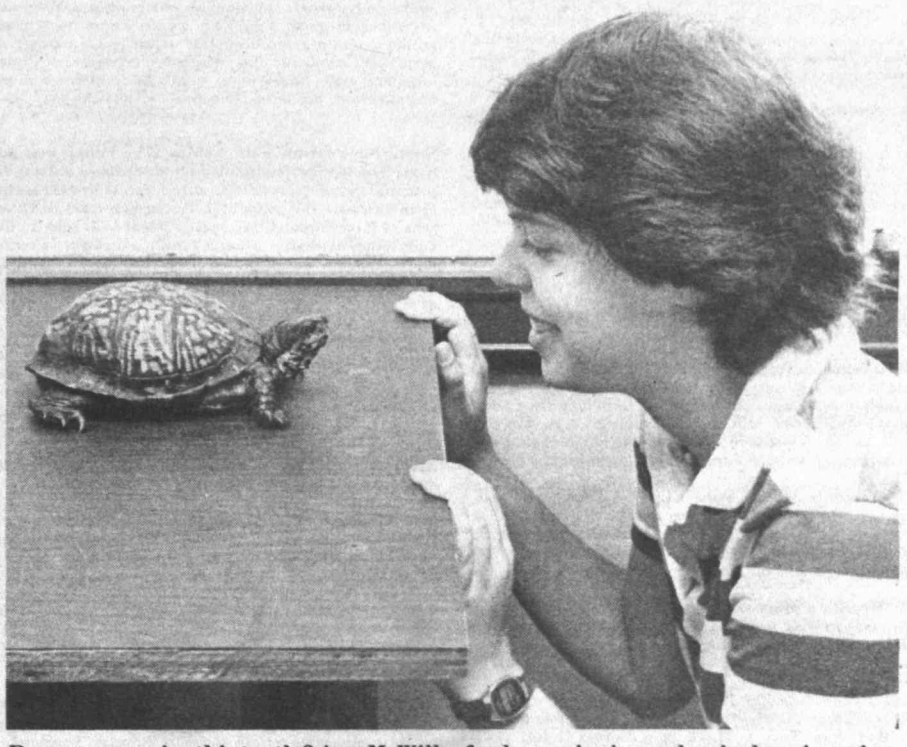
Dividends rise

The per annum divident rate on paid-in shares in the MIT Employees Federal Credit Union will be increased from eight to nine per cent effective October 1. The change was adopted by the Credit Union Board of Directors in its continuing effort to keep up with current economic conditions.

No changes were made to the remaining loan policies at this time.

Alley addendum

Amherst Alley, which will undergo reconstruction September 24-November 24, will be open during hours construction is not going on, Harry P. Portnoy, campus architect, has announced. Construction will take place Monday-Friday, 8am-4pm. The alley will be open for traffic 4pm-8am daily and on weekends. Access for service and emergency vehicles will be maintained throughout the project.



Do you recognize this turtle? Ann M. Willerford, a senior in mechanical engineering from Columbia, Conn., found the turtle on Killian Court and has placed an ad in today's Tech Talk seeking its owner. She's convinced it's someone's pet "because he's a land turtle and he didn't get there by himself." Ann knows her turtles, she said, because she lives in a rural area and has seen plenty of them. In the meantime, she's keeping the turtle in her dormitory room on East Campus, feeding it lettuce, apples and bread. If no one claims the turtle, she'll probably keep it, she said, explaining, "He's kind of cute."

—Photo by Calvin Campbell

Automobile to stay, but the industry will change

By ROBERT C. Di IORIO
Staff Writer

The automobile—lighter, more fuel efficient and kinder to its environment than it was a decade ago—will continue to be the world's prime mode of travel to the end of the century and beyond, MIT's International Automobile Program has concluded.

However, the international industry which produces the automobile faces a more uncertain future, although it will continue to be the world's foremost manufacturing activity, the researchers said in a book published September 18.

The book, *The Future of the Automobile* (MIT Press), was discussed today at a symposium at MIT attended by executives from most of the world's major auto companies, labor leaders and government officials. An estimated 500 people are attending the two-day symposium sponsored by MIT's Industrial Liaison Program, the Center for Transportation Studies and the Center for International Studies.

The book, which involved teams from seven nations, said there may be significant shifts in where auto manufacturing takes place because of unprecedented labor and trade pressures that are confronting the industry, now in the throes of the fourth transformation in its 100-year existence.

The transformation, sparked by the application of high technology to autos and to the

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Bruce announces realignment in Information Systems area

Dr. James D. Bruce, professor of electrical engineering and director of Information Systems at MIT, has announced a reorganization of that group.

The Information Processing Center, Information Systems and Telecommunications Systems have been combined as Information Systems and subdivided into four divisions.

The reorganization will provide stronger links among computing services for academic and administrative use, telecommunication services ranging from Centrex telephones to sophisticated digital networks, and support services for the full range of information technology available at MIT, Professor Bruce said. The new divisions:

—Telecommunications Systems, directed by Morton Berlan, which will provide all telecommunications services, including the campus-wide computer and cable television networks.

—Administrative Systems, directed by Marilyn A. McMillan, which will work with administrative organizations to design, develop or purchase, document and maintain the software needed for MIT's administrative operations.

—Operations and Systems, directed by

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Lecture to mark Green 20th

Dr. Frank Press, president of the National Academy of Sciences, will give the inaugural lecture at 4pm, October 3, in a lecture series that will mark the 20th anniversary of the Cecil and Ida Green Building. He will speak in McDermott Hall, Rm 54-100. President Paul E. Gray will introduce Dr. Press.

The 21-story, 128,816-square-foot building, the gift of Cecil Howard Green '23 and Ida Flansburgh Green, is the home of the Department of Earth, Atmospheric, and Planetary Sciences. Dr. Press headed the predecessor Department of Earth and Planetary Sciences from 1965 to 1977.

Mr. Green, a co-founder and honorary director of Texas Instruments Incorporated, and his wife have provided MIT over the years with nine endowed professorships and several scholarship and graduate fellowship programs, including programs especially for women students.

Dr. William F. Brace, head of the Department of Earth, Atmospheric, and Planetary Sciences, is Cecil and Ida Green Professor of Geology.

Mr. and Mrs. Green are Life Members of the MIT Corporation, Emeriti. Mr. Green is also

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F.E. Low to retire as provost next June

Provost Francis E. Low will retire from the position of provost when the present academic year ends on June 30 of next year.

In a letter to associates last week, Professor Low said that when he began as provost on July 1, 1980, he and President Paul E. Gray originally agreed that a tenure of five years in the post would be appropriate.

"That period will be over in June," Professor Low said.

Professor Low said he and President Gray recently reviewed Professor Low's initial commitment and together they "have decided to stay with the original plan.

"Perhaps the most compelling reason for me is that at age 63 I would like to return to teaching and research while there is still time (and energy) to reenter the profession," Professor Low said.

Professor Low, an esteemed theoretical physicist, is MIT's Karl Taylor Compton Professor of Physics, a professorship he has held since it was established in 1968. The Compton chair honors the late Karl Taylor Compton, the physicist who served as MIT's president from 1930 to 1949. Professor Low is a former director of MIT's Center for Theoretical Physics (1973-77) and a former director of the university's Laboratory for Nuclear Science (1979-80).

Dr. Low is an authority on elementary

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IAP kickoff Tuesday

Coordinators for IAP '85 will meet Tuesday, Sept. 25, to learn procedures for publicizing their activities in a new single edition of the IAP Guide.

In the past, preliminary information was published in an early edition in November. Revised and later listings were published in a final edition a month later in mid-December. This year, as a cost-cutting measure, one IAP Guide will be published in early December. The deadline for submitting activities is November 1.

The luncheon meeting in the Student Center's Mezzanine Lounge is held each year to help coordinators get off to a good start in planning their section's programs by providing them with essential information and encouragement.

The meeting will be chaired by Professor Shaoul Ezakial, chairman of the IAP Policy Committee. Speakers will be Shirley McBay, dean for student affairs; Frank Perkins, associate provost and dean of the Graduate School; Professor Samuel Allen, past coordinator for Materials Science and Engineering; Deirdre Dow-Chase, funding chairman; Mary Jasinski, scheduling chairman; Mary Enterline, manager of IAP, and Maryglenn Vincens, editor of IAP.

Israeli ambassador speaks here today

Israel's ambassador to the United States, Meir Rosenne, is speaking at MIT this afternoon on the subject, "Israel Towards the End of the Century." He is giving the talk, sponsored by the Center for International Studies, at 4pm, in Rm 66-110 (Ralph Landau Building). Dr. Meir, who has a PhD in international law from the Sorbonne in Paris, has been in government service since 1953. He became ambassador to France in 1979 and ambassador to the US in 1983.

INSTITUTE NOTICES

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

Announcements

Graduate Student Council Interviews for Seats on Institute Committees—Sept 25-26. Standing Committees of the Faculty: Committee on Discipline; Committee on Educational Policy; Committee on the Library System; Committee on Student Affairs. **Committees Appointed by the President:** Committee on Assessment of Biohazards; Athletic Board; Commencement Committee; Community Service Fund Board; Dining Advisory Board; Equal Opportunity Committee; Committee on Foreign Scholarships; AIP Policy Committee; Committee on International Institutional Commitments; Medical Advisory Board; Prelaw Advisory Council; Committee on Radiation Protection; Committee on Safety; Student Activities Development Board; Committee on Toxic Chemicals; Committee on the Use of Humans as Experimental Subjects; Committee on the Visual Arts; Women's Advisory Board; Advisory Committee for Women Student's Interests; Advisory Committee on Shareholder Responsibility. For further info, application forms and to schedule an interview, contact the Graduate Student Council Office, x3-2195, afternoons. All interested graduate students invited to apply.

Graduate Student Council—First full Council meeting of '84-85 term, Thurs, Sept 20, 5:30pm, Rm 50-222 GSC Lounge. Pizza served. All graduate students welcome. Call Ann St. Onge, x3-2195 if you plan to attend.

Student Directory Official Notice—All changes in addresses and telephone numbers must be turned into the Registrar's Office Rm E19-335 by Sept 28 for inclusion in the student directory. Telephone requests not accepted.

September Degree Candidates—Post cards must be returned to Rm E19-335 to indicate whether diplomas are to be mailed, called for in person, or if attendance at Commencement, June 3, 1985 is planned.

Career Planning and Placement Company Recruitment Presentations—**Morgan Stanley and Company,** Thurs, Sept 20, 7-9pm, Rm 4-153. **United States Army Reserves,** Wed, Sept 26, 9am-4pm, Lobby 13.

Law School Panel: Admissions to Law School—**deans of Admissions from University of Chicago, Columbia, Cornell, Harvard and NYU law schools,** Preprofessional Advising Office seminar, Thurs, Sept 20, 3pm, Rm 4-163. For more info, call Preprofessional Advising Office, x3-4737.

Digital PC Show—For MIT Personal Computer User Society, Sept 20, 11am-4pm, Rm 26-414. Latest Digital PC Offerings; Scientific Word Processing, AD/DA Converters, Newest Graphic Products.

Bioelectrical Engineering Open House—**for Course 6 Grad Students,** Course 6, Area VII presentation and lab tours by Bioelectrical Research Groups, Mon, Sept 24, 3-5pm, Rm 36-428. Refreshments served.

Army ROTC—meets each Thursday, 3-5:30pm, Rm 20E-126. Freshmen have no obligation for future military service. For more info, call x3-4471.

New International Students, Immigration Information Sessions— **Eugene R. Chamberlain, International Student Adviser and Kathleen Lufti, administrative assistant, International Students,** ODSA, International Student Office presentation on maintaining legal status, permissions to work and travel, Sept 25, 7-8:30pm, Rm 9-150. Attendance required.

International Student ID Cards—now available in Office of Career Services, Rm 12-170. The ISIC is an asset when studying or travelling abroad as it is recongized internationally and offers a multitude of discounts and benefits. Foreign students holding F-1 visas also eligible. For more info contact Marianne Ciarlo, Rm 12-170, x3-4735.

MIT-Japan Science and Technology Program—**Dr. Richard J. Sameuls, director of the Program,** Study/Research Opportunities in Japan for qualified MIT science and engineering students, Open Meeting, Thurs, Sept 20, 6pm, Student Center Center Lounge. For more info, call Prof Samuels, x3-2449 or Alice Peattie, x3-3142.

MIT Bowling Alley and Games Area—located in basement of Student Center, open 4-11:30pm, Tues-Sat (closed Sun-Mon). For more info, call x3-3913.

Basic Pistol Marksmanship Course—Will stress safety, Mass gun laws, care & handling along with development marksmanship skills, 5 consecutive Thursdays beginning Sept 20, 6pm, DuPont Pistol Range. Each class approx 2½ hours. Fee includes everything. Preregister and info: Andy Platais, x8-2077 Draper.

Rune—The magazine of literature and art at MIT is accepting submissions of prose, poetry and graphics for its 10th anniversary issue. Three copies of written submissions may be sent to *Rune*, Rm 14E-310. Special arrangements for pick-up of graphics submissions may be made with John or Milat, x5-9630 dorm. All work will be returned if requested. Deadline: Feb 10, 1985.

Rune—on sale in Lobby 10, 10am-5pm, through September 21.

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

Faculty Members—Technology Review would like to hear about books being published by MIT faculty members. Please notify us, as far in advance as possible, of your upcoming book. Technology Review, 10-140, x3-8250.

Club Notes

WMBR—is looking for students interested in radio and technical work. Contact Eli Polonsky, x3-4000. Leave name and phone number.

Tool & Die—Humor magazine meets Wednesdays, 5pm, Rm W20-400. No experience necessary.

ACBL Duplicate Bridge at MIT*—Bridge games every Sat, 7pm; every Thur, Sun & Mon, 6:30pm, $.75 entry fee, Rm 407, Student Center. Lessons free w/entry at 6:15pm from Bridge Senior Masters. No partners necessary, all welcome.

MIT/DL Bridge Club*—ACBL Open Duplicate bridge, Tues, 6pm; Novice game for newcomers to duplicate, Weds, 6:30pm preceded by intro/lecture, 6pm. MIT Student Center Rm 345. Newcomers welcome both games; come with or without partner. Info call Gary Schwartz, x8-1484 Draper, or Mark Dulcey, 576-3745. Admission: $.75/students, $1.50 non-students.

MIT Table Tennis Club—meets Sats and Suns, 6pm, T-Club Lounge. Campus Tournament, Sept 22, 3pm. For info call Kenny, x3-8771 dorm or David 492-4317.

MIT Aikido Club—meets Mon-Fri, 5:30pm, DuPont exercise room. Aikido is a non-competitive Japanese martial discipline. Beginners welcome.

MIT Filipino Association—**Lessons in Arnis (Philippine martial arts)** conducted by George Brewster, Sats, 4-6pm, Student Center Rm 407. Lessons free, beginners welcome.

MIT European Club*—Welcome party; food and refreshments served, Fri, Sept 21, 7:30pm, Student Center Mezzanine Lounge.

MIT Hobby Shop—Complete supervised facilities for wood working and metal working. Hours: M-F, 10am-6pm; W, 10am-9pm. Fee $15/per term students; $25/per term MIT community. For info call or visit W31-031, x3-4343.

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

Tech Sports Car Club*—first meeting, Thurs, Sept 20, 5:30pm, Rm 31-161. Organization of Fall activities, including National Collegiate Driving championships; maybe some Detroit F1 slides, too.

MIT Nautical Association—Memorial Dr, opposite Walker Memorial, x3-4884. We are open 7 days/wk, 9am-sunset. There is still lots of great fall sailing left, so come join us and learn to sail! Basic Sailing Shore School, M/Th, 5:15pm; Boardsailing clinic, Tues, 5pm. Other sailing classes offered occasionally, call for schedule. Club racing, Mon eves. Membership cards available in Cashier's Office, Rm 10-180: $5/students; $30/staff & faculty; $40/alumni.

MIT Student Pugwash—General meeting, Wed, Sept 19, 7pm, Rm 4-149. Join us to explore the social impact of science and technology. Newcomers welcome! Contact Robin, x3-6466, Rm E40-238.

MIT Hunger Action Group*—is interested in local and world hunger, poverty and development issues. We are engaged in on-campus education and local volunteer work. First meeting Thurs, Sept 20, 7pm, Student Center Rm 407. See our announcements outside Rm 5-106. For more info, call Parick Cheung, x5-9558 dorm or 494-8751 (mssg).

MIT Women's Water Polo Club—Women students, faculty, staff & others: Club practices M & F/5-7pm; T & Th/3-5pm, MIT Alumni pool. All levels of experience are welcome—try it, you'll like it! For more info, call Amy, 628-0821 or George, x5-9321 dorm, or just show up at a practice.

MIT Women's Soccer Club—Play women's soccer. Beginners and all levels of experience welcome. Practice three times a week—work out all your aggressions, have fun, make friends and get exercise. For additional info: Leslie or Inge, x3-6799.

MIT Wu-Tang Club*—teaches northern Chinese martial arts Mon, 4pm, Tues & Thurs, 6pm, Burton Dining Hall. Beginners welcome.

Boston Wu-Tang Chinese Martial Arts Association—Praying Mantis class, Mon, 8-10pm, Lobby 13, Thurs, 8-10pm, T-Club Lounge. Beginners welcome. **Demonstrations** Tai Chi, Shao Lin, Hsing I, Pa Kua Praying Mantis, Pa Chi, Pi Kua, Mi Chung I, Chin Na, & weapons, Sun, Sept 23, 2:30pm, Kresge Auditorium. Tickets available at the door. For info, call 497-4459.

MIT Tae Kwon Do Club—Tae Kwon Do is a Korean martial art. Meetings Sundays, 4pm, T-Club Lounge; Mon-Wed, 6pm, Burton Dining Hall; Fri, 6pm, T-Club Lounge. For info call In Ho Kim, 266-2827.

Scuba Club—The club sponsors dives throughout the year with practice sessions in the pool every other week. For further info contact Jon Powell x3-6031 or see our notice board at the pool.

MIT Guild of Bell Ringers*—meets Mondays, 6:30-9pm, 2nd floor Lobby 7, for change ringing on handbells. We also ring the tower bells at Old North Church. Beginners are welcome. Contact Eric Brosius, Rm 2-270, x3-3773 for more information.

Religious Activities

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

Christian Science Organization at MIT*—Weekly Testimony Meeting, Thurs, 5:45pm, Rm 4-159.

Tech Catholic Community*—Roman Catholic Sunday Masses: 9am, 12pm, MIT Chapel. Weekday masses: Tues, Thurs, 5:05pm, Fri, 12:05pm.

MIT Hillel Rosh Hashana Services—Reform: Wed, Sept 26, 8pm; Thurs Sept 27, 10am, MIT Chapel. Conservative: Wed, Sept 26, 6pm; Thurs, Sept 27, 8:30am & 6:15pm; Fri, Sept 28, 8:30am & 5:30pm, Student Center Sal de Puerto Rico. Orthodox: Wed, Sept 26, 6pm; Thurs, Sept 27, 8:30am & 6:15pm; Fri, Sept 28, 6pm, Student Center Mezzanine Lounge. Special holiday meals served in Kosher Kitchen, Walker Rm 007. Call x5-6750 dorm for reservations. Tickets required for Wednesday evening services; students can pick up free tickets at Hillel (W2a) or in Lobby 10, Sept 24-25. Faculty and staff should contact Hillel, x3-2982.

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

Meditation and Discourse on the Gita—**Swami Sarvagatananda** of the Ramakrishna Vedanta Society of Boston. Sponsored by MIT Vedanta Society. Fridays, 5:15-6pm, MIT Chapel.

Charismatic Prayer Group*—Mon eves, 6:45, Miller Rm 1-114. Pot-luck supper followed by prayer meeting, Bible sharing, music & praise. Jim Mahoney, x3-3074.

MIT Baha'i Association*—weekly discussions on the Bahai Faith and the vision of a new world order. For info call Brian Aull, x3-2112 or Roy Steiner, 868-0444.

Islamic Society*—Daily prayers, Ashdown House (basement), 5 times a day. Call 225-9837 for schedule. Friday prayer, Ashdown House 1-2pm, Khutba starts at 1:15pm, congregation at 1:45pm.

MIT Seekers Christian Fellowship*—Park Street Church Seekers Teaching and Worship Time, Sundays, 9:15am, enjoy our biblical teaching, worship and sharing at Park Street Church, right in front of the Park Street T stop. MIT Seekers leave from McCormick at 8:30am. Come join us.

Campus Crusade for Christ—Family time, 7:15pm, Fri, eves, Rm 37-252, (Marlar Lounge). Fellowship, scripture teaching, prayer, singing, refreshments & fun. Tues, prayer time, 7:30-9am, W20-441, Student Center. Call x5-9153 dorm.

United Christian Fellowship—(Inter-varsity chapter) Large group fellowship every Friday at 7:30pm in Moore Rm 6-321. Call Chavonne x5-8537 dorm for more info.

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 E17-438, bring lunch. Ralph Burgess, x3-8121. (Since 1965).

Edgar Cayce Study Group*—Tuesdays, 7-9:30pm, Ashdown House First Floor Lounge. Edgar Cayce's Search for God material will be used as the basis for group discussion & meditation. For info: Dave Rosenblitt, 267-7693, Douglas McCarroll, 497-5539 or Scott Greenwald, 494-8530.

The Church of Christ in Cambridge—Christians meet for worship, study, discussions, fellowship, Tang Hall, 1st & 3rd Sunday each month, 6:30pm. Robert Randolph, x3-4861/3-5085 or Claudia Lewis, 494-1326 (Ashdown).

Graduate Studies

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

NTNF Postdoctorate Fellowship Program, Approximately 20 fellowships offered by the Royal Norwegian Council for Scientific and Industrial Research. Open to candidates who wish to work in Norway for one year in technology and applied sciences. English is used on all research teams. For application forms and further information, write the Royal Norwegian Council for Scientific and Industrial Research, Sognsveien 72, 0855 Oslo 8, Norway. Also see Dean Chamberlain, Rm 5-106. Application deadline, Dec 1, 1984.

Visiting Scholar Exchange Program by the Committee on Scholarly Communication with the People's Republic of China National Program of Scholarly Exchanges. Exchange program providing opportunties for study and research at Chinese universities and research institutes, to make significant contributions to academic exchanges in a given discipline. Open to US citizens and permanent residents who possess a high degree of Chinese language skill. Applications available from Dean Eugene Chamberlain, Rm 5-106. Deadline for applications: Oct 29, 1984.

Hertz Foundation Fellowships. The Fannie and John Hertz Foundation fellowships for students of outstanding potential in the applied physical sciences, to be used at one of 19 institutions, including MIT. Applicants must be US citizens or have documented proof of intent to acquire it; have maintained at least an A- average during the last two years of undergraduate work; and the proposed field of graduate study must be concerned with applications of the physical sciences to human problems. For 1985-86, the fellowships will cover $6,000 toward tuition and a $10,000 stipend for unmarried students. It is the student's responsiblity to make up the difference between the cost-of-education allowance and tuition. Applications in Rm 3-138. Deadline: November 1, 1984.

Fulbright Program in Japan in Natural and Applied Sciences. For PhD students to do research in Japan, beginning on or after July 1, 1985. For info, contact the MIT-Japan Science and Technology Program (x3-5143 or x3-2449). Application deadline: October 31, 1984.

The American-Scandinavian Foundation. Awards for study in Scandinavia 1985-86, open to US citizens and permanent residents who will have completed their undergraduate education at the time this overseas program begins. Demonstrated language skills required. Contact: American-Scandanivian Foundation, 127 E 73rd St., New York, NY 10021, (212) 879-9779, or see Dean Chamberlain, Rm 5-106, Foreign Scholarship Committee. Application deadline November 1, 1984.

Robert Bosch Foundation Fellowship Program. Provides international experience through internships and training programs within German industry, business and government for 10-15 American university graduates and young professionals. Positions are on a high executive level, directly related to participant's professional interests or background in the fields of business administration, economics, public affairs, political science, law, journalism, and mass communications. For applications, contact: Ursula Hoegsberg, The Carl Duisberg Society, Inc., The Robert Bosch Foundation Fellowship Program, 425 Park Ave., New York, NY 10022, or see Dean Chamberlain. Application deadline: October 15, 1984.

Ministry of Education in the Republic of China on Taiwan Scholarship Program for American Students to Study in Taiwan. To study culture, philosophy or literature; candidates must demonstrate a good command of Chinese. For applications contact: Mr. Liu, Chia-Chih, Director, Cultural Division, Coordination Council for North American Affairs, Statler Office Bldg, 20 Park Plaza, Suite 1012, Boston, MA 02116, (617) 542-5196, or see Dean Chamberlain. Application deadline: March 1, 1985.

Internships

The following is a list of internship opportunities. For more information and deadline dates, contact Elizabeth Reed or Diane Wilhoite, Office of Career Services and Preprofessional Advising, Rm 12-170, x3-4733.

The Assembly, State of New York, Albany. Internship opportunities for the Spring semester. **Session Intern Program,** from Jan 7 to May 17, juniors and seniors, $1,000 stipend. **Graduate Scholars Program,** from Jan 4 to Aug 16, full-time research or policy analysis, $8,000 stipend, deadline November 1.

City of Boston, Office of the Mayor. Interns needed to help prepare and deliver press releases, clipping newspapers, clerical and research assignments. Students should have experience in college newspaper or radio newswriting and interest in city politics and community issues.

Commonwealth of Massachusetts, Executive Office of Communities and Development. The Office of Community Economic Development is seeking an intern for the Fall semester to be resonsible for co-ordinating the office's efforts to market Community Economic Development across the state.

Commonwealth of Massachusetts, Executive Office of Economic Affairs, Office of International Trade & Investment. Seeks two graduate student interns to work with staff who are involved with assisting firms to define their export strategy.

Polaroid Corporation, Cambridge. Polaroid Corporate Archives is offering eight internships to undergraduate and graduate students in Communications, Business, History and the Arts during each semester. 15 hrs/wk, $250 per semester stipend.

UROP

For more detailed information on UROP opportunities listed, MIT undergraduates should call or visit the Undergraduate Research Opportunities Program Office, Rm 20B-141, x3-5049 or 3-4849 unless otherwise specified in the listing. Undergraduates are also urged to check with the UROP bulletin board in the main corridor of the Institute.

MIT undergraduates are hereby invited to join with faculty members in pursuit of research projects of mutual fascination.

***1984/85 UROP Directory** which lists faculty and areas of research is available at the UROP Office and UASO (7-104).*

Read the Participation section of our Directory, and then talk with Coordinators and faculty members; come to the UROP Office or call us with specific questions. Current projects will be listed in this weekly column and on the UROP bulletin boards.

Joel M. Orloff Undergraduate Research Prize. Nominations from faculty are invited. An award of $1,000 will be presented in early October to the undergraduate who has demonstrated the most outstanding ability and creativity in physics-related research during the past summer and/or academic year. Nominations should be sent to the UROP Office by October 5.

Sea Grant UROP Awards. Grants of $750 each will be given for undergraduate research in any area related to the study and management of the ocean and ocean resources. Proposals may come from departments throughout MIT (Wellesley students may also apply). A letter of recommendation should accompany the proposals and be sent to the UROP Office by October 10.

Understanding Ambiguous Words. Much recent work has involved understanding an ambiguous word (e.g. "palm") in a sentence context which selects for only one meaning of the word (e.g. "The fortune teller looked at the boy's palm."). Surprisingly, words associated to both meanings of the ambiguous word will be activated. Reaction times to simple tasks involving words related to both meanings (e.g. "tree" and "hand") will be faster than to unrelated words (e.g. "house"). The current project assesses the hypothesis that this dual activation is relatively shallow within the linguistic system, and does not reflect activation of both meanings. We will test this by presenting subjects, after the word in its sentence context, with picture probes related to the two meanings of the ambiguous word. These picture probes should be more sensitive to conceptual, rather than linguistic, phenomena. Hence we predict to see only an advantage for pictures related to the sentence-relevant meaning of the word. Student will help with all facets of the experiment. We will use a Terak computer to run subjects and collect and analyse data. Prerequisites: interest in cognitive psycholog; familiarity with PASCAL or other computer language a plus. Faculty Supervisor: Prof Molly Potter, Psychology. Contact Nancy Kanwisher, x3-8945 or 661-6326. Open to FRESHMEN. PAY or credit.

Biosynthesis of Phosphatidylcholine in Rat's Brain. Project will involve learning of many methods allowing to separate biological molecules. Strong background in chemistry and previous laboratory experience helpful. Faculty Supervisor: Dr. Richard Wurtman. Contact Michael Lakher, x3-6733 (lv mssg). Open to qualified FRESHMEN.

Advisory Committee on Women Students' Issues. Two students needed to serve as staff assistants to the Advisory Committee on Women Students' Interests, to work 8 hrs/wk. PAY or UROP credit available. Work consists of: a)Designing surveys on graduate student life with input from MIT grad students; b)Distribution of surveys; c)Evaluation of survey responses; d)Personal interaction with administrators in academic departments to get permission for survey distribution and to determine special factors relevant to individual departments. Qualifications: a)Computer background desirable; b)Availability through the spring term. Immediately contact: Prof Margery Resnick, x3-5277/5698 or Prof Judy Kildow, x3-5310/2868. PAY or credit.

Effect of Caffeine on Rat Fetal Bone Development. Study conducted to determine effects of caffeine ingestion during pregnancy on the developing fetal bones and the prolonged effect, if any, on neonatal rats. The student will help with the histological preparation and evaluation of the bones, the analysis of caffein content of serum using HPLC, and the statistical analysis of the results. Faculty Supervisor: Prof Michael Holick. Contact Ann Schunior, x3-5155 (8am-12noon only), Rm 56-232.

Computer-Based Language Learning. Students will write computer programs in LISP for the Project Athena Annenburg/CPB Language Learning project, which is develping exercises for learning foreign languages. Some of the programs involve artificial intelligence techniques for natural language processing. Juniors and Seniors in Course 6 especially welcome. Faculty Supervisor: Prof Robert Berwick. Contact Dr. Janet H. Murray, x3-2094, Rm 20B-231. Qualified FRESHMEN accepted. PAY or credit.

Group Decision Making. Research assistant needed for project on Group Decision Making. Project investigates the impact of group composition, communication pattern, and member personality on the nature and quality of group decisions. Student will help complete and then assist in running of subjects. Must be a good BASIC programmer. Knowledge of LISP and behavioral research desirable but not required. Contact Prof John S. Carroll, faculty supervisor, x3-2617, E52-568. Credit or PAY.

The Role of Animals in Victorian Culture. Student will assist in study of changes in the ways that people perceived and treated animals during this period and how this reflected human attitudes to other human beings. Emphasis on the evidence in contemporary periodical literature. Contact Prof Harriet Ritvo, x3-6960/7894, Rm 14N-336.

Evaluation of Visuo-Cognitive Disturbances in Patients who Undergo Open Heart Surgery. Students needed to work on project which involves the administration of a battery of computerized tests to patients who undergo cardiac surgery with bypass, at Beth Israel Hospital. Clinical observations of such patients suggests that they often acquire visual neurological disturbances as a result of cardiac surgery. We are currently carrying out a randomized study of the possible role of the type of oxygenator used in the post-surgical visuo-cognitive deficits. The project offers good clinical experience to pre-med students. No experience is necessary, however background in psychology helpful. Student will work off-campus. Open to qualified FRESHMEN. Contact Dr. L. Vaina, Biomedical Engineering Center, x3-7624/7420, Rm 20A-129.

Visual Consequences of Trigeminal Neuralgia. New procedures to be developed for measuring vision and coordination in normal subjects and in patients treated for trigeminal neuralgia. Student will help modify the apparatus now in use and participate in testing of subjects. Skill and sensitivity in dealing with elderly patients required. Contact faculty supervisors, Prof Alan Hein, x3-5759 or Dr. Rhea Gendzier, x3-5796.

Student Jobs

Student for answering phones, occasional typing, some filing and organizing, and occasional projects related to childcare operations. Greet and assist visitors to the office. Quiet, non-smoking office. Want someone who is comfortable dealing with people from diverse cultural backgrounds, both on the phone and in person. Should have an interest in child care or related human services. Approximately 15 hrs wk, to be arranged. Hours may be split between 2 students. $5.25/hr. Contact: Kathy Tighe or Esther Haning, MIT Child Care Office, Rm 4-144, x3-1592.

Someone to answer telephones 3 afternoons/wk, 1:30-5:30pm. Pleasant office, good for studying; about 12 hrs/wk; minimum wage. Contact: Susan Cooney, ABC Answering Service, 4 Brattle St., Harvard Sq, 876-0606.

Lab Monitor to sit at desk and provide minimum security. Plenty of time to study. Starts next week; need to cover about 38 hrs/wk, could be split between several students, 6pm-12, M-F, 10am-6m wkends; $7/hr. Contact: Bob Fisher Symbolics, 4 Cambridge Center (Kendall Sq), 576-6642, 576-2600.

Fortran programmer needed for analyzing downtown real estate markets in various cities. Part-time; need someone self-motivated; flexible hours; wage negotiable. Contact: Andrew Lang, 140 Beach St, Boston (near South Station), 426-2986.

TECH TALK

September 19, 1984
Volume 29 Number 8

Tech Talk is published 37 times a year by the News Office, Massachusetts Institute of Technology. Director: **Robert M. Byers;** Assistant Directors: **China Altman, Charles H. Ball, Robert C. Di Iorio, Joanne Miller,** Tech Talk editor, and **Calvin D. Campbell,** photojournalist; Reporter: **Lynn Heinemann** (Institute Calendar, Classified Ads, Institute Notices).

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Actor to direct Shakespeare

Derek Campbell, an experienced actor who has been head of the Acting Program at the State University of New York at Buffalo, has been named as the new director of the MIT Shakespeare Ensemble.

Mr. Campbell was born and brought up in Northern Ireland, where he worked for several years before moving to England to pursue his theatre career in Coventry and London. He holds a diploma from the New College of Speech and Drama in London, and the MA degree in theatre arts (with emphasis in directing) from the Pennsylvania State University.

Among the more than 20 plays he has directed are five by Shakespeare. His first major production here will be next April.

His appointment was announced by Professor Hartley Rogers, Jr., chairman of the Shakespeare Ensemble Steering Commitee and Professor Arthur Mattuck, associate chairman. He will be a lecturer in the School of Humanities and Social Science.

Among his objectives for the first year of his three-year appointment, Mr. Campbell said, is to upgrade and improve the educational component. "I hope to introduce a stronger teaching element," he said, "and toward that end, I will be running regular acting workshops for the members."

As part of the celebration of its tenth year the company has decided to repeat itself for the first time with a new staging of its first play, *Twelfth Night,* October 25-30, in the Sale de Puerto Rico. This production will be directed by Ensemble alumnus Thomas Garvey '82, who has already directed *A Midsummer Night's Dream* and, for the Ensemble, *All's Well That Ends Well.*

The Ensemble has staged 19 of Shakespeare's 37 plays since 1974. This concentration makes it unique among university acting groups.

An extracurricular program, it requires about 10 hours per week through the academic year, roughly the equivalent of a varsity sport. Members are chosen by audition from the MIT and Wellesley College communities. They attend six hours of classes each week in verse, voice and movement.

Institute Professor Philip Morrison, second right, received the $5,000 honorarium that accompanies the James R. Killian, Jr. Faculty Achievement Award from President Paul E. Gray at a ceremony in Dr. Gray's office last week. Flanking Dr. Morrison are Dr. Killian, left, former president, chairman and honorary chairman of MIT, and Professor Arthur C. Smith, chairman of the faculty. Professor Morrison will present two Killian lectures next April. *—Photo by Calvin Campbell*

Variety marks Chapel music series

By CHINA ALTMAN
Staff Writer

When the MIT Chapel was being built in the early 1950s, those involved expressed the hope that it would provide a tranquil contrast to the bustling activities of the campus at large.

One of the most successful examples of that kind of contrast occurs every Thursday at noon when the Chapel becomes the setting for performances in an unusual concert series. The second of this year's MIT Chapel concerts will feature the Lenox Brass Quintet of Boston, known for its repertoire of early antiphonal music and contemporary compositions.

They will perform works of De Wert, J.S. Bach, Giles Farnaby, Robert Carriker and Jan Bach.

Concert coordinator Clarise E. Snyder explained that a variety of music is planned every year, on every kind of instrument except the piano, and in styles ranging from early Medieval and Renaissance to contemporary. This includes folk or world music from many cultures.

Each Thursday's concert is listed in Tech Talk's Institute Calendar. Information also may be obtained by calling Ms. Snyder at x3-2906.

The Chapel series was begun in 1966 by the late John Cook when he became aware of the unusual acoustics of the cylindrical building designed by Eero Saarinen. Mr. Cook, who was Institute organist and lecturer in music from 1965 to 1981, realized it would be an ideal setting for small concerts.

The community is invited to all these concerts without charge.

A photograph of the Chapel's altarpiece screen, by sculptor Harry Bertoia, was used recently to illustrate a series of poems on the quality of light, in the Christian Science Monitor. Natural light enters the windowless building in an unusual manner: Sunlight striking the water in the encircling moat is reflected upward through the "floor lights" within the arches between the outer and inner walls. This causes changing effects from moment to moment, one of the most well-beloved occurring on sunny days when sparkles of reflected light dance upon the wavelike forms of the interior red brick wall.

The Chapel has a new harpsichord which will be dedicated in a special concert on Sunday, Sept. 30, at 8:30 pm in a program performed by Institute organist James David Christie. The new two-keyboard instrument was made by Willard Martin of Bethlehem, Penn., based on a design by Nicolas Blanchet of Paris, circa 1710.

Mr. Christie will play an all-Bach program.

Apple president to open series

John Sculley, president, chief executive officer and a director of Apple Computer, Inc., will launch the 1984-85 Distinguished Speaker Series at the Sloan School of Management on Wednesday, Sept. 26. He will speak in the Bowen Room (E51-329) at 4:30pm.

In the year and a half since Sculley joined Apple as president and CEO, the company's sales have risen more than 50 per cent and the best-selling Macintosh personal computer has been introduced. By way of explaining his accomplishments, Sculley, named 1984 Marketer of the Year by Adweek, says, "I'm a thinking man's president. I approach things from a conceptual standpoint. My technique is to get people to do great things."

Before joining Apple, Sculley had been president and chief executive officer of Pepsi-Cola Company since 1978. Under his direction, a new food service division of Pepsi-Cola broke the Coca Cola Company's monopoly on the US fountain syrup market and grew annually at four to five times the rate of both Coca Cola and the soft drink industry.

Sculley had been with PepsiCo, Inc., the parent company of Pepsi-Cola, since 1967. Earlier he had worked in advertising and marketing with the InterPublic Group Co. and as an industrial designer in New York. He graduated in 1961 from Brown University with a bachelor's degree in architecture and also holds a master's degree in business administration from the Wharton Business School.

Doherty nominations are open

Nominations are open for the Doherty Professorship in Ocean Utilization, according to Chryssostomos Chryssostomidis, director of the MIT Sea Grant College Program. All nontenured MIT faculty members from any Institute department are eligible.

Endowed by the Henry L. and Grace Doherty Charitable Foundation, the two-year chair opens the way for promising, junior faculty members to undertake marine-related research. The purpose is to encourage faculty and their students to do seminal research on a significant issue that will further innovative ocean uses. There are no restrictions on the area of research and any aspect of marine use and/or management may be addressed whether social, political, environmental, economic, or technological.

Each year two faculty members are appointed as Doherty Professors and each receives $20,000 in annual support. At present one chair is open; the other will be held for a second year by Dick K. Yue, associate professor of ocean engineering, who continues his research to understand second-order wave effects to a level where they can be easily incorporated into engineering design.

Department heads may submit one nomination each year. The deadline is December 28, 1984. Final selection will be made by a committee that includes the Provost, Dean of Engineering, Dean of Science, Chairman of the Sea Grant Committee, and the Director of the Sea Grant Program following a review and recommendation from the full Sea Grant Committee. The Provost will announce the new Doherty Professor in the spring of 1985.

Anyone wishing to be nominated should contact his/her department head for procedures and selection criteria. In addition, MIT Sea Grant encourages all interested Doherty candidates to respond to the Program's 1985-86 call-for-proposals which has just been issued. Short form proposals are due in the Sea Grant office by October 15, 1984. Please contact Lawrence McKinnon or Norman Doelling for forms and guidelines, Rm E38-300, x3-7041.

Whitaker Fund will include Tufts in '85

The Whitaker Health Sciences Fund will extend its support for interuniversity faculty collaborative research to Tufts University School of Medicine next year, Dr. Irwin W. Sizer, president of the Fund, has announced.

Tufts will be joining the program that now provides research support for collaborations between MIT faculty members and those at Harvard Medical School and the Boston University School of Medicine. Three grants of about $40,000 will be allocated for Tufts-MIT projects next year.

The inclusion of Tufts followed a faculty survey at MIT in which some 50 faculty members engaged in biomedical research expressed interest in collaborating with Tufts faculty members, Dr. Sizer said. As a result of the survey the board of the Whitaker Health Sciences Fund voted unanimously to incorporate Tufts in the interdisciplinary program on an experimental basis.

Dean Henry Banks will be in charge of the program at Tufts. He chairs a committee that will review research proposals before they are submitted to the Whitaker Fund officers.

Proposals for next year may be made by faculty members at either university and are due February 1, 1985. Awards will be made by April 1 for the year beginning July 1, 1985. Interested faculty members may call Dean Banks at 956-6565 or Dean Sizer, x3-7878, for further information.

Swim classes planned

The Child Care Office will offer two swim programs this fall—one for infants and one for small children.

The purpose of both six-week programs is to teach parents to teach their children to swim, so a parent must be present and in the water with the child at all times. Cost of the programs is $25.

The infant program is for babies four to 18 months old and will meet Tuesdays, 4-5pm, beginning October 2. The pre-class meeting for participating parents will be Thursday, Sept. 27, 4-5:15pm.

Space may still be available in the program for children 2½-5 years old. These classes will be divided according to age and will meet Saturdays at 10 and 11am. The pre-class parent meeting will be Thursday, Sept. 20, with the first class sessions on Saturday, Sept. 22.

For further information or to sign up, stop by the Child Care Office, Rm 4-144, or call x3-1592.

Pardue named to board

Dr. Mary Lou Pardue, professor of biology at MIT, is one of three new members appointed to four-year terms on the National Advisory General Medical Sciences Council. The council, made up of leaders in the biological and medical sciences, education, health care and public affairs, reviews applications for research and research training grants and makes recommendations on policy matters.

Dr. Pardue, a molecular biologist and cell biologist, is doing research on the structure and function of chromosomes and gene activity during development. She received a BS degree from the College of William and Mary, MS from the University of Tennessee, and PhD from Yale University. She was president of the Genetics Society of America in 1982-83, and is now president elect of the American Society of Cell Biologists.

Ellis takes AI post

Charles I. Ellis, administrative officer at the Center for International Studies since 1978, has been appointed fiscal officer at the Artificial Intelligence Laboratory, Professor Patrick H. Winston, lab director, has announced.

Mr. Ellis, formerly assistant auditor at the MIT Audit Division, holds the BS degree in accounting/economics from North Carolina Central University.

Book sale

Book lovers should hasten to Hayden Gallery Tuesday, Sept. 25, where the MIT Libraries Book Sale will take place from 10am-3pm. Included will be new and used book bargains in all fields. Each purchaser will receive a free USGS map. Proceeds from the sale benefit the Libraries' Preservation Fund.

Foreign population is high

MIT ranked 15th last year in a listing published in the Chronicle of Higher Education of American universities with the most foreign students. But in terms of the proportion of international students, the Institute ranks third, at 23 per cent. Northrup University with 56 per cent and the University of California with 25 per cent have higher proportions of foreign students.

AARP year begins

The MIT Cambridge chapter of the American Association of Retired Persons (AARP) will hold a dinner meeting, its first of the year, Tuesday, Sept. 25, at 5pm at the Faculty Club.

All MIT people age 50 or more are eligible to join AARP and are invited to do so. Anyone who would like to attend Tuesday's dinner meeting should call x3-7914 before Friday, Sept. 21.

AARP meetings are held on the fourth Tuesday of each month from September through May (except December and January). The next meeting will be at 5pm October 23 in the Student Center Mezzanine Lounge, with a program to be announced. Monthly meetings feature timely subjects for people retired or approaching retirement.

Weight control program to be offered

An orientation session for a 10-week weight control program will be held Wednesday, Sept. 26, at noon in the Health Education Conference Room (E23-297) of the Medical Department. The meeting will include a slide/tape presentation and will acquaint prospective participants with the philosophy and content of the program.

The program itself will begin Wednesday, Oct. 3. It is based on principles of behavior modification. Participants will set their own goals with guidance from the group leader, Connie Roberts, nutritionist at Brigham and Women's Hospital. No prescribed diets will be used.

Topics to be covered include evaluation of eating habits, pacing, cue elimination, preplanning and problem solving. Specific problems such as impulse eating, splurges and guilt, surviving holidays, vacations, parties and restaurants, eating fun, and making calories work to advantage also will be adressed.

Mild stretching and relaxation exercises will be practiced at each session, but no special clothing is required.

The program is open to all members of the community. The fee is $75 ($60 for students and MIT Health Plan members). Advance registration is required. For further information and registration, call the Health Education Service, x3-1316.

Arts proposals due

All members of the MIT community are eligible to apply for funds from the Grants Program of the Council for the Arts for arts-related projects or activities. The first deadline for the 1984-85 year is Friday, Sept. 28.

The Council supports applications in all artistic disciplines and welcomes projects which allow students to experiment with and learn about the arts. Grant awards have generally ranged from a few hundred dollars to $10,000. Previous experience in the arts is not required.

For application forms and further information, call or visit Alison Shafer, Rm 20D-220, x3-4003.

THE INSTITUTE CALENDAR

September 19-October 1

Events of Special Interest

Information Night**—Tech Community Women-sponsored orientation for newcomers to MIT life. Representatives from various MIT departments will be present to meet you and answer questions, Sept 25, 8pm, Rm 10-340. Refreshments served at 7:30pm.

Libraries Book Sale*—of new and used book bargains in all fields, Sept 25, 10am-3pm, Hayden Gallery. Free USGS map with any purchase. Proceeds benefit the Libraries Preservation Fund.

Seminars and Lectures

Wednesday, September 19

Discovery, Excavation and Reconstruction of the Royal Ship of Cheops: A 43-Ft, 4,500 Year-Old Egyptian Funerary Ship*—Paul Lipke, curator, marine department, Plimoth Plantation, MIT Museum, The Ditty Bag Series of Maritime Evenings, 7pm, MIT Museum, 265 Massachusetts Ave.

Israel Towards the End of the Century*—Ambassador Meir Rosenne, Israel's Ambassador to the US, Center for International Studies lecture, 4pm, Rm 66-110.

In Whose Interest? A Discussion of Critical Perspectives on Recent Developments in the American Economy—Republican and Democratic Economic Proposals: How Much of a Difference*—Prof Joshua Cohen, MIT, Political Science, Undergraduate Economics Association Fall Lecture Series, 8pm, Rm 9-150.

Thursday, September 20

Has Safety Become a Question of Relativity Under Airline Deregulation?*—Robert Reed Gray, Hale Russell & Gray, attorney and pilot, Aeronautics and Astronautics Flight Transportation Laboratory Seminar, 2-3:30pm, Rm 1-277.

National Media Policymaking*—Jeremy Tunstall, City University of London and Jack Lyle, Boston University, MIT Communications Forum, 4-6pm, Rm E37-252.

Random Fields and Phase Transitions: A Case of Advanced Dimensionality Schizophrenia—Prof Robert Birgeneau,** Physics Colloquium, 4pm, Rm 26-100. Refreshments served 3:30pm, Rm 26-110.

Overview of English Stress and Intonation, Part II—** Writing and Communication Center ESL Workshop, 4:15pm, Rm 14N-317.

Mechanical Behavior of Wood—Prof Lorna Gibson, MIT,** CFD Seminar, 4pm, Rm 1-350. Refreshments served at 3:30pm.

A Rosh Hashana Workshop-A Look at the Liturgy and Meaning of the High Holiday Period*—Rabbi Dan Shevitz, MIT Hillel Director, Hillel Seminar, 6:30pm, Rm W2A (Hillel), 312 Mem Dr.

NMR Chemical Shift Imaging—Bruce Rosen, MD, PhD, MIT, MGH Dept of Radiology,** Harvard-MIT Division of Health Sciences and Technology Seminar, 4-5:30pm, Rm E25-117. Refreshments served.

Friday, September 21

Epoxy Resins: Fundamentals and New Developments*Dr. Friedrich Lohse, Central Research Department, CIBA-GEIGY Limited, Basel, Switzerland. Special Polymer Seminar, 11am, Rm 66-360. Coffee and doughnuts served at 10:30am.

The State of Nationalism in Germany*—Dr. Edwin Scheunch, Director of the Institute for Applied Social Research, University of Cologne, Center for International Studies Seminar, Rm E38-615. Bring your own brown-bag lunch.

Large Scale Purification of Biological Compounds Using Immunoaffinity Chromatography—Kris Antonsen,** Chemical Engineering Seminar, 2pm, Rm 66-110.

Catalytic Oxidation of Model Chlorinated Hydrocarbons—Mark A. Liepa,** Chemical Engineering Seminar, 3pm, Rm 66-110.

Monday, September 24

Optical Fiber Technology and Applications: Optical Sources and Transmitters—Dr. Stewart Personick, Bell Communications Research,** EECS and Communications Forum, 3-4:30pm, Rm 36-144.

Revision: Ideas—** Writing and Communication Center series on "Revising Scientific, Professional, and Academic Writing, 12:30pm, Rm 14N-317.

Greedoids-Basic Facts and Recent Work—Prof Anders Bjorner, MIT,** Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served at 3:30pm, Rm 2-349.

Tuesday, September 25

Radio Supernovae*—Dr. Kurt Weiler, National Science Foundation, Astrophysics Colloquium, 4:15pm, Rm 37-252. Coffee served at 3:45pm.

Yeast Centromeres: Structure and Function—Dr. John Carbon, U. of California, Santa Barbara,** Biology Colloquium, 4:30pm, Rm 10-250. Coffee served at 4pm, Bldg 56 5th flr vestibule.

EDIF: An Electronic Design Interchange Format—Prof. A. Richard Newton, University of California, Berkeley,** VLSI Seminar, 4pm, Rm 34-101. Refreshments served at 3:30pm.

Official Pumping and Molecule Formation—Paola Bicchi, Instituto di Fiscia, Universita di Siena and Instituto de Fiscia Atomica e Molecolare de CNR, Pisa,** Modern Optics and Spectroscopy Special Seminar, 11-12pm, Rm 37-252.

Multi-Stage Identification of ARMA Models Based on Prediction Error Methods*—Dr. Laimonis Kavalieris, MIT, Statistics Seminar, 4pm, Rm E49-298. Refreshments served at 3:30pm, Rm E40-111.

The Biology of Cerebral Dominance: Implications for Cognition—Prof Norman Geschwind, MD, Harvard Medical School, Commentary by Prof Steven Pinker & Prof Gerald Schneider,** Center for Cognitive Science Seminar, 7:30-9:30pm, Rm 36-428.

Wednesday, September 26

TBA—John Sculley, president and chief executive officer, Apple Computer Inc.,** Sloan School of Management 1984-85 Distinguished Speakers Series, 4:30pm, Rm E51-329.

Operational Testing of TCAS (Traffic Advisory and Collision Avoidance)*—Prof Walter M. Hollister, Dept of Aero & Astro, Aero & Astro Seminar, 4pm, Rm 33-418.

Thursday, September 27

Fish Oil and a Healthy Heart*—Dr. William P. Castelli, Framingham Heart Study, MIT Seagrant "Coastweek in New England Seminar, 7pm, Rm 37-252.

Faraday Polarization Fluctuations of Transionospheric Propagation—Dr. M.C. Lee, Air Force Geophysics Laboratory,** Electronics Research Lab Seminar, 4:30pm, Rm 34-302.

Pronoun Reference—** Writing and Communication Center ESL Workshop, 4:15pm, Rm 14N-317.

NMR Imaging Contrast Agents—Randall Lauffer, assistant in chemistry, MGH Dept of Radiology,** Harvard-MIT Division of Health Sciences and Technology seminar, 4-5:30pm, Rm E25-117. Refreshments served.

Friday, September 28

An Elementary Vortex Heat Engine—Dr. Henry Melson Stommel, senior scientist, Woods Hole Oceanographic Institution,** Center for Meteorology and Physical Oceanography, 6th Annual Victor Paul Starr Memorial Lecture, 3:30pm, Rm 9-150. Reception in Rm 54-927 following lecture.

Effect of Calcium on the Gasification of Carbon—Joachim K. Floess,** Chemical Engineering Seminar, 2pm, Rm 66-110.

Hydrogen Transfer from 1,4-Dihydronaphthalene to 9,10-Dimethylanthracene—John M. Pope,** Chemical Engineering Seminar, 3pm, Rm 66-110.

Films

Eulerian and Lagrangian Description* and *Pressure Fields and Fluid Acceleration—** Fluid Mechanics Film, Thurs, Sept 20, 4-5pm, Rm 3-270.

Rheological Behavior of Fluids* and *Cavitation—** Fluid Mechanics Film, Thurs, Sept 27, 4-5pm, Rm 3-270.

Community Meetings

President Gray's Office Open Hours—** Tues, Sept 25; Wed, Oct 24; Thurs, Nov 29, 4-6pm; Wed, Dec 12, 4-5:30pm; Thurs, Feb 14; Tues, March 5; Wed, April 3; Wed, April 24; Tues, May 14. Open hours are 3:30-5:30pm unless otherwise indicated. Appointments for time with the president are accepted only on the day of Open Office Hours, and may be made by calling x3-4665 or dropping by the reception area in Rm 3-208.

Al-Anon—** Meetings every Tues, noon-1pm, Rm 18-290; every Fri, noon-1pm, Health Education Conference Rm E23-297. The only requirement for membership is that there be a problem of alcoholism in a relative or friend. Call Ruth or Shirlee, x3-4911.

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

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

Commodore VIC Users Group—** meets monthly at noon time. For more info, call Gil, x8-3654 Draper.

Parent Support Group—** Medical Department sponsored meetings for parents with newborn to 2-yr old children, Sept 25, Oct 9, 30, Nov 13, 27, Dec 11, 12-1pm, Rm E23-501. Expectant parents encouraged to attend. For more info, call Bette Livesey, x3-6320, Janette Hyde, x3-1744 or Medical Dept, x3-1316.

MIT Wives' Group—** First meeting of the Afternoon Group, **Welcoming Newcomers: How to Get the Most From Your Time Here,** Wed, Sept 19. **Getting Acquainted with Wives' Group Members in Your Neighborhood,** 3-5pm, Student Center Rm 407. Babysitting provided in Rm 491. All women in the MIT community welcome.

Women and International Development: Joint Harvard-MIT Group*— Orientation meeting/discussion of program plans, Wed, Sept 19, 4:30-5:30pm, Center for International Studies, 292 Main St., 6th flr Conf Rm 1.

Weekly Exercise Classes—** Tech Community Women classes taught by professional instructor Kim O'Brion, Mondays, through Dec 17, 7:30-8:30pm, DuPont Dance Studio (2nd flr DuPont Gym). Fee: $21/TCW members, $28/non-TCW members, 14 wks; Athletic Card required.

MIT Women's League Informal Needlework Group—** Wednesday lunchtime gatherings, 9:30am-1:30pm, Rm 10-340. Bring sack lunch, projects, swap ideas. Coffee and tea served. Meeting dates: Sept 26, Oct 10, 24 (Rm 10-344), Nov 14, 28, Dec 12.

MIT Cambridge Chapter of American Association of Retired Persons (AARP)*— First meeting of year, Tues, Sept 25, 5pm, MIT Faculty Club; dinner served at 5:30pm. All persons age 50 or over are eligible and invited; respond before Fri, Sept 21. Regular meetings held the 4th Tuesday of each month from Sept-May except Dec & Jan. Timely subjects discussed; day trips arranged to Tanglewood, foliage trips, clam bakes, theaters, Lake Winnipesaukee, etc.

MIT Activities Committee

MITAC, the MIT Activities Committee offers discount movie tickets for General Cinema ($2.50), Showcase and Sack Theaters ($2.75). 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 and Lobbies 10 and E18 on Fri, 12-1pm. Lincoln Lab employees may continue to purchase these discount passes from Malcolm Coley, Rm C-280, Mary Kowal, D-250, and Linda Wesley, C-447, Wed & Fri 1-3pm, only. Check out our table of discounts for camping, dining, musical and cultural events available to you through MITAC and MARES (Mass Assoc of Recreation and Employee Services).

Academy of St. Martin in the Field. Friday, Oct 12, Symphony Hall, 8pm. Tickets $14 (reg $15.50) in the MITAC Office.

Fall Foliage Tour, stopping in Amherst for lunch on your own and continuing to Mt. Greylock, Saturday, Oct 13, leave West Garage, 9am, return 6pm, $12.50.

You Never Know. Cole Porter musical, BU Theatre, Wednesday, Oct 17, 8pm. Tickets $12.50 (reg $17.50) at the MITAC Office.

Ringling Bros and Barnum & Bailey Circus. Sunday, Oct 21, 11am; Tuesday, Oct 23, 7:30pm, Boston Garden. Tickets $7.50 (reg $9.50) at the MITAC Office. Don't miss this favorite!

Old Sturbridge Village. Sunday, Oct 28, leave West Garage, 8:30am, return to Cambridge about 5pm. Dine at the Tavern, have a lunch basket prepared or bring a picnic lunch. Tickets: $13.50/adults, $10.50/children.

Annual Fall River Factory Shopping Outlet Spree. Saturday, Nov 3, leave West Garage, 8:30am; leave Fall River, 4:30pm, only $5. More information available at the booths or in Rm 20A-023.

Bella Davidovitch. Russian pianist performs program of Chopin and Schumann, Friday, Nov 9, Symphony Hall, 8pm. Tickets $15 (reg $16.50) available in Rm 20A-023.

Holiday Night at the Museum of Science. Nov 30, 5-10pm. Join us in celebrating our new membership. Admission and a wine and cheese party are included for $1 (children under 12 free). Reduced parking fee with MITAC validation. Tickets must be purchased in advance!

Boston Children's Theatre Present *Peter Pan.* Dec 8, 2pm, New England Life Hall. Limited number of tickets available in the MITAC Office at $3.50 (reg $4.50).

New City Books coming in October for only $.50!

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

MIT India Forum Get-Together and Dinner*— cosponsored by SACA, BSCC; hosted by the Bhagat Singh Cultural Club. Meet students from Indian sub-continent (Bangla-Desh, India, Nepal, Pakistan & Sri-Lanka), Sat, Sept 22, 5:30pm, Student Center West Lounge.

Movies

The Empire Strikes Back—** LSC Movie, Sept 21, 7&10 (+ 2 on 9/22), Rm 26-100, 8&11, Kresge. Admission: $1 w/MIT or Wellesley ID.

A Star is Born—** LSC Classic Movie, Sept 21, 7:30pm, Rm 10-250. Admission: $1 w/MIT or Wellesley ID.

Liquid Sky—** LSC Movie, Sept 22, 7&10, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

Murder on the Orient Express—** LSC Movie, Sept 23, 6:30&9:30, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

Aus Einem Deutschen Leben (A German Life) (with English subtitles)—** MIT Foreign Languages and Literatures Section/Goethe Institute, Boston film series on The Third Reich in the Films of the Federal Republic of Germany, Thurs, Sept 27, 7:30pm, Rm 10-250. Free.

Mein Kampf (with English subtitles)—** MIT Foreign Languages and Literatures Section/Goethe Institute of Boston film series on The Third Reich in the Films of the Federal Republic of Germany, Fri, Sept 28, 7:30pm, Rm 54-100. Free.

Educating Rita—** LSC Movie, Sept 28, 7&10, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

Mutiny on the Bounty—** LSC Classic Movie, Sept 28, 7:30pm, Rm 10-250. Admission: $1 w/MIT or Wellesley ID.

Kirmes (with English subtitles)—** MIT Foreign Languages and Literatures Section/Goethe Institute, Boston film series on The Third Reich in the Films of the Federal Republic of Germany, Sat, Sept 29, 7:30pm, Rm 10-250. Free.

Vertigo—** LSC Movie, Sept 29, 7&10, Kresge. Admission: $1 w/MIT or Wellesley ID.

Die Patriotin (with English subtitles)—** MIT Foreign Languages and Literatures Section/Goethe Institute, Boston film series on The Third Reich in the Films of the Federal Republic of Germany, Sun, Sept 30, 7:30pm, Rm 10-250. Free.

The Paper Chase—** LSC Movie, Sept 30, 6:30&9:30, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

Music

Noon Hour Chapel Concert*— The Lenox Brass Quintet perform works of De Wert, J.S. Bach, Giles Farnaby, Robert Carriker and Jan Bach, Thurs, Sept 20, 12noon, MIT Chapel.

An Adventure in Chinese Songs and Dances*—The Youth Goodwill Mission from Taiwan, Republic of China Student Association, Chinese Institute of Engineers concert, Sept 22, 7:30pm, Kresge Auditorium. Admission: $4.

MIT Women's Chorale—** First rehearsal, Thurs, Sept 27, 7:45pm, Rm 10-340. Get in the "sing" of things! Join us Thursdays, for 2 hours, to sing a variety of music from medieval through contemporary. Open to MIT-Harvard Community. For info, call 876-3517.

MIT Choral Society—** Open rehearsal and auditions, Mon, Sept 24, 7:30, Rm 2-190 (note date change). No preparation necessary. Fall performance of Handel's *Messiah*, Nov 30, conducted by John Oliver. For more info, call x3-2906.

Noon Hour Chapel Concert*— Susan Larson, soprano; Claudia Von Canon, soprano, Stephanie Wingfield, cello; John Finney, harpsichord, perform works of Carissimi, Scarlatti, Handel and Rossini, Thurs, Sept 27, 12noon, MIT Chapel. Free.

MIT Affiliated Artist Concert*— Paul Orgel, piano, performs Bach, Schumann and Schubert, Fri, Sept 28, 8:30pm, Kresge Auditorium. Free.

MIT Affiliated Artist Concert*— James David Christie, harpsichord, performs music of J.S. Bach, with guest soloists: Fenwick Smith, flute; Gerald Elias, violin; John Finney, harpsichord, Sun, Sept 30, 8pm, MIT Chapel. Free.

Theater

***Of Thee I Sing* Auditions—** MIT Musical Theatre Guild, Sept 24-25**-(MIT Students Only!), Sept 26*-(Open to Public, No MIT Students), 7pm, Student Center. Bring a prepared song; call x3-6294 for more info.

Dance

MIT Dance Workshop—** Beth Soll, director. Workshops, Regular meetings: Beginning Modern Technique, M/W, 3-5pm, T-Club Lounge; Improvisation/Composition, Thurs, 3-5pm, T-Club Lounge; Intermediate Modern Technique, T/Th, 5:30-7pm, Walker 201.

Children's Dance Classes—** Pamela Day, instructor. Creative movement/modern dance classes for children 3-12, West Campus location; children and mothers do not have to speak English. Classes begin end of Sept. For more info and schedule, call Pamela, x3-5758.

Women's Rhythmic Gymnastics Classes—** T/Th, 5pm, T-Club Lounge. For information call Yana, x3-2427 or Helena, 526-2396.

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

Yoga*— ongoing classes in traditional Hatha and Iyengar style. Beginners: Mon, 7:20pm; Intermediates: Mon, 5:45pm; all levels: Fri, 12:05pm. For information call Ei Turchinetz, 862-2613.

Exhibits

COMMITTEE ON THE VISUAL ARTS

Student Art Loan Exhibit and Lottery 1984, Hayden Gallery, through Sept 20. Hours, M-F, 10-4, Weekends, 1-5pm.

THE MIT MUSEUM

Flowers As Images: Abstractions Through a Macrolens by Vernon M. Ingram. Macrophotographs in color by Prof. Ingram, MIT, through Oct. **Etched in Sunlight: Samuel V. Chamberlain '18,** Lithographs, etchings and photographs, through Nov 16. **Weavings of Guatemala,** early 20th-century ceremonial and everyday clothing demonstrates technical skill and use of color dynamics, through Feb 20. **All Mankind,** Photographs taken on assignment throughout the world by former Christian Science Monitor photographer Gordon Converse, through Oct 24. **Kites,** Expressions of kite flying, oil paintings by Ray Parks, Sept 26-Oct 31; Opening reception, September 25, 5-7pm. Hours: Weekdays, 9am-10pm M-F, Saturdays 10am-4pm.

Compton Gallery

RING THE BANJAR! The Banjo in America from Folklore to Factory. Robert Webb, curator. The musical, social and technological history will be shown by more than 50 instruments. Through Sept 29, 1984, Hours: Weekdays 9-5pm, Saturdays 10-4pm.

Hart Nautical Gallery

C. Allard: Artist to Dutch Merchants 17th-Century etchings depicting the watercraft and marine activities of the time. Through Jan 23, 1985.

Robert Fulton: Engineer and Artist, Fulton's patent specifications of 1809 and 1810 for his steamboat. Twenty-one drawings and one self-portrait. Through April 30, 1985.

Ongoing exhibits: **MIT Seagrant**—A review of MIT ocean research; **Collection of Ship Models**—Half-models and drawings. Historical view of the design and construction of ships.

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: **Rogers Building, 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.** Building 8: **Solar Energy, Society of the Sigma XI.** Building 14N, across from Rm 14N-118. **Happy Birthday Mr. Killian, 24 July 1904** photographic display in honor of the 80th birthday of the President Emeritus.

OTHER EXHIBITS

Institute Archives and Special Collections—Planning the New Technology. Part One: John Ripley Freeman. The first of a three-part series about the relocation of "Technology" (MIT) from Copley Square to Cambridge highlights the plans of Freeman whose ideas on interconnected buildings were rejected as "too wide a departure from accepted methods." Hall exhibit case across from Rm 14N-118.

MIT Faculty Club—Caribbean Reflections/Barbados, Photographs by Linda Cuccurullo, M-F, through Sept 28.

Jerome B. Wiesner Student Art Gallery— for 1984-85 scheduling, any MIT student or student group interested in showing or performing art in the Gallery, call Andy Eisenmann, x3-7019 in Rm W20-429, M-F, 9-5.

Sports

HOME EVENTS: Sept 19: Women's Volleyball vs Salem State, 7pm. Sept 20: Women's Tennis vs Simmons, 3pm; Men's Tennis vs Brandeis, 2pm; Women's Field Hockey vs Nichols, 3:30pm. Sept 21: Baseball vs Babson, 3:15pm. Sept 22: Men's Tennis vs Maine, 3pm; Football vs Providence, 1:30pm; Baseball vs Northeastern, 1pm; Men's & Women's Cross Country vs Coast Guard, 1pm. Sept 22-23: Women's N.E. Single-Handed Championship. Sept 23: Baseball vs Stonehill, 1pm. Sept 26: Men's Tennis vs Boston U, 3pm; Women's Tennis vs Emmanuel, 3:30pm; Soccer vs Babson, 3pm. Sept 28: Baseball MIT Fall Classic (vs Brandeis), 1:30pm. Sept 29-30: Baseball MIT Fall Classic. Sept 29: Women's Soccer vs Regis, 2pm; Water Polo MIT Invitational; Men's Sailing Single-Handed Championship Elimination, 9:30am; Soccer vs Bates, 2pm; Golf vs Bowdoin, Springfield, 1:15pm. Sept 30: Men's Sailing Northern Series I, 9:30am.

Wellesley Events

Jewett Arts Center*—The Permanent Collection, through Jan 20; **Master Prints from the 16th-20th Centuries,** through Oct 14; **French Art of the 19th Century,** through Oct 14. Hours: M-Sat, 10am-5pm, Sun 2-5pm. Free.

Junior Show*— Sept 21-22, 8pm, Alumnae Hall Auditorium. Wellesley students free; admission charge for general public.

First Steps for Reentry Women*— Center for Women's Careers Workshop, Sept 24, 7-9pm. $20 fee due at registration, 1 wk before program. For info, call x2352.

The Awesome Landscape: Photographs by Timothy H. O'Sullivan—Eleanor Hight, assistant director, Wellesley College Museum,** ArtBreak Talk, Sept 25, 12:30pm & 4:15pm, Wellesley College Museum.

Women in Finance, Part II: Investment Banking, What Is It, Where Do You Start, Where Do You Go?*—Wendy Evrard Lane, Women in Action series, Career Exploraton Program, Sept 25, 7pm, Library Lecture Room. Admission: $5/general public.

Evening Services, Rosh Hashanah*— Sept 26, 6pm, Hillel Lounge, Schneider Student Center. Open to public.

Rosh Hashanah Services*—Sept 27, 10am, Hillel Lounge, Schneider Student Center. Open to public.

Concert*— Shawm and Sackbut with Organ, Sept 30, 8pm, Houghton Memorial Chapel.

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

Send notices for Wednesday, September 26 through Sunday October 14 to Calendar Editor Rm 5-113, before noon, Friday September 21.

MIT Arts in the News

A Sampler of Press Clippings
Compiled by the Council for the Arts at M.I.T.

September 1984

The Boston Globe Magazine

February 26, 1984

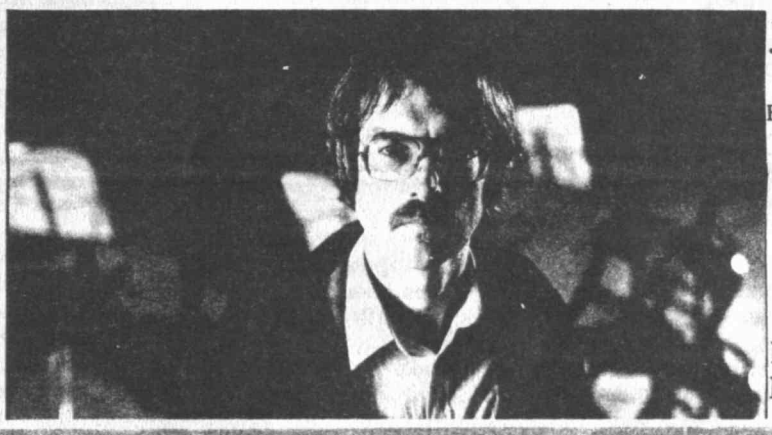
A homecoming for John Harbison

BY JANET TASSEL

BOSTON, ACCORDING TO ANDRE Previn, the music director of the Pittsburgh Symphony Orchestra, is lucky to have John Harbison. In fact, Previn is the lucky one: For almost two years Harbison has been the composer-in-residence with the Pittsburgh Symphony, a situation that Previn calls "absolutely ideal." He recalls the time he first heard Harbison's music, three years ago: Driving to an appointment, Previn turned on the car radio and "there was this *amazing* music." It was Harbison's Piano Quintet. Late for the appointment, Previn nevertheless stayed in the car until the composer's name had been announced. Soon afterward, Previn located scores and recordings of Harbison's works, and he says he has never heard a piece he has not admired. "When the people from the Meet-the-Composer program contacted me," he says, "I was given a long and impressive list of composers. And there was John's name! I leapt! If I had my way, I'd keep him here indefinitely."

The Meet-the-Composer/Orchestra Residency program, just entering its second season, matches orchestras with American composers for two-year residencies. Even in the unlikely event that the program's sponsors — Exxon, the Rockefeller Foundation, and the National Endowment for the Arts — were willing to bankroll an extended relationship, Harbison would still belong to Boston. In the fall he will be returning to his position as professor of music at MIT, and this summer he will be composer-in-residence at Tanglewood. More immediately, he will be here next month for the Boston Symphony Orchestra premiere of his First Symphony on March 22. Says BSO music director Seiji Ozawa, to whom the symphony is dedicated: "This is a very, very talented man. I am really excited to help this symphony get born."

Like all of Harbison's visits to Boston since he was spirited away by Pittsburgh, this one will have the flavor of a welcome-home party. Some years ago Harbison slipped modestly into his niche as a favorite son in the musical community. Besides his work at MIT, he has served as director of the Cantata Singers and has frequently conducted such groups as Collage and Emmanuel Music.



JOHN HARBISON, WHOSE SYMPHONY WILL BE PREMIERED BY THE BSO NEXT MONTH.

Photograph by Eric Roth

The Atlantic

MARCH 1984

MUSIC

HARD-WON DIRECTNESS

BY LLOYD SCHWARTZ

THERE SEEMS TO be so little interest in serious contemporary music that one tends to get suspicious of any composer who begins to stand out. What's the gimmick? Who's the connection? Which record company is launching a new ad campaign? But the more one scrutinizes the career of John Harbison, the more one sees that if he has begun to cast his shadow—as a "New Romantic," a "tune man," a "radical conservative," or a "conservative radical," all labels the press has attached to him—the reason is simply that his music is more memorable, more moving, and less easily pigeonholed than the music of anyone else in his generation.

Harbison, forty-five, is currently on leave from the MIT music faculty and in the second half of a two-year appointment as the Pittsburgh Symphony's first composer-in-residence. His First Symphony, one of the Boston Symphony's twelve centennial commissions, will be given its world premiere this month. His latest, full-scale orchestral work—an hour-long ballet in two parts, *Ulysses' Raft* and *Ulysses' Bow*—will receive a double premiere this spring in New Haven and Pittsburgh.

NEW ENGLAND MONTHLY

MAY 1984

CLASSICAL MUSIC

The **Atlantic String Quartet** is an indefatigable champion of this century's music, playing the old familiar guys such as Stravinsky and Schönberg as well as premiering some 100 new pieces over the last ten years. On May 4 at 8 they will give the Boston premiere of a new quartet by MIT's Edward Cohen, who writes dense, intensely expressive music. Also on the program are works by Webern and Stravinsky, and the entirely delightful Ravel quartet. Kresge Auditorium, MIT, Massachusetts Ave, Cambridge, as part of the Music at MIT series. Free. Call 253-2906 for information. — *J.S.*

Dancemagazine

Beth Soll: NEXT WAVE *by Iris M. Fanger*

Doing It Her Way

BOSTON'S Next Wave choreographer Beth Soll makes dances her own way, as she has done for more than a decade. There has been a continuum in her work that stretches from *Lunch Break,* produced in 1974 at Harvard, to *Dances of Paradise and Everyday Life,* seen in Boston last April and scheduled to be shown at the Ethnic Arts Center in New York City October 15 and 16. Although the works have different titles and were created over a period of years, the common thread running through them is the imaginary society Soll has conceived, with personages, rules, territory, rituals, and gods. The panorama of events has unfolded like an epic poem, with Soll as the bard at court.

Soll's work has received recognition beyond Boston. She has been given four choreographic fellowships from the NEA and small grants each year from the Massachusetts Council for the Arts and Humanities, but Soll worries that she will be unable to keep her company of five other dancers together beyond spring of 1984 unless additional funds can be raised.

Meanwhile, Soll's calendar is filled for the coming year. After her New York performances, she will travel to Hungary and France to teach and perform during November. She will return in time for a shared concert with Montreal choreographer Jo Lechay at MIT in early December. In January, *Dances of Paradise and Everyday Life* will be presented at the Dance Place in Washington, D.C. Soll is working on a collaborative piece with Boston choreographer Ruth Birnberg, who studied with Soll, and on a new full-length work for the company.

DANCEMAGAZINE October 1983

A. Epstein

SOJOURNER
THE WOMEN'S FORUM
JANUARY 1984

Grace Paley: Her Life and Words Make a Difference

Grace Paley's lines stick. Like, "You have your opinions, I have my opinions, life don't have no opinions."

by Leslie Lawrence

Eight or so years ago, one of my teachers suggested I take a look at the work of Grace Paley. I did—and it changed my life.

I continued to read her work throughout the years, to tell all my favorite people to read her, too, and to read her aloud to students, friends, and lovers. Recently, when I was presented with the opportunity to interview Grace in connection with her appearance at MIT, I hesitated. I knew from friends we had in common how busy she was—teaching at Sarah Lawrence, reading all over the country, sitting in, camping out, showing up and speaking out at countless anti-nuke rallies. Still, what writer can resist the chance to have a long talk with her favorite one?

When she steps up to the podium, she's chewing gum as she always does when she reads, but her chomping looks quieter, more subtle than I remember. Her voice seem tentative at first, but as soon as she starts to read her stories all signs of nervousness disappear. Her words take over—their inimitable syntax and rhythm and inflection. It's all there, stronger than ever: the humor, the pathos, the wisdom, the compassion, the hard questions with no answers, the lines that stick. Like, "You have your opinions, I have my opinions, life don't have no opinions."

When Grace is finished, we are on our feet clapping and cheering—not a myth, not a cult figure, but a woman whose life and words have made a difference. And I realize that there's another reason why I was reluctant to interview her: her stories speak for themselves.

January 1984—SOJOURNER

Margaret Atwood's Poison Pen

by Robyn Fizz

Margaret Atwood, the Canadian novelist and poet, mixes venom with humor. Much of her writing is about poisons of the human spirit: she has little sympathy for comfort or illusion, and she will not be tricked into sentiment. "Hope is when you expect something more, and what more is there?" (from "Hopeless"). Atwood spent a rainy November day on the MIT campus, where she gave a class, press conference and public reading under the auspices of the Writing Program. In the class, she compared making discoveries in writing to concocting things in your basement with a chemistry set. Atwood tends toward the acid, in person and in her work, but her distillations fizz with humor.

At her well-attended reading, Atwood chose several short fictions from the recently published *Murder in the Dark*, and several snake poems which she felt—from a biologist's point of view—were suited to a gathering at MIT. The audience was less convinced of this, but loved the prose pieces, especially "Simmering," "Women's Novels," and "Happy Endings." These satires on sexual politics, which Atwood delivered deadpan, drew rounds of laughter from the audience. Few serious authors manage to be this funny.

For Atwood, "What you see depends partly on what you want to look at and partly on how" (from "Instructions for the Third Eye"). Atwood examines power and those demeaned, and measures the distances we keep, or try to keep, from cruelty and pain. She does not sit us down with armchair reading, but points the way to the basement. In the darkness there's a glint of vials, of poison and of humor.

Author's Note: *The MIT Writing Program deserves recognition for bringing women writers of great talent, and with feminist perspectives, to a campus known chiefly for the whiz of technology.*

TAB

November 9, 1983

Women's Words

MIT brings talented women writers to town

Margaret Atwood

By Anna Warrock

While a student at the Massachusetts Institute of Technology may learn to literally "hold infinity in the palm of your hand," the school seems an unlikely place to host a year-long reading series on "Women, Writing and Society."

Nonetheless, Gwendolyn Brooks, Margaret Atwood, Grace Paley, Maxine Kumin, Dorothy West, Ann Petrie, and others will represent a half-century of award-winning women's writing at monthly readings which will take place during this school year.

And judging by the standing-room-only crowd of more than 600 at the October reading by Gwendolyn Brooks, the programs will be well received.

The series has received financial support from various segments of the school, including the office of Dean Harold Hanham (dean of MIT's School of Humanities), the MIT Women's League, and the Tenth Anniversary Martin Luther King, Jr. Fund.

According to Janet Romaine, assistant dean for administration in the School of Humanities, the series echoes several concerns of MIT. "MIT is 25 percent female among undergraduates, so there is a strong constituency represented by the series," says Romaine. "At the same time, MIT is a place where women students' identities as women can become less important than their identities as professionals," Romaine continues. The reading series promotes excellence through example, she says.

A highlight of the spring semester will be an evening symposium of Black Women's Literary Traditions, including Harlem Renaissance writer Dorothy West, and Ann Petrie, author of *The Street*, one of the first novels detailing Harlem city life.

"MIT is strongly committed to the concept of diversity in student body and faculty, a diversity not just of technical versus humanistic, but of different cultural experiences," Romaine says. "Here again, we hope to promote excellence."

The monthly reading series is sponsored by the MIT Writing Program, a little-recognized but significant department serving undergraduates. "The three streams of the Writing Program — science and technical communication, expository writing, and creative writing, — offer courses that allow a student to major in engineering and minor in writing," says Assistant Professor Robin Becker, one of the organizers of the series and a teacher and poet.

Becker explained that the courses cover everything from beginning essay writing to poetry and short stories to science journalism and naturalist writing. "Naturalist writing is something most MIT students are really good at, because they're good at describing things in detail," Becker notes.

Becker says that the Writing Program gives prizes to students in all three streams at the end of the year "so students realize that we take writig as seriously as the science departments that give prizes for research."

Becker worked along with Assistant Professor Marilyn Richardson and Visiting Writer Fanny Howe to bring significant women writers to MIT because, she says, they agree that excellent example is good encouragement.

"We invited authors who made a significant contribution to the explosion in women's writing over the past 40 or 50 years," Becker says. "We wanted to contribute to the tradition of excellence at MIT."

Margaret Atwood, who won Canada's Governor General's Award and has written more than 16 novels and books of poetry, will read Nov. 11. Grace Paley's short stories, collected in *The Little Disturbances of Man* and *Enormous Changes at the Last Minute*, reflecting her occupations as writer, mother, and political activist since the 1950s, will read Dec. 1. Both programs are at 8 pm at the Salle de Puerto Rico in the MIT Student Center, across Massachusetts Avenue from MIT's main building. The spring schedule will be announced later.

18 • Thursday, October 27, 1983 • BAY STATE BANNER

Gwendolyn Brooks

Kay Bourne

Gwendolyn Brooks is poet laureate of Illinois, a Pulitzer Prize-winner in 1950 for her book of poetry, *"Annie Allen,"* and a black woman whose writing is a bold panorama of the city neighborhood in which she lives, Chicago's Southside. Last Wednesday afternoon she also became a teacher and held class at MIT.

Musing about literature, and noting her penchant to write compactly, she early on established the respect she feels for her readers. "The reader supplies some of the beauty," she said, "some of the philosophy."

Every word counts. The exact word matters. Their order is important. "I revise. I revise. I revise," she said.

Miss Brooks became an immensely popular writer with the publication in 1960 of her poem *"We Real Cool."* It appeared in a collection of her verse "The Bean Eaters."

In her early years of writing, Gwendolyn Brooks said that she used to actually go places, "sit down, and take notes about everything I saw."

She is less of a reporter noawadays, but even so, "I think of myself," she said, "as being a people poet." Here she is referring to the message she intends with her essays, poems, and stories and to the audience she intends them for, as well as, to subject matter.

Gwendolyn Brooks was the inaugural speaker in a series at MIT, "Women, Writing and Society," which will also include Canadian novelist, poet and critic Margaret Atwood (Nov. 11) and short story writer Grace Paley (Dec. 1). There will be, as well, five more events in the series, including poet Maxine Kumin and writer Sissela Bok.

In addition to teaching a class of undergraduates at MIT, Gwendolyn Brooks gave a reading in the Sala de Puerto Rico on the MIT campus which was open to the public.

Poet laureate Gwendolyn Brooks spoke at MIT last week to discuss her old and recent works. Brooks was a Pulitzer Price winner in 1950 for her book of poetry "Annie Allen." *(Don West photo)*

Graham Hair's musical computations

By Richard Buell
Special to The Globe

"One of the idiomatic characteristics of the computer," says the Australian composer Graham Hair, "is that it *doesn't have any*. I think of it as a musical instrument. It's a completely versatile tool."

Hair has been busy at the Massachusetts Institute of Technology's Experimental Music Studio, putting finishing touches ("they're the nuances," he says) on a piece for computer with live performer. His will be the first of some five computer-with-performer works scheduled for premieres this season and next at MIT under a grant from the Massachusetts Council on the Arts and Humanities. (The other composers in the project are Charles Dodge, Peter Child, Martin Brody, and William Albright. The opening concert in this "New Musical Resources" series will take place Saturday night at Kresge Auditorium.)

Hair turns out not to be an embodiment of that forbidding popular stereotype, the computer composer – a term usually taken to mean computer engineer first (blip-blip, etc.), and composer second, and a rather poor, unmusical second at that.

"Well, people really are stuffed up to the eyeballs with prejudices, aren't they?" says composer-pianist-conductor Hair, who has been a student of Peter Maxwell Davies, spent time soaking at the Princeton and IRCAM (Paris) musical think tanks and figured energetically in new-music activities in his native Australia.

"The notion that it takes a lifetime of computer science to use the medium is simply not true. For me, certainly, the medium *qua* medium is hardly the first thing.

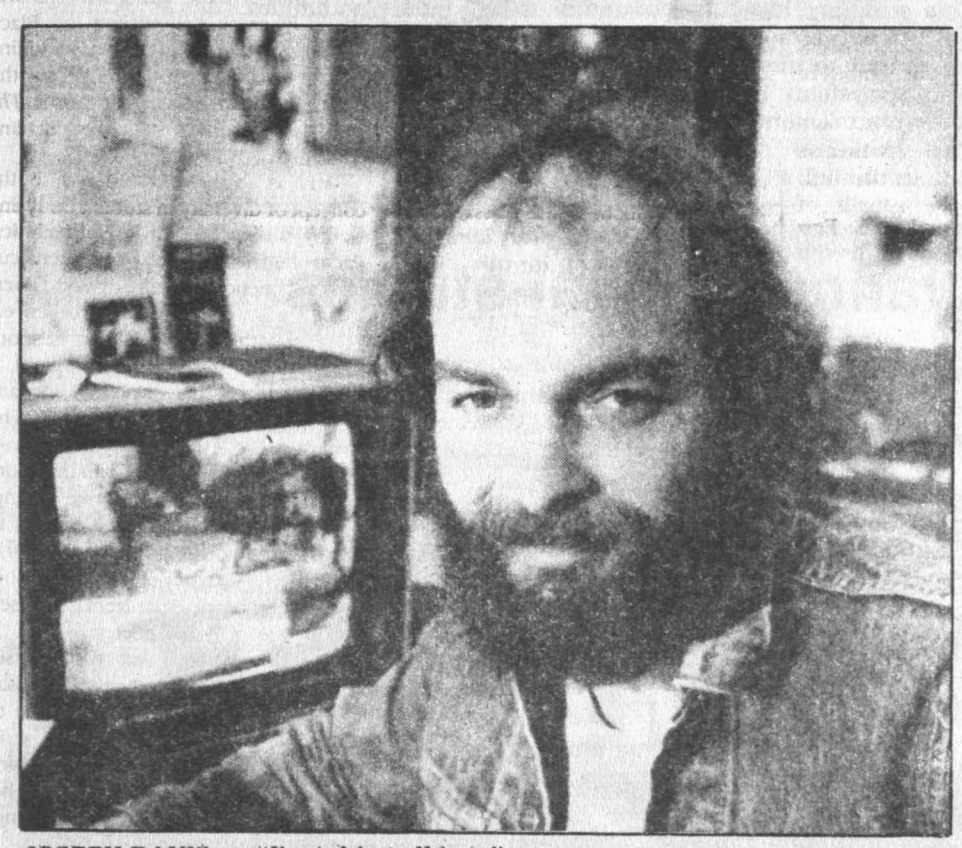
"What sort of composer am I? What do I like? I'd say that much of my music is polyrhythmic – I'm interested in medieval music – Josquin, especially – and I like Gabrieli for his spatial polyphony. And in the present, the player-piano studies of Conlon Nancarrow. In fact, some aspects of this piece I'm doing now I've used the instrument – well, like a player piano a couple of generations onward.

"I've worked with singers a lot, written a lot of voice pieces, and I'm interested in the drama of *physical* things. Nothing's more physical than opera singers. And the way trombone players work!

Composer Graham Hair (left) and trombonist Lawrence Isaacson rehearse Hair's new work for trombone and computer.

THE BOSTON GLOBE THURSDAY, DECEMBER 15, 1983

Is outer space ready for 'New Wave Ruby Falls?'



JOSEPH DAVIS . . . "I'm taking all bets" GLOBE PHOTO BY JOHN BLANDING

By Marty Carlock
Special to Globe

Some time next year, Joseph Davis plans to light up the sky with a far-out piece of art – the first ever in space.

It has the potential to be the largest piece of art ever produced – Davis himself has no idea how many hundreds of miles of space it may occupy – and it could possibly be seen by the biggest live audience for any man-made event in history.

Working at the Center for Advanced Visual Studies at MIT, Davis and his colleagues are putting together what he calls "a little box of northern lights." The package will be carried into orbit by a NASA space shuttle mission, and, on command, it will paint the sky with colors over the most populous areas of the earth. He has titled it "New Wave Ruby Falls."

Will it work? "I'm taking all bets," the artist says.

The earliest possible launch date now would be aboard a flight next month, numbered STS (Space Transportation System) 11. Goddard Space Flight Center has told Davis it has openings on at least six other flights next year, so the exact date can be modified depending on when the package is completely tested and approved.

Simply to get on the schedule, Davis has had to overcome a lot of obstacles and answer a lot of questions, such as: Does art belong in space? Will it contaminate the atmosphere? How can you produce northern lights at will? How can you put the apparatus in a package whose maximum size is five cubic feet and whose maximum weight is 200 pounds? And: is it art anyway?

But what makes "New Wave Ruby Falls" art rather than a scientific experiment? "The key here is implication," the artist argues. "Just as you've used a coathanger to clear a drain, or a screwdriver to open a can, these [space age] tools become another thing and have another function by the explicit use at the moment. By using technology for art I want to show that, in America, technology is both acceptable and adaptive and has a right to make a difference.

"It has just now become possible to make a work of art really huge," he continues. "The formal arts can transcend the limitations of place, and become specific to the act and ceremony of the moment."

The Boston Globe Sunday, April 8, 1984

Views of heaven at MIT

REVIEW | ART

By Robert Taylor
Globe Staff

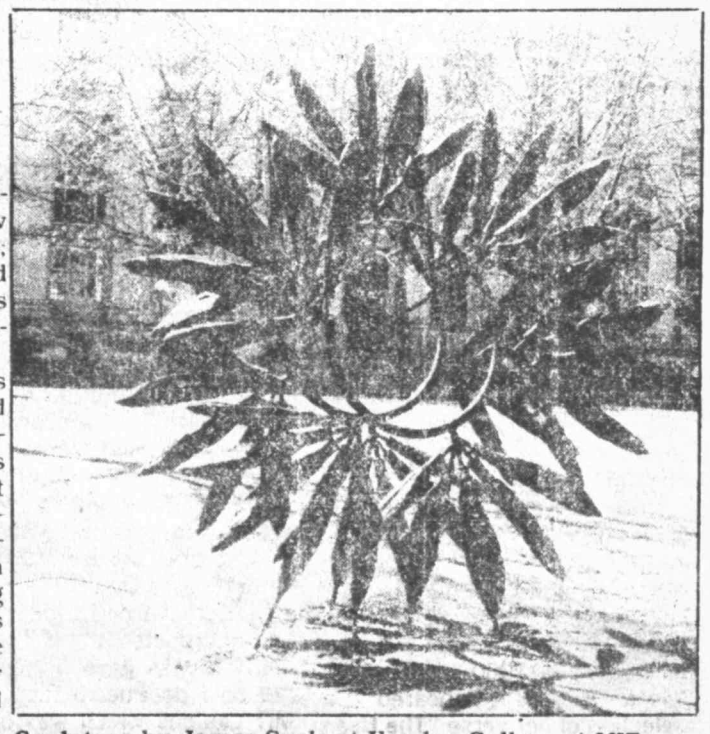
Paradise is usually considered a future condition or place as in much religious doctrine, or a past condition or place as in Marxism and the philosophy of Rousseau. Seldom does the notion of paradise involve the present. The interesting new show of three installations in and around MIT's Hayden Gallery presents the concept of paradise from a different viewpoint.

It is treated as a relationship between the individual and society, and has its roots, like other Hayden Gallery exhibitions this season, in George Orwell's "Nineteen Eighty-Four."

The novel refers to paradise: "The place where there is no darkness was the imagined future, which one would never see, but which, by foreknowledge, one could mystically share in." This refers to a future without Big Brother, a dream of Winston Smith, but instead he ironically discovers the place where there is no darkness is the torture chamber of the Ministry of Love. The MIT installations don't come to this dark conclusion but leave paradise still a tantalizing possibility.

Vito Acconi's 24-foot-high structure adjacent to the gallery presents a glass-panelled room elevated above the ground. It has three elements not unlike a cube (the room) resting on two tilted polygonal shingled bases looking like upended houses on an outsize Monopoly board. The room is open, evoking contemporary architecture where inside and outside flow together; we can see its furniture; and because the panels are tinted blue this evokes the celestial colors of sky, the benign aspects of nature.

Behind the gallery James Surls has created a 14-foot-long and nine-foot-high carved wood sculpture in which fronded shapes spring up along an open spiral. It is a graceful piece, closer to traditional sculpture than to the concept of an installation. The open rhythmic loops establish a flowing linear idiom, although the piece is overwhelmed on this site by the proximity of the huge black Calder stabile. If it were in the enclosed court where the Acconi rises, it would, I think, work more effectively.



Sculpture by James Surls at Hayden Gallery at MIT.

GLOBE PHOTO BY JOSEPH DENNEHY

THE CHRISTIAN SCIENCE MONITOR

AN INTERNATIONAL DAILY NEWSPAPER TUESDAY, MARCH 13, 1984 A TWO SECTION PAPER 50¢ (60¢ Canadian)

VOL. 76 NO. 169

Art coming out to play

SURROUNDED by the buildings of Killian Court on the Massachusetts Institute of Technology campus, you feel like a very small person in the midst of a very well-planned universe. The lawn is proportioned into vast, un-New England-like spaces, and the dome overarching the Barker Engineering Library is based on the Pantheon in Rome. After this expansive visual statement, bringing together many facets of life to reinforce science and technology, it comes as no surprise that MIT has one of the best collections of outdoor art in New England.

Killian Court looks perfectly finished and complete in itself — until you pass by one of these sculptures and notice that it looks very like the leavings of a children's building game. This piece by Michael Heizer takes up a comparatively small part of the courtyard, yet it makes the viewer realize that the one thing left out of this universe is childhood — as if play is put in storage when an adult prepares for work. The reverse side of that belief is that the more complex the thoughts of a person are, the further that person is from having fun. The word "serious" is likely to be applied to cultural activities, but not to a group of people exchanging puns. But I'm not so sure there's such a great distance between fun and so-called "serious" activities. Sometimes the seeds of one are found in the other.

Take puns, for instance. Alexander Calder's black metal stabile is one of the most popular modern sculptures on campus. People involved with MIT remark that this affection may stem not only from the fact that the sculpture has been around a while and has become almost a logo for the campus but also that it tickles the engineer's love of puns. For this sculpture, named "The Big Sail," symbolically captures the wind coming through the tall Green Building behind it.

Much of art is bristling with what are, if not technically puns, at least branches on the same family tree. They make a play on two very different things that have similar appearance instead of similar sound. Such visual puns may not stimulate rollicking laughter, but they can make the viewer feel as if he or she has accidentally touched something enchanted.

Take the Heizer sculpture, "Guennette," again. Closer up, the expanse of undecorated surfaces, compared with that of the buildings behind, looks not only monumental but primitive. There is a pun on time here. The buildings closest to the sculpture have elegant refinements and elaborations that suddenly seem to the viewer as if they were made later than these simple piles of elemental shapes, not the other way around. The artist has been known to talk about primitive and ancient echoes in the earth works he is well known for.

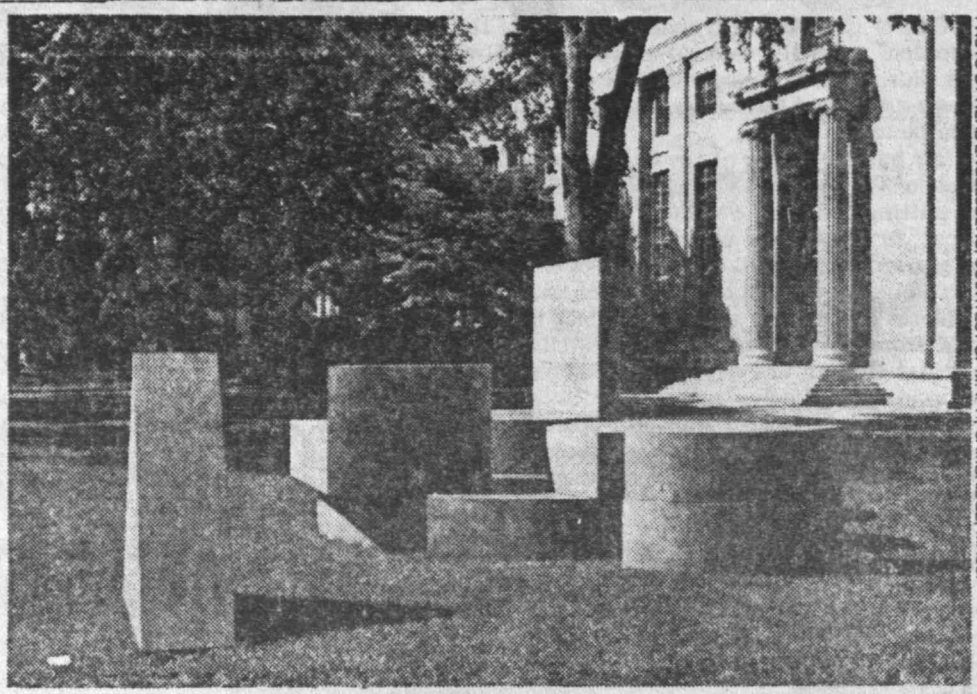


PHOTO BY HERB ENGELSBERG, COURTESY OF M. I. T., CAMBRIDGE, MASS.

'Guennette' (1977): sculpture by Michael Heizer

Here, construction becomes a primal impulse to make something more complex out of even the simplest materials, even if it is balancing carefully proportioned segments of a circle on top of each other, or varying them by letting some slabs swing out into empty space, or even making puns out of their configurations. Especially in Killian Court, the symbolic heart of MIT, the building-game aspect of this sculpture has a special meaning. It suggests that some professions that require working with intricate systems may, for some of their practitioners, actually preserve the freshness of seeing certain things through a child's eyes.

To keep alive that first exhilaration of childhood discovery — say, when blocks or logs, which by themselves don't look capable of much, suddenly slide together just right and become a house — a person may look for things to work on that have ever-new angles capable of magically interlocking with and transforming the things around them. And, as with the puns, each twist and turn, no matter how important the ultimate purpose, has a little bit of play built in.

Elizabeth Findley

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art press 76

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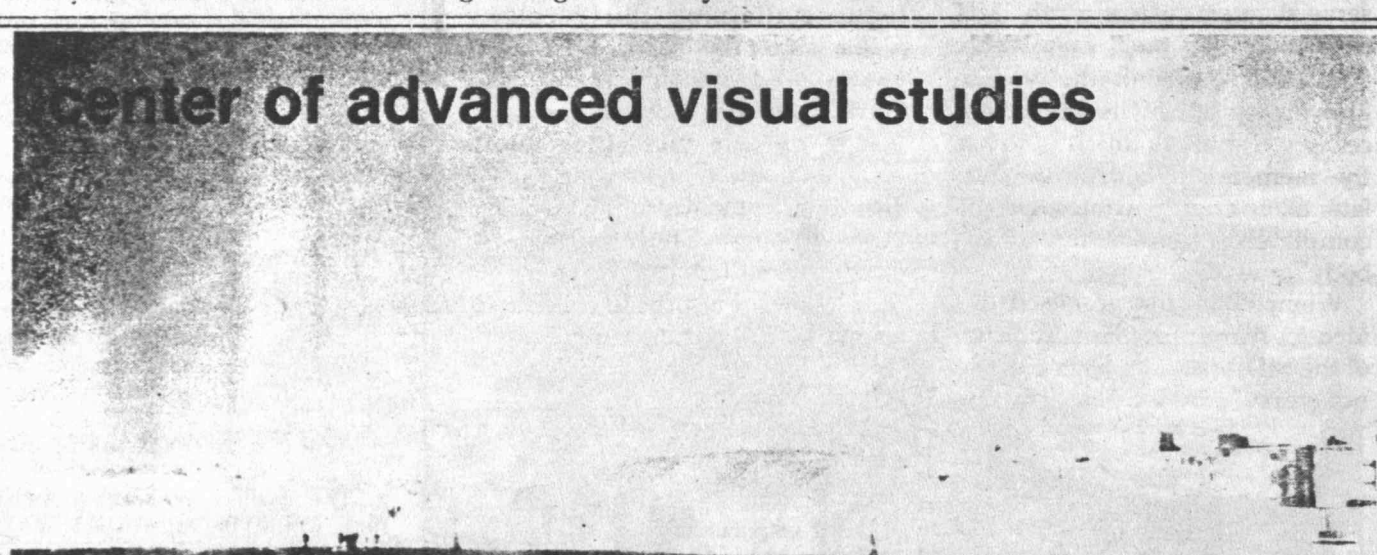
center of advanced visual studies



ALEJANDRO SINA - Rubans lumineux » M.I.T. 1975 - ph. C. Campbell

nouvelles frontières de l'art et de la technologie

BERTA SICHEL

Quand le Massachusetts Institute of Technology décida de faire des recherches sur les nouveaux media, il créa le Center of Advanced Visual Studies (C.A.V.S.), en 1967, avec l'apport financier de différentes institutions comme Old Dominion et la Fondation Graham et aussi d'autres industries désireuses d'ouvrir les nouvelles technologies au domaine de l'art. A l'origine de cette idée et de cet idéal : le peintre, photographe et penseur hongrois Gyorgy Kepes. Comme Roland Barthes, Marshall McLuhan ou Norman O. Brown, Kepes croyait en l'existence d'une *nouvelle sensiblité* et en la possibilité d'une culture non-littéraire, une culture d'images. Mais il était conscient que beaucoup de ces images sont aussi difficiles à comprendre qu'un problème de physique.

héritage du Bauhaus

Le C.A.V.S. est situé au numéro 40 de Massachusetts Avenue, presqu'en face de l'édifice central de MIT, bâtiment imposant avec des colonnes de temple Grec dans le plus pur style colonial. Le Centre, par opposition, est un bâtiment de 1.200 m², peint en gris avec des éclairages indirects et d'antennes paraboliques, qui rappelle le style « bunker ».

Gyorgy Kepes est arrivé à MIT en 1946, invité par l'école d'architecture. A l'époque, le discours de l'institution était dominé par des hommes comme McCulloch et Nobert Weiner pour qui, en termes de communication, l'être humain n'était pas très différent de la machine. Dans une interview de la fin des années 60, Kepes déclarait avoir éprouvé un « choc culturel ». Les cerveaux brillants qu'il avait rencontrés dans le *campus* de MIT étaient, selon lui, complètement ignorants dans le domaine de l'art. Kepes a commencé à chercher une façon de combiner les deux discours de l'art et de la technologie, et actuellement certaines personnes pensent que la direction de MIT a accepté d'avoir un centre expérimental d'art comme alibi à l'excès de technicisme dans le contexte local. Kepes connaissait bien la combinaison *Art-Technology*. Ex-assistant de Laszlo Moholy-Nagy, il savait que le *« Art-Technology : a New Unity »* avait été inventé par Walter Gropius quand l'art produit par le Bauhaus fut accusé d'être bourgeois. La liaison Kepes/Moholy-Nagy/Gropius a fait que certains ont vu une relation entre le Centre et le Bauhaus. Dans l'interview ci-jointe, Otto Piene s'explique sur cette supposée filiation. S'il y trouve quelque points communs, ils constate par contre une différence fondamentale : *« Nous sommes dans les années 80 et nous vivons en Amérique »*. L'artiste argentin Luis Frangella, « fellow » du Centre à l'époque de Kepes, note pour sa part, à ce sujet : *« La structure propre du Centre ne permet pas l'existence d'une communauté artistico-politico-philosophique comme le Bauhaus. Le Centre a toujours été une institution underground par rapport à MIT et par rapport au monde de l'art »*.

TechnologyReview MAY/JUNE 1984

Above: **The Clandestine Marriage** *by David Garrick and George Colman, directed by Robert Scanlan and Wayne Heller, '86. Actors left to right: Anjali Sastry, '86, Bill Bryant, '83, and Joel Gluck, '86.*

The Dramashop Experience

Ring the Banjar!

by Robert F. Baldwin

A banjo-picking historian and the MIT Museum in Cambridge, Massachusetts, have joined forces to give the public its first comprehensive look at what could rightfully be called America's national musical instrument.

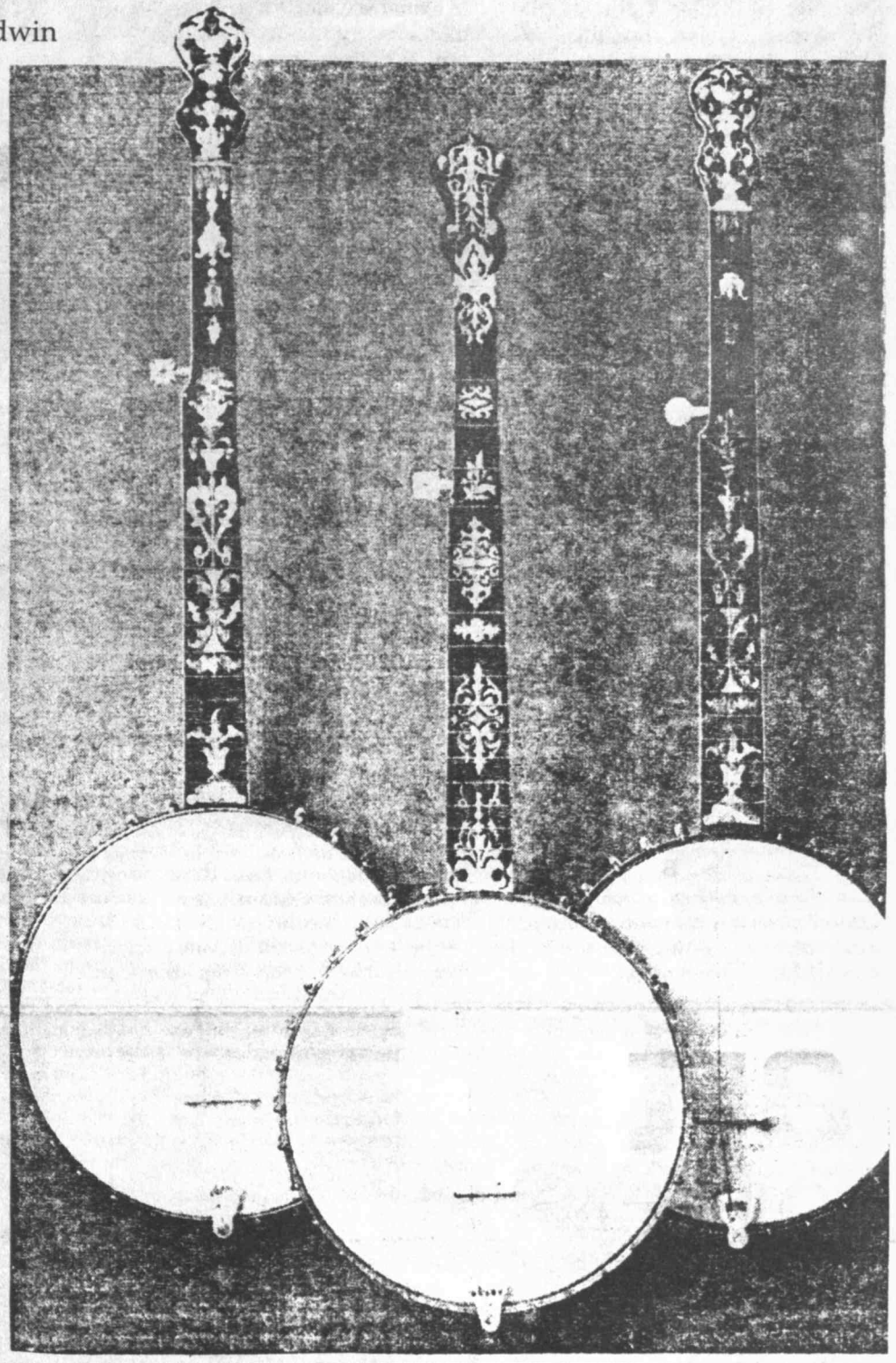
The exhibition on banjos spans a two-hundred-year period and includes more than sixty instruments. Probably never before has the banjo been exhibited on such a scale. They are all there: the slave instrument fashioned from a skin-covered gourd, long-necked "minstrel" banjos carved from wood, elaborately decorated banjos owned by rich Victorian families, mountain banjos, jazz banjos, classical banjos, vaudeville banjos, banjos for showing off, and banjos for solitary plunking.

"Ring the Banjar! The Banjo in America from Folklore to Factory," which opened at the museum on April 13, was the idea of Robert L. Webb, thirty-six, who took a leave of absence from his job as research associate and education director at the Kendall Whaling Museum in nearby Sharon, Massachusetts, to serve as guest curator for the MIT exhibition. "To me," says Webb, "the banjo represents the young, growing America of the nineteenth century. It came to this country in the memories of slaves and was later taken over by whites. It's still completely recognizable. Everybody knows the banjo."

When Webb first proposed the idea to Warren Seamans, director of the MIT Museum, Seamans was not very knowledgeable about banjos—even though he had one that had belonged to his great-grandfather when he was homesteading in Colorado before the turn of the century. (That banjo is now included in the exhibit.) As he learned more about the subject, Seamans perceived that while the instruments might seem out of place at MIT, the technology of banjo manufacturing was complex enough to justify mounting the exhibit at the institute. Finally, the dates of Webb's proposed exhibit coincided with the one hundredth anniversary of the first MIT music club. "We're reasonably sure it was a banjo club," Seamans says.

When Webb moved into the MIT museum six months ago, years of planning and dreaming began to bear fruit. He started assembling banjos, paintings, lithographs, photographs, broadsides, and related printed materials. Last November, the project received a grant from the National Endowment for the Humanities; combined with MIT funds, it made $73,000 available for the show.

The exhibition is documented in a one-hundred-sixteen-page catalogue containing thirty color plates, about fifty black-and-white photos, and scholarly essays by Webb and James Bollman, a Cambridge collector and stringed-instruments dealer who lent some twenty instruments to the exhibit. Although some of the other instruments were lent by museums, most came from private collectors known to Webb through his long interest in folk music.



Technology Review

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY MAY/JUNE 1984 $3.00

TECHNOLOGY REVIEW FEBRUARY/MARCH 1984

The Mark of M.I.T. Architects: Vigor, Integrity, a Style All Their Own

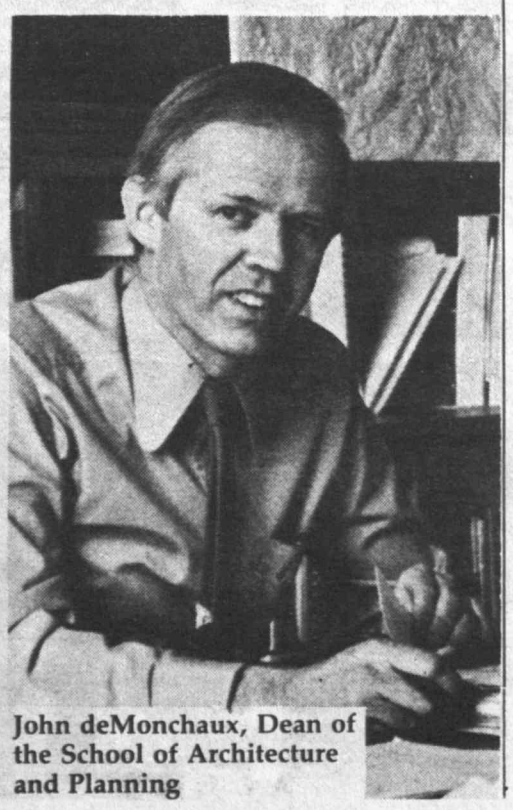
Two years after he arrived from Australia to become their dean, Professor John de Monchaux says that M.I.T. architecture and planning students have "a vigor and an energy about them that is enormously stimulating.

"I expected them to be this way, and they are," he told *Technology Review* late last year.

One result is "an approach to the design of buildings and environments that is distinctively M.I.T.," Dean de Monchaux says—a kind of pragmatic honesty. Hard to describe, Dean de Monchaux admits, but he thinks this special quality really derives from two qualities:

☐ A concern for the "immediate human environment"—how whatever is built will affect what was there before and whatever follows—especially the quality of people's lives.

☐ An insistence on integrity, so that all elements of a built environment reveal themselves for what they are—no disguises.



John deMonchaux, Dean of the School of Architecture and Planning

A Better Public Square

TECHNOLOGY REVIEW MAY/JUNE 1984

Boston has more than its share of renowned architecture, and one of the city's most fortunate places in this respect is Copley Square. To the north the arches and pointed roofs of Trinity Church rise in patterns of light- and dark-brown stone. Opposite stands the granite facade of the Boston Public Library, a grand nineteenth-century re-creation of a Roman palace. To the side the blue-green mirror wall of the John Hancock tower reflects the surroundings and the sky. But Copley Square itself is hardly one of the nation's premier open spaces. It is a sunken expanse of concrete, often windswept and deserted.

That is changing. Last year was the hundredth birthday of the square, and the Copley Square Centennial Committee, composed of local business people, residents, and city officials, asked Thomas Piper and others at M.I.T's Laboratory of Architecture and Planning to help figure out a way to build a better square.

First, Piper and his staff studied the problems of the existing square, and found plenty. The present plan resulted from a design competition in 1965. At that time, planners were so enamored of using open stone plazas to create a setting for buildings that they ignored the needs of pedestrians. In fact, designers in that competition were required to submit aerial but not ground-level views. "Copley Square is great looking from the thirty-fourth floor," notes Piper, "but it doesn't work on the ground."

The sunken central area is partly walled off from the street. The thinking of the sixties held that such a design would create a haven from the city, but it hasn't worked that way. Copley Square's divorce from the street makes people consider it unsafe, says Boston Police Sergeant Thomas Maloney. Nothing very terrible actually happens there—mostly, street people put pop bottles in bags before redeeming them at the local supermarket. But those on the higher rungs of the social ladder do not seem to find the square very inviting.

The Solution

The Centennial Committee held four public forums to discuss these problems and seek solutions. According to one school of thought, activities such as a cafe or skating rink would draw people to the square. But in the end the committee sided with Whyte's simpler vision. What are the three main functions of a square? "One: a place to sit, to rest, to catch the sun, to watch people go by. Two: a place to walk through. Three: a place for activities [such as a cafe or rink]. I don't think there is a conflict among these, but I do think one should get the highest priority, and that is the first."

—*David Luberoff* ☐

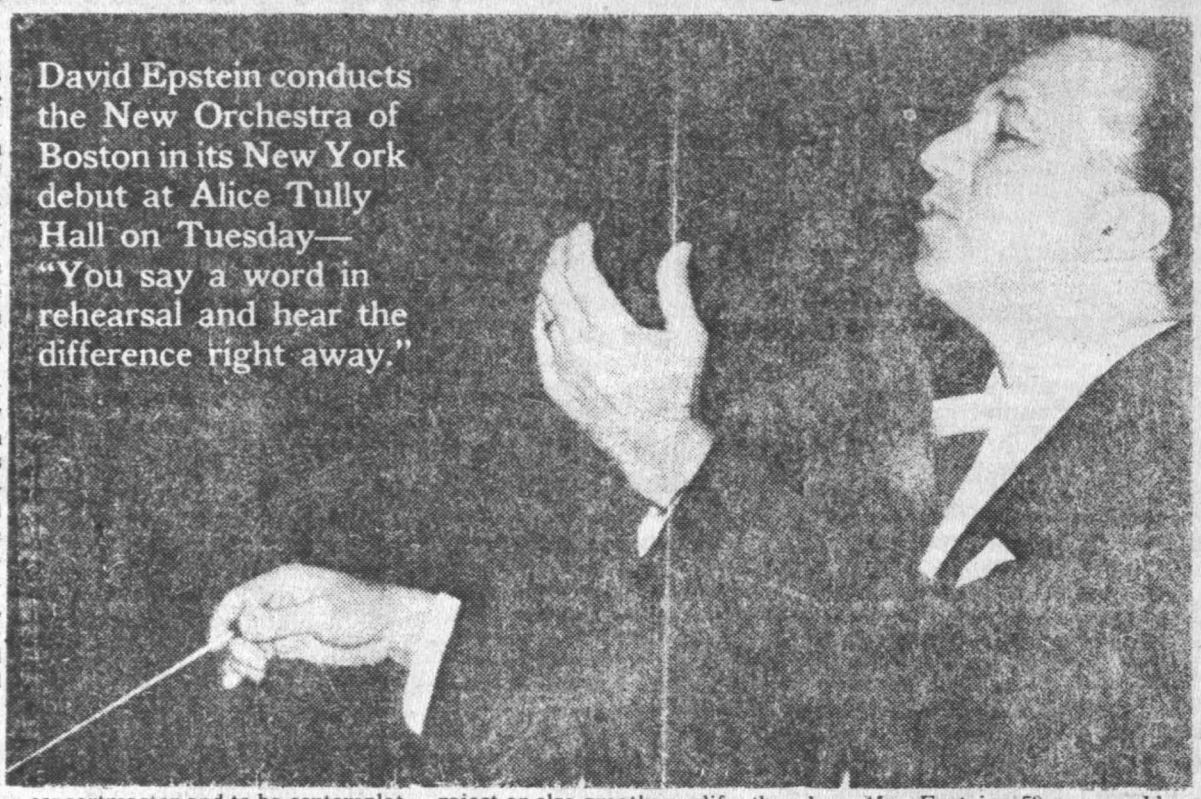
The New York Times SUNDAY, MARCH 25, 1984

Music

"About half of the professional players of the New Orchestra of Boston consists of students, faculty, staff or alumni of the Massachusetts Institute of Technology and Wellesley College." (Bernard Holland)

Scientists Who Make Music As Readily as They Do Research

By BERNARD HOLLAND



David Epstein conducts the New Orchestra of Boston in its New York debut at Alice Tully Hall on Tuesday— "You say a word in rehearsal and hear the difference right away."

Most orchestras are called into being to fill the needs of a waiting public. The New Orchestra of Boston, which makes its New York debut at Alice Tully Hall Tuesday night, was born to answer the desires of its players.

To understand why The New Orchestra exists and what makes this ensemble unusual, one must first see where it lives — namely, the Massachusetts Institute of Technology in Cambridge, Mass. In this fortress of mathematics, physics, engineering, biology and genetic research, music — as part of M.I.T's School of Humanities and Social Sciences — has maintained a persistent presence through the years — offering either a relief from strenuous scientific life, or else, stimulating that life as well.

The 90-member M.I.T Symphony Orchestra, the progenitor of this new and smaller ensemble, has long been admired for its scientist-musicians and musician-scientists, but this season David Epstein, conductor and professor of music at M.I.T since 1965, has refined the concept — borrowing many of the school orchestra's students, faculty and alumni, adding others from the pool of freelance players in the Boston area and forming a 45-player fully professional group.

The New Orchestra of Boston satisfies different needs in different ways. Sandra Ayres, an oboist with degrees in zoology and psychology, leads a hectic schedule as a researcher in M.I.T.'s psychology department and a player in various Boston ensembles large and small. "Right now my life is just about split down the middle," she says. "I spend half my time in the lab and the other practicing. I hope I never have to choose between the two."

Dorcas McCall is an undergraduate violist at Wellesley College — a school closely associated with M.I.T. Miss McCall has been section principal with the M.I.T. school orchestra, but the New Orchestra offers something beyond. "This is a chance to get professional experience even before I've gone out into the the professional music world," she says. Miss McCall is not paid, nor does she even hold a union card. With several exceptions — each worked out with Boston's branch of the American Federation of Musicians — the players of the New Orchestra earn professional wages. Miss McCall is one of the exceptions.

Brian Johnston has three degrees in chemistry, two of them from the University of California at Berkeley; but he was also playing in the first violin section of the Oakland Symphony Orchestra. Presently, Mr. Johnston is a post-doctorate fellow in molecular biology at M.I.T. and looking toward a career in research. "Right now, my life is 95 percent science and five percent music. When I have a concert, though, I make time to practice. It's nice that the music is always there to come back to when I'm able."

One violinist in the New Orchestra, Barbara Hughey Beckwitt, is a graduate student in experimental atomic physics but plays well enough to be the M.I.T. school orchestra's concertmaster and to be contemplating in May a solo appearance with the group in the Brahms Concerto. Gerald Seixas, a percussionist, is a young alumnus with M.I.T degrees in chemistry and toxicology who now works in genetic engineering. About half of the New Orchestra's professional players consists of students, faculty, staff or alumni of M.I.T and Wellesley.

•

The line which separates the scientific mind from the musical one is a thin but blurred one; still, does the flow from one discipline to the other really run both ways? A superficial look indicates no. In other words, scientists seem to lean toward music, but musicians are not necessarily scientific.

> 'A scientist can dabble in music and dabble well.'

It is true that many brilliant musicians are good at counting money and leave mathematics at that. And it is also true that amateur college orchestras everywhere tend to be densely populated by the school's science departments. Miss Beckwitt, thinking back to her undergraduate days at Princeton, remembers the school orchestra's string sections as "almost all mathemeticians and physicists."

But this one-way idea is one which the New Orchestra's players usually reject or else greatly modify, though most admit that science and music can occupy different parts of our consciousness. "Certain kinds of scientists seem to be musical," says Mr. Johnston, "but maybe only 30 percent of the total. Music does seem to attract more people in physics and mathematics, but perhaps these are the more creative sciences — ones in which you start with something little and come up with something new." Mr. Epstein likes to paraphrase the French mathemetician Poincare: "He said that when you are faced with different paths toward the solution of a problem, you should seek always the beautiful one."

Mr. Epstein comments on the quick, bright intensity of his players. "You say a word or two to them in rehearsal," he says, "and you hear the difference in the playing right away." Parts for upcoming concert pieces go out to players weeks in advance, and if a recent Saturday rehearsal on the M.I.T. campus offered an indication, orchestra members work on them and come prepared. Ages range from 20 to the early 50's, says Mr. Epstein with the average ranging from 25 to 35 years old.

Mr. Epstein predicts gradual growth for his orchestra, noting the artistic and intellectual strength of the Boston area's multi-university society. M.I.T., which supports the orchestra and supplies its home, offers, by itself, a base of students, faculty and staff totaling 18,000 people, says Mr. Epstein. He sees more concerts per season in the future and some touring of neighboring towns around the Boston area.

Mr. Epstein, 53 years old, was raised in New York and trained as a composer under Roger Sessions and Milton Babbitt and as a conductor under George Szell, Max Rudolf and Izler Solomon. His recent book, "Beyond Orpheus," studies the Romantic era as seen through the light of Arnold Schoenberg's 20th-century ideas about music.

Does an orchestra in a scientific community take on a scientific quality in its playing? Most of these players say no. "What is different," says Miss Ayres, "is that these are very bright people. They pick up on a musical concept and can incorporate it right away. With a lot of the community orchestras I've played with, learning an idea can take weeks."

Does scientific intelligence, the tendency to analyze and hierarchize, stultify the natural musical impulse? "When I study music, the approach is analytical — I'm interested in structure," says Mr. Seixas. "But when I perform I put that more to the side and try to be creative. It's similar in my field. The work in genetics my company does is, in terms of research methods, pretty much 'down the line.' But the creative thinking that lies behind this technology was arrived at through inspiration."

All seem to agree that having other lines of professional interest is a benefit. "People who play all the time might not have the enthusiasm we have," says Miss McCall. There is also a feeling that even with those whose work tends toward the strictly logical, music offers an expressive opportunity to break free.

Cambridge Chronicle

THURSDAY, MAY 3, 1984

Confab on black writers planned

Black women writing from 1850-1950 will be discussed at the last symposium of the 1983-84 Women, Writing and Society series of the Massachusetts Institute of Technology Writing Program at 7pm, May 3, in Huntington Hall (Rm 10-250).

Ann Petry, Dorothy Sterling and Dorothy West, all characterized by Assistant Professor Robin Becker as "writers and pioneers in the preservation and perpetuation of black female literary achievement," will speak about the aesthetic and social traditions informing the work of black women writing fiction, essays, sermons and poems during that time.

West will give personal testimony of her experience as a writer during the 1920's and 1930's in the "Harlem Renaissance" and beyond. Ms. Petry will discuss the special issues that concern women writer.

Author of 10 books in the field of black history, Sterling said in an interview, "I've come to the conclusion that black women have emerged as distinct and different personalities — independents and survivors."

Although black women sometimes have been regarded as being much like white women with black skins, the reality is different, she said. "Historical developments have placed black women in some roles which could serve as models for white feminists," she said.

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY FEB/MAR 1984

TechnologyReview

How to Broaden Our Views of the World

By China Altman

When actress Zoe Caldwell was introduced as McDermott Award speaker at the annual meeting of the Council for the Arts late last year, she swept dramatically onto the stage and instantly had her audience in hand with a remarkable multi-layered solo performance that wove together her passion for connecting human beings to each other with some insightful impressions of M.I.T.

Ms. Caldwell enthused about the day she spent on the M.I.T. campus before her appearance, mentioning especially the beauty she saw in a fluid dynamics laboratory and how she had been "deeply moved by the level of awareness among the teachers of science and technology" whom she met.

"I had expected that M.I.T. would be a place of harsh, technical sensibilities," she said. "And what I was introduced to was a very civilized awareness, a marvelous sensibility about human beings and an awareness that we must keep the two lots of sensibilities in balance."

Beauty itself is where science and technology connect with creative arts, she said. She appealed for the two disciplines "to stay on the same side.

"If we could do that," she said, "I just feel we could be so potent as to almost stop a nuclear war. The thrilling part is that you at M.I.T. are showing the rest of the world that it can be done. I am so grateful to you."

THE NEW YORKER JUNE 18, 1984

MUSICAL EVENTS

Aiming High

ON the day of the eclipse, Paul Earls' "Icarus"—a "sky opera" that opens with an apostrophe by Pasiphaë to Helios, her father, and ends with a threnody for Icarus, who flew too close to the sun—had its American première, in the Kresge Auditorium of the Massachusetts Institute of Technology. (The Cambridge sky, alas, was sodden that day, the sun invisible.) Earls is a fellow of M.I.T.'s Center for Advanced Visual Studies, which collaborated with the Boston Musica Viva to present his opera; eight years ago I admired his one-act "The Death of King Phillip," performed in a Brookline church with astonishing electronic and C.A.V.S. light effects—laser-projected imagery, strobe snapshots of action lingering in silhouette on the scenery after the actors had moved on. "Icarus," which lasts about fifty minutes, was scenically an even more elaborate affair, to which Otto Piene, the director of C.A.V.S. (and scenarist and artistic director of "Icarus"), had contributed inflatable sculpture; Günther Schneider-Siemssen scenery (painted on glass slides and projected from four Pani lanterns) and films; and Earls himself a music-activated computer drawing, laser-projected, of Icarus' flight and fall. The opera has been a long while in the making. Episodes—drafts and sketches—appeared in Washington, in Vienna, in Guadalajara, and at M.I.T. from 1978 to 1981. Ian Strasfogel, as librettist and director, and the Boston Musica Viva, conducted by Richard Pittman, joined in the creation of the full première, at the Ars Electronica festival in Linz in 1982. Last year, the team put on a different production, in a lakeside open-air stadium in Munich. The Cambridge production (with Mr. Schneider-Siemssen as a new collaborator) was different again. Although Eero Saarinen's Kresge Auditorium, housed in a vast, light concrete shell that touches the ground at only three points, is a dramatic place, it is more of a concert or meeting hall than a fully equipped theatre, and it has a platform rather than a stage. Projections must come from the front; Mr. Schneider-Siemssen when painting his slides had to allow for actors' shadows cast on the backcloth. He did so effectively and fulfilled his expressed hope of making the spectators "feel as if they are sitting in a cosmic room, with none of the usual boundaries they are accustomed to experience in the theatre." The human actors of Daedalus and Icarus could not fly aloft on pinions but remained earthbound, waving their arms and shifting their weight, and this was somewhat less than magical. But the evening as a whole was filled with visual marvels close-matched to Earls' imaginative and capable score.

THE BOSTON GLOBE THURSDAY, MAY 31, 1984

REVIEW | OPERA

Nelda Nelson as Pasiphae hails the sun in rehearsal for "Icarus."
GLOBE PHOTO BY JANET KNOTT

'Icarus' a dazzling mix of the musical and visual

"ICARUS – A SKY OPERA" – by Paul Earls (music, laser projections), Ian Strasfogel (text, direction), Otto Piene (inflatable sculptures, costumes, scenario), Guenther Schneider-Siemssen (scenic environment, projections, film). With Nelda Nelsen (Pasiphae), Otto Piene (Minos), Timothy Noble (Daedalus), Josef Olefirowicz (Icarus). Given by the Boston Musica Viva, Richard Pittman conducting, and the Center for Advanced Visual Studies, M.I.T., last night at Kresge Auditorium, Cambridge.

By Richard Buell
Special to The Globe

To the inventors of "Icarus – A Sky Opera," the details of the ancient story (from Ovid) must have teemed with possibilities – Pasiphae's mating with a bull; the birth of the Minotaur; the rage of her husband King Minos; Daedalus the inventor and his son Icarus imprisoned (with the Minotaur) in the labyrinth; their escape by winged flight; and Icarus's quite literal downfall. It's a rattling good tale.

What they've achieved is an altogether dazzling theater experience – visually, at least – that also has its share of contradictions and dead spots. The theater technology is advanced indeed. The projections are so coruscatingly vibrant and definite that they might not be projections at all; they have an unnerving presence, substance, *there*-ness. In this case the result was a little as if Classics Illustrated had gone psychedelic. It was a "sky opera" indeed – sunsets with lurid marbled-endpaper patterns; swirling multicolored vortices; a large, fluttering image of Icarus in flight, was drawn in lines of super-intense white light – true laser wizardry.

It has to be said that in its 55 minutes "Icarus" told its story clearly and steadily, all the media meshing beautifully in the telling, without overlap or overkill. Otto Piene's inflatable sculpture depicting the Minotaur was a hit with the audience. What was most wonderful about it was its canny suggestiveness while on its way to being fully inflated – at which point came a massed "ah" of recognition – and in its deflation and withdrawal, where it had another, oozingly menacing quality. This was a Thing that surely knew how to steal a scene. The strenuous respiratory noises of the musical score worked hand in glove with these doings.

Paul Earls's score is, in the composer's words, "eclectic," and mightily so. What does work turns out to work well indeed, situationally, as sonorous and dramatic *coup*. He gave the Treble Choir of New England eerie, characterful things to do – they not only sang, they wielded whistles and recorders, rattled paper. The brass bull noises and frantic fanfares seemed apt. Less so was the writing for live singers, which (especially in this context) rather bogged things down in old-fashioned operatic artiness. It made for a neutral effect. But the singing by Nelda Nelsen, Timothy Noble and Joseph Olefirowicz was unquestionably first-rate. Everything about the playing of the Boston Musica Viva bespoke Richard Pittman's preparation, skill, commitment. A vivid evening, a gorgeous planetarium show at the very least. But was it mythic, depth-sounding? Who's asking?

DIE ZEIT
Nr. 40 – 30. September 1983

Kunst in der Luft

Sky Art ist eine Kunst, die ihre Zeichen an den Himmel schreibt. Ob das nun Laser-Strahlen sind, die über eine nächtliche Stadt hinweg farbige Spuren markieren, Plastiken, die sich im Winde bewegen oder andere, durchaus fest am Boden verankert, die sich durch Mithilfe der Sonne in Lichtobjekte verwandeln – immer sind es Kunstwerke, die Luft und Technik (manchmal auch das, was man Luft-Technik nennt) zur Voraussetzung haben.

Himmelskunst ist nun keineswegs ein neuer, modischer Trend, sondern der ernsthafte Versuch, künstlerische Phantasie an den Himmel zu projizieren – auch wenn gelegentlich der Absprung in galaktische Dimensionen mißglückt und der Künstler hoch oben in den Wolken eine schöne neue Welt erträumt, die der gar nicht so schönen hier auf Erden zum Verwechseln ähnelt.

Zugegeben, die Sky Art hat einen übermächtigen Konkurrenten: die Natur selbst. Die Ereignisse, die sie inszeniert, den leuchtenden Regenbogen, die zuckenden Blitze und die mächtigen Wolkengebilde, kann der Künstler nicht nachahmen. Dennoch ist es durchaus legitim, im Namen der Phantasie Anspruch zu erheben auf den Besitz des Himmels, der bisher den Flugzeugen und Raketen

gehörte. „Der Luftraum ist der einzige, der dem Menschen fast unbegrenzte Freiheit bietet", hat Otto Piene bereits 1961 geschrieben. „Warum machen wir keine Kunst für den Luftraum, keine Ausstellungen im Himmel?"

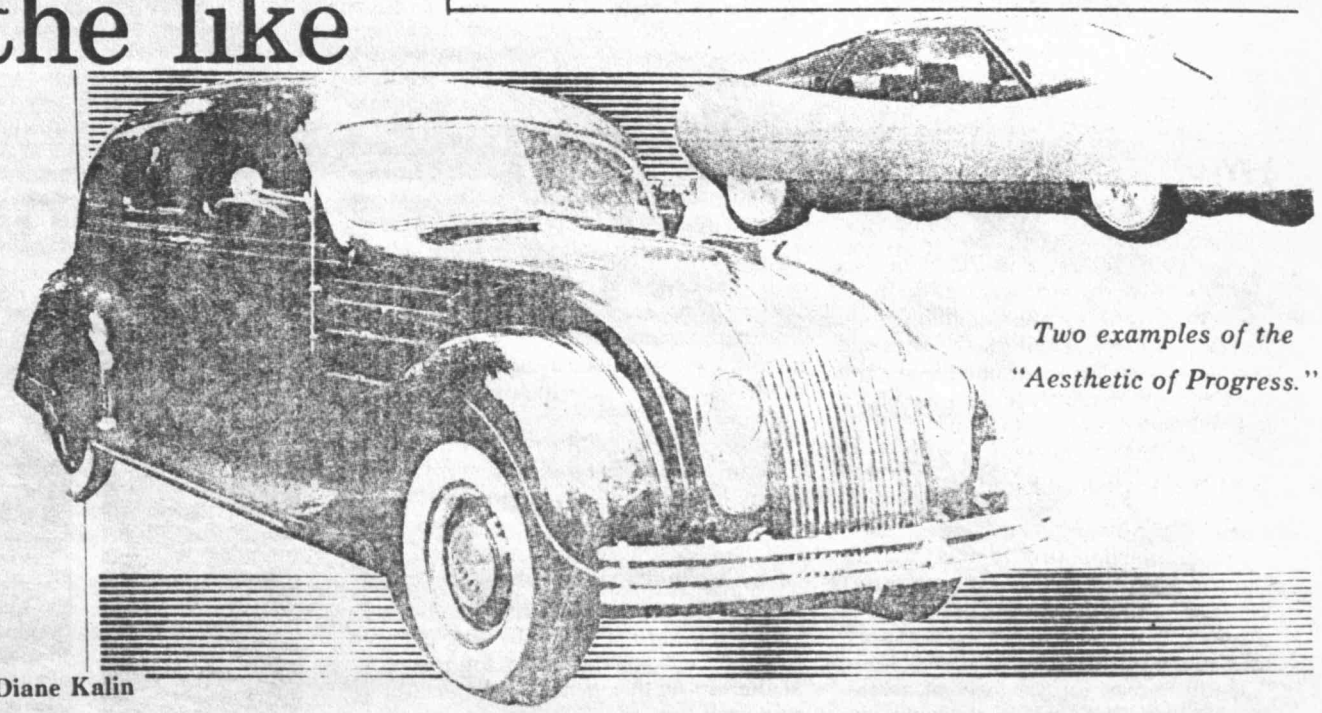
BOSTON LEDGER
June 4 – June 11, 1984

Of progress, art, trends and the like

How does period technology give rise to visual metaphors, or design characteristics, such as these? At the Hayden Gallery of MIT, an exhibit called the "*Aesthetics of Progress*" explores this question across the "landscape" of consumer products of the 1930's and the 1980's.

Katy Kline, curator, provides something of an answer to this question. By contrasting a small group of artifacts from each period, she builds her case that differences in the functioning of various objects are only a factor in the way they come to be designed. The sense that society has of technology's *overall* contribution may just as readily determine design. What use are the vestigal wings on a steam iron in the exhibit? Yet they reflect a thirties obsession with high speed travel, combined with a desire to transfer this unencumbered ease to daily life. In the economically depressed thirties, belief in progress was still strong enough for an entire aesthetic to be built around that faith.

By Diane Kalin



Two examples of the "Aesthetic of Progress."

TIME

THE WEEKLY NEWSMAGAZINE

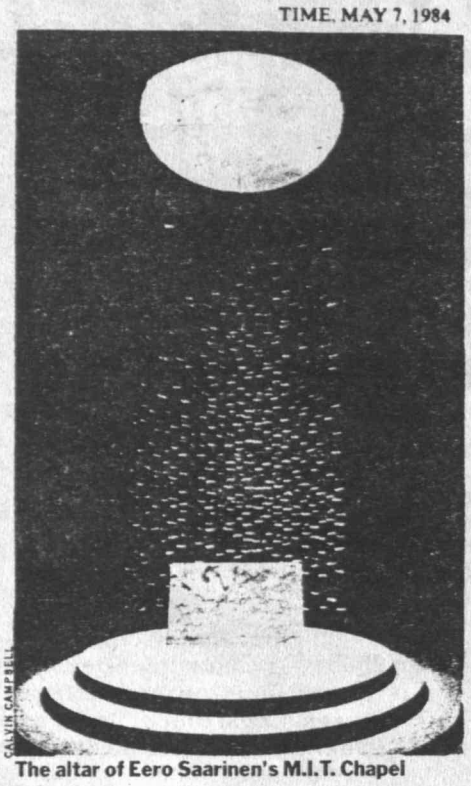
TIME, MAY 7, 1984

Our Bauhaus

The influence of Cranbrook

Until a decade or so ago, what was considered good modern design in America was not American at all. It was the International Style, promulgated mostly by Weimar Germany's Bauhaus: sleek, austere functionalism that lent an impersonal, industrialized finish to everything from skyscrapers to fountain pens. Increasingly, however, we are realizing that the design that has most consistently appealed to us all along—buildings like Eero Saarinen's main terminal at Dulles International Airport, furnishings like the Eames lounge chair—had its genesis not in Weimar but in a relatively little-known school of art and design in the wooded hills of Michigan, 20 miles north of Detroit.

The Cranbrook Academy of Art, in Bloomfield Hills, is, in fact, our equivalent of the Bauhaus, and it has had an equally profound influence on our contemporary design. The Bauhaus search for a machine-age aesthetic was revolutionary, a radical break with the past. The Cranbrook approach was evolutionary. Its artists and craftsmen created new designs not with dogmas or preconceived notions but by enthusiastic, almost playful experimentation with traditional craftsmanship and styles.



CALVIN CAMPBELL

The altar of Eero Saarinen's M.I.T. Chapel

Design That experimentation is traced in an excellent and comprehensive exhibition, "Design in America: The Cranbrook Vision 1925-1950," which opened two weeks ago at New York City's Metropolitan Museum of Art. The show was organized by R. Craig Miller of the Metropolitan and Davira S. Taragin of the Detroit Institute of Arts, where it opened last December. As is made clear in the scholarly catalogue, Cranbrook is no ordinary art school. There has never been a formal curriculum or method in this graduate school for some 150 students. Instead, each department, such as sculpture, painting, ceramics or weaving and textile design, is headed by an accomplished artist who does his or her work while guiding and sharing the creative tension with students. The exhibition shows, in some 240 objects, models, drawings and photographs, the best of what this creative tension has produced.

Cranbrook's first great achievement was the 350-acre campus itself, which includes four schools, an institute of science and a museum. The complex was founded by Detroit Newspaper Magnate George Gough Booth and his wife Ellen Scripps Booth, both philanthropists and aesthetes under the spell of the arts and crafts movement that was launched in England in the 1880s, inspired by the work of the designer-poet William Morris. They enlisted a kindred spirit—Eliel Saarinen, then Finland's leading architect—to serve as Cranbrook's designer, president and guiding force. Saarinen's stately, romantic brick buildings, with their web of walkways, courts, terraces, stairs and walls, all highlighted with sculptures and other objects by the outstanding artists Saarinen attracted to Cranbrook, probably represent this century's most successful integration of architecture, landscape design and works of art. Every brick, shrub, fountain, gate and ornament contributes to the delight of the whole.

As a number of photos and drawings in the exhibition demonstrate, the Saarinen architectural vision soon left its mark on other parts of the U.S. as well. With his architect son Eero, Saarinen collaborated on such buildings as the innovative Crow Island School (with Perkins, Wheeler and Will) in Winnetka, Ill., and the calm, lofty First Christian Church in Columbus, Ind. Eero's work eventually eclipsed his father's. His eerily mysterious M.I.T. Chapel at Cambridge, Mass., is not only one of his own but also one of 20th century architecture's greatest triumphs. After Eliel's death in 1950 at the age of 76, the academy's influence spread through the work of Eero and a number of students and associates who became some of the country's leading planners and architects, among them Edmund Bacon, Carl Feiss, Harry Weese, Cesar Pelli, Kevin Roche, Ralph Rapson, Gunnar Birkerts and E. Charles Bassett. —*By Wolf Von Eckardt*

The Washington Post STYLE

Monday, January 16, 1984

Beth Soll: Free Spirit Of Dance

Talking With the Choreographer

By Alan M. Kriegsman

"In Boston," says dancer-choreographer Beth Soll, who makes her home in that city, "my work is considered very far out. I don't think it is. That's certainly not what I'm after. I just do what I do."

It's precisely her independence of spirit and mind that has brought Soll national and even international attention in recent years. Her dances, which shunt freely in idiom from classical to modern to jazz vocabularies, and draw as well upon the workaday movement of daily life, owe no obvious allegiance either to conventional modern dance or to trendy fashions of the day. The word critics most often apply to her choreography is "unclassifiable." Soll's creative autonomy has earned her such distinctions as Boston magazine's 1983 "Best of Boston" award, and a fifth choreography fellowship from the National Endowment for the Arts last fall.

Beth Soll in "Dances of Paradise and Everyday Life"; by J.C. Hotchkiss

Soll and the five-member troupe she founded in 1977 made their Washington debut this past weekend at The Dance Place, in a program consisting of Soll's recent, evening-length piece, "Dances of Paradise and Everyday Life," with an original score by Dave Stringham. "What I'm trying to show," she has said of the work, "is that paradise is there in everyday life, if only people look for it."

In 1971, Soll followed her husband to Boston, where her choreographic career took flight. In summers, over the past decade, she's taught at the Harvard Summer Dance Center. During the regular school year she teaches at MIT, where she now has a full-time appointment as director of the dance workshop. In the performance course she teaches there, she tries also to touch upon the history of dance, with an emphasis on contemporary developments, and the relation between dance and other forms of cultural expression, as well as the links to the evolution of the sciences.

"It's too much," she says. "I should be teaching three separate courses, but they don't have the money and I don't have the time, so this is what we do instead. I'm enormously grateful to MIT though, because they've been so supportive of my own work—they let my company rehearse there, and often sponsor our performances. Just now [illegible]ng for a large grant to underwri[illegible] collaborative work I'm undertaking with photographer J. C. Hotchkiss—it's extremely gratifying to have this kind of backing, and I don't know many other institutions where one could find it."

The Boston Globe

SEPTEMBER 15, 1983

Boston boasts a number of fine independent choreographers who turn up in self-sponsored programs in college gyms and church halls. There also are a variety of small dance companies. Here are brief profiles on half a dozen of the best:

● **Beth Soll and Company** – Soll is the finest and most original choreographer to have emerged from New England. Her style, which is linked more closely to European Expressionism than to the great American modern dance pioneers, is intricate and dense; it avoids the acrobatics so popular nowadays.

Soll's dances are rooted in everyday experiences and emotions. One dance grew out of an injury which limited her movement range, another cast her in a glamour-girl red dress. But the choreography travels so far from its origins that you'd often be hard put to guess the source. With performances this fall in New York, Washington, Paris, and Budapest, Soll is gaining an international reputation. Look for her in a program of solos at MIT's Kresge Little Theater Dec. 3 and 4.

TECH TALK

May 9, 1984

An ephemeral art work

Noontime joggers leapt over the primrose path on their way to the river.
—Photo by Calvin Campbell

Before the primroses came.

E Lab decries energy complacency

By ROBERT C. Di IORIO
Staff Writer

Researchers at MIT's Energy Laboratory say the nation is becoming dangerously complacent about the long-term availability and cost of imported fuels.

A casualty of that complacency, the researchers say, is the effort to develop a domestic synthetic fuels industry, which the nation will eventually need.

"But both the public and private sectors have cut back deeply on research and development, assuring delays in generating better (synthetic fuels technology)," says an article in E Lab, the Energy Laboratory's research bulletin.

Research must be started now, the article says, if appropriate technology is to be available a decade or more from now when a commercial synthetic fuels industry is needed.

In a move toward that goal, the Energy Laboratory recently inaugurated a cooperatively supported program of long-term research on synthetic fuels. The initial industrial sponsors of the program are the Electric Power Research Institute, Occidental Oil Shale, Inc., Peabody Holding Co., Inc., Sun Company, Inc., and Texaco, Inc.

Dr. Malcolm A. Weiss, director of the new program, said it is designed to serve the national interest and the interests of the energy-supply industry "by providing stable, long-term research on synthetic fuels funded cooperatively by industry."

That research, he said, "should provide the base for the cheaper, cleaner, more efficient technology that will be wanted for commercialization a decade or more from now. The research must be done now for the technology to be ready then."

National interest in synthetic fuels was high in the late 1970s and in 1980. The Arab oil embargo of 1973-74 had demonstrated that imported oil supplies were unreliable and that prices had risen more than tenfold since 1970. Synthetic fuels were seen as substitutes for petroleum and natural gas. Their development was urged as a way of reducing US dependence on imported oil.

The current outlook is dramatically different, the E Lab article points out.

"The nation now believes that supplies of imported oil are secure and that prices will not rise unreasonably. Domestic supplies of natural gas also seem ample. With little commercial or national-security incentive to pursue synthetic fuel, interest has dropped precipitously.

"At MIT, investigators believe that the nation is too complacent about the long-term reliability and cost of imports. Therefore, the United States will eventually want a synthetic fuels industry. An attractive industry will emerge only when it has better technology or when it enters a market with higher prices or more uncertain supplies than now foreseen," the article said.

To date, the program sponsors have allocated funds to Professor Carl R. Peterson of the Department of Mechanical Engineering and Professor Terry A. Ring of the Department of Materials Science and Engineering for research on comminution (pulverizing) of energy minerals; to Professor Lawrence B. Evans of the Department of Chemical Engineering for computer-aided analysis of critical technologies for hydrogen manufacture; and to Professor Sylvia T. Ceyer of the Department of Chemistry for equipment to measure low-energy electron diffraction.

In addition, research proposals during the next year have been invited from Professor Ring for separation of submicron particulates from liquids, Professor Ceyer for dynamics of dissociative adsorption of methane, and Professor Ronald F. Probstein of the Department of Mechanical Engineering for rheology of coal slurries. Suggestions from other faculty and staff are welcome.

The projects chosen reflect the sponsors' interest in proposals that represent new thrusts with high potential for technological advancement, Dr. Weiss said.

In addition to addressing a national need, the new Energy Laboratory program also serves "as an interesting experiment for companies with in-house research programs," Dr. Weiss said.

By sharing expenses with other sponsors, an individual company can generate technical information more economically than usual. And by participating in a cooperative program, its researchers can work with a large group of knowledgeable faculty, students and other industrial people, all capable of challenging narrow viewpoints or unsupported assumptions."

Each company is supporting the program for an initial period of three years. Discussions are under way with other companies with the objective of adding about five more to the program.

Companies or individuals wishing more information can call Dr. Weiss at the Energy Laboratory, x3-3411.

White, Weiss named Codirectors of E Lab

Professor Kenneth A. Smith, vice president for research and associate provost, has announced that Professor David C. White and Dr. Malcolm A. Weiss have been named co-directors of the Energy Laboratory. The change, Cr. Smith said, is intended to reflect more accurately the manner in which Professor White and Dr. Weiss have been working together for some time. "No changes in their responsiblities or activities are planned," Dr. Smith said.

He also announced the appointment of Professor Kent F. Hansen of the Department of Nuclear Engineering as an associate director of the laboratory, replacing Professor Thomas H. Lee of the Department of Electrical Engineering and Computer Science. Dr. Lee was recently named director of the International Institute for Applied Systems Analysis in Vienna and will be spending less time at MIT, Dr. Smith said.

One of the areas within Professor Hansen's cognizance—the Energy Laboratory's Electric Utility Program (EUP)—also has a new director. He is Dr. J. Derek Teare, who replaces Dr. William D. Hinkle, who resigned to join a consulting firm. Dr. Teare will divide his time between the EUP and the Combustion Research Facilities where he has been working with Professor Janos M. Beer.

Mother and son attending MIT this year are Anita M. Kirkpatrick of San Diego, Calif., enrolled in the Management of Technology Program, and Desmond A. Kirkpatrick, a sophomore in electrical engineering and computer science. Dr. Kirkpatrick, who has been involved in the development of commercial medical products, hopes to work in new applications of biotechnology after she receives her SM in the management of technology. She has a PhD in biochemistry from the University of New Mexico.

—Photo by Calvin Campbell

New class enters joint program

The fourth entering class for MIT's Management of Technology Program represents strong technical expertise and leadership, reports program manager Jane M. Morse:

—A quarter of the students had PhD degrees and another 20 per cent had masters' degrees before enrolling this past June.

—They average 11 years of work experience, ranging from five to 24 years individually.

—Coming from a variety of positions in industry and government, they held jobs such as senior project engineer, assistant chief of the research and development department, and manager of program operations before leaving the work force for a year to enter the program.

Forty per cent of this year's group are being sponsored in the program by their corporate and governmental organizations. One has had more than eight years of program management experience with RCA, managing multi-million dollar technical programs. Another is technical director for Advanced Energy Technology, Inc., a firm that provides engineering services for the petroleum industry.

The other 60 per cent are paying their own way and come from organizations such as DuPont, Westinghouse, Emhart and MITRE Corporations.

A third of the students are foreign, from such countries as France, the United Kingdom, Argentina, Singapore and Japan.

The Management of Technology Program was developed jointly three years ago by the School of Engineering and the Sloan School of Management, and involves a twelve-month, full-time curriculum taught by faculty from the two schools. The program admits technical professionals, scientists and engineers, with a minimum of five years of work experience, who are gaining increasing management responsibility on the technical side of their organizations. It is designed to serve the increasing needs of industry and government for technological leadership.

How to get there from MIT

(Following is another in a series of essays written by MIT alumni about their careers and how MIT prepared them for what they are doing today. The essays were compiled by the Office of Career Services and Preprofessional Advising for publication in a 72-page booklet issued under the title above. Tech Talk will reprint the essays regularly on a space available basis. ©1983 by the Office of Career Services and Preprofessional Advising, MIT.

(Joseph Mallen received the SB degree in 1948 and the SM degree in 1949 in aeronautical engineering.)

By JOSEPH MALLEN
President, Boeing Vertol Company, Philadelphia, Pa.

I felt timing was on my side when I returned to MIT after World War II to complete my aeronautical engineering education. For as long as I can remember, I wanted to be an aeronautical engineer. That desire was reinforced by the wide application of the airplane during the war.

This was a time when we were first seeing metal fuselages, more powerful engines, advances in avionics and rapid achievements in aerodynamic design. Radar was being introduced. The jet engine was being tested. The age of rocketry was beginning and civilian air passenger service was on the verge of a boom.

So, as a student I was entering a field full of promise and excitement—with a virtually limitless future. My future was given direction when I met Professor Rene Miller, who was giving a course in rotary wing design and aerodynamics. Professor Miller was a true pioneer in helicopter development (remember Igor Sikorsky's first flight was only a decade before.

The helicopter was just emerging as a practical air vehicle. I was enthralled with its unique capabilities and equally inspired by Professor Miller. Because of his knowledge and enthusiasm, I finished my first course on helicopters, an elective, and then did my thesis work on helicopters as well.

When I graduated 35 years ago, I entered the aviation field with Piasecki Helicopter in Philadelphia—the forerunner of Boeing Vertol. Yet, what should be of interest to today's aerospace engineering student is that this industry is still just as fascinating, as challenging, and as filled with potential today—perhaps even more so. New technology along a broad spectrum of disciplines is keeping the field revolutionary. New strides are being taken every day as technology spawns new technology. Never has production followed so closely upon or been tied in so directly to engineering. This is particularly the case in vertical flight, still a relatively new field, where the industry is still growing and its technology is constantly at the leading edge.

Several programs now in the planning or early development stages offer exciting challenge. For example, the tilt-rotor will combine helicopter and airplane flight characteristics to perform a variety of roles. A new US Army scout/attack, utility helicopter with 24-hour all-weather flight capability, requiring sophisticated avionics and target acquisition and identification systems, is in the early stages of concept development. The Heavy Lift Helicopter, capable of carrying payloads of 70,000 pounds, is currently being reviewed.

Other areas of growth include the expanding use of composite materials in fuselages and other components, fiber optics, digital electronics, high-speed rotors, bearingless main rotors, electronic vibration suppression, advanced cockpits, and many other areas of future development. So, the aerospace industry, and the helicopter field with which I am most familiar, continue to expand significantly. It remains an industry of breakthroughs and new concepts. Even as an "old-timer" I still find every day exciting, every new project a challenge.

I hope my position can illustrate to engineering students today the need for a strong engineering background with a solid base in engineering principles. You must build upon the basics to be able to expand those basics. If my career can be used as an example, I served as chief of aerodynamics, a project engineer, then chief project engineer, director of engineering, program manager, director of technology and product assurance, and vice president of operations before becoming president. Naturally, as president of Boeing Vertol, I am removed from the day-to-day engineering details that I used to enjoy so much. I must admit that this has been a source of frustration on occasion, but the broader responsibilities for overall business management and company success more than compensate.

I firmly believe there is no short cut for learning; and learning doesn't stop when you leave school—it begins. Take the time and the opportunity to learn as much as possible from as many different areas as you can so your fundamental knowledge is enhanced by practical experience. As technology expands, the presidents of the high technology companies of the future are going to be those who understand technology and know how to use it to grow. That could give you a leg up on non-technical managers as your career expands.

In that regard, let me give you some tips on getting the job you want. Most companies, including ours, rely on both objective data and a subjective assessment of each individual. Our objective evaluation includes related experience such as coop or intern programs, grade point average, special curriculum or academic projects suited to our needs, our success with prior graduates from your school, and any prior military experience. Subjective areas include your communication skills, interest in *our* company, geographical preference, your maturity, and how your goals and objectives relate to our business goals.

The most important tip I can impart to you concerning such interviews is to come *prepared*. You must know the company, its needs, and its products. You must show interest and be able to highlight significant aspects of your professonal and academic background.

In short, my advice to students is quite basic. You should determine what you want to do—what you'd like to do—and then do it. Of course, whatever you do—do it well. The aeronautical field will offer continuing challenges, opportunities, and rewards—in conquering such things as the pull of gravity of this planet or discovering new landing places in space.

When I entered MIT more than 35 years ago I was excited about the opportunities I saw before me. They are still there for you—as an engineer and a manager. You most certainly hold your own future, your destiny, in your hands—make sure you're prepared for it.

New Mazlish book issued

A new book by Professor Bruce Mazlish of MIT, *The Meaning of Karl Marx*, is being published this month by Oxford University Press. Dr. Mazlish, professor of history, examines the complex interrelationship of Marx's life and writings to find why Marxism is the major secular religion of our time. In examining Marx' work as a social scientist as well, Mazlish also looks at the issue of what is involved in any effort at social science. The book concludes with a brief commentary on Marxism's future as a cultural system and the relevance of both capitalism and communism to the problems of today.

Anyone for TV?

Randy Winchester of MIT Cable TV is looking for students who would be interested in founding a new student activity to program cable channels. Mr. Winchester suggests that possible programming could include live coverage of campus events, student projects, arts and entertainment, or classic films. Suggestions would be welcome. Those interested should contact him at x3-7431, Rm 9-030.

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Deadline is noon Friday before publication.

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6.002/6.003 lab kit, $10; 3x6 rice papr wndw shds, $5. Call 266-2894 morn & eve.

19 Zenith tv, wrks exc but only VHF, nd cnvrtr for UHF, asking $25. Tony, x3894 Linc or 893-3377 eves.

Coal brning stv, $250. Mark, x4776 Linc or 862-9578 eves.

Antq wh BR furn, chst of drwrs, drssr w/mirror, nght tbl, int in exc cond, $50/piece. Marie, x3-3236 or 891-5829 after 6pm.

AIWA 3200 tape dck, v gd cond, $125; JVC RS-33 rcvr, exc cond, $125. Jeff, x5-7191 dorm.

Nw sailbrd, Vinta 370, $550; Dryfashion dry suit, nw $195; nw Camaro boots, sz 11-11, $35; used O'Neill Frmer Jhn, $65; used Seal marine jckt, $35; wndsrfr semiflotatn harnss, $35; all sz L; all for $850 or best. Call 489-3358.

Full-sz bed, grt cond, $100. Michael, x3-3149 or 661-3931 eves.

Dual F41Q trntbl w/Ortophon crtrdg, $250; Technics rcvr/amp, SA404, 50w chnnl, $175; Frnch 10-spd 25 M's alum alloy frm bike w/lck & pmp, $135. Reinhard, x3-2402.

2 46 Danish styl couches, v strdy hrdwd frms, vnyl cvrd firm foam cshns, $25/both. Bob, x8-3157 Draper.

Kenmore elec dryr, delx mdl, rns gd, $80. Tom, x7214 Linc.

4 virtually nw Sears Silent Cushn stl bltd rad trs, P155/80R13, fits Honda Accord & simlar cars, pd $170, asking $100. Call x3-7802.

Lrg 7 strdy sofa, brwn, blck, beige plaid, $95. Mike, x3-6997 or 661-8974.

6x9 hndwvn wht rug, $75. Maria, x3-2115 or 472-1347.

Q-sz bed, 4 chrs, rcknq chr, shds, lmp, drainr, wstbskt, mirror, stereo stnd, TDC spkrs, Pioneer rcvr, Toshiba trntbl. Call x5-9750 dorm.

L's Vita-Sprint Marquis bike, 26 frm, 10-spd w/carry bag, $55; kryptnt lck, $5; bike rck, $15. Call 273-3454 after 8pm.

TRS80 16K Basic colr cmptr, cass rcrdr, joystkcs, more than 15 games inc football, bsball, brkout, Dungeons of Diagoreth, less thn 1-yr-old, nw $700, asking $525 nego. Ken, x3-1859 or 776-6897.

Twn mttrss & bx spr on legs, $50; twn mapl bed, bx spr & mttrss, $75. Call 566-8394.

2 cords unsplt hrd firewd, $75/cord. Debra, x3-3879 or 657-3832.

Wd stv, Glenwood #122 antq parlr stv, cmplt, exc cond, btfl cast, v ornmntl w/phineal. Cris, x3-8919 or 666-4925 lv mssg.

Magnavox stereo consl w/AM/FM radio & rcrd playr in fruitwd cabnt, asking $50. Bill, x8-4455 Draper.

Apt-sz fridge, GE round top, 55hx30w, $75 or best, you arrange pck-up & delvry. Maria, x3-4433.

Kirby upr vacuum w/attchmnts, exc cond, $200; Sears flr mntd sun/heat lmp, $25. George, x7126 Linc.

Sofa bed w/full-sz mttrss & mtchng chr, modrn, off-white, gd cond, $289 or best. Call 354-1140.

Used 17 cu ft Frigidaire fridge, gd cond, asking $125; 4 rad VW trs, 1 mntd, like nw, asking $125. Suzanne, x3-7821 or 625-3441 after 6pm.

M's sz 10 rllr skts, grt cond, nw $55, sac for $25; Brine lacrosse stck, $10. Steve, 494-8220.

Univox elec bass w/amp; 2 Firestone 175/70 SR13 trs; gd toastr ovn & 2 brnr hot plate; AMS/OIL synthtc lubrcnts, any rsnbl offrs. Mark, x3-3146.

Fuzzbuster remote radr dtctr, dtcts all types police radr, nvr used, $80. Gerry, x3-7466, Rm 37-524.

Sndbx, $5; chld's slide, $20; teak wndsrfr booms, $20; thck glass for cffee tbl, etc, $10. Harry, x3-1637.

Various wdth 14 trs, some rads, some bias-ply reg, some snws, sets & sngl trs, $10-20 ea. Gordon, x2256 Linc.

Chld's schl dsk-chr unit, $15; rfrck for VW Rabbit, $20. Henry, x8-3424 Draper.

Bauer Black Panther hcky skts, sz 6, $45; Bauer Custom 90, sz 6, $55, bth nvr used, szes vary w/ shoe sz, mst try on. John, x8-2001 Draper.

Mttrss & bx spr, Q-sz, bst offr. Barbara, x3-3623 or 662-0488 after 7pm.

Blue formca dining/playrm tbl, custm md, 36x36, $45; misc cheap furn; custm md lined drapes, 1 pr 100% wool, nw $25; 2 prs, nw cond, $20; carpt remnts, $5-20, white twls & sheets, $.50 ea; glf clbs w/bag, $35; sm applncs, $5-12. Call x3-6085.

Sleep sofa, 3 yrs old, tan plaid colr, v gd cond, $200. Call 494-0944 eves.

2 10x12 rugs w/pads, lght beige, $50; drk beige, $75; Q-sz pltfrm bed w/mttrss, $30; elec espresso mach, $25; Teac 2300S reel rcrdr, $100. Lee, x3-7727 or 267-8340 eves.

Shred-It leaf shrddr-mulchr, Tecumseh 5hp gas eng, gd cond, $150 or best; wd (cedar?) framd strm wndws, szes up to 31x54, $10 ea or best. Wilson, x3-5121 or 876-6326.

Sony CFS-7 AM/FM/cass stereo rcrdr, stndrd/mtl tapes, mltpl jcks, $80 or best. Christopher, x3-7868 or x5-9576 dorm.

19 colr tv, lk nw, $260; remote cntrl for tv, recvs HBO for free, $90; wden drssr w/big mirror, $60; IBM elec typwrtr & cvr, exc cond, $160. Call 494-1531.

2 Smith Corona elec typwrtrs, $80 ea. Call Maurice, x3-4511.

KV1514 Trinitron colr Sony tv; 2 white movbl louvr wden shttrs, 34x59 wndws; 4 white mvbl louvr wdn shttrs, 42x59 wndws. Mary Pat, x3-7878 or 236-4805.

IBM Sel II slf-coff typwrtr, exc cond, lists $700, $395 used. Carrie, x3-5728.

Clarnt, flute, & sax, exc cond. Eleuterio, x4503 Linc or 332-7152 after 6pm.

Free for taking: 19 Zenith formr colr tv w/fading CRT. Joanne, x3-2704.

Twn-sz bed, firm, orthpdc mttrss & bx spr, gd cond, $75. Daniel, x3-5320.

Upr piano w/ivory keys, mnfctrd by Cable, gd cond, asking $500. Call 232-8997 eves & wkends.

Sanyo C4 prtbl mini stereo, AM/FM-/cass w/Dolby, 5 band GE, $150. Martin, x3-1446.

Mapl rckr, $20; couch w/cvr, $45. Gwen, x3-4250.

Free 275 gal oil tank, you move. Pat x8-1177 Draper.

Vehicles

'69 VW Beetle, gd cond, no rst, reblt eng, muff, batt, genrtr, frnt end, rns v well, $950. Chris, x3-8803 or 576-1826 eves.

'69 VW Cmpr, Westfalia fact eqppd, 80K, used to be exc runnr, now transm probs. Ludwig, x3-2173 or 648-2033 eves.

'70 BMW 02 series, frm CA, no rst, nw Bilstein shcks, Mich, Supr Sprnt, Blaupunkt AM/FM, ovr $4,200 invstd, $2,950. Jim, x3-2048 or 1-934-6782.

'70 VW sqbck, orig ownr, gd cond, $750. Call x3-3284 or 863-1483 eves.

'72 MGB CT, clssc sprts car, exc cond, lo mi, $3,980 or best. Call x3-7863 or 497-9142.

'72 Volvo 164, nw brks, a/c, gd rnning cond, $1,200 or best. Ruth, x3-4062 or 861-1191 eves.

'73 Maverick sdn, 70K, rns ok, has rst, $400 or best. Jay, x3-8662 or 734-4453 eves.

'73 MGB for prts or rstrtn, bst offr. Paula, x3-3623.

'73 Ford Torino sta wgn, 302 V8, 71K, $750 w/snws. Brad, x3-6778 or 734-3650.

'74 Volvo wgn, ps, pb, a/c, rlbl city trnsprtn, $1,200. Call 924-8083.

'74 Chevy Impala, some rst, rns ok, grt car for Bostn city drving, $290. Laura, x3-1981 or 254-5090.

'74 Chevy Vega, 2-dr cpe, 70K, 3-spd mnl, v cln in & out, $500. Rich, x3-3149 or 576-3432.

'76 Pontiac Catalina, 4-dr, auto, ps, pb, a/c, nw trs, exc cond, no rst, TX plts, $1,950 or best. Jeremy, x3-1807 or 536-6083 after 6pm.

'76 Capri, lo mi, htchbck, 4-spd, gd cond, $1,600. Jerry, x3-5260 or 734-8993.

'77 Ford LTD II wgn, 67K, 9 passngr, ps, pb, a/c, rad trs, mny nw prts, $800 or best. John, x8-4475 Draper or 729-1637.

'77 Plymouth Volare 4-dr sdn, ps, pb, slnt 6, 3-spd, stndrd w/ovrdrv, gd cond, $1,250. Raymond, x3-7235.

'77 Subaru 4WD wgn, 78K, rns well, bdy rst, $850 or best. Call x3-4079.

'77 Toyota Corolla, 63K, 4-dr, auto, gd eng w/snw trs, exc bdy, $2,100. Min, x3-5716 or 494-5247.

'77 Honda Civic, gd city car, nw brks & shcks, all-wthr rads, semi-auto trans, gd bdy, passed 84-85 inspctn, $1,500 or best. Karen, x8-3326 Draper 4-5pm or Rupert, 491-8680 eves.

'77 Volvo DL wgn, stndrd w/ovrdrv, almnd ext, brwn int, velour seats, rfrck, AM/FM, meticuls maint, nw brks, 108K, $5,000. Call 861-6668.

'77 Subaru, 4-dr, fwd, 108K, eng strng, parts car or fxabl, cheap, bst offr. Kris, x3-1722 or 696-2093 after 6pm.

'77 VW Van, less than 10K on nw eng, nw muff & batt, mnr rst, asking $3,000 or best. Meredith, x3-1507/4910 or 876-4328 eves.

'77 Chevy Malibu wgn, mny nw prts, gd mech cond, bst offr. Joaquim, x3-8718 or 494-9286.

'79 Chevette 4-dr htchbck, 4-spd, 54K, AM/FM, mnl, exc cond, nw batt, all-wthr trs wthin 1 yr, $2,150. Mayo, 731-0293.

'79 Plymouth Volare, 4-dr, exc cond, mst sell, $2,600 or bets. Dick, x3-6788 or 232-8480.

'79 Ford Granada, 56K, exc bdy & eng, radio, $3,700 or best. Yossifon, x3-2300.

'79 Chevy Monza wgn, 2-dr, stndrd, gd cond, orig ownr, 51K, asking $2,500. Charlotte, x3-3529.

'79 Batavus moped, red mtrcycl-type bdy, 1.6K, exc cond, w/hlmt, tools, oil, $350; '69 VW Beetlw, 90% restrd, reblt eng, gd bdy but nds nw rckr panls, grey primed, gd trs, $950. Ed, x5431 Linc or 779-6473.

'80 Pontiac LeMans wgn, outsnding cond, a/c, rfrck, ps, pb, rear defot, nw shcks & more, 45K, $5,700. Jack, x8-4418 Draper.

'80 Olds Omega, brwn, 2-dr, auto, a/c, ps, pb, AM/FM, 52K, well maint, $3,500. Eli, x4684 Linc.

'80 Honda XL250S, gd cond, v fst & rlbl, inc Supertrap Silencer & Powerroll exh sys, nw chain & sprckts, w/hlmt, asking $600 or best. Mitch, 247-2986.

'81 Subaru DL, 45K, exc cond, $4,900. Maria, x3-2026.

'81 Plymouth Champ, 30K, 4-spd, AM/FM, nw brks, muff, bdy & mech mnt, Bilstein rstprfd, $3,500. Howard, x3-2628/7805 (sec) or 332-4232.

Housing

Furn studio condo for rnt, jst ovr the bridge, avlbl thru Nov, $600/mo inc ht & utils, btflly maint, secr bldg, cncrg, refs. Dave, x8-4537 Draper or 383-1520.

N Cambridge, spacs 3BR apt, $900; sunny 2BR apt, $800; bth hv br nw ktchns & baths, hrdwd flrs, conv to T, quiet, resdntl nghbrhd, frshly renvtd. Hugh, x3-1907 or 661-7158.

Mt-top chalet for rnt during foliage & ski seasn, 3BR, 1 bath, btfl mt views, Gunstock ski area, Guildord, NH. Bill x8-4504 Draper.

Lrg furn rm in Winchester Center house, all utils, prkng, linens, lndry faclts & cbl inc, non-smkng F only, $300/mo. Call x3-7117 or 729-0006 eves.

Hull, 3BR house on acre, btfl ocean & bay view frm granite cliff, 5 min wlk to beach, cmpltly wntrzd, sun prch, $75,000 by ownr. Call x3-6372 or 925-9358 or 666-3666.

New Orleans Frnch Qrtr condo for Wrld's Fair finale, Nov 9-16, $800. Georgia or Joe Collins, x3-4212.

Animals

Snw wht chinchilla for sale, cln quiet pet, $10. Stephanie, M-W, x3-4719.

Wanted

3 wrking prfssnls, mid-30s, sk house for rnt in Watertown/Newton/Belmont area, 3BR, dry bsmnt w/access frm st, yrd & quiet nghbrhd desrd, refs avlbl. Janet, x3-3470 or 926-0263 lv mssg.

Frnch post-doc sks 1BR housing or for rmmate to shr biggr house. Bertrand, x3-8148 or 628-0023.

Exprncd chldcare wntd for 3-mo-old grl, in our Cambridge hm, 6-10 hrs/wk, non-smkr, own trnsprtn. Call x3-3581 or 661-9829 eves.

Trade my Sloan prkng stckr for your East Garage stckr. Kathi, x3-1592.

Vistng fclty & fmly nds shrt-trm rntl for fall semstr. Maria, x3-1509 or 1-485-0614 eves.

VW eng frm mnl trnsmssion VW Bug or bus, I can remv it frm currnt car if ncssry. Call 494-9260.

Carpool

Rdrs wntd for vanpool lving frm Marlboro to Shopper's World to Draper-Tech Sq. Fred, x8-1706 Draper.

Rd wntd, Everett-MIT, M-F, 8:30-5, or rd to Everett frm MIT at 5pm. Mary Ann, x3-1319/1329.

Rd nded frm Peabody to MIT, rnd trip, M-F. Irene, x3-7133.

Lost and Found

Found: W's Rolex wtch, Wed 9/5 in Killian Court, idntfy to retrv. Call x5-8978 dorm or lv note at Next Hse dsk #552.

Found: box turtl wndring in Killian Court, call to claim. Ann, x5-6507 dorm.

Miscellaneous

Exprt typng on wrd prcssr, fst, accurt, rsnbl rates. Call x3-2203.

I have 2 5-lb blcks of steel to de-rst & metl plate, don't know how, can anyone hlp me? Mike, x3-4619 or 267-7693 (lv mssg).

Babysitting in my hm on campus, exp, lcnsd, refs. Call 494-8096.

Technology Children's Center nds occsnl sub tchrs, if you enjoy wrk w/chldrn & intrstd, call x3-5907.

Yrd sale: 9/22-23, 10am-5pm, 19 Kimball Rd, Arlington off Rte 3. Furn, ktchn applncs, 3-spd bike, 14 snw trs, drssr, mttrss, rugs, tbls, chrs, lmps, mirrors, etc. Call x3-6375 or 648-0244.

Surplus Property

OFMS has the following excess MIT equipment for transfer within MIT. Unless noted, items are at the Equipment Exchange, 224 Albany St., open Mon. Wed & Fri 10am-1pm. After 30 days, items are sold to individuals. Where noted, bids and offers go to Tom Donnelly, property administrator, E19-451, x3-2779, with envelope so marked. Always reference case number.

Case 1195: 55 student dsk lmps,w bulb, gd cond, $5 ea.

Cae 1184, 1260, 1264, 1284, 1285: 47 chrs, misc types & colors, ideal for student use in lab, office, dorm, reas price, fair-gd cond.

Case T-222: IBM Selectric I typewriter, poor cond.

Case T-223: Royal manual typewriter, poor cond.

Case T-224: IBM standard typewriter, poor cond.

Case 1286: Sony dictating machine, mdl BM, fair cond.

Case 1290: A.B. Dick mimeograph, mdl 550, gd cond; 3 Atlas mimeo stencil files, gd cond; metal cabinet, 27x28x36, gd cond.

Case 1291: 3 Mosler file cabinet safes, gd cond; Shaw Walker file cabinet safe, gd cond.

Case 1292: Wyandot laborator chr, fair cond.

Case 1293: Desk, 30x60, fair cond.

Case 1294--To inspect, call Ken Burrhus x3-2107: Lepel high frequency induction heating unit, mdl T-10-3, fair cond.

Case 1299: 5 wood 4-drawer file cabinets, fair cond; Friden Marchant calculator, mdl 10FA, poor cond; Remington adding machine, fair cond.

Case 1289: Steelcase IBM 4-drawer card file, gd cond.

Case 1300: 3 HP function generators, mdl 202A; 2 Eastern Scientific regulators; RID Lab multiplier, amplifier, discriminator, power supply, and oscilloscope; HP oscilloscope, mdl 130BR; Dumont oscilloscope, mdl BT-1; Philbrick power supply, mdl R100B; Frigit Midjet cooler; all above items fair cond; Pitney-Bowes postage meter, mdl 5500; postage scale, mdl S-120, both in gd cond; Tallyl tape drive, poor cond; Beta Electric Corp power supply, mdl 2010, gd cond; Spectra-Strip Corp printer, mdl P-8687-10-12R, fair cond; Mosely X-Y recorder, poor cond; J.C. Carter Co rotating coil fluxmeter.

POSITIONS AVAILABLE

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

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

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

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

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

Pat Williams	**3-1594**
Dick Higham	**3-4278**
Virginia Bishop	**3-1591**
Appointments:	
Therese McConnell	**3-4270**
Ken Hewitt	**3-4267**
Kenneth W. Chin	**3-4269**
Sally Hansen	**3-4275**
Appointments:	
Darlene McNeil	**3-4268**
Susan Gaskell	**3-4266**
Appointments:	
Nancy McSweeney	**3-4076**

Administrative and Academic Staff

Auditor I, Audit Division, to perform audit tasks in reviewing and appraising the soundness, adequacy and application of accounting, financial and operating controls. Assist in the review of the extent to which Institute assets are accounted for and safeguarded against losses of all kinds. Maintain a high degree of professionalism and objectivity in the audit tasks assigned. Participate in preparing reports and reviewing systems and procedures, making recommendations in systems design and computer applications. Supervise support staff as directed. Requires Bachelor's degree in Business Administration with a major in Accounting or equivalent combination of education and experience. One to three years experience with a C.P.A. firm necessary. Reasonable knowledge of systems analysis and computer capabilities desirable. A84-439

Sponsored Research Staff

Statistical Programmer, Psychology, to organize and analyze neuropsychological date using VAX 11/780 computer. Under a statistician's supervision, programmer will update, maintain, and transform data files, program and perform statistical analyses using SAS package and summarize results. Requires extensive programming experience including use of data management and statistical procedures and knowledge of at least one standard high-level language; and a general background in applied statistics (at least 2 undergraduate courses). Must be organized, work independently, handle pressure, and document material well. DBMS, SAS and VAX/VMS experience desirable. Bachelor's degree preferred. R84-511

Postdoctoral Associate, Nutrition & Food Science, to perform analysis of mutational spectrum of the hgprt locus in human T-lymphocytes. Requires PhD in Microbiology. Experience in gene cloning, cDNA library construction and sequencing desired. Applicants should include 3 references with curriculum vitae. R84-510

Administrative Officer, Research Laboratory of Electronics, to manage administrative affairs of the department. Strong human relations skills needed, as well as a bachelor's degree or an equivalent combination of education and experience. The ability to manage the planning, implementation, training, and utilization of a computer-based administrative information system to support purchasing, contract management, secretarial support, and laboratory-wide networking is essential. Minimum of two years related experience necessary. R84-493

Library Support Staff

Library Assistant IV, Barker Engineering Library, to operate the Media Services Area under supervision of Public Services Librarian. Includes the microform collection and the non-print media collection. Provide user services such as duplicating microfiche and instructing in the use of equipment. Monitor equipment and supplies. Process technical reports for the collection and maintain catalogue. Type for Barker Library **Bulletin** which is published biweekly. Train and direct student assistants. Assist at circulation desk as needed. Requires 2.5 years direct/related experience. Post high school education may count toward experience. Should be punctual, dependable and able to work independently. Organizational skills, attention to detail and good communication skills important. Typing ability essential. Word processing preferred. Knowledge of microforms, microform equipment and video equipment desirable. L84-222

Library Assistant III (11 mos/perm), Rotch Library, to act as circulation assistant in the public service section of the Rotch Library of Architecture and Planning. Includes responsibilities in circulation, reserves and stack maintenance. At times may be only staff person in library, running circulation desk, answering phones and closing the library. Should have ability to handle diverse activities and assist library users in a positive and efficient manner. In addition should be prompt, reliable in meeting schedules, and be accurate and thorough in handling detailed processes. Willingness to take responsibility, interpret policy and make decisions within established guidelines important. Some typing required. Must be high school graduate and have at least one year of direct/related experience. Post high school education can count toward experience. NON-SMOKING OFFICE (35 hrs/wk, eves & weekends) L84-241

Library Assistant III, Catalogue Department, to input, edit and produce catalogue records on the OCLC terminal approximately 4 hrs/day from work forms prepared by cataloguers in the processing section. Participate in maintaining data base including holdings and heading changes. Type charge cards and book pockets. Remove or correct cards in the Institute Libraries Catalogue. Type authority reference cards and perform other related clerical assignments as directed. Requires high school graduation, typing 40 wpm, attention to detail, and ability to perform complex input on OCLC 100, 105, or M300 terminal. Experience using CRT terminal desirable. Minimum of one year direct/related experience required. L84-215

Secretary/Staff Assistant

Administrative Secretary-Technical, Plasma Fusion Center, to provide detailed administrative and research secretarial assistance to the Director and to coordinate certain projects assigned to the Headquarter's operation. Schedule numerous meetings including arranging support details (guest travel, lunches, rooms, equipment, correspondence, etc.). Type reports, correspondence, memos, and extensive theoretical research manuscripts using word processor. Answer phones and receive visitors. Maintain files. Arrange travel, itineraries, advances, vouchers, visas, etc. Distribute work to headquarter's secretary or student assistants as needed. May train or instruct others. Requires 4.5 years direct/related experience, excellent scientific typing (60 wpm), knowledge of MIT procedures and ability to handle complex secretarial duties. Should be able to handle confidential matters with discretion and tact, work under pressure and have knowledge of word processing or willingness to learn. (40 hrs/wk) B84-232

Administrative Secretary, Materials Science & Engineering, to provide secretarial and administrative support to the Department Head. Applicants must have excellent typing, word processing and dictaphone skills. Shorthand desirable. Solid command of the English language, good organizational skills and ability to handle variety of tasks simultaneously required. Ability to work independently and set priorities essential. At least 4.5 years direct/related experience or the equivalent combination of education and experience necessary. B84-211

Administrative Staff Assistant, Center for Real Estate Development, to provide administrative and secretarial support to the Director and Associate Director of Resource Development. Assist in development of liaison program with membership of the Center. Set up filing and tracking systems. Involves extensive interaction with members. Must be able to deal successfully with all levels of management. Minimum 4.5 years secretarial experience required. Excellent typing, shorthand, word processing, and organizational skills essential. Initiative, good judgement and strong interpersonal skills important. Understanding of real estate industry helpful. NON-SMOKING OFFICE B84-208

Sr. Secretary-Technical, Chemistry, to perform secretarial duties for one chemistry professor. Type correspondence, technical manuscripts, grant proposals and course materials; make travel arrangements; schedule appointments; monitor research accounts; answer phones; process mail; and maintain files. Assist in departmental projects as necessary. Requires 2.5 years direct/related experience, good technical typing skills and word processing experience or willingness to learn. B84-239

Sr. Secretary-Technical, Chemistry, to provide secretarial support to two inorganic chemistry professors. Type corrrespondence, technical manuscripts, grant proposals and course material. Answer telephones; process mail; schedule appointments; arrange travel; and monitor research accounts. Applicant should be effective in dealing with people and able to set priorities without detailed supervision. Minimum 2.5 years direct related experience required as well as good technical typing skills, experience with dictaphone and willingness to learn word processing. MIT experience desirable. B84-238

Sr. Secretary (part-time), Science, Technology, and Society, to perform general secretarial duties for one professor. Type and proofread manuscripts; conduct bibliographic searches, prepare course materials; answer phones; process mail and routine correspondence; coordinate calendar; arrange travel; and perform other duties as needed. Must have good organizational, interpersonal and excellent typing skills. Should be able to set priorities and work independently. Knowledge of or willingness to learn word processing essential. Familiarity with any European language highly desirable. Interest in sociology, economics or anthropology a plus. (20 hrs/wk, flexible) B84-237

Sr. Secretary-Technical, Mathematics, to handle substantial volume of correspondence including composing routine letters, and typing class materials, proposals, reports and mathematical manuscripts for several faculty members. Answer telephones and inquiries, arrange travel, process mailings, and schedule appointments. Busy office requiring intiative and ability to set priorities. Must have excellent typing skills including technical typing experience. Familiarity with office routines and filing systems necessary. Minimum 2.5 years direct related experience required. Knowledge of MIT preferred. B84-233

Sr. Secretary (part-time/perm 9 mos), to maintain schedules and calendar for MIT Symphony Orchestra in the Music Section of the Humanities Department. Order music parts; handle financial accounts; arrange logistics for recordings, concerts, tours, etc.; act as liaison between Music Section and Graphic Arts; schedule meetings; and perform general office duties including assisting Music Headquarters as time permits. Requires good typing skills, shorthand/speedwriting, organizational skills, and ability to work independently. Professional telephone skills and strong interpersonal skills essential. (20 hrs/wk, M-F 1-5) B84-230

Sr. Secretary, Sloan School of Management, to provide secretarial support to three professors in the Economics, Finance and Accounting Group. Type, proofread and reproduce manuscripts, reports, exams and correspondence, often of a technical nature. Some of this will require transcription from dictaphone and good command of the English language. Assist with preparation of course materials and notes. Answer phones and inquiries, schedule appointments, arrange travel, xerox, maintain files and respond to routine inquiries. Willingness to learn word processing desirable (WANG). Requires excellent typing (some technical), proofreading, dictaphone, and organizational skills. Attention to detail important. Minimum 2.5 years direct/related experience or an equivalent combination of education and experience required. B84-229, B84-216

Sr. Secretary, Laboratory for Computer Science, to provide secretarial support for research groups led by two faculty members. Manage preparation of class notes, reports, research proposals and technical memos. Maintain files and data bases of research groups. Use computer-based support including text editor, formatters, and file systems as appropriate. Handle correspondence, answer telephones, arrange travel, and provide assistance in organizing professional meetings. Must have 2.5 years direct/related experience or equivalent combination of education and experience. Interest in learning computer-based text-editing and other applications, ability to work independently and set priorities essential. Good typing and organizational skills necessary. B84-228

Sr. Secretary (part-time), Research Laboratory of Electronics, to provide support to one faculty member and two research scientists. Type class materials, technical reports, proposals, scientific manuscripts and correspondence. Answer phones, maintain office supplies, arrange meetings and interact with students. Requires high school graduation and 2.5 years direct/related experience. Excellent typing, including technical typing and good interpersonal skills essential. (20 hrs/wk) B84-227

Sr. Secretary-Medical, Medical Department, to provide reception and secretarial support in the Medical Specialty Area for the Dermatology Service and the ENT Service. Includes heavy appointment scheduling, record management, patient triage and medical transcription. Will share responsibility with two other secretaries for supporting other services in the Medical Specialty Area during peak periods, lunch hours or absences. Requires 2.5 years related secretarial experience, preferably in a medical field. Typing (55 wpm), medical transcription and effective telephone and communication skills essential. Discretion and tact in dealing with patients and confidential information important. Must be able to work well in a busy setting. B84-217

Sr. Secretary-Editorial, Civil Engineering, to provide secretarial and editorial support for faculty member and research staff in the Ralph M. Parsons Laboratory. Prepare manuscripts and correspondence using word processor (Micom); monitor research accounts; assist in preparation of research proposals; coordinate editorial activities of a scientific journal; maintain records, calendar, telephones, etc. Should be able to work independently and efficiently in the face of frequent interruptions. Organizational, editorial and technical typing skills important. Knowledge of accounting helpful. Willingness to learn word processing helpful. Minimum 2.5 years direct/related experience required. B84-205

Sr. Secretary, Laboratory for Nuclear Science, two positions open to provide secretarial support for the Theoretical Physics group including faculty, research staff and students. Responsibilities include preparing detailed technical manuscripts with extensive equa-

tions, referee reports, course work, correspondence and dictaphone. Arrange travel, seminars and meetings; process postdoc and visitor applications; file; sort mail; answer phones; fill reprint requests; and perform other secretarial and administrative functions. Requires excellent secretarial skills and ability to set priorities. Strong organizational skills and ability to handle pressure situations necessary. Involves frequent interaction with variety of people. Willingness to learn word processing essential. Minimum 2.5 years direct/related experience or equivalent. Some college preferred. NON-SMOKING OFFICE B84-020

Sr. Secretary, Provost's Office, to provide reception and secretarial support for Institute Professor who is also Foreign Secretary of the National Academy of Sciences, and his Administrative Assistant. Duties include: greet and assist visitors; answer phones; open and sort mail; schedule appointments and meetings; assist with travel arrangements; type correspondence including initiating and composing routine correspondence; set up and maintain files; prepare Institute forms; order and maintain supplies. Interact with Institute officers and committees, as well as national and international organizations. Involves extensive liaison with 80 member Office of the Foreign Secretary. Will train in the operation of a facsimile copier/word processor. Applicants must have excellent organizational ability and knowledge of general office procedures. Strong interpersonal skills, flexibility and command of the English language important. Minimum 2.5 years' direct/related experience required. Shorthand or speedwriting preferred. (Non-smokers preferred). B84-915

Secretary (part-time), Electrical Engineering & Computer Science, to provide support to one faculty member. Type correspondence and scientific manuscripts; schedule appointments; answer phones; photocopy; and assist with special projects. Requires excellent typing and at least one year of secretarial experience. (20 hrs/wk, M-F 9-1) B84-235

Receptionist/Word Processing Operator, Civil Engineering, to assist the Administrative Assistant with word processing requirements for major reports, master mailings and list processing. In addition, will answer phones, xerox and lend assistance with other duties. Requires one year of direct/related experience. Knowledge of DECmate II desirable. Excellent typing skills essential. Professional telephone skills important. B84-231

Staff Assistant, Artificial Intelligence Laboratory, to perform general secretarial duties for two faculty members. Will answer phone, type, photocopy, etc. Must be willing to learn computer text-editing system. Good interpersonal skills important. Must be able to work under pressure. College education preferred. Minimum one year direct/related experience. NON-SMOKING OFFICE (40 hrs/wk) B84-209

Secretary (part-time), Nutrition & Food Science, to type memos, vouchers, research budgets and correspondence for Administrative Officer and Administrative Assistant. Maintain list of active accounts, update records, file forms, screen phone calls, process mail, greet visitors, provide information, and perform other secretarial duties as assigned. Will be required to run office-related errands. Applicants must have good typing, facility with figures, attention to detail, ability to work independently and set priorities. Must be willing to learn word processing. Minimum one year of office experience required. NON-SMOKING OFFICE (20 hrs/wk, afternoons) B84-207

Secretary, Whitaker College, to provide secretarial support to the Director and Manager of the Lab for Health Care Studies. Will receive visitors; answer phones; type correspondence and manuscripts; transcribe recorded dictation; maintain files, order and maintain office supplies; process mail; and perform other related duties as assigned. Requires good interpersonal and communication skills. Knowledge of or willingness to learn word processing essential. (25 hrs/wk to full-time, flexible) B84-188

Office Assistant

Sr. Editorial Assistant, Aeronautics and Astronautics, to participate in all phases of manuscript preparation for publication in professional journals, books, reports and proposals. Will be responsible for all production phases of report preparation such as typing, proofreading, formatting, technical illustrating, reproduction and distribution. Other duties include assisting in the review procedures for technical societies and in compiling and distributing fiscal reports. Will occasionally compose correspondence. Requires high school graduation and 4.5 years direct/related experience. Excellent typing, proofreading and copy editing skills essential. Must exercise discretion in setting priorities. Familiarity with Corvus word processing system highly desirable. College degree preferred. S84-226

Administrative Assistant, Energy Laboratory, to assist with the non-technical administration of the Laboratory's Electric Utility Program. Act as information source, arrange and follow-up frequent meetings of faculty, staff and outside representatives. Coordinate the preparation, submittal and follow-through of proposals and progress reports. Prepare correspondence and reports associated with overall program management and specific program tasks. Maintain records, files and administrative accounts. Requires excellent typing, organizational skills, and communication skills. Experience or willingness to learn word processing essential. Minimum 4.5 years direct/related experience required. S84-212

Sr. Office Assistant, MIT Press, to act as Book Production Assistant in the Design Department. Will assist in many phases of book production process including: adding type specifications to edited manuscripts, checking page proofs and repro, sizing art, trimming salt proofs and placing them in page proof, doing mechanicals for book jackets, and performing general office functions such as creating and maintaining files. Applicants should have 2.5 years related work experience. Ability to operate photostat machine and some drafting skills a plus. Willingness to learn technical aspects of book production required. Attention to detail and technical procedures important. Should be able to show examples of previous mechanical paste-up work. S84-236

Sr. Office Assistant, Development Office, to act as Senior Research Assistant and compile and maintain information on gift prospects and donors. Research published reference materials to produce standard profile reports used by analysts in preparing research reports; generate other research reports such as the Corporate changes of MIT Alumni as needed. Access the Alumni Association/Treasurer's data base for information. Process incoming correspondence including gift records, acknowledgements, memos, letters and reports. Involves heading up, indexing, matching, posting and filing. Requires good typing, organizational and telephone skills; willingness to be trained on the Alumni Association terminal; and analytical ability. S84-234

Office Assistant (temporary), Admissions Office, to assist in processing undergraduate applications to the Institute. Enter application data into database and perform other clerical duties such as reading correspondence, typing, answering phones, compiling statistics and filing. Requires high school graduation or equivalent. Good typing skills, ability to work under pressure and close attention to detail essential. (6 mos only to April 1985) OFFICE S84-223

Benefits Specialist, Personnel, to be responsible for communicating benefits information to all segments of the MIT community. Answer heavy volume of benefits questions by phone, in person and in writing, in a very busy environment with frequent interruptions. Provide detailed information and solve administrative problems, often in sensitive circumstances. Act as liaison between MIT and insurance carriers and tax deferred annuities. Develop and arrange workshops and meetings. Conduct orientation programs for new personnel. Provide secretarial support to one staff member, including typing and word processing. Assist others as needed. Requires excellent communication and organizational skills and ability to interact with a wide variety of people. Must solve administrative problems quickly and tactfully. Work independently and perform under pressure. Word processing experience and excellent typing required. Knowledge of MIT benefits or related experience helpful. S84-221

Receptionist/Office Assistant, Personnel, to act as department receptionist to provide services related to the employment process: provide information on job status, requirements, application procedures, etc. Check applications for completion, administer typing tests, schedule interviews and refer general inquiries to appropriate Institute offices. Maintain data bank of applicant information and assist with resume acknowledgement system. Operate word processing equipment and work on special projects as necessary. Requires ability to grasp routine procedures quickly and respond to unusual circumstances appropriately. Should be able to monitor several situations at once (applicants, several phone lines, etc.). Minimum of one year of office experience in a service-oriented capacity required. Accurate typing essential. Willingness to learn word processing important. S84-214

Office Assistant, Purchasing and Stores, to type purchase orders using electric typewriter and perform other related clerical functions as a member of a support services team. Must have high school diploma and better than average typing speed (50+wpm). S84-202

Clerical Assistant (part-time), Committee on the Visual Arts, to act as Gallery Attendant for the Hayden Galleries. Monitor security of the gallery, handle publication sales and provide reception. Must be reliable and willing to work flexible hours. Knowledge of contemporary art desirable. (approx 19 hrs/wk, W-F 10-4, Sat 1-5) S84-213

Service Staff

Patrolman/Patrolwoman, Campus Police, to assure protection of life and property, traffic control, policing of MIT parking lots, making foot patrols of all grounds and buildings. Administer first aid including ambulance service for injured or ill persons. Participate in emergency procedures, explosions, fire, chemical spills, etc. Perform investigations, write reports and other police duties. Minimum of three years Police Department experience in Municipal, State, or Campus Police required. Should include all phases of law enforcement experiences such as criminal law, knowledge of procedures, criminal investigation, case preparation, investigation of complaints and report writing. Will be required to obtain Emergency Medical Technician Certification. May be required to successfully complete additional police academy training. Qualify with use of firearms, valid driver's license, honorable discharge for any earlier police service, ability to work long hours on occasion, qualify for Institute Physical Examination and ability to handle top level public relations required. (H84-023, H84-024)

Technician A (E-M), Center for Materials Science and Engineering, to assist in laboratory, research, or analytical work under direction or supervision of scientific personnel. Operates highly technical experimental apparatus. Has demonstrated considerable skill and good performance in the particular field of activity. Requires some supervision. Will operate, adjust and maintain an Ion Implanter. Provide ion implantation services for users and assist users in developing implantation procedures. Maintain records of all implants performed and procedures used. Will perform all maintenance and adjust equipment as required. Requires graduation from a two year day technical school or its equivalent and a minimum of two years of applicable experience. Familiarity with electronic equipment and vacuum systems necessary. H84-017

General Cook (temporary), Food Service, to prepare all food items required for the Breakfast and Luncheon production as the menu directs. Includes cooking procedures for frying, roasting, braising, baking, sauce and broiler work. Set up and break down the steamtable for each meal period. With direction, plan and execute advance preparation for all menu items. Demonstrate ability to correctly time food production so as to provide a flow of freshly prepared products to the customer. Perform other related duties as assigned. Requires minimum of 3 years experience in mass food production. Knowledge of position controls and preparation timing, meat recognition and cutting knowledge necessary. Must be able to compute recipe conversions, lead and train other food service personnel of a lower grade. (through March 1, 1985) H84-012

Waiter/Waitress (part-time), Faculty Club, to perform such duties as may be necessary to the effective operation of the dining facilities, including, but not limited to, setting up tables, taking orders, serving customers, clearing tables, carrying food and dishes to and from the dining room and kitchen, setting up and clearing buffets, cleaning and filling serving dishes such as sugar bowls, coffee pots, water pitchers, etc., stocking sideboards with place mats, napkins and condiments and keeping sideboards, pantries, closets and furniture clean and in good order. Requires ability to read and speak English. Experience in service-oriented environment preferred. (20 hrs/wk) H84-025

The following positions were still available at Tech Talk deadline. Complete descriptions of all available positions are posted in the Personnel Office (E19-239), and at locations listed at the beginning of Positions Available section.

ADMINISTRATIVE AND ACADEMIC STAFF:
A84-435, Coordinator of Alumni/ae Activities, Sloan School
A84-434, Sales Representative, MIT Press
A84-433, Unit Manager, Food Services
C84-123, Postdoctoral Associate, Nutrition & Food Science
C84-122, Assistant Radiation Protection Officer, Medical
C84-121, Librarian I (pt/temp), Libraries
C84-120, Librarian II (temp), Libraries
C84-119, Librarian I, Libraries
A84-432, Associate Director of Programs, Center for Real Estate Development
A84-431, Computer Operations Assistant, Whitaker College
A84-429, Regional Director, Alumni Association
A84-428, Assistant Curator, Committee on the Visual Arts
A84-423, Sr. Applications Programmer, Comptroller's Accounting Office
A84-419, Systems Analyst, Administrative Information Systems
A84-400, Systems Analyst, Administrative Information Systems
A84-385, Manager of Systems Operations, Project Athena
C84-117, Business Services Officer, Libraries
A84-391, Advisor to Fraternities, Dean for Student Affairs
A84-413, Assistant Director, Council for the Arts
A84-410, Director of Operations, West Campus Plaza
A84-407, Director of Admissions, Office of Admissions
A84-402, Direct Mail Manager, MIT Press
A84-397, Sr. Graphic Designer, MIT Press
A84-337, Systems Programmer, Project Athena
A84-336, Systems Programmer: Operations, Project Athena
A84-381, Systems Programmer, Information Processing Services
C84-105, Assistant Engineering Librarian, Barker Library
C84-104, Head, Science Library
A84-365, Industrial Liaison Officer, Industrial Liaison Program
A84-361, Program Manager, Physical Plant
A84-356, Major Gift Officer, Resource Development
A83-336, Systems Programmer, Project Athena
C83-083, Applications Programmer, Electrical Engineering & Computer Science

SPONSORED RESEARCH STAFF:
R84-500, Research Staff Programmer, Haystack Observatory
R84-499, Computer Facility Manager, Research Laboratory of Electronics
R84-498, Technical Assistant, Center for Cancer Research
R84-496, Technical Assistant, Center for Cancer Research
R84-488, Technical Assistant, Laboratory for Computer Science
R84-416, Technical Assistant, Center for Cancer Research
R84-356, Research Staff Engineer, Haystack Observatory
R84-495, Research Engineer, Electrical Engineering & Computer Science
R84-494, Research Engineer, Electrical Engineering & Computer Science
R84-493, Administrative Officer, Research Laboratory of Electronics
R84-492, Research Associate, Energy Laboratory
R84-491, Research Specialist, Energy Laboratory
R84-490, Technical Assistant, Energy Laboratory
R84-489, Theoretical Research Scientist, Plasma Fusion Center
R84-487, Technical Assistant, Whitaker College
R84-474, SRS Administrative (Librarian), Plasma Fusion Center
R84-469, Research Specialist/Programmer, Earth, Atmospheric, and Planetary Sciences
R84-468, Research Specialist, Whitaker College
R84-467, Research Specialist/Associate, Civil Engineering
R84-465, Registered Nurses, Clinical Research Center
R84-464, Research Scientist, Earth, Atmospheric, and Planetary Sciences
R84-460, Microbiologist, Division of Comparative Medicine
R84-457, Fiscal Officer, Laboratory for Architecture and Planning
R84-402, Research Associate, Research Laboratory of Electronics
R84-387, Chief of Telescope Operations, Haystack Observatory
R84-459, Technical Assistant, Whitaker College
R84-457, Fiscal Officer, Laboratory for Architecture and Planning
R84-452, Physicist/Engineer, Bates Linear Accelerator
R84-451, Postdoctoral/Research Scientists, Laboratory for Nuclear Science
R84-447, Postdoctoral Research Staff, Laboratory for Nuclear Science
R84-445, Research Scientist, Energy Laboratory
R84-444, Sponsored Research Staff, Francis Bitter National Magnet Laboratory
R84-439, Postdoctoral Research Scientist, Laboratory for Nuclear Science
R84-438, Computer System Manager, Laboratory for Nuclear Science
R84-433, RF Engineer, Plasma Fusion Center
R84-431, Systems Programmer, Laboratory for Computer Science
R84-430, Systems Programmer, Laboratory for Computer Science
R84-426, Research Scientist, Plasma Fusion Center
R84-419, Technical Assistant, Nutrition & Food Science
R84-416, Technical Assistant, Center for Cancer Research
R84-418, Electronics Engineer, Plasma Fusion Center
R84-409, Research Scientist-Exp., Plasma Fusion
R84-408, Research Scientist-Exp., Plasma Fusion
R84-405, Technical Assistant, Biology
R84-400, Technical Assistant, Biology
R84-399, Research Scientist, Laboratory for Nuclear Science
R84-392, Research Scientist-Exp., Plasma Fusion Center
R84-310, Computer Facilities Programmer/Manager
R84-381, R84-383, R84-384, SRS Postdoctoral Positions, Spectroscopy Lab
R84-378, Research Specialist, Aeronautics & Astronautics
R84-373, Research Engineer, Aeronautics & Astronautics
R84-370, Research Scientist, Artificial Intelligence Laboratory
R84-358, Principal Research Scientist, Lab for Nuclear Science
R84-353, Radiochemist, Nuclear Reactor Lab
R84-340, Research Scientist, A.I. Lab.
R84-335, Technical Assistant, Center for Cancer Research
R84-334, Manager, Tagged-Token Dataflow Project, Laboratory for Computer Science
R84-333, R84-332, R84-331, Research Staff and Principal Research Staff, Electrical Engineering and Computer Science
R84-327, Research Associate, Nutrition and Food Science
R84-319, Research Associate, Materials Science and Engineering
R84-298, Research Specialist (6 mos.), Energy Lab.
R83-289, Magnet Design Engineer, Plasma Fusion Center
R83-133, Research Engineer/Scientist, Energy Laboratory
R83-132, Research Engineer, Energy Laboratory
R83-210, Research Specialist, Artificial Intelligence Laboratory
R83-185, Systems Programmer, Laboratory for Computer Science
R83-183, Research Associate, Technology Adaptation Program
R83-175, Sponsored Research Staff, Center for Materials Science & Engineering
R83-172, NMR Spectroscopist, National Magnet Laboratory
R83-140, Research Associate, Materials Science & Engineering
R83-135, Research Scientist, Earth, Atmospheric & Planetary Sciences
R83-124, Sponsored Research Staff, Laboratory for Nuclear Science
R83-125, Sponsored Research Staff, Laboratory for Nuclear Science
R83-084, R83-086, Research Scientist—Experimental, Plasma Fusion Center
R83-080, Materials Scientist, Materials Processing Center
R83-988, Experimental Physicist, Center for Space Research
R83-986, Postdoctoral, Center for Space Research

LIBRARY SUPPORT STAFF
L84-148, Library Asst. IV, Dewey Library
L84-147, Library Asst. IV, Barker Engineering

SECRETARY/STAFF ASSISTANT
B84-185, Administrative Secretary, Laboratory for Nuclear Science
B84-195, Sr. Secretary (pt), Earth, Atmospheric & Planetary Sciences
B84-193, Sr. Secretary, Mechanical Engineering
B84-191, Sr. Secretary (pt), Urban Studies & Planning
B84-189, Sr. Secretary, Harvard-MIT Div. Health Sciences and Technology
B84-182, Sr. Secretary, Office of Facilities Management
B84-176, Sr. Secretary, Materials Science & Engineering
B84-885, Sr. Secretary, Alumni Association
B84-768, Sr. Secretary-Tech., Ocean Engineering
B84-197, Secretary (pt), Earth, Atmospheric & Planetary Sciences
B84-186, Secretary (pt), Whitaker College
B84-184, Secretary (pt), Earth, Atmospheric & Planetary Sciences
B84-178, Sr. Secretary, Laboratory for Computer Science
B84-177, Sr. Secretary, Laboratory for Architecture and Planning
B84-174, Sr. Secretary, Mechanical Engineering
B84-172, Sr. Secretary, Plasma Fusion Center
B84-170, Sr. Secretary, Sloan School
B84-167, Sr. Secretary, Physical Plant
B84-166, Sr. Secretary, Civil Engineering
B84-164, Sr. Secretary, Earth, Atmospheric & Planetary Sciences
B84-162, Sr. Secretary, Research Laboratory of Electronics
B84-158, Sr. Secretary, Chemical Engineering
B84-152, Sr. Secretary-Tech. (pt), Ocean Engineering
B84-150, Sr. Secretary, Center for Cancer Research
B84-143, Sr. Secretary, Personnel
B84-142, Sr. Secretary, Francis Bitter National Magnet Laboratory
B84-140, Sr. Secretary, Sloan School
B84-133, Sr. Secretary, Political Science
B84-132, Sr. Secretary, Materials Processing Center
B84-128, Sr. Secretary, Aeronautics & Astronautics
B84-071, Sr. Secretary, Materials Science & Engineering
B84-078, Sr. Staff Assistant, Management of Technology Program
B84-058, Sr. Secretary, Project Athena
B84-054, Sr. Secretary, Materials Science & Engineering
B84-050, Sr. Secretary, Music
B84-046, Sr. Secretary-Technical, Laboratory for Information & Decision Systems
B84-704, Sr. Secretary-Technical, Chemistry
B84-610, Sr. Secretary, Center for Advanced Engineering Study
B84-155, Secretary, Psychology
B84-151, Secretary/Receptionist, Nutrition & Food Science
B84-109, Administrative Secretary, Laboratory for Information & Decision Systems
B84-117, Sr. Secretary, Physical Plant
B84-107, Sr. Secretary, Laboratory for Computer Science
B84-103, Sr. Secretary, Biology
B84-099, Sr. Staff Assistant, Center for Advanced Engineering Study
B84-097, Sr. Secretary, Sloan School
B84-118, Secretary, Nutrition & Food Science
B84-108, Secretary, Architecture
B84-079, Sr. Secretary, Sloan School
B84-065, Sr. Secretary, Aeronautics & Astronautics
B84-005, Sr. Secretary (pt), Aeronautics and Astronautics
B84-047, Secretary, Nutrition & Food Science
B84-995, Sr. Secretary, Physical Plant
B84-836, Sr. Secretary Mathematics
B84-798, Sr. Secretary, Whitaker College

TECHNICAL SUPPORT STAFF
T84-135, Technical Assistant, Haystack Observatory
T84-942, Diet Aide, Clinical Research Center
T84-978, Word Processing Operator, MIT Press

OFFICE ASSISTANT
S84-190, Administrative Assistant, Harvard-MIT Div. Health Sciences & Technology
S84-196, Service Assistant (pt/temp), Earth, Atmospheric & Planetary Sciences
S84-161, Administrative Assistant, Media Laboratory
S84-169, Sr. Office Assistant, Research Laboratory of Electronics
S84-171, Office Assistant, Plasma Fusion Center
S84-145, Administrative Assistant, Economics
S84-139, Administrative Assistant, Graphic Arts Service
S84-154, Office Assistant, Registrar's Office
S84-129, Clerical Assistant (pt), Libraries
S84-116, Administrative Assistant, Sloan School
S84-920, Sr. Office Asst./Data Entry Op. (temp), Libraries
S84-012, Administrative Assistant, Alumni Association

SERVICE STAFF
H84-018, Senior Audiovisual Specialist (temp), Graphic Arts Service
H84-015, Technican A (Electronic), Energy Laboratory
H84-983, Machinist A, Aeronautics & Astronautics
H84-009, Gardener, Physical Plant
H84-008, Technician A (Electronic), Haystack Observatory
H84-006, Technician A (E-M), Electrical Engineering & Computer Science
H84-005, Technician B (Electronic), Laboratory for Nuclear Science
H84-003, Technician B (Electronic), Laboratory for Nuclear Science
H84-002, Technician B (E-M), Plasma Fusion Center
H84-959, Technician A (Electronic), Electrical Engineering & Computer Science
H84-004, Building Attendant (pt), Office of Facilities Management
H84-997, Heat & Vent Mechanic, Physical Plant
H84-923, Technician A (electronic), Telecommunications Systems

WHITEHEAD INSTITUTE
Technical Assistant, Whitehead Institute
Sr. Secretary, Whitehead Institute

Lecture to mark Green 20th

(continued from page 1)

an honorary lecturer in the department that makes its home in the building he and his wife gave to the Institute in 1964.

Mr. Green, who holds the SB and SM from MIT in electrical engineering, pioneered the use of advanced techniques in the application of reflection seismography to mineral exploration during his leadership of Geophysical Services, Inc., the predecessor company of Texas Instruments.

The Greens have been major benefactors to universities on three continents. In 1978 a unique gathering of international educators and scientists met in Washington to thank the Greens for their substantial support. More than 185 guests representing 21 organizations attended the function, held at the National Academy of Sciences.

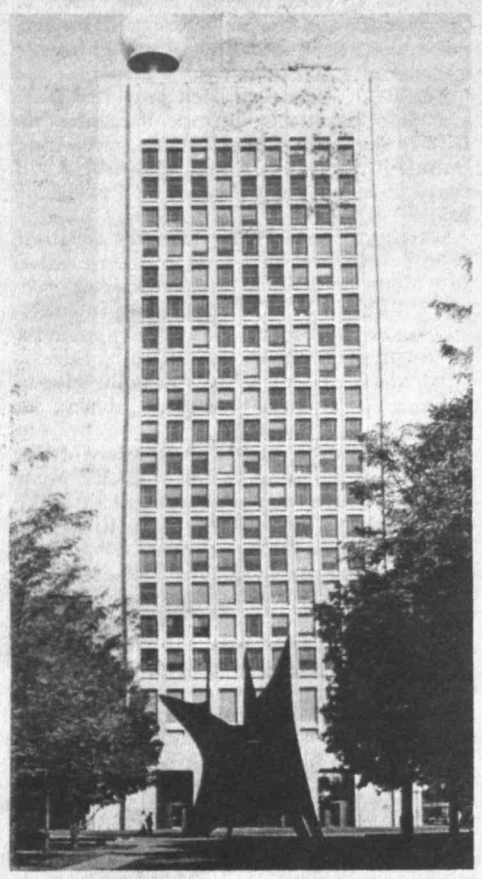
For the inaugural lecture in the 20th anniversary series, Dr. Press has chosen for his topic: "Science and National Policy for the 1980s." The Greens plan to attend the lecture.

Mr. and Mrs. Green also will be special guests the night before at a special reunion dinner of the Department of Earth, Atmospheric, and Planetary Sciences at the Faculty Club. About 250 people are expected to attend, among them all former heads of the department.

David S. Saxon, chairman of the MIT Corporation, will preside at the dinner.

Dr. Press will be a key figure in another event on October 4, at MIT when scientists from throughout the world gather for a day-long symposium on "The Science of Frank Press." The occasion anticipates Dr. Press' 60th birthday, which will occur December 4. The birthday celebration is being arranged by the Department of Earth, Atmospheric, and Planetary Sciences.

The symposium chairmen are Dr. M. Nafi Toksoz, morning session, and Dr. Carl Wunsch, afternoon session, both of the MIT Department of Earth, Atmospheric, and Planetary Sciences. Dr. Toksoz is director of MIT's Earth Resources Laboratory and the George R. Wallace Jr. Geophysical Observatory. Dr. Wunsch is Cecil and Ida Green Professor of Physical Oceanography and a former department head.



The 20th anniversary of the Green Building will be marked by a series of events in early October.

The introduction will be given by Dr. Jerome B. Wiesner, Institute Professor and president emeritus at MIT, who was science advisor during the Kennedy and Johnson administrations.

Four take new development posts

Nelson C. Lees, director of the Office of Special Gifts and director of Resource Development has announced several appointments and changes in the staff of his area:

Edith E. Nelson has been promoted from associate director to director of Leadership Gifts in the Office of Special Gifts, succeeding Donald P. Severance, who has retired but will continue to support the office on a part-time basis.

Stephen D. Immerman, formerly assistant dean for student affairs, has joined the Leadership Gifts staff as a district director, succeeding Robert H. Bliss who retired in June.

Thomas W. Boyden has been appointed major gifts officer in the Office of Special Gifts. He was formerly associate director of major gifts at Tufts University during its present capital campaign.

Karen A. Engelbourg, a development officer in the New England Office of CARE since 1981, has been named assistant director of the Development Office, filling a position that has been vacant for some time.

Miss Nelson came to MIT in 1975 as district director for New England for Leadership Gifts in the five-year Leadership Campaign that successfully raised more than $252.5 million for the Institute. The Leadership Gifts office is responsible for the identification and solicitation of potential donors of large gifts and for coordinating volunteer efforts supporting these activities. It is also responsible for a major effort which has just been launched to identify new important gift prospects for the Institute, the MIT National Resources Program, which is enlisting the help of scores of volunteers in key cities nationwide. In adition, the MIT Sustaining Fellows Program is administered by the office. Miss Nelson became associate director of the office in 1982. An alumna of Elmira College, Miss Nelson was affiliated with several financial institutions before coming to MIT.

Mr. Immerman will be based in Cambridge but will work in close collaboration with alumni and friends of MIT in designated geographic areas in cultivating and soliciting substantial gifts from individuals. He will serve as staff for volunteers in obtaining background profiles on potential donors and developing solicitation strategies. Mr. Immerman, a graduate of the State University College of Arts and Sciences at Potsdam, N.Y., received the MS degree in counseling and student personnel services from the State University of New York at Albany. Since coming to MIT in 1979, he has been business advisor to the fraternities and independent living groupsand since 1982 has also had major responsibility for student activities.

Mr. Boyden is filling a new position in a new Office of Special Gifts that is devoted to the identification, cultivation, solicitation and ongoing relationships with alumni and friends who have the potential to donate amounts of $100,000 or more. Mr. Boyden will solicit prospects personally and also coordinate solicitation of such prospects by senior officers of MIT, faculty members and top volunteers. Before joining Tufts University, Mr. Boyden did development work for the Rochester Museum and Science Center and the Rochester General Hospital in New York. He is a graduate of the University of Vermont and holds an MBA degree from Western Michigan University.

Ms. Engelbourg will undertake a wide variety of assignments in support of MIT's fundraising goals, including identifying and evaluating potential donors, providing background and assistance on special projects and extensive writing of correspondence, memoranda, proposals and information pieces. She will work closely with senior academic and administrative officers with reference to fundraising goals. Ms. Engelbourg is a cum laude graduate of Brandeis University and is now a degree candidate in the Radcliffe Management Program. Before joining CARE, she was a development researcher and senior researcher in the Tufts University Development Office.

ROC troupe to perform

The Youth Goodwill Mission of Taiwan, Republic of China, will come to Kresge Auditorium Saturday, Sept. 22, at 7:30pm to present "An Adventure in Chinese Songs and Dances."

The group is made up of college-age young people who are touring this country to present the Chinese culture in their own way, according to graduate student Alan Wan. Their appearance here is sponsored by the Republic of China Student Association and the MIT chapter of the Chinese Institute of Engineers.

Tickets are $4 and may be obtained at the door or by calling Yee Min Wuu at 494-0444 or Mr. Wan at x3-8613.

Automobile to stay

(continued from page 1)

operations by which they are designed and manufactured, may continue to the end of the century, the book said.

The degree to which producers, suppliers, unions and governments in a given country understand the strengths and weaknesses of their geographic location and the speed with which they can react to the new pressures will determine what share of world auto production that nation will capture, the book said.

To policymakers who may be tempted to slow down the transformation, particularly during declines in the auto market, by restricting imports, the book gives this warning: Such efforts will likely affect only the pace and not the ultimate outcome of change. Long-term protection against imports will only retard the technological changes that each producer must make to insure future competitiveness, the book said.

The question that decisionmakers must confront, the book said, is whether workers, many of whom will suffer permanent dislocation, must bear the full burden of these changes.

The codirectors of the Future of the Automobile book are Professor Daniel Roos and Professor Alan Altshuler. Professor Roos heads MIT's Center for Transportation Studies and is a faculty member in the Department of Civil Engineering. Professor Altshuler, now dean of the School of Public Administration at New York University, formerly headed the Department of Political Science at MIT.

In its 20-year look into the future, the MIT book found reason to dismiss some "tenets of conventional wisdom" about the industry.

The book took issue with the belief that the automobile is a mature technology about to be outmoded by rising oil prices and environmental constraints. *The book found, on the contrary, that the industry's technical base is strong and that technologies are becoming available which can deal with any foreseeable energy and environmental challenges.*

The book said that the small, uniform "world cars" that some predicted would emerge are nowhere in sight. *What is occurring is a divergence of vehicle designs as producers explore new technologies and search for "market niches."*

The book also disagreed with the view that the auto industry will shrink to five or six giant producers. *The book said that although competition on individual products will increase among major producers, the development of flexible automation and continued consumer demand for differentiated products means the strength of smaller producers—for example, Volvo, Honda and BMW—is increasing. The industry of the future, the book said, will be more rather than less competitive.*

The book also found that there is no inherent reason that the established producing countries cannot continue to be producers. *What will make the difference, the book said, is how producers, suppliers, unions and governments deal with the changes that will confront the industry.*

The book's findings emerge from the Auto Program's discoveries about the evolution of the auto industry through four transformations during its first century.

The first transformation was the change from custom building each auto to mass production. This occurred in America after the turn of the century.

The second was the marriage of mass production and product differentiation in Europe in the 1950s.

The third was the Japanese invention of a new system of manufacturing organization in the 1960s and the 1970s.

The fourth transformation is the current introduction of flexible manufacturing systems that began in the 1980s. Traditional manufacturing systems, the book said, "have been replaced by the ability of the microprocessor to make manufacturing equipment much more flexible. For example, the multiwelders introduced in the 1950s automatically joined major subassemblies into a complete body and were a major advance over the hand welding used previously. However, they were enormously expensive and could handle only a single body style. The new robot welding systems, by contrast, can be programmed to weld a wide range of models and body styles as they proceed through the production system in random order."

Each of the four transformations, the book said, led to competitive imbalances between national industries and trade tensions.

The current transformation is even more unsettling, arriving as it did in a period of economic stagnation when the rest of the industry had not fully worked out its response to the Japanese challenge.

Many changes are ahead for the industry, the book said, because of the new manufacturing system.

The number of labor hours needed to produce a car will fall steadily. In the United States, Japan, Germany, France, Italy, Sweden and Britain, total auto manufacturing employment reached a record high of about 3.6 million in 1979. The book said employment will probably decline steadily to about 2.3 million by the year 2000, a 36 per cent reduction. This change will occur even though demand for cars in those countries will increase by about 30 per cent during the same period, the book said.

In the United States alone, auto employment will decline by nearly 40 per cent from the peak of 982,000 in 1979 to about 596,000 in 2000, the book said.

That prediction, the book said, assumes no increase in market share by Japanese and European manufacturers from the current level.

As dramatic as the decline in employment, the book said, will be the change in the types of jobs in the auto industry. Assemblers and semiskilled machine operators—traditionally the bulk of the workforce—will give way to workers who can program computers and keep a complex automated assembly system on track, the book said.

The new manufacturing technologies will tend to make every producer a specialist, the book said, as firms founded on million-unit runs of identical products will struggle to adapt while smaller firms introduce new products, exploiting the new manufacturing techniques.

The book also predicted that the new manufacturing systems will greatly slow the widely expected shift of production to low-wage countries, such as Korea and Mexico. The book says production for most world markets will tend to occur near the point of final sale. International trade will be concentrated in marginal product lines, the book said.

The western industry faces a major period of catching up to achieve Japanese manufacturing levels. The book found that this process has begun, with some manufacturers reacting faster than others.

It is already apparent that there is no inherent reason that Europe and North America cannot retain or strengthen their position in the world auto industry, the book said. Autos are not like steel or textiles—industries destined to decline substantially in importance no matter what levels of manufacturing and product leadership are achieved.

The key question about the future, therefore, will be the rate of adaptation and the success of the Western producers in perfecting new systems of production organization, the book said.

In sum, the MIT book sees a bright future for the auto and the world auto industry, provided the producers, suppliers, financing sources, labor unions and governments understand the logic of auto industry evolution and react in a timely manner.

The German Marshall Fund of the United States and the Lilly Endowment provided support for the international coordination of the program. In addition, each national research team obtained funds from public and private organizations in its home country.

Bruce announces realignment

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Roger A. Roach, which will provide operations and systems programming support to all centrally managed computers at MIT and offer facilities management services to other MIT organizations that operate computer facilities.

—Information Services, directed by Richard D. Scott, which will offer comprehensive support to administrative, research and instructional computing users in areas of education and training, documentation, consulting, and contract programming and writing.

"This reorganization will enable our present support of information technology to evolve to meet the challenges of the rapidly expanding use of computers more effectively," Professor Bruce said. "Within the next few years we can expect to have professional workstations that offer computing power comparable to large minicomputers but at prices comparable to today's personal computers. Large numbers of these workstations will be used on the campus, and support must be available for them."

Planning for the new alignment has been underway since Dr. Bruce was appointed director of information systems more than a year ago. The reorganization has also brought promotions to several staff members associated with the former organizations. Ms. McMillan was formerly acting director of Administrative Information Systems; Mr. Roach was formerly manager of the systems programming group at Information Processing Services, and Mr. Scott was formerly manager of IPS's Academic and Research Computing Services (ARCS). Mr. Berlan's division, formerly a part of Physical Plant, was integrated into Information Systems a year ago.

Computing advances now available or expected soon include:

—Operations and Systems offers software that permits personal computers to act as terminals to central mainframe "server" machines and to transfer files easily. Laser printing and datastorage services are also offered through this department.

—Information Services will soon open a Microcomputer Center to provide advice, examination and sales of hardware and software products to the community for both Institute use and personal purchase at substantial discounts. IBM, Apple and DEC microcomputers, related peripherals, blank diskettes, applications of programs, and vendor and site-written manuals will be stocked. The products will be offered for sale in cooperation with MIT Purchasing and Stores. Other services will include a reference library, classes, consulting, needs analysis, configuration and maintenance.

Low to retire

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particle physics, particularly nuclear and electromagnetic forces. He was co-developer with Dr. Gordon Chew of the University of California of the Chew-Low equations which deal with how the field of the subnuclear particle, the pion, is coupled with the nucleus.

In 1981, when Professor Low reached his 60th birthday, more than 400 physics colleagues from throughout the US and several foreign countries gathered at MIT for a day-long physics symposium in his honor.

As provost, Professor Low has served as the principal deputy to the president, establishing with the president, the university policies, directions, plans and priorities affecting the academic programs, including education and research. He has been responsible, through deans and directors of interdepartmental laboratories, centers and programs, for the conduct of all on-campus academic programs, overseeing appointments and promotions for academic and research staff, supervising allocation of financial resources that are applied to academic programs and supervising the allocation of space.

During his term as provost, Professor Low was MIT's principal representative in the development of an affiliation with the newly established Whitehead Institute for Biomedical Research in Cambridge and has had a major role in the continuing development of long-range strategic plans for the university and its constituent parts.

A native of New York City and a 1942 graduate of Harvard College, Professor Low, following World War II military service, received the PhD degree in physics from Columbia University in 1949 and was at the Institute for Advanced Study at Princeton, N.J., from 1950 to 1952 when he joined the physics faculty at the University of Illinois. He was visiting professor at MIT in 1956 and joined the faculty here in 1957 with the rank of professor.

Ford chief speaks at lunch

Ford Motor Company Chairman Philip Caldwell, speaking at MIT Tuesday, September 18, issued a wide-ranging call to leaders around the globe to find answers to international trade problems that threaten world stability.

The Ford chairman, the luncheon speaker on the opening day of a symposium on *The Future of the Automobile*, said there is a challenge "to reexamine and rethink the concepts that shape the international trading system."

"We must stop pretending there is no problem," Mr. Caldwell said. "Huge trade imbalances are wreaking havoc all over the world, threatening the underpinnings of national economies everywhere. Their very real social costs—to individuals and communities—may well create political instability, and sooner than we may think."

"We need new research and fresh ideas from the academic community and the public policy research institutions," Mr. Caldwell declared. "The world needs our best and our brightest to give top priority to breaking through the intellectual barriers that are masking the gravity of this predicament."

Mr. Caldwell emphasized that "the time has come for governments to fulfill the promises of the Williamsburg Summit—to harmonize economic policies and restore balance worldwide."

The Ford chairman's remarks were presented during the opening of a two-day symposium focused on the release of MIT's new book, *"The Future of the Automobile,"* which resulted from a four-year, seven-nation effort of research teams.