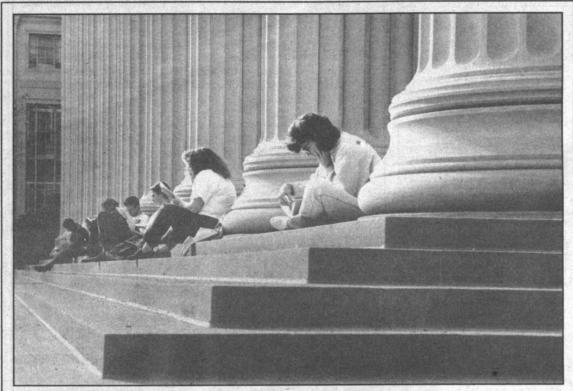


# ROLLME 35 . NUMBER 22





A WARM WINTER'S DAY?—Hardly a scene you'd expect to find in February—these students took advantage of the warm weather we had last week to study on the steps of Killian Court.

Photo by Donna Coveney

#### 2ND ANNUAL

# Entrepreneurial Competition Returns

MIT is a breeding ground for entrepreneurship, and now there is \$10,000 in prize money to encourage it.

For anyone who hasn't seen the posters plastered throughout the campus, the second annual 10K Entrepreneurial Competition is offering \$10,000 for the best student business plan on the MIT campus. The contest is open to all MIT students.

The historical importance of both new start-ups as well as MIT's role in these ventures is clear. MIT's reputation as a prolific incubator for entrepreneurs is supported by a recent study by the Bank of Boston. The study identified 636 companies in Massachusetts alone that were started by MIT alumni. In 1988, these companies boasted combined sales of 39.7 billion dollars, and accounted for 10 billion dollars of personal income. The list of companies is virtually a who's who of the hightech world: DEC, Raytheon, Thinking Machine, Lotus, and many more.

#### Classes For High Schoolers

Do you know any students in grades 7 through 12 who'd be interested in taking a course on daytime astronomy, basic sign language or practice doing science?

These and over 50 other creative academic and non-academic classes will be taught by MIT students and area professionals in the spring 1991 term of the MIT High School Studies Program (HSSP).

Classes meet for ten consecutive Saturdays from March 2 through May 11 in three class periods between 10am and 5:30pm. Students can take one, two or three classes for one \$20 registration fee.

Registration for the spring term will be Saturday, February 23, 10am-noon at the Student Center.

For more information call William Glass, director of HSSP, at x3-4882, or write to HSSP at Room W20-467.

Governor Weld recognized the importance of the entrepreneurial spirit in reviving the Massachusetts economy and made it one of the keynotes in his inaugural address. While the Massachusetts Miracle has faded, there has been no cooling off of entrepreneurial activities at MIT. In fact, student groups like the MIT Entrepreneurs Club and the Sloan New Venture Association are more active than ever. The two clubs are devoted to helping students

harness their creative and entrepreneurial energy.

The 10K Competition is a direct result of their interest in promoting start-up ventures. In the first competition last year, more than 300 entry packets were distributed, and some 60 teams entered the contest. Business plans ranged from new technology projects to not-for-profit projects.

The \$10,000 first prize was awarded (continued on page 6)

#### NUCLEAR ENGINEERING

# Students Have Busy HS Visiting Program

■ By Elizabeth A. Thomson News Office

One of Jerry Martin's favorite demonstrations when he talks to high-school students about nuclear

physics involves a Geiger counter and an orange dinner plate.

"Notice how the counter ticks even if there are no radioactive materials around," the graduate student in nuclear engineering told a chemistry class of juniors at Quincy High School last week. "That's because of background radiation in the air. But there are materials in which you can find more concentrated sources of radiation."

So saying he picked up the orange plate. "Anybody have this at home?" he asked. "Fiesta-ware? I bet your grandmother had some—it was very popular back in the 1950s." Mr. Martin held the plate up to the Geiger counter and instantly the machine ticked furiously. The reason? Orange Fiesta-ware gets its distinctive color from uranium tetroxide, which is radioactive (though at levels that are not considered dangerous).

The point of the Geiger counter demonstration is to show students that radiation is all around us; that nuclei are constantly being emitted even from common household goods. And that gives them "a better intuitive understanding" of nuclear phenomena, said Tony Hechanova, a graduate student in nuclear engineering and coordinator of the High School Speakers Program through which Mr. Martin's talk was arranged.

"The high-school students we talk to probably have a better understanding of nuclear phenomena than people at MIT that are not in nuclear engineering," Mr. Hechanova said. "That's because these are not things you intuitively understand. No one does. You don't interact with nuclear phenomena on a daily basis."

Mr. Martin, Mr. Hechanova, and 14 other students in the Department of Nuclear Engineering are giving highschool classes around New England (continued on page 8)

### IN BRIEF

#### THANKS, FOLKS

A note from Barrie Gleason, communications manager, says that members of the community responded most generously to her request for copies of the 1990-91 Student Directory.

"In fact," she said, "we received so many directories that we are now able to handle additional requests."

Faculty and staff may call the Communications Office, x3-1702 or 3-1705, to request copies. Students may stop at the Information Center, Rm 7-121, to pick one up.

#### **CU BANQUET**

The MIT Employees' Federal Credit Union will hold its Annual Dinner Dance Saturday, March 9, at the Caruso Diplomat in Saugus. Two bands will be on hand to provide ballroom, disco and rock for dancing.

Tickets, at \$13 and limited to two per member, will be on sale Friday, Feb. 22, noon-2pm in Lobby E18; 11:30am-12:30pm in Rm A220 at Lincoln, and noon-2pm in the Draper Human Resource Office.

#### YOU'RE INVITED

MIT Graphic Arts will hold an open house Thursday, Feb. 14, 3-6pm in its headquarters at 211 Massachusetts Ave, so that customers and would-be customers can meet the staff there and see demonstrations of state-of-the-art equipment now in use. Refreshments will be served.

#### **LURIA DIES**

A memorial service is being planned for Salvador E. Luria, the pioneering molecular biologist who shared the 1969 Nobel Prize. A date will be announced soon.

Professor Luria, who founded the MIT Center for Cancer Research, died February 6 at his home in Lexington, at the age of 78. See obituary on page 6.

#### **BLACK HISTORY MONTH**

See complete listings of activities in the Calendar on page 4.

#### THAT'S HIS RAQUET

# New Tennis Products Tested Here

■ By Eugene F. Mallove News Office

A dozen tennis racquets of many shapes and sizes were strewn on the table. Dr. Rudrapatna V. Ramnath, MIT's resident world expert on tennis racquet technology, began his seminar by serving his audience a burst of tennis trivia.

Did you know, for example, that macho man Bobby Riggs has occasionally handicapped himself by playing with a dog tied to his leg? "He said it's great if the dog is housebroken," recalled Dr. Ramnath, an active player, who once did battle with Riggs on the clay court.

Dr. Ramnath, an adjunct professor of aeronautics and astronautics, and a senior lecturer in mechanical engineering, became enchanted with the science of tennis racquet dynamics about 12 years ago, along with his colleagues Professors Karl Hedrick and Bora Mikic of mechanical engineering.

Now Dr. Ramnath serves as the technical editor of World Tennis Magazine, whose bi-monthly laboratory evaluations of new tennis products may make or break them. Already they, have tested more than 1,000 racquets. Their performance numbers have become "the industry standard," he says.

Dr. Ramnath traced the history of scientific tennis-racquetry to its inception with the 1880 paper on the "Irregular Flight of a Tennis Ball" by Lord Rayleigh. The famous physicist dubbed the phenomenon of a spinning ball's curving trajectory the "Magnus effect." Dr. Ramnath noted that it wasn't until aerodynamicist Prandtl's 1903 work on the theory of object-hugging boundary layers, that science began to understand the "Pro-Magnus" and the "Anti-Magnus" effects that occur under different conditions.

It is the flexure and dynamics of racquets themselves, however, that give life to speeding balls, so Dr. Ramnath has focused much of his work on cataloging a host of tennis racquet parameters. Balance point and weight are simple to measure, but more elusive are the location of a racquet's "power zone," or its "sweet spot."

Laypeople know the "sweet spot"

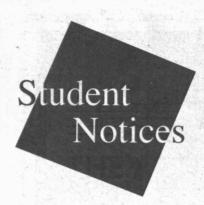
Laypeople know the "sweet spot" as that point on the racquet at which "it feels good" to hit, but translating that subjective feel into numbers is another matter. Dr. Ramnath claims that the site of the sweet spot has to do with technical matters such as "coefficient of restitution," the "center of percus-

(continued on page 8)



Professor Ramnath with one of the high-tech tennis raquets he talked about at a recent IAP seminar.

Photo by Donna Coveney



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

#### **MANNOUNCEMENTS**

- VI-A Student Open House\*\*-Feb 13: All student affair, informal, meet current VI-A students, inside information on VI-A companies, learn about housing, transporation, locale, etc., help in deciding which companies to interview, 2:30-4pm, Rm 34-401. Refresh-
- Booksales\*\*-Feb 15: Booksale sponsored by the MIT Libraries, 11:30am-2pm, basement of the Hayden Library (outside the library storage facility in building 14S). Additional sales will be held Mar 15, same time & location as above. Books from a variety of subject areas will be included. Open to the MIT community only.
- MIT Boxing Club\*\*-Feb 27: Meeting, 12pm, Rm 7-335A. All MIT community invited.
- Career Services and Preprofessional Advising Recruitment Presentations\*\*-Feb 13: Public Financial Management, Inc., 5-6pm, Rm 4-145. Morgan Stanley, 7-9pm, Rm 4-149. Teradyne, 7-9pm, Rm 4-153. Princeton Transportation Consulting Group, 7-9pm, Rm 4-145. Feb 14: Acuson, 7-9pm, Rm 4-153. Feb 19: Silicon Graphics, 7-9pm, Rm 4-145. Feb 20: Varian Associates, 4:30-6:30pm, Rm 4-145. MIT Lincoln Lab, 4:30-6:30pm, Rm 4-153. Amdahl Corp., 6-8pm, Rm 4-159. Advanced Cardiovascular Systems, 7-9pm, Rm 4-149. Electronic Data Systems, 7-9pm, Rm 4-163. Feb 21: Hughes Aircraft, 9am-3pm, Mezzanine Lounge, Student Center 3rd floor Wilkenson Group, 4:30-6:30pm, Rm 4-149. Repligen, 7-9pm, Rm 4-145. Feb 25: Symmetrix, 4:10-6pm, Rm 4-149. Caere, 6-8pm, Rm 4-145. Feb 26: Intel Corporation, 5-7pm, Rm 4-149. Hewlett-Packard, 6:15-8pm, Rm 34-101. Feb 27: Qualcomm, 5-7pm, Rm 4-149. Feb 28: Fish & Richardson, 4:30-6:30pm, Rm 4-149.
- MIT Figure Skating Club\*\*-10 hours of club ice every week through mid-March. Group learn-to-skate and dance lessons available at very low cost. More info Lisa Rung x3-4788 or x8-ISKT.
- Free Museum of Science Admission for MIT Students-With MIT student ID, provided by Mass Beta chapter of Tau Beta Pi, the National Engineering Honor Society. Reduced admission to special exhibits.
- MIT Student Furniture Exchange\*\*-great bargains, used furniture and more, Tues/Th, 10am-2pm, 25 Windsor St (MIT Museum bldg, 1st fl). Donations welcome. x3-4293.
- Arts Hotline-Recorded information on all art events at MIT may be obtained by dialing x3-ARTS. Material is updated every Monday morning.
- Nightline\*\*-a student-run campus hotline open every evening of the term, 7pm-7am. If you need information about anything or you just want to chat, give us a call. We're here to listen. x3-8800.

#### **■ RELIGIOUS ACTIVITIES**

The Chapel is open for private meditation 7am-

- Baptist Student Fellowship\*\*-Weekly Worship and Bible Study each Tuesday at 6pm in the chapel; snack supper fellowship immediately preceding at 312 Memorial Drive, 5:15pm. Graduate Student Study every other Thursday at 1pm, 312 Memorial Drive. Info x3-2328
- Morning Bible Studies\*\*—Fri, 7:30-8:30am, L-217. Ed Bayliss, x3456 Linc.
- Noon Bible Study\*-Every Wed, Rm 1-132, bring lunch. Ralph Burgess, x3-8121. (Since 1965.) (Graduate Christian Fellowship.)
- MIT Bible Study Group\*-The Economy of God, a look at God's eternal purpose to dispense Himself into man based on the revelation of the Bible, Fri, 8pm, Student.Ctr Rm 407. Singing, prayer, Bible reading, fellow-
- Tech Catholic Community\*\*-Masses: Sat, 5pm; Sun, 10am & 5pm. Tues & Thurs, 5:05pm, Fri, 12:05pm, MIT Chapel. Info x3-
- MIT Christian Community\*\*—Come and join monthly lunch and discussion on God and Christians at MIT with your fellow faculty

- staff, administrators, and grad students. Info: Park x3-2875.
- MIT Christian Impact\*-The weekly meeting for the ministry of Campus Crusade for Christ. Wind up the week: relax, snack, sing, laugh through skits and gain practical insight from God's Word. Meets Friday 7:17pm, Student Ctr. 3rd flr.
- United Christian Fellowship\*\*-Large group meetings. Join us for a time of worship, prayer, and Biblical teachings, Fridays, 7pm, Rm 6-321.
- Christian Science Organization at MIT\*-Weekly Testimony meetings, Thurs, 8pm, MIT Chapel.
- Graduate Christian Fellowship\*\*-Come join other grad students, faculty and staff in learning about and growing in the Christian faith. Activities open to both Christians and those interested in learning more about Christianity Info: John Keen x3-7706, Dave Otis x3-2198.
- MIT Orthodox Christian Fellowship\*\*-Feb 18: next meeting. The newly formed MIT OCF will meet every other Monday night at 8pm in the MIT Chapel. Vespers (Evening Prayer) will be followed by Fellowship/Discussion. Open to Orthodox Christians and those interested in learning about the ancient Christian Faith. Info: Arlene Lanciani Marge x3-3555
- MIT Hillel\*-Feb 13, 20: Israeli Folk Dancing, 7:30pm. Feb 13: Study break, 9pm, Burton-Connor. Feb 15: Shabbat dinner, 6:30pm, Walker Rm 50-007. Feb 20: Purim Basket Project, Lobby 10, through Thurs, IM Bas-ketball, Hillel vs ZBT, 8:30pm. Feb 22: Reform Students Shabbat Dinner, 6pm, Baker. Shabbat Dinner, 6:30pm, Walker Blue Rm. "A Conversation with Author Janet Robertson," 8:30pm, Walker Blue Rm. Feb 23: Orthodox Shabbat Services, 9am, Walker 50-010. Feb 24: Bagel & Hamentashen Brunch, 12pm, Ashdown West Dining Rm. Feb 25: IM Basketball, Hillel vs #6, 7:30pm. Feb 27: Megilla Reading, Purim Shpiel & Refreshments, 7pm, Student Ctr, Mezz Lounge. Feb 28: IM Basketball, Hillel vs MacGregor H, 7:30pm. More info: x3-2982.
- MIT Islamic Society\*—5 daily prayers in the prayer room, Ashdown House (Bldg W-1) west bsmt. Friday congregation: 1:10-1:45pm in Ashdown House (Bldg W-1) west bsmt.
- Lincoln Laboratory Noon Bible Studies\*-Tues & Thurs, Kiln Brook III, Rm 239. Annie Lescard, x2899 Linc.
- Lutheran Ministry and Episcopal Ministry\*\*
  Weekly Service of Holy Communion—Wed, 5:10pm, MIT Chapel. Supper follows at 312 Memorial Drive. For further info, call x3-
- MIT Vedanta Society\*-Meditation and discourse on the Bhagavad Gita. Swami Sarvagatananda, MIT Religious Counseler. Classes held Fridays 5:15pm, MIT Chapel.

#### **■OPPORTUNITIES**

- John Asinari Award for Undergraduate Research in the Life Sciences. Nominations sought. Open to undergraudates in Course VII and VII-A. For details see A. Sinskey, Rm 56-121,x3-6721. Deadline for submissions: Feb 28.
- The Writing Prizes. Cash prizes awarded in each category: fiction, short story, poetry, drama, essay, scientific and engineering writing, science writing for the public. For applications and guidelines contact The Writing Program, Rm 14E-303. Deadline: Apr 11.

#### **INTERNATIONAL**

MIT-Japan Program. Go to Japan for a year of fun and excitement—all expenses paid—with the MIT-Japan Program. Further info: x3-

#### STUDENT JOBS

There are more job listings available at the Student Employment Office, Rm 5-119. The Student Employment Office has many "one time only" jobs. Many students find these jobs a good way to earn money fast.

- On Campus, Technical. General technical lab work in the sensory communications group lab. Work will include electronics repair (Macs, PCs, etc.) running cable and misc. lab work. Possible design and construction of hardware for audio A/D and D/A with PCs and Vaxes, depending on interest and experience. This is a long term opportunity with full time summer work available. E-mail address: seth@cbgrle.mit.edu. Hours: 10 hrs/ wk flexible. Salary: \$7/hr. Contact: Mr. Seth Hall at x3-8041. Address: 36-796.
- Off Campus, Non-Technical, Clerical. Part time clerical help needed. Qualifications: Junior in college or first year graduate student, business or computer science major, and GPA of 3.0 or above. Hours: 15 to 20 hrs/week. Salary: depends on experience. Send resume to: Dina Fagel, Prudential Financial Services, 245 First Street #1401, Cambridge, MA 02142.
- Off Campus, Non-Technical. Person needed to test software. Should know the Macintosh. Not an aspiring developer and no word pro-

cessing skills needed right now. Needed ASAP. Hours: 20 hours/week. Salary: \$8 - \$12/hour Contact Ms. Candace Clampitt at 876-0900. Address: On Technology, 165 Second St., Cambridge, MA 02141.

Off Campus, Technical. Technical Client Services Assistant. PC and DOS knowledge and a computer science background are necessary. Hours: 10-15 hrs/wk. Contact: Mr. Gary Grosse at 492-7491. Address: Politzer and Haney, 1972 Mass Ave, Cambridge, MA.

#### **■VOLUNTEERS**

The MIT Public Service Center has compiled the following volunteer opportunies.

- Cambridge School Volunteers. Help a small group of 7th graders in the computer lab, help ESL students with 7th and 8th grade math, help teach basic Spanish to 7th and 8th graders, or share a hobby or craft with a group of 6th and 7th graders. Call Antonia Burke 349-
- ARMIT. Interested in doing AIDS education withing the MIT community? AIDS Response at MIT is looking for new members. Meetings are on Mondays, 6:30pm, Rm W20-549. Contact Amita Gupta x5-6623.
- Habitat for Humanity. Work with Habitat and Central Square's St. Paul's AME church. Four to five homes are being renovated for transitional housing for the homeless. Lindsay Lee, 661-1110.

#### **UROP**

MIT and Wellesley students are invited to join with faculty members in pursuit of research projects of mutual fascination. Fall term projects are now posted on the bulletin boards in the infinite corridor by the Admissions Office and in our office. For further information, read details on procedures in the participation section of the directory.

Faculty supervisors wishing to have projects listed should send project descriptions to the UROP office. Questions? Contact UROP at x3-7306,

We are now accepting UROP proposals for IAPI Spring. This includes Space Grant and Sea Grant UROP proposals.

- Caltech Summer Research. There are several openings for MIT students in the Summer Undergraduate Research Fellowships (SURF) Program at Caltech. For the opportunity to interact full-time for ten weeks with a Caltech faculty member on a research problem of mutual interest-from Temperature-sensitive vpt Mutants to the Phototaxic Vehicle to StarRocks—pick up an application, available in the UROP office in room 20B-140. Deadline to be a California SURFer: March 3, 1991. Contact: Claude J. Poux, 20B-140, x3-8801.
- Department of Brain and Cognitive Sciences. Student sought to assist in research on cognitive development in children, especially the development of scientific thinking skills. In particular, preschoolers' ability to differentiate between simple hypotheses and evidence supporting or disconfirming these hypotheses will be studied. The student will help prepare experimental materials and run subjects. Faculty supervisor: Prof. Susan Carey, E10-004, x3-5768; contact: Beate Sodian, x3-8175 or sodian@psyche.mit.edu.
- Computer Based Narrative Structures. Summer 1991 UROP Student wanted for research on the structures of computer-based narrative, including authoring systems such as Hyper-Card, Advsys (a lisp-like system), MUDs, and StorySpace, and exploration of available computer-based narratives. Exploration of AI programs like ELIZA as models for literary creation. Student should be a good programmer, familiar with Macintosh and Athena basics, and with background in literature. Credit, possibly pay. Faculty supervisor: Janet 20B-226, x3-2094 or Murray, jhmurray@athena.
- Interactive Instructional Video Project. Student wanted for interactive instructional video project to program a Macintosh Hypercard interface for an existing "How to Build a 2.70 Machine" videodisk. Time is critical: must complete by March 12. High pay possible for good quick work. Related carry on projects likely for remainder of term. Previous expe rience essential. Faculty supervisor: Mark Jakiela, 3-449G, x3-6552.
- Pollution Prevention Research. Student needed to conduct research in the area pollution prevention. Student will be part of research team examining how several local companies have reduced pollution through changes in production processes and product redesign Case studies of firms will be conducted and presented at workshops for government and industry representatives. Cases will emphasize the managerial and organization components of successful pollution prevention programs. This is an excellent opportunity for a student with technical skills to develop expertise in environmental policy and management. Faculty supervisor: John R. Ehrenfeld, E40-241; contact: Jennifer Nash, E40-247, x3-2727.
- Project in Economics. Student sought to work on research project analyzing the relationship between the organizational and management structure of rail firms and their cost saving and productivity gains. Familiarity with microeconomic theory and industrial organi-



#### TV FEATURE STORY

Former MIT catcher and quarterback Tim Day '90, of Oklahoma City, will be featured on a television program Sunday, February 17, at 8pm on cable network ESPN. The program will highlight five collegiate athletes who showed extraordinary courage or valor in coming back from injury or illness. Day was stabbed during a robbery in downtown Boston in December 1987, and battled back from the injuries he sustained to become an All-New England performer in baseball, and a first-team All-Conference quarterback in football.

#### WRESTLING

Heavyweight wrestler Josh Ertischek of Anchorage, Ark., recently placed second in the Northern New England Tournament held at Plymouth State

#### **GYMNASTICS**

Gymnast Lisa Arel, a junior from Lee's Summit, Md., was the subject of a feature article in the January 29, 1991, Boston Globe. Arel has been the top all-around performer for MIT all season despite recovering from a back

Roger F. Crosley

zation is desirable. Potential for summer employment. Faculty supervisors: Prof. Ann F. Friedlaender, E52-353, x3-3370, or Prof. Ernst R. Berndt, E40-431, x3-6435.

Drug Delivery: Medicine-Biophysics-Chemical Engineering. Student needed to conduct research on the fundamentals of an innovative method of drug delivery through the skin, by means of electroporation. Lab work involves exposing red blood cells and other model systems to short pulses of high voltage electricity, followed by analysis with flow cytometry. Upperclasspeople with lab experience preferred. Faculty supervisors: Prof. R. Langer, E25-342, Dr. J. Weaver, 20A-128; contact: Mark Prausnitz, E25-342,-x3-3136.

Project in Experimental Atmospheric Chemistry. A UROP position is currently available on an atmospheric chemistry experiment which involves measuring trace halocarbons and hydrocarbons in air using gas chromatography. The goal is to measure ambient hydroxyl radical levels in clean, tropospheric air by an active titration technique. Student will be involved in analyzing gas samples, preparing for a field experiment, and/or calibrating the instrumentation. At least one se mester of experimental chemistry or physics experience is required. Project may begin now, and continue into the summer. Pay or Credit. Faculty supervisor: Prof. Ronald Prinn, 54-1312, x3-2452; or contact: Michele Sprengnether, 54-1326, x3-0136.

EMG Real-Time Algorithm on a PC IBM Compatible. Electromyography is currently used in physical therapy and biomechanical studies to investigate the muscle activity for various purposes. Recording of EMG signals is performed with electrodes. Off-line experiment algorithms and software are available to analyze the signals of these electrodes The student's objective in this project will be to implement algorithms and softwares on a real-time basis on a PC IBM compatible. Credit only. Useful skills are C language, DOS, biomechanics and programming interests. Project supervisor: Prof. Neville Hogan, 3-449D, x3-2277; contact: Denis Rancourt, 3-147, x3-8120.

Integrating Multiple Information Sources for Financial Applications. The Sloan School of Management is involved in a long term project involving the integration of information obtained from distributed heterogeneous information sources. The focus is on connectivity from organizational and technical perspectives. The goal is to solve problems and establish new research themes for this area. A prototype database integration system is being developed under UNIX in C,shell, and Lisp. Several students are sought who have skills in either finance and banking or databases and software development. Please send resumes to E53-321. Faculty supervisor: Prof. Stuart Madnick, E53-321, x3-6671; contact: Nat Collins, x3-2650, or Henry Kon, x3-9690.

**Tufts Department of Rehabilitation Medicine** Robotics Technology. Individual sought to work on a speech recognition based robotic workstation being used by an engineer at MITRE Corp. who is severely disabled. This is a unique experience to work on advanced engineering design issues. Minimum requirements include demonstrated ability in engineering design and software engineering, "C programming language. CAD experience preferred. Responsibilities include improving the design of robotic environment, contributing to human-factors study of user's productivity with robot workstation, writing data-collection and data-analysis software, improving voice-recognition software. Faculty supervisor: Prof. Will Durfee, 3-455B: contact: David Horowitz, 956-5036, x3-5334.

The Havstack Observatory: Summer Research 1991. The Haystack Observatory wishes to invite undergraduate science and engineering students to apply for summer research positions. These are nominally three months in duration and carry a stipend depending on academic level and experience. Projects are in astronomy, atmospheric sciences and engineering/software development. Application deadline is March 15, 1991. For further information and an application form please write to: Office of the Director, Haystack Observatory, Off Route 40, Westford, MA 01886; or call: (508) 692-4764.

The Leaders for Manufacturing Internship. The Leaders for Manufacturing Program is an educational/research partnership between eleven major U.S. manufacturing firms and MIT's Schools of Engineering and Management. The internship is designed to influence students' impressions of the firm and its industry. The program includes a six-and-a half month applied research internship conducted at a partner company between June and December of the student's second year. Please address questions to: Donald B. Rosenfield, 9-317, x3-1064; or the LMP Office, 9-321,

Plasma Fusion Center-Audiovisual Project. This UROP opportunity is ideal for a student experienced with electronics or audiovisual equipment. Student will be responsible for researching, purchasing and setting up an audiovisual surveillance system for the Alcator C-NOD tokamak. Possible thesis project. Faculty supervisor: Prof. Ian Hutchinson, NW17-186; contact: Paul Rivenberg, NW16-289, x3-8101.

#### III CABLE

For more information call Randy Winchester at x3-7431

February 21: Channel 8: 4-5pm—Apple Education TV Series: "Macintosh Solutions for Administrators."

February 25: Channel 8: 4-5:30pm-Live coverage of the MIT EECS Colloquium Series: "X-Ray Lasers," P. Hagelstein, MIT.

February 26: Channel 8: 4-5:30pm—Live coverage of the MIT VLSI Seminar: "Wafer-Scale Solid-State Mass-Memory System," Ted Lyszczarz, MIT Lincoln Laboratory.

#### TECH TALK (USPS 002157)

February 13, 1991 Volume 35 Number 21

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**Assistant Editor** 

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FEBRUARY 13, 1991 MIT TECH TALK = 3

#### SCHOOL OF ENGINEERING

# ME's Wormley Named New Associate Dean

P rofessor David N. Wormley, head of the Department of Mechanical Engineering since 1982, has been named associate dean of the School of Engineering. Professor Wormley is recognized widely for his research in control systems, transportation systems and fossil fuel energy systems.

His appointment was announced by Dean Joel Moses of the School of Engineering. Dean Moses, the Dugald Caleb Jackson Professor of Computer Science and Engineering, also announced that Professor Wormley would continue to serve as head of mechanical engineering while a search for a new department head is made.



**Professor Wormley** 

"Dave Wormley was the overwhelming choice of the many members of the faculty and administration whom I have consulted," Dean Moses said in a letter to School of Engineering faculty. "He has been an outstanding head of the Mechanical Engineering Department for the last nine years. He is an excellent teacher and has won two Graduate Student Council Awards for Outstanding Teaching. His research interests... complement those of my own. He is widely recognized as a person with great judgment. It will be a pleasure sharing the Dean's Office with him."

Professor Wormley succeeds Professor Jack L. Kerrebrock who served as associate dean with Professor Moses' predecessor, Professor Gerald L. Wilson, from September 1985 until January 1990, when he began a sabbatical year. Professor Kerrebrock has resumed his teaching and research in the Department of Aeronautics and Astronautics.

The new associate dean of engineering received all of his degrees from MIT—the SB in 1962, the SM in 1964, and the PhD in 1967. He was appointed to the faculty in 1967 as assistant professor in the Department of Mechanical Engineering and became head of the department's Systems and Design Division in 1977.

Professor Wormley's research has focused on the dynamic analysis, optimization and design of advanced control systems, transportation systems and fossil fuel energy systems. He is director of the Association of American Railroads Affiliated Laboratory at MIT. His research has included the development of sensors and actuators for advanced control systems, control modeling and simulation techniques for fossil fuel power systems and analysis techniques and experimental evaluation methodologies for transport vehicles and guideways.

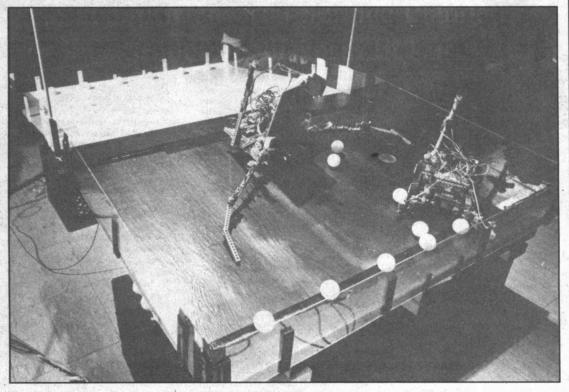
Long noted for his excellent classroom teaching, Professor Wormley twice (1975 and 1977) was the recipient of the Graduate Student Council's award for outstanding teaching in his department.

He has taught undergraduate and graduate subjects in dynamic systems, control, instrumentation and design. He is a member of the Institute Committee on Undergraduate Programs, has been co-chair of the Science-Engineering Working Group (a committee which in 1989 made recommendations concerning the science and engineering core subjects for first-year undergraduates) and currently is chairman of the Education Committee for the School of Engineering.

He serves on the Governing Board of the Leaders for Manufacturing Program and is chair of the Sea Grant Faculty Advisory Committee. He is co-principal investigator of the NSF-ECSEL university coalition effort at MIT for renewal of undergraduate engineering education. In addition to MIT, members are Howard University, which is the lead institution, City College of New York, Morgan State University, Pennsylvania State University, University of Maryland and University of Washington.

Professor Wormley is chairman of the board of the Massachusetts Technology Development Corporation, a Commonwealth of Massachusetts quasi-public venture capital organization; a member of the National Science Foundation Advisory Board to the Mechanics and Structures Division; a member of the American Society of Mechanical Engineers' Board of Research, and is past chairman of the Systems and Design Division of the American Society of Mechanical Engineers. He is vice-president elect of the Systems and Design Group of the ASME

In addition, he is a member of ASME, Sigma Xi and Pi Tau Sigma and serves on the editorial board of the International Journal of Vehicle Mechanics and Mobility. He has been the recipient of the ASME Lewis Moody Award, and a NASA Certificate of Recognition, and is a Fellow in the American Society of Mechanical Engineers.



**ROBO-PONG-**"ET," a contender in the Media Lab's Robot Design Competition, spreads its arms toward "Anthrax." ET was ultimately victorious in this particular duel, in which the robots competed to push ping-pong balls onto each other's playing surface. Students constructed the robots over IAP with a standardized kit of parts that included LEGO bricks and a microprocessor. ET was made by sophomores Wilson Chan, Michael Daniels, and Manish Tuteja, and freshman Richard Lester. Anthrax was made by sophomores Nitish Swarup and Srijayanth Chakrapani, and freshman Rajexh Suryadevara.

**Photo by Donna Coveney** 

#### PRICES SOAR

# Libraries Plan Journal Cuts

The MIT Libraries seek faculty advice in identifying which subscriptions to professional and scholarly journals are most important to the community, as a major cancellation program begins because of continuing inflation in journal rates.

Anticipated price increases in 1991 range from 12 percent for domestic journals to 25 percent for foreign titles, which constitute about 42 percent of the Libraries' subscriptions, according to Carol Fleishauer, associate director for collection management and technical services. She said the differential is largely attributable to the weakness of the dollar abroad.

The Libraries have carried out sev-

eral cancellation projects over the past decade, which will make the 1991 effort the most difficult so far, Ms. Fleishauer said. Nearly all duplicate subscriptions among campus libraries have already been cancelled and in 1988—the last major cut—nearly 1,000 unique titles were dropped.

The extent of cancellations needed this year will not be known until the Libraries FY 1992 budget is set, major publisher price projections are received and the dollar vs. foreign currency rate is known. A substantial reduction of titles is expected, however.

Library subject specialists are now reviewing price, use and citation data to arrive at a preliminary list of titles for possible cancellation. During February and March, librarians will be contacting academic departments to get faculty input on proposed cancellations. The Faculty Committee on the Library System will review the recommendations before cancellations are implemented.

As a long-term solution, Ms. Fleishauer said, the Libraries are investigating avenues that substitute ready access for journal ownership using electronic means. But, she noted, the cancellations necessary this year are likely to have a perceptible effect on the MIT Libraries' ability to respond to the information needs of faculty and students.

#### MANY PRIZES

# Writing Competition Opens

The Writing Prize Competition, sponsored by the Writing Program, is accepting manuscripts from undergraduate and graduate students through April 11. The 36 prizes carry cash awards and are given to students whose essays, plays, poetry, short stories and technical papers are judged to be of the highest quality by a committee of faculty and staff members.

Ilona Karmel, senior lecturer in the Writing Program and this year's competitionchairman, hopes all interested students will submit their best efforts to the competition. She is also encouraging faculty members who receive outstanding undergraduate papers to urge the student writers to enter the competition.

The prizes are:

—The Ellen King Prize for Freshman Writing: for writing in all categories (fiction, short story, essay, drama). First prize, \$150; second, \$75; honorable mention, \$25

—The Robert A, Boit Writing Prize: for undergraduates in the categories of essay, poetry and short story, with prizes in each category. First prize, \$250; second, \$150; third, \$100; honorable mention, \$50.

—The Boit Manuscript Prize; for undergraduate work in fiction, poetry, drama or essay of substantial length, completed or in progress. This prize is for longer works or collections that give evidence of publishable quality. First prize, \$300; second, \$150; honorable mention, \$75.

—The S. Klein Prize: for outstanding interpretive writing on scientific and technological subjects by undergraduate and graduate students. Entries should be

specifically intended for a nonspecialized, but educated audience. First prize, \$300; second, \$150; honorable mention, \$50.

—The Dewitt Wallace Prize for Science Writing for the Public: writing by undergraduates for lay audiences on issues and developments in science, medicine or engineering. First prize, \$300; second, \$150; honorable mention, \$75.

—The Writing Program Prize for Engineering Writing: undergraduate writing on any topic of professional interest to engineers. First prize, \$200; second, \$100; honorable mention, \$50.

For more information, visit the Writing Program office, Rm 14E-303, where applications and prize guidelines are

#### MIT/BU ROTC

# Navy Plans Merger

The Navy Reserve Officer Training Corps programs at MIT and BU are slated to be combined by the Secretary of the Navy as part of a program reflecting future budget reductions, the Navy has announced. The consolidation of the two programs is to be implemented by September 30, 1992.

Capt. Robert W. Sherer, commander of the Navy ROTC unit at MIT, said classes will continue to be held here for MIT students and for NROTC students from Harvard and Tufts. (The Wellesley-NROTC program is being terminated.)

BU NROTC students will continue to have classes on that campus and so will students from Boston College and Northeastern who train with the BU group.

"We are considering coming together as a large consolidated unit for drills, alternating on the two hosts' campuses," Capt. Sherer said. Those discussions are just beginning, he said. MIT has informed him that final arrangements will have to be acceptable to MIT. Professor Margaret L.A. Mac Vicar, dean for undergraduate education, is the MIT official with responsibility for the ROTC programs.

The MIT-BU combination would be one of eight "geographic consortia" the Navy has proposed forming. The other pairings are UCLA and USC; Northwestern and Illinois Institute of Technology; Duke, University of North Carolina and North Carolina State; Georgia Tech and Morehouse; Villanova and University of Pennsylvania; Rice and Prairie View A&M; Memphis State and University of Mississippi.

The plan also includes closing units at five other schools in fiscal year 1996.

# A s the war in the Middle East enters its second month, Campus been left unattended for more than hour at the end of the Infinite Corridor

A enters its second month, Campus Police Chief Anne P. Glavin says there have been no incidents at MIT that can be linked to possible acts of political terrorism.

"Nevertheless, as we have from the outset, we are maintaining a heightened sense of awareness," the chief said, "and this has been reflected in our patrolling procedures."

Two recent incidents that led to evacuating some buildings were not linked to the war in the Middle East, the chief said. On January 18 an anonymous caller reported a bomb in Building 10, but said nothing else. A police sweep found nothing. A few days later Buildings 6 and 8 were evacuated when an employee reported a briefcase had

been left unattended for more than an hour at the end of the Infinite Corridor. The Cambridge bomb expert opened the case with firefighters standing by. The case, of the type carried by technicians who service copying machines or computers, was empty. Police believe it had been stolen elsewhere and emptied of tools.

Although news accounts about the likelihood of terrorist attacks have raised concerns on campus to some extent, the chief said, she has received only about a half-dozen phone calls and one letter expressing apprehension.

Chief Glavin said community members with special concerns about security could contact either her at x3-9760, or Deputy Chief James F. Mahoney Jr. at x3-9751.



- \* -Open to public
- \*\*-Open to MIT community only .
- \*\*\*-Open to members only

#### February 13 - March 3

#### SPECIAL INTEREST

- Black History Month at MIT\*\*-Feb 13: Mark Mathabane, author of "Kaffir Boy," 7-9pm, Kresge. Feb 14: "Nothing But A Man," a tribute to Ivan Dixon, BSU Film Series, 7pm, B\$U Lounge. Feb 15: "The Spook Who Sat by the Door," a tribute to Ivan Dixon, BSU Film Series, w guest appearance by Ivan Dixon, 7pm, Killian Hall. Feb 19: OME sponsores Secrets and Strategies for Academic Success - "Getting Involved, A Sense of Community, and Making a Difference," w/ presenters Prof. Frank Jones, Donna Marie Horse Grant and Barry Robbins, 6-7:30pm, BSU Lounge. Feb 22: Minority Career Fair, 12-6pm, Dupont Gymnasium. Feb 22; "Tongues Untied," BSU Film Series, 7pm, BSU Lounge. Feb 23: Trip to the African American Museum, call Vicki Boyd x4-6486. Feb 27: African American Living Museum -A Theatrical Presentation, 5pm, BSU Lounge.
- MIT Employees' Federal Credit Union's 51st Annual Dinner/Dance\*\*\*—Mar 9: Caruso Diplomat, Rte 1, Saugus, starts at 6:30pm, dinner served at 7:30p, cash bar, roast beef family style, two bands (ballroom, disco/rock), continuous dancing 7:30pm-midnight. Tickets \$13/ea, will be limited to two per member and will be available Feb 22 at: Lobby E18, 12-2pm; Lincoln Lab A220, 11:30am-12:30pm; Draper Human Resource Office, 12-2pm.
- MIT Employees' Federal Credit Union\*\*\*— Mar 4: Annual Business Meeting, Nomination and Election of the Board of Directors and Credit Committee, Rm 10-105, 5:30pm.

#### **SEMINARS & LECTURES**

Freshmen are encouraged to attend departmental lectures and seminars. Even when these are highly technical they provide students one means to learn more about professional work in a department and field.

#### WEDNESDAY, FEBRUARY 13

- Technical Findings Underlying the Challenger
  Disaster\*—Gene Covert, MIT, member of
  the Challenger Commission. Seminar on
  Technology, Defense, and Arms Control in a
  Changing World, 12-2pm, Rm E38-714.
- Evaluation of Rankine Green Functions in a Rectangular Channel\*—Prof J Nicholas Newman, MIT. Informal Hydro-dynamics Seminars, Dept of Ocean Engineering, 3:30pm, Rm 5-314.

#### THURSDAY, FEBRUARY 14

- Advanced Composites Manufacture\*\*—Greg Dillon, MIT. Laboratory for Manufacturing and Productivity Seminar Series, 3-4pm, Rm 35-520.
- Numerical Simulation of a Variable Density Shear Layer\*\*—Marios Soteriou, PhD Candidate, MIT. Sloan Automotive and Gas Dynamics Laboratories Seminar Series, 4pm, Rm 37-232. Refreshments, 3:45pm.
- Innovative Computer Applications for Construction (Part II)\*—Dr. Mikio Shoji, Information Processing Ctr, Kajima Corp., Japan. Intelligent Engineering Systems Laboratory Seminar, 4-5pm, Rm 1-350. Refreshments, 3:30pm. Part III on Feb 21.
- Modified Barrier Functions (Theory and Methods)\*—Roman Polyak, T J Watson Research Center, Sponsored by the Operations Research Center, 4pm, Rm E40-298. Refreshments follow, Rm E40-162.
- Modeling the Ocean Thermohaline Circulation\*—Dr Andrew Weaver, McGill Univ. Quasi-biweekly Seminar Series sponsored by the Center for Meteorology and Physical Oceanography and the Center for Global Change Science, 4pm, Rm 54-915.
- Absence of Localization in One Dimension\*\*— Prof Philip Phillips, MIT. Sponsored by the Dept of Physics, 4:15pm, Rm 10-250. Refreshments, 3:45pm, Rm 26-110.

#### FRIDAY, FEBRUARY 15

- A Ribozyme Derived from Tetrahymena prerRNA: Mechanistic Investigation\*\*—Dan Herschlag, Univ of Colorado at Boulder. Whitehead Institute Seminar, 11am, Whitehead auditorium.
- Will the Sun Rise Again? Reflections on Japan's Defense Policy\*—Dean Cheng, PhD candidate, MIT's Defense and Arms Control Study Program. Sponsored by the MIT Japan Program, 12-2pm, Rm E38, 6th floor conference room. Brown bag lunches welsone.
- Observation of the Structural Inversion of Microemulsions via a Bicontinuous Structure\*—Prof Sow-Hsin Chen, MTT. Center for Materials Science and Engineering Colloquium, 12:15pm, Rm 12-132. Box lunch available.
- Heat Transfer with Oscillating Pressure in Reciprocating Machinery\*\*—Eun S. Jeong, PhD dissertation. 1pm, Rm 1-246.
- ABM Systems We Know How to Build\*—Prof Ted Postol, MIT. Plasma Fusion Center Seminar Series, 4pm, Rm NW17-218.
- Outrageous Hypotheses for Pb-isotopic Disequilibrium in the Kiglapail Intrusion: Memory of the Source of Black Magic?\*\*— Prof S A Morse, Univ of Massachusetts. EAPS Lecture Series, 4-5pm, Rm 54-915.

#### TUESDAY, FEBRUARY 19

- Femtosecond Through Microsecond Time-Resolved Spectroscopy of the Liquid State\*\*— Keith A. Nelson, MIT, Seminar on Modern Optics and Spectroscopy, 11am-12pm, Rm 37-252. Refreshments follow lecture.
- Unmanned Undersea Vehicle Design and Fabrication at Draper Labs\*\*—Peter Sebelius,
  Draper Laboratories, Inc. Autonomous
  Underwater Vehicles Seminar Series, 12pm,
  Rm E38-300. Bring lunch.
- Command and Control of Naval Strategic Systems\*\*—W J Holland, Jr, Rear Admiral, USN (Ret.). MIT Defense and Arms Control Studies Program, 3:30-5pm, Rm E38-714.
- Proton/Electron Coupling in Proteins\*\*—Prof R J P Williams, Oxford Univ. The 1991 Arthur D Little Lecturer in Chemistry will also present lectures on Feb 20 and 21. Sponsored by the Dept of Chemistry, 4pm, Rm 6-120, reception will follow, Rm 18-490:
- Recent Results from the NMC Experiment at CERN\*\*—Klaus Rith, Max Planck Institute, Heidelberg. LNS Physics Colloquium, 4:15pm, Rm 4-163. Refreshments, 3:45pm, Rm 26-414.
- Probing the Edge of the Galactic Disk: Warps, Windows, and RR Lyrae Stars\*—Ken Janes, Boston Univ. Astrophysics Colloquium sponsored by the MIT Center for Space Research, 4:15pm, Rm 37-252. Refreshments, 3:45pm.

#### WEDNESDAY, FEBRUARY 20

- Microsoft Word (for the Macintosh) User Group\*\*—Sponsored by Information Services, 12-1pm, Rm 24-307. Contact Phyllis Crerie, x3-0736.
- Aerodynamic Design Considerations for the B2 Bomber\*—Prof Jan Roskam, Univ of
  Kansas. Seminar on Technology, Defense,
  and Arms Control in a Changing World, 122pm, Rm E38-714. Bring a lunch; drinks will
  be provided.
- Performance Enhancement Among Autonomous Agents\*\*—Steven Kim, MIT. Laboratory for Manufacturing and Productivity Seminar Series, 3-4pm, Rm 35-520.
- Non-linear Simulation of Free Surface and Vortex Sheet Generated by a Moving Surface-piercing Plate\*—Wu-ting Tsai, MIT. Informal Hydro-dynamics Seminars, Dept of Ocean Engineering, 3:30pm, Rm 5-314.
- Supercomputer Applications at MIT: Ab Initio Simulation of Solids\*\*—Prof John Joannopoulos, MIT. Sponsored by the MIT Supercomputer Facility, 4-5pm, Rm 10-105. Third in a series of monthly seminars sponsored by MITSF.
- Some Roles of Calcium in Biology\*\*—Prof R J P Williams, Oxford Univ. The 1991 Arthur D Little Lecturer in Chemistry will also lecture on Feb 21. Sponsored by the Dept of Chemistry, 4pm, Rm 6-120.

#### THURSDAY, FEBRUARY 21

- Innovative Computer Applications for Construction (Part III)\*—Dr. Mikio Shoji, Information Processing Ctr, Kajima Corp., Japan. Intelligent Engineering Systems Laboratory Seminar, 4-5pm, Rm 1-350. Refreshments, 3:30pm.
- Inorganic Biochemistry from Messages to Catalysis\*\*—Prof R J P Williams, Oxford University. The 1991 Arthur D Little Lecturer in Chemistry. 4pm, Rm 6-120.
- Selected Operations Research Problems at United Airlines\*—Ira Gershkoff, United

- Airlines. Sponsored by the Operations Research Center, 4pm, Rm E40-298. Refreshments follow, Rm E40-162.
- The Interaction Between Baroclinic Eddies and Temperature Structure: Part II\*—Shuntai Zhou, MIT. Quasi-biweekly Seminar Series sponsored by the Center for Meteorology and Physical Oceanography and the Center for Global Change Science, 4pm, Rm 54-915.
- The Computer Revolution in Physics Teaching\*\*—Prof Edward F Redish, Univ of Maryland. Physics Colloquium, 4:15pm, Rm 10-250. Refreshments, 3:45pm, Rm 25-110.
- The National Uprisings in the Soviet Union\*— Prof David Laitin, Univ of Chicago. Peoples and States: Ethnic Identity and Struggle, 4:30-6:15pm, Rm E38-714, Refreshments.

#### FRIDAY, FEBRUARY 22

- Phase Transitions in Protein-Water Solutions\*—Prof George Benedek, MIT. Center for Materials Science and Engineering Colloquium, 12:15pm, Rm 12-132. Box lunch available.
- The Tectonic and Petrologic Evolution of the Lower Crust Beneath a Slow Spreading Ocean Ridge\*\*—Dr. Henry Dick, Woods Hole Oceanographic Institution. EAPS Lecture Series, 4-5pm, Rm 54-915.

#### MONDAY, FEBRUARY 25

- Compressive Residual Strength of Graphite Epoxy Laminates after Impact\*\*—Teresa Guy, MIT. Seminar Series, Materials, Structures and Aeroelasticity, 3pm, Rm 33-206.
- X-Ray Lasers\*\*—P Hagelstein, MIT. EECS Colloquium Series, 4-5pm, Rm 34-101. Refreshments, 3:30pm.
- Elastohydrodynamic Collisions and Rebound of Small Particles\*\*—Prof Robert Davis, Univ of Colorado. Fluid Mechanics Seminar Series, 4-5pm, Rm 5-234.
- Magneto-Structural Correlations in Binuclear Complexes With and Without Biological Relevance\*\*—Prof Karl Wieghardt, Ruhr-Universität Bochum, Germany. Sponsored by the Dept of Chemistry, 4pm, Rm 18-490.
- Bridging the Gap Between Greenhouse Science and Greenhouse Policy\*\*—William Moomaw, Tufts Univ. Sponsored by the Ralph M. Parsons Laboratory for Water Resources and Hydrodynamics, 4pm, Rm 48-316.
- Wavelets, Wavelet Packets, and Best Bases\*\*— David Walnut, George Mason Univ. Wavelet Seminar, Dept of Mathematics, 4:05pm, Rm 2-139.
- Fitting Transfer Functions to Frequency Response Measurements\*\*—Dr John Spanos, JPL. MIT/Draper Joint Seminar Series in Dynamics, Guidance and Control, 4:15pm, Rm 33-206.
- Ottoman Aleppo: The Rise and Fall of a Trading City\*—Bruce Masters, Wesleyan Univ. Aga Khan Program, An Evening With Series, 5pm, location TBA, call x3-1400.

#### TUESDAY, FEBRUARY 26

- Sub-Doppler Spectra of Substituted Acetylene Compounds\*\*—Kevin K Lehmann, Princeton, Seminar on Modern Optics and Spectroscopy, 11am-12pm, Rm 37-252. Refreshments follow lecture.
- The Problem of Regional Nuclear War\*\*— Stephen Peter Rosen, Harvard Univ. MIT Defense and Arms Control Studies Program, 3:30-5pm, Rm E38-714.
- Immigration Policy and Sociopolitical Change in Australia and the US\*—Prof Gary Freeman, Univ of Texas at Austin. The Inter-University Seminar on International Migration, 4-6pm, Rm E38-615. Refreshments.
- Experimental Studies of Mixing with Streamwise Vorticity\*\*—Ted Manning, MIT. Gas Turbine Laboratory Seminar, 4:15pm, Rm 37-232. Refreshments, 4:15pm.
- Desperately Seeking Dark Matter\*\*— Lawrence Krauss, Yale. LNS Physics Colloquium, 4:15pm, Rm 4-163. Refreshments, 3:45pm, Rm 26-414.

#### WEDNESDAY, FEBRUARY 27

- Ultra-Wideband Radar Applicability to Air Defense\*—J David Kramer, MITRE Corp. Seminar on Techonology, Defense, and Arms Control in a Changing World, 12-2pm, Rm E38-714.
- The General Circulation of the Eastern Mediterranean Reconstructed with Prognostic Modeling, and the Adjoint Method\*\*—P Pizzoli, MIT. Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915.
- Dynamics of Avalanches and Earthquakes\*\*— Prof Sydney Nagel, Univ. of Chicago. EAPS Lecture Series, 4-5pm, Rm 54-915.
- Political Democratization in South Africa?\*\*\*—Prof William Foltz, Yale. Harvard-MIT Joint Seminar on Political De-

velopment (JOSPOD), 5:30pm, MIT Faculty Club, open to members only. Call David Lane 277-4280.

#### THURSDAY, FEBRUARY 28

- Chemical Kinetics of Engine Knock\*\*—James C Keck, Professor Emeritus, MIT. Sloan Automotive and Gas Dynamics Laboratories Seminar Series, 4pm, Rm 37-232. Refreshments, 3:45pm.
- Göltepe Excavations: A Metal Processing Site in the Taurus Mountains, Turkey\*\*—K Aslihan Yener, Smithsonian. CMRAE Materials and Anthropology Series, 8pm, Rm 8-314.

#### FRIDAY, MARCH 1

The Automobile Industry—A Global Perspective\*\*—Daniel Roos, MIT. Luncheon Seminar Series sponsored by the Center for Transportation Studies, 12:45-2pm, Rm 10-105. Luncheon optional, 12-12:45pm, \$2 students, \$5 non-students.

#### **FILMS**

Video News Tapes on India from Newstrack\*— Feb 25: The first showing of a series of video tapes from Newstrack, an independent news agency in New Delhi. Sponsored by the Center for International Studies, 4:30pm, Rm E38-615.

#### **COMMUNITY INTEREST**

- Alcoholics Anonymous (AA)\*\*—Meetings every Tues, 12-1pm; Thurs, 12-1pm, Rm E23-364. For info call Alice, x3-4911.
- AARP\*—Feb 26: "History, Political Structure and Foreign Policy of the Middle East," Professor Sherifa Zuhur, visiting professor, MIT Humanities Dept. 12pm, Student Center, Twenty Chimneys. Sponsored by MIT Cambridge Chapter #2893 of the American Association of Retired Persons, Inc. Luncheon, 12pm, \$10.50, reserve by Feb 18, x3-7914. Speaker at 1pm.
- Al-Anon\*\*—Meetings every Fri, noon-1pm, Health Education Conference Rm E23-297; every Tues, noon-1pm, Rm 1-246; and every Mon, 12-1pm, Lincoln Lab Bldg 1218, Family Support Ctr. The only requirement for membership is that there be a problem of alcoholism in a relative or friend. Call Alice, x3-4911.
- Alcohol Support Group\*\*—Meetings every Wednesday, 7:30-9am, sponsored by MIT Social Work Service. For info call Alice, x3-4911.
- Co-Dependents Anonymous (CoDA)\*—Meetings every Thurs, 6:30-8pm, Rm 66-156. Info: Alice, x3-4911.
- Eldercare Support Group\*\*—Meetings every Monday 12-1pm, Rm 8-219. For info call Carole x3-9368 or Maria x3-8820.
- Habitat for Humanity\*—Help build affordable housing for deserving families. Volunteer for a work day Feb 16. Info: Augie Lee x5-7202 or Hoang Tran x5-9544.
- Informal Embroidery Group\*\*—MIT Women's League, 10:30am-1:30pm, Rm 10-340. Upcoming dates are: Feb 20, Mar 6 & 20, Apr 3 & 17, May 1 & 15, June 12. Info: x3-3656.
- Graduate Student and Postdoc Parents Support Group\*—Co-leaders: Dawn Metcalf, MIT Social Worker, and Rae Goodell, MIT Coordinator of Parent Programs. Ongoing, meets weekly. Info: Dawn Metcalf, x3-4911, Rm E23-344, or Rae Goodell, x3-1592, Rm 4-144...
- Boston Mutagenesis Group\*—Meetings are held the first Wednesday of the month in the 6th floor conference room, E17, 7pm. Speakers from MIT, Harvard and other local schools discuss their research; related topics include mutagenesis, carcinogenesis, cellular repair systems and DNA damage in prokaryotic and eukaryotic cells. Info: Kara Best x3-6729.
- Narcotics Anonymous\*—Meetings at MIT, every Mon, 1-2pm, Rm E23-364 (MIT Medical Dept). Call 569-0021.
- Overeaters Anonymous (OA)\*—Meets Thurs, 1-2pm, Rm E23-364. Only requirement for membership is the desire to stop eating compulsively. Info: Alice, x3-4911.
- Parenting Programs—Feb 14\*: "50-50
  Parenting?" 12-1:30pm, Rm 6-233. Sponsored by the MIT Child Care Office, x3-1316.
  Feb 28-Apr 25\*: "Positive Discipline for Ages 4 to 12," 7-part workshop, 12-1:30pm, Rm 6-233. Pre-registration and book purchase required, call x3-1592. Mar 1\*: "Is There Life After Childbirth?", 12-1:30pm, Rm 14E-304. Mar 8-May 17: "Without Spanking or Spoiling: Discipline from Age One through Five," 9-part workshop, Fridays 11:30am-1pm, Rm 10-280. Pre-registration and book purchase required, call x3-1592.
- Parenting Support Groups—New Parents Support Group\*\*: Tuesdays beginning Feb 26, 12-1:30pm, contact Rae Goodell, x3-1592.

For parents of children up to 6 months old or expected by 4/15. Parent Support Group\*: Wednesdays beginning Feb 20, 12-1:30pm, call 1-800-882-1250. Parenting After Divorce Support Group\*\*: Biweekly Fridays beginning Feb 22, 12-1pm, contact Rae Goodell x3-1592. Child Care Briefings\*\*: Introductory seminars, 12-1:30pm, Rm 4-144 on Feb 20, Mar 6 & 20, Apr 3 & 17, May 1, 15 & 20, June 12 & 26. Breastfeeding: The Video\*\*: Apr 18, May 30, 7-9pm, Rm E23-297.

- Weight Watchers at MIT\*\*— New 10-week special starting Feb 26, 12-1pm, Women's Lounge, Rm 8-219. Guests invited to Feb 19 meeting. Phone Rose Bella x3-4617.
- Wives' Group\*\*—Feb 13: "Women's Current Health Concerns," Judy Norsigian, Co-Director, Boston Women Health Book Collective. Feb 20: "Take it Easy': Understanding US Slang," Suzanne Koons, Lecturer, ELS, MIT. Meetings are from 3-4:45pm, Rm 491-Student Ctr. Babysitting in Rm 407. All women in MIT community welcome. Info: x3-1614.

#### HEALTH EDUCATION

- MIT Students with Diabetes\*\*—Looking for MIT students with diabetes interested in joining a support group. Contact Alice Yates x5-7519 (x3-6561 mssgs) or the Health Education Office, x3-1316.
- From Smoker to Non-Smoker\*\*—Starts Mar 4: Smoking Cessation 5 week program meets weekly, 12-1:30pm, sponsored by the Medical Dept. Cost \$30, \$25/students and MIT Health Plan members. Info/registration x3-1316.
- A New Perspective on Stress Management\*\*— Starts Mar 12: Stress Management 5 week program meets weekly, 12-1:30pm, sponsored by the Medical Dept. Cost \$45, \$35/ students and MIT Health Plan members. Info/ registration x3-1316.
- Weight Control Workshop\*\*—Starts Mar 13: Weight Control 10 week program meets weekly, 12:30-1:30pm, sponsored by the Medical Dept. Cost \$85, \$70/students and MIT Health Plan members. Info/registration x3-1316.
- Nursing Mothers' Support Group\*\*—Pregnant and breastfeeding women at MIT meet to gain confidence and share info and practical tips. First Tues of each month, 10-11am and third Weds of each month, 4-5pm, Rm E23-297. Babies welcome. Info: Margery Wilson 868-7218.
- Working Mothers Support Group\*\* An ongoing support group that meets to discuss parenting-related issues in a casual atmosphere. Meets every other Thursday, 12-1:30pm (drop in anytime), Rm 18-591. Info: Janette Hyde x3-4290.

#### MITAC

Ticket locations and hours: Tickets may be purchased at the MITAC Office, Rm 20A-023 (x3-7990), 10am-3pm Monday-Friday. Lincoln Lab sales in Rm A-218, 1-2pm Tuesday-Friday. Friday ticket sales in Lobby 10 and E19, 12-1:15pm. Further details on events are included in MITAC's monthly flyer. To avoid disappointment, make reservations and purchase tickets early. Because MITAC is nonprofit, refunds are not available.

- MITAC, the MIT Activities Committee, offers discount movie tickets for General Cinema and Loews Cinemas, both are \$4/ea (Loews tickets are not valid the first 2 weeks a movie is released). Tickets are good 7 days a week, any performance. Showcase and Entertainment cinema tickets have been discontinued.
- Spring Skiing at Waterville Valley—Mar 3:
  Downhill or cross-country; skating and sleighrides at additional cost. Downhill: \$45/ adult, \$36/child (12 & under). Cross-country: \$26/adult, \$23/child (12 & under). Bus Ivs Hayward Lot at 6:30am & returns approx. 6:30pm. Reservations and full payment due by Feb 27.
- The Red Badge of Courage—Mar 9: Stephen Crane classic presented by the Boston Children's Theatre, New England Hall, 2pm, tkts \$4/ea (reg \$5). Suggested for families w/ children 10 & older.
- Le Grand David & His Own Spectacular Magic Company—Mar 10: 3pm, Cabot St. Theatre, Beverly, MA, tkts \$9/adult (reg \$10); \$7/ child (reg \$8); must be purchased by Feb 22.
- The Chieftains and James Galway—Mar 10: 8pm, Symphony Hall, tkts \$25/ea (reg \$28/ea).
- 120th New England Spring Flower Show: A New England Sampler—Mar 11-17: This year's theme is "A New England Sampler," with more than 60 interpretations of distinctive New England landscapes. At the Bayside Expo Center. Tkts \$8 ea (reg \$10), not valid the first 2 days of the show, Mar 9 & 10.
- Steel Magnolias—Mar 17: Production at the Amesbury Playhouse includes a complete luncheon prior to performance plus shopping stop at Pickering Wharf. Bus leaves Hayward Garage at 11am; returns- approx. 6:30pm. Tkts \$36, reservations w/full payment must be made by Feb 26.

Spring Weekend in Montreal—Apr 13-15: Bus leaves West Garage Apr 13, 7am; returns approx. 7pm, Apr 15. Cost: \$125/pp/dbl occup (incl round-trip bus, 2 nights' lodging in downtown Montreal, & 2 continental breakfasts). Reservations must be made by Mar 13.

Tired of automotive woes? Discount coupons now avail for Merchants Tire & Car Care, 10% off all reg automotive svcs, 5% off all regular priced tires. Avail in MITAC office.

North Shore Music Theatre Corporate Discounts! Enjoy top-notch theatrical productions at \$3 off all Broadway shows. Call 922-8500 for tkt reservations.

Museum of Fine Arts—The Council for the Arts has 10 passes employees may borrow for free admission. Call the MIT libraries, x3-5651, for availability. At Lincoln Lab, MFA passes are available in A-150.

Arlington Capitol Theatre discounts! Commercial, 2nd run, and art-type films, only \$3/pp with MIT ID (reg. \$4/pp). Located at 204 Mass Ave, call 648-4340 for more info.

Ski Cards have arrived, savings on international and domestic lift tickets and lodging, \$18/ea (reg \$50). Gunstock Ski Discounts are here! Coupons for \$10 off midweek lift tickets, \$5 off on weekends.

Greater Boston Books are here, 1000+ pages of discounts, \$25/ea (reg \$35), offered through Mar 1. A few City Books are still here, \$1/ea (reg \$7.50), valid through Mar 15.

Winter Ferry Discounts to Martha's Vineyard, \$1 off, and Nantucket, \$2 off (valid through 4/ 15, limit 4 per coupon).

Just arrived: Discounts for the Golfer's Expo (\$1-off coupons, March 1-3 at the Bayside Expo Center) and Taxman (20% off on tax preparations).

#### **SOCIAL ACTIVITIES**

French Lunch Table\*\*—Come to lunch and speak French; every Tuesday from 1-2pm in Walker dining hall. Look for the table with the tablecloth. All levels welcome. Sponsored by the Foreign Languages & Literatures Section.

German Lunch Table\*\*—Come to lunch and speak German, every Monday from 1:15-2pm in Walker dining hall. Look for German flag. All levels welcome. Sponsored by the Foreign Languages & Literatures Section.

Japanese Lunch Table. Bring a bag lunch and talk with native Japanese speakers. Special cultural event each month. Beginning Japanese speakers especially welcome. Sponsored by the MIT Japan Program, the Dept of Foreign Languages and Literatures, and the MIT Japanese Wives' Group. Meets Tuesdays at 1pm in Walker 220. More info: Susan Sherwood x3-8095.

#### ■ MOVIES

Black Student Union Film Series\*\*—Feb 15:

Sweet, Sweetback's Baaaddaassss Song. A black man is on the lam from the police. A pivotal film that caused a renaissance in films in the 70s. Feb 22: Tongues Untied and Pairs is Burning and Affirmation. Films on the Black gay experience by director Marlon Riggs.

Mar 1: Sugar Cane Alley. By Euzhan Palcy. 7-9pm, Black Student Union Lounge, Walker Rm 50-105. Info: x3-4861. See also listings under Special Interest as part of Black History Month.

Queer Movies\*—Feb 21: Mala Noche, the story of a romantic young grocery clerk and a desperate Mexican migrant teenager, and Gus van Sant's Diary, four short films. Screenings at 7 & 9pm, Rm 66-110. Sponsored by the Ad Hoc Committee on Gay and Lesbian Studies at MIT. Donation \$2. More info x3-3599.

Backayaro!\*—Feb 25: The acclaimed Japanese comedy, subtitled in Engish. Sponsored by the MIT Japan Program and the Japanese Language Program, 7:30pm, Rm 10-250. Donation \$2 at door.

Admission to below Lecture Series Committe Movies is \$1.50, and MIT or Wellesley identification is required. For the latest Lecture Series Committee movie and lecture information, call the LSC Movieline, x8-8881;

LSC Movies\*\*—Feb 15: Ghost, 6:30 & 10pm, Rm 26-100. Feb 16: Reversal of Fortune, 7 & 10pm, Rm 26-100. Feb 17: Raiders of the Lost Ark, 7 & 10pm, Rm 10-250. Feb 22: Wild at Heart, 6:30 & 10pm, Rm 26-100. Feb 23: Narrow Margin, 7 & 10pm, Rm 26-100. Feb 24: Who Framed Roger Rabbit?, 7 & 10pm, Rm 10-250. Mar 1: White Palace, 7 & 10pm, Rm 26-100. Mar 2: The Rescuers Down Under, 3, 7 & 10pm, Rm 26-100. Mar 3: Blade Runner, 7 & 10pm, Rm 10-250.

#### **MUSIC**

For recorded information on upcoming concerts and lectures call the MIT Music and Theater Arts Concert Line, x3-9800. Updated weekly.

MIT Chapel Series\*—Feb 14: Handel and Bach.
Feb 21: David Cho, cello. Feb 28: Carol
Lewis, gamba, and Olav Chris Henriksen,
baroque lute. Music by JS Bach, CPE Bach,
Abel, Scheidler. 12pm, MIT Chapel.

Advanced Music Performance Concerts\*—Feb 15: Erika Anderson '91, bassoon. Feb 22: Graduate student Joyce Wong, cello, student of David Finch. Mar 1: Graduate student, Una Hwang. 12pm, Killian Hall.

MIT Faculty Series\*—Feb 22: Lydian String Quartet, 8pm, Killian Hall.

MIT Concert Band Tour Finale Concert\*— Feb 23: John Corley, director. Contemporary music ensemble with 80 winds and percussion, 8pm, Kresge Auditorium.

#### **THEATER**

Call the Theatre & Dance Performance Hot-Line at x3-4720 for complete up-to-date information on theatre and dance performances at MIT.

The Birds\*—Feb 14-16: MIT Dramashop production of the classic play by Aristophanes. Director, Michael Ouellette, lecturer in Theater Arts, 8pm, Kresge Little Theater.

#### **DANCE & MOVEMENT**

Tai Chi\*\*—Ancient Chinese system of exercise beneficial to one's physical, mental and emotional health. Introductory classes Feb 20 & 27, 5-5:45pm, Emma Rogers Rm, 10-340. More info: Lisa x3-5695.

MIT Folk Dance Club\*—Three nights of dancing. Sunday: International Dancing, 7-11pm, Lobby 13, with Early Teaching from 7-7:30pm. Tuesday: Advanced Balkan Dancing, 7-11pm, Rm 491, Student Center. Wednesday: Israeli Dancing, 7-11pm, Lobby 13, with Early Teaching from 7-7:30pm. Info:

Aerobics Classes\*—Sponsored by the MIT Dance Club, Every Mon, Wed, Fri, 6-7pm, Bldg W31 Dance Studio. \$4/class, beginners welcome. More info: Julia, 492-1369.

Yoga\* Ongoing classes in traditional Hatha and lyengar style. Beginners: Mon, 5:10pm; Intermediate/Advanced: Mon, 6:30pm, Rm 10-340. For information call Ei Turchinetz, 862-2613

Kundalini Yoga\*—Monday classes, 6-7pm, Rm 1-136. Beginners welcome. \$1/class. For information call Andy Rothstein 232-9961.

MIT Dance Workshop Classes\*—An activity of the Theatre Arts program taught by members of the Beth Soll & Co, MIT's resident dance company. Beginning Modern Technique, M,W,3:30-5pm, T-Club Lounge, Dupont Ctr, Intermediate Modern Technique, Tu,Th,5:30-7pm, Walker-201; Composition/Improvisation, Tu 1-2:30pm, Walker-201; Technique/Repertory/Improvisation, Wed 11-12:30, Walker-201. Tap, Fri 12-1:30pm, Walker-201. Info: x3-2877.

#### **EXHIBITS**

#### LIST VISUAL ARTS CENTER

Juan Francesco Elso Padilla. First US showing of works by Padilla, a Cuban sculptor who died of leukemia at age 32. Highly personal blend of secularism, mysticism, magic and ethics seeking to identify and embody a Latin American mythology, drawing on both Afro-Cuban and Indian traditions. Robert Arneson: The Jackson Pollock Series. Large portrait busts and heads of Pollock, which are both dramatic psychological studies and technical tours de force. Also included are ceramic recreations of Pollock's final car crash and a full-scale sculptural interpretation of one of Pollock's major paintings. Barbara Broughel: Storytelling Chairs. Ensemble of eight richle doctored and decorated early American chairs by the New York-based sculptor creates an environment for relecting on the little-appreciated extent to which colonial American culture was idebted to Iroquois example and precedent. Feb 23 - Apr 14. Public Preview, Feb 22, 5-7pm, Barbara Broughel will attend. Open M-F 12-6pm, Sat, Sun 1-5pm.

#### THE MIT MUSEUM

MIT Museum Bldg (N52)—Works by Robert
Preusser. Overview of paintings done since
the 1930s by former MIT Professor of Visual
Design, Dept of Architecture. Through Apr4.
American Color: Photographs by Rodger
Kingston. A visual documentation of the
ways advertising, architecture and celebrity
define us as American. Through Mar 24. Doc
Edgerton: Stopping Time. Photographs,
instruments, and memorabilia documenting
the late Harold Edgerton's invention and use
of the strobe light. Origoing. Light Sculptures by Bill Parker. Vivid interactive light
sculptures, each with its own personality and

set of moods. Ongoing. Holography; Types and Applications. Scientific, medical, technical and artistic imaging drawn from the work of the Spatial Imaging Group at MIT's Media Lab. Ongoing. Math in 3D: Geometric Sculptures by Morton G. Bradley, Jr. Colorful revolving sculptures based on mathematical formulae. Ongoing. Tues-Fri 9-5; Sat-Sun 1-5.

#### HART NAUTICAL GALLERY

Ongoing exhibits: George Owen '94: Yacht Designer—Ship Models, Half Models in Naval Architecture, Ongoing, 77 Mass Ave, Mon-Sun 9am-8pm.

#### CORRIDOR EXHIBITS

Corridor Exhibits: Bldg 1 & 5, 2nd floor: John Ripley Freeman. Lobby, Bldg. 4: Norbert Wiener, Karl Taylor Compton. Community Service Fund, Ellen Swallow Richards. Women at MIT. An overview of the admission of women at MIT. Five photographic panels with text documenting the circumstances that increased the number of women in the classroom since Ellen Swallow Richards. Bldg 6: Laboratory for Physical Chemistry. Bldg 4: Edgerton's Strobe Alley: Exhibits of high-speed photography. (Corridor Exhibit)

#### COMPTON GALLERY

The Art of Architecture: The Christian Science Church 1894-1990. An exhibition of historical drawings, plays, prints, writings, and models by the five architects who designed the Church buildings and plaza which comprise the Christian Science Center in Boston. Through Mar 8. Weekdays 9-5.

#### OTHER EXHIBITS

Institute Archives and Special Collections— Jerome C. Hunsaker, Father of Aeronautics at MIT: Chronicles his founding of aeronautics at the Institute; his design and construction of Navy airships and NC-4, the first airplane to cross the Atlantic, and his role in leading the Dept of Aeronautical Engineering from 1939-51. The Tech Show: "Engineering is interfering with fun...Wish my four year stretch were over and done." That's from 1947 but it could be sung today. Portrays an MIT institution with a 92 year history.

#### **WELLESLEY EVENTS**

#### LECTURES & EVENTS

Feb 14: "Decline of Marriage Among African Americans: Public Policy Implications," Lynn C Burbridge. 12:30-1:30pm, Cheever House. "Women and Corporate Power," Karla Scherer, 4:30pm, Clapp Library Lecture room.

Feb 17: "Transitions and Changes." A panel of seniors will discuss their experiences as Black students at Wellesley College, 3pm, Harambee House. Chamber Concert, works of Beethoven, Brahms and Shostakovich, 8pm, Jewett Arts Center auditorium.

Feb 19: "Beyond the Curse: Women in Ministry," the Rev. Daphne Wiggins, the Rev. Dietra Bell, Dr. Rev. Aida Besancon Spencer, and Evangelist Lorraine Langham, 4:30pm, Clapp Library Lecture Room.

Feb 21: "Infant Development and Mother-Infant Synchrony: Project Progress Report," Meredith Censullo, 12:30-1:30pm, Cheever House. "Defining the Legal Family: 'Who's In and Who's Out,'" Martha Minow, 4:15pm, Clapp Library Lecture Room.

Feb 25: "The Meeting," critically acclaimed play about a fictional meeting between Malcolm X and Martin Luther King, 8pm, Jewett Arts Center auditorium.

Feb 28: "A Quiet Fight all the Way:' Developments in Child Care for Children with Disabilities," Dale Borman Fink, 12:30-1:30pm, Cheever House. "Antigone," through Mar 2, 8pm, Alumnae Hall auditorium (matinee Sat 2pm). \$5, call 235-0320, x2029.

#### ■ LOOKING AHEAD

Second Spring Break Open House at Talbot House\*\*—Mar 27 & 28: MIT's retreat in Woodstock, VT. Small groups and individuals may stay at Talbot House without begin part of the usual formal group. Come for the good local skiing, or to relax and sit by the fire. Costs; \$50.50 students, \$58.50 non-students, incl· 2 nights, 2 breakfasts and one dinner. Diane Gilbert x3-4158. There are also vacancies midweek in march. Applications now being accepted for April.

The Johnson Games are Back!\*\*—May 4: Join in a combination of physical and mental activities for teams from across the MIT community. Each team should be formed around a core group, such as a house, department, or activity; must include faculty, students, and staff; and have a 50/50 ratio of men and women. Registration forms available at 7-121 and W32 Equipment Desk, Call x3-1707 for more info. Registration deadline: Apr 5,

Send notices for Wednesday, February 27, through Sunday, March 10 to Calendar Editor Rm 5-111, before 12 noon Friday, February 22.





Chalk one up for seat belts. And, specifically, for MIT's policy requiring all members of the MIT community to wear seat belts in any vehicle—university-owned, rented or personal—while on Institute business.

Safety officials believe the use of the belts saved two MIT employees and a student from serious injury on January 27 when an MIT Chevrolet Suburban wagon being used to transport electronics equipment to an out-of-state site overturned on a New York highway in a skidding accident.

Although the vehicle rolled over one-and-a-half times, ending up on its roof in the median strip, the driver and passenger in front and another passenger in a back seat all managed to walk away from the crash. The back seat passenger, the student, lost consciousness momentarily when he was hit on the head by a piece of electronics equipment, but was otherwise not hurt, officials said. The front seat passenger had a scraped hand. The driver was uninjured.

In a letter to the head of the laboratory whose vehicle was involved in the accident, Senior Vice President William R. Dickson wrote:

"It would appear that the use of seat belts certainly paid off in this instance. I hope you can use this example to encourage all of your employees to wear seat belts whether or not they are on Institute business."

The Institute's Committee on Safety adopted the seat belt requirement in 1986 after the state's seat belt law had been overturned in a referendum.

Forget the Super Bowl... MIT's MITEE Mouse is Number 1!

As reported in Here & There on November 7, the computerized robot micromouse had racked up a string of international victories and was facing its ultimate test in Tokyo in a contest sponsored by the Japanese Micromouse Club.

The robots navigate a 10-foot-square maze using their sensors to detect the top or sides of the maze's walls. The micromouse with the fastest time wins.

As it turned out, MITEE Mouse won quite handily when its chief rival had a bad day, reports David M. Otten, principal research engineer in the Laboratory for Electromagnetic and Electronics Systems and head of the MITEE Mouse team. "We were lucky we got away so easily, because we know the capability is there," said Otten, who went to Japan with Anthony Caloggero, a project technician in the lab.

Still, victory was sweet. "The Japanese are our arch competitors and had never been beaten on their home turf before," Otten said.

As world champion, are there other fields to conquer?

"It will never be the same," Otten conceded, but he intends to keep going.

The champion is actually the sixth MITEE Mouse produced by the MIT team. "We're talking about at least one more," Otten said.

■ The members of MIT's Alpha Tau Omega fraternity are wearing their patriotism on the side of their house.

The 49 fraternity brothers voted unanimously to hang a 25-square-foot American flag from the roof of the building over a 10-foot-long banner proclaiming, "ATO Supports Our Troops in the Gulf."

The fraternity house is on Memorial Drive, but the flag is on the back of the building on Amherst Way, facing the campus.

The Boston Herald spread word of the event with a story and photograph.

■ The mysteries of journalism: When President Emeritus Jerome B. Wiesner wrote a letter to The New York Times defending the Media Lab against criticism voiced in a Times article, the newspaper printed the letter virtually in its entirety but did make a few editorial changes. (For example, Professor Wiesner wrote that the article presented a "distorted picture of international scientific and economic trade"; the Times version put the adverb 'somewhat" in front of "distorted.") But when the same letter appeared in the International Herald Tribunepartly owned by the Times-it was run in its original form.

■ Abdullah Toukan, described as a scientific advisor to Jordan's King Hussein and one of a group of scientists who described the possible environmental consequences of a war in the Middle East at a London press conference, is an MIT graduate. He received the PhD in physics in 1976.

■ Lindsay Ellison, a temporary employee working as an account assistant in the Department of Materials Science and Engineering head-quarters, was scheduled to appear on ABC-TV's Good Morning America program this week in a segment on how Americans are being affected by the recession.

Ms. Ellison was to appear on the show as a typical single mother. She lives in Brookline with her son, Zak, 10.

#### **CLIPS AND QUOTES**

—A story in the Providence Evening Bulletin on a group of Air Force reservists called to active duty at Westover Air Force Base in Chicopee, Mass., focused on a Lincoln Laboratory technical assistant/data editor, **Sharon D. Shackelford** of Sudbury. In the 439th Military Airlift Wing and Support Group, she is Tech. Sgt. Shackelford, a specialist in finance and accounting.

—The Machine That Changed the World, a book on the global auto industry by MITers James P. Womack, Daniel T. Jones and Daniel Roos of the Center for Technology, Policy and Industrial Development, was named the best business book of 1990 by the Financial Times of London.

**Charlie Ball** 



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INSTRUCTIONS: Ads are limited to one (of approximately 30 words) per issue and may not be repeated in successive issues. All must be accompanied by full name and extension. Persons who have no extensions or who wish to list only their home home telephones, must come in person to Rm 5-111 to present Institute identification. Ads using extensions may be sent via Institute mail. Ads are not accepted over the telephone.

All extensions listed below are campus numbers unless otherwise specified, i.e., Dorm, Linc, Draper, etc.

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

Deadline is noon Friday before publication.

#### FOR SALE

- Sharp 7000 8086 portable computer, AC pwr, lunchbox case, 640K RAM, 2 5.25 360K FD, CGA, 15/1P, NLQ thermal printer, softwr, \$800 or bst. Call dorm x5-7483.
- Airline ticket, round trip, fly anytime before Mar 14 1991 between any two US cities, \$250 or bst. Call 494-5159.
- RasterOps ClearVue/Gs30 19", 256 grayscale monitor w/video card for SE/30, \$1500; HP Adobe Postscript cartridge for HP IIP, \$550; answ mach, \$75. Richard 547-0965.
- Lrg desk, walnut formica top 66"x30", 3 drawers, to be assembled, \$50 or bst. Call 527-5312.
- Electrolux vac, \$45; twin matt, \$25; ktchn tbl, white, rd, \$55; sm desk, \$40; coffee tbls, \$35, \$55; space htrs, \$15, \$35; downhill skis: Dynastar 175, \$55; Rossi 200, \$25. Call 332-8251.
- Traditionally styled sofa, 90", exc cond, \$350 or bst. Dana x8-7610.
- Sewing mach, SInger 5522, exc cond, free arm, zig-zag, 3 needle positions, foot pedal, incl all orig access, inst manual & carrying case, \$65. Claire x3-2292.
- 20" color TV, Hitachi, cable-ready, \$300. Tim 864-5483.
- 2 laptop computers: Zenith Z180, two 3 1/2" FD, ext 5 1/4" dr, 4 hr batt, backlit screen, \$1000 or bst; Toshiba 1000, 3 1/2" FD, 4 hr batt, 6.4 lbs, 1.2 MB, \$700 or bst. Lola x3-4068.
- ThunderScan for the MacIntosh, used twice, askg \$50. Pam x3-3123.
- Blizzard V19 Thermo SL high-performance slalom skis, 195 cm, Geze G70 bindings, used only once, poles incl, \$250. Tom x3-1499 or 494-5497.
- M's figure skates, sz 7, new, best offer. D. Wong, dorm x5-8886.
- Lux white rabbit fur jacket, elegant cut, sz M, fur from France, 3 yrs old, nd to sell, moving to Calif, grt bargain, \$49 (orig \$165). Terrie, dorm x5-8692.
- Futon frame only, sharp-looking sturdy sofa easily slides open to full-sz bed, natural wood, \$180 or bst (\$250 orig). Jafar x8-9512 or 876-8108.
- Ski outfit, Head skis, 150 cm, Marker bindings, Duralite poles, \$50 for all. Call 484-0802 bef 9pm.
- Electrolux, Super J model, v gd cond w/attachmts but no pwr nozzle, \$125. Mary, Linc x7712.
- CSD Alpine Tracker 202 ski machine, \$50 or bst; Monark 633 rowing machine, \$50 or bst; Toyota AM/FM car radio, I yr old, \$75; Toshiba humidifier, \$20. Jan Blair, Draper x8-2843.
- Warm M's English-style coat, sz 42, below knee, quilted lining, beige-brown-green check, belted waist, shoulder flaps, like nw, can see on campus, \$55. Rosalie 776-3748.
- 30"x60" office table w/12"x60" shelf, grt for computers or as a workspace, pd \$230, sell for \$115. Call 494-8115.
- 4 Mt Cranmore ski passes, gd anytime incl holiday & wknds, \$75. Call 899-8131.

5" B&W portable TV, \$75 or bst; 2 round trip tkts to Fla, \$300 or bst. Amy, dorm x5-6522.

#### **■ VEHICLES**

- 1976 Chevy Malibu Classic 4-dr, V8, auto, exc mech, v reliable for long trips, askg \$450. Spiros x3-1559 or 876-5411 lv mssg.
- 1980 Volvo DL, 2-dr, 1 ownr, 146K, 5-sp, sunrf, Michln XZXs, many nw parts, runs grt, many extras incl, \$1600. George, Linc x4496 or 508-256-6304.
- 1982 Saab 900S 4-dr sedan, silvr/blue int, many new pts, sunrf, body/int/mech in impeccable shape, 107K, \$2000 or bst. Thule sportrack w/ bike attach, \$200. Meredith x3-1675.
- 1982 Buick Regal S/W loaded, V-6, auto cassette, reblt eng, meticulously main, \$2400 or bst. Call x3-8095 or 603-673-6678.
- 1984 Dodge Colt, 4-dr, nw trs/muff, runs v well, \$1200. Call 621-1211.
- 1984 Plymouth Reliant, 4-dr sdn, 65K, auto, a/c, AM/FM, well maint, gd cond, \$1900 or bst. Ike-uchi 484-2405 eves.
- 1985 Dodge Colt E, htchbk, 4-sp manual, 79K, red, sunrf, AM/FM/Cass, \$1600 or bst; 1978 Honda Civic CVCC 3-dr, 5-sp, 106K, a/c, AM/FM/cass, \$600 firm, Call dorm x5-9712.
- 1985 VW Golf, 107K, 5-sp manual, nw clutch, best offer. Julio 734-5106.
- 1985 Renault Encore, 67K, standard, v gd cond, \$1800. Call 617-241-5182.
- 1986 Dodge Aries Wagon, auto, 25-30 mpg, exc mech, no oil, nw brks/exh/ign/trs, no damage/ rust, v clean, 110K easy miles, \$1950. Dennis, Draper x8-2446.
- 1988 Saab 900S, red w/tan int, 4-dr, 5-sp, sunrf, pw, pd, a/c, htd seats, AM/FM/cass stereo, fold-down r seat, bra & Thule rack incl, 44K, \$11,500. Bob x3-6279.
- 1988 Toyota Celica GT, 2-dr coupe, 26K, Calif car, ice-blue, 5-sp, a/c, stereo cass w/4 spkrs, Viper alarm w/remotes, 4 nw trs & batt, exc cond, \$8000. Call dorm x5-9613.

#### **■** HOUSING

- Arlington: apt for rent in duplex hse, 3B, 1 1/2 bath, www, mod ktchn, d/w, disp, 2-car prkg, walk to Pond, nr T, no pets, \$800. Call 643-9678.
- Arlington: IBR condo on Arl/Med/Som line nr Rtes 16 & 93, a/c, swimming pool, approx 400 s.f., deeded prkg, \$59,950. Eve x3-7182.
- Arlington Hts: spotless rm w/f bath & priv entrance in 1-fam home, on bus stop, glass slider onto deck, trees, no ktchn priv, no pets, pref non-smkr. Call x3-4251 or 646-1876.
- Boston: Bay Village, sunny 1BR apt, wd flrs, frplc, high ceilings, lrg windows, 12-unit bldg w/laundry & rf deck, quiet, nr 2 T lines, \$700 incl ht, hw, gas. Felix x3-8625.
- Cambridge: Hvd Sq 1BR condo, "Dana Castle," hdwd flrs, leaded windows, fplc, low condo fee, prestige bldg, courtyd vw, \$83,800. Richard 876-1760.
- Chester, VT: sm ski/yacation hse avail, quiet, v scenic, easy drive to Magic, Bromley, Stratton & Okemo, \$150/wknd/ \$350/wk. Bob, Linc x2826 or 617-863-1041 eves.
- Everett: modern 5-rm apt, 2BR, ww, new pro windows, renov ktchn, tile bath, w/d hkup, no pets, \$650/mo. Call Mary x3-4727.
- Newton: 2BR 1st fl in 3-fam hse, eat-in-ktchn, laundry, nr shops & bus, \$700 + util. Call 527-8724 aftr 3pm.
- Somerville: 1st flr of 2-fam, 5 rms, brand-nw ktchn & bath, hdwd flrs, 3 decorative marble fplcs, nr public transit, avail 3/1, \$800/mo. Joan x3-4569 bef 3.
- S End: Irg loft for rent, \$395/mo, grt vw of Boston, shared ktchn & bath, key fee required. Call x3-1316 ask for Joan or 267-1472.
- Stoneham: warm charming 2BR Colonial, exc cond, spacious, grt yd, patio, mod ktchn w/ dining area, easy commute to Camb, just reduced, \$149.9K. Allison x3-7327 or 617-279-0047.
- Wakefield: 2 1/2 rm, 1BR, ktchn/LR, mod bath, deck, off-st prkg, close public transp, perf for single, \$495/mo + util. John, Linc x5215 or 581-9253.
- 9-rm hse for rent, 6BR, 2b, newly renov, full bsmt for storage, 5 mins from Davis Sq T, spacious, ideal for students, \$1500/mo + util. Linda x3-0275 or 776-8678.

#### **WANTED**

- \$1500 reward for rent controlled 2BR apt, mod-Camb area, W of Prospect, N of Mass Ave, 2nd fl or higher. Call 864-0239.
- 6.041/6.431 book wanted, Fundamentals of Applied Probability, Drake; also 2.151 text,

#### Entrepreneur

(continued from page 1)

to Zhen-Hong Zhou, a graduate student in electrical engineering, for a laser particle remover for semiconductor wafer cleaning, and \$5,000 was awarded to Mark Hansen, a graduate student at the Sloan School, for software for network optimization. As Mike Shore from the New Venture Association puts it, "the contest is really wide open to all types of business ideas. The major criteria is that they have the potential to become viable businesses."

The Competition has broad support from legal services, consulting, venture capital, and high technology companies, including Sullivan & Worcester; Price Waterhouse; and Burr, Eagan and Deleage. Additionally, guidance and funding has been given by the MIT community, including the Engineering and Sloan Schools, as well as the Technology Licensing Office, Industrial Liaison Program and the Enterprise Forum.

The contest organizers are currently planning a mentorship program to match finalists with successful entrepreneurs. Jon Silver, one of the contest's organizers, says "the bottom line of this contest is new business creation. We are trying to get would-be entrepreneurs to think about how to get their ideas off the drawing boards and into the board room."

The deadline for submission of a 3-5 page executive summary is Tuesday, Feb. 19. Those chosen as finalists must submit a full business plan by April 4. Final awards will be announced at the MIT Enterprise Forum on May 9.

Laurie Dean, Sloan School

Control Sys Des & Intro to S Space Methods, Friedland. Jack x3-5332 or 868-2087.

#### **■ ROOMMATES**

- Arlington, E: housemate wanted, 2 floors, spacious sunny BR, TV & DR, study, ktchn, more, free prkg, nr all needs, off Mass Ave, no dep, no lease, \$333/mo. Call Gerald 646-7259.
- Arlington, E: M to shr spacious sunny 2BR on 1st fl of 2-fam w/1M, mostly furn, nice yd w/ garden, quiet st, prkg, walk to Alewife T, \$375 + util. Call 643-1511.
- Belmont: 2M sk 2M/F non-smkg hsmts to fill duplex 4 mi from MIT, 1 block from #73 bus to Hvd Sq, share LR, DR, lrg ktchn, 2b, \$245/ 250 + util. Joe 484-6204.
- Cambridge: Inman Sq, grad student wanted to shr 3BR apt, \$350/mo incl all utils. Marta 547-7190.
- Newton: non-smkr wanted to shr 3BR lux townhse w/MIT grad student, furn rm, 5-min walk to T, laundry, priv prkg. Call 783-8024.
- Somerville: non-smkr wanted to shr 2BR apt, furn rm, close to T, Harv Sq, shops, avail early Mar, \$350 incl util. Call x3-3458 or 776-7655.
- Watertown: to shr w/prof F, nonsmkr, 2 1/2 BR, 1b, v sunny, hdwd ffrs, prkg, T, \$412.50+. Call Lee x3-3835 or Kathleen 926-4954.
- Woburn: 1 rmmt wanted to shr house w/1F, lrg BR, nice nbrhd, avail immed, 15 min to MIT, on T. \$450 + util. Call x3-0998 or 933-2869.

#### **■ MISCELLANEOUS**

Typing: resumés, business proposals, term papers, we'll get it done by any deadline, \$2/pg. Kris, Gina, Linc x7924.

#### SURPLUS PROPERTY

The Property Office has this excess MIT equipment for transfer within the Institute. Unless noted, items are at the Equipment Exchange, 224 Albany St, x3-5611. open Tues & Thurs 11 am-3pm. After 30 days, items are sold to individuals. The Institute reserves the right to reject any or all bids.

Transfer of Funds Required:

- Case 2957: IBM PC monitors, drives & parallel mono cards. For technical information call Anna Berkley x3-3006.
- Case 2974: 6 DEC Microvax II, 3 DEC VS2300 computer systems. Information, Bob Donahue x3-2098.
- Case 2975: DEC Micro Vax, model 0VXII w/ VR20 19" color monitor & hd disk. Information, Bob Donahue x3-2098.

Please note: Questions about disposal or acquisition of excess property, call Earl Fuller x3-2779. Please have MIT bar code and/or disposal case number available when you call.

## Memorial Service Planned For Professor S.E. Luria

Institute Professor Emeritus Salvador E. Luria, a pioneer in molecular biology who shared the 1969 Nobel Prize for medicine or physiology, died February 6 at his home in Lexington, at the age of 78, after suffering a heart attack.

Funeral arrangements were private. A memorial service will be held at MIT at a date to be announced.

Professor Luria, a physician and scientist, was internationally known for his research in the fields of virology and genetics. He was the first to discover the phenomenon of virus host restriction in bacteria and this work led to the discovery of "restriction" enzymes which formed the basis of modern recombinant DNA technology.

In 1969 he shared the Nobel Prize with Dr. Max Delbruck of the California Institute of Technology and Dr. Alfred D. Hershey of the Carnegie Institute of Washington.

Their basic research on viruses is regarded as being primarily responsible for modern advances in the control of viral diseases and for advances in molecular biology.

Dr. Luria and Dr. Delbruck also received the Louisa Gross Horwitz Prize in 1969 for their work on genetics of bacteria and bacteriophage, which led to the birth of what became known as "the phage group," phage being the shortened form of bacteriophage, the type of virus the research involved. The phage group formed the core of what later became molecular biology in the United States.

Professor Luria was a member of the MIT faculty in the Department of Biology from 1959 until his death. When he joined MIT he organized a new teaching and research program in the field of microbiology and later founded the MIT Center for Cancer Research, which he directed from 1972-1985

In 1970, in recognition of his important contributions to his field, to society and to MIT, he was named Institute Professor, an honor MIT bestows on very few of its faculty.

Professor Luria was a visible and vocal member of the peace movement and was identified with efforts to keep science humanistic. For example, in 1985, at the 21st Nobel Conference at Gustavus Adolphus College in Minnesota, he said that scientists who "exile themselves from the arena of social struggles" are failing the societies in which they work. Scientists who shirk their responsibilities to society, he said, stand "somewhere between that of philosophers and poets on the one hand, and that of handgun

manufacturers on the other hand."

A Time Magazine profile published in 1985 described Professor Luria this way: "Born in 1912 into a distinguished 500-year-old family of Northern Italian Jews, he determined to exercise vigorously the intellectual freedom of his new (1947) American citizenship. After fleeing fascism in Italy in 1938, he left Paris for the US two years later and applied his genius for molecular biology to the genetics of bacteria."

Professor Luria told Time Magazine for that article: "I made up my mind that as a citizen I would be an active participant in American politics, taking advantage of the democratic opportunities that were not available to me in Italy. What scientific achievement I have reached is due to the freedom provided in this wealthy country to all aspects of intellectual enterprise."

He urged his students to form a strong world view and for some time taught a course in world literature to graduate students at MIT and to medical students at Harvard Medical School to insure their involvement in matters outside science. He was deeply interested in the arts and one of his hobbies was sculpting. He took sculpting les-



Institute Professor Salvador Luria

sons in Paris in 1963 while on a fellowship and preferred to work in the abstract school.

In 1974 he won the National Book Award in the Sciences for his first nonacademic book, *Life: The Unfinished Experiment*, which was translated into German, French, Italian, Spanish and Japanese.

Professor Luria was born in Turin, Italy, August 13, 1912. He received the MD degree summa cum laude, from the University of Turin in 1935. He went on to become a specialist in radiology at the University of Rome. When the political situation in Italy worsened, Dr. Luria went to Paris in 1938 to become a research fellow at the Institut du Radium.

Immigrating to the US in 1940, Dr. Luria continued to do research at Columbia University until 1942. A Guggenheim Fellowship then made it possible for him to work at Vanderbilt and Princeton Universities.

From 1943 to 1959, Professor Luria taught at Indiana University. One of his graduate students there was James D. Watson, who shared the Nobel Prize in 1962 for the discovery of the structure of DNA. In 1950 Professor Luria lectured in biophysics at the University of Colorado and was a Jessup Lecturer in zoology at Columbia University. In that year he joined the faculty of the University of Illinois as professor of bacteriology. In 1959, he was Nieuwland Lecturer in biology at Notre Dame University.

At the time of his death he was senior scientist at Repligen Corp., a biotechnology firm in Cambridge, a position he had held since 1984.

Dr. Luria was a member of the National Academy of Sciences, the American Academy of Arts and Sciences, the American Philosophical Society, the American Academy of Microbiology, the American Society for Microbiology (vice president, 1966-67, president, 1967-68), the American Society of Biological Chemists, the Society for General Microbiology, the Genetics Society, the American Naturalists, and the Society for the Study of Development and Growth.

He received honorary doctor of science degrees from the University of Chicago (1969), Indiana University (1970), Rutgers University (1970), Providence College (1972), Brown University (1973) and the University of Palermo (1973).

Surviving are his wife, Zella (Hurwitz) Luria, a professor of psychology at Tufts University, Medford, Mass., and a son, Daniel, an economist.

Contributions in Dr. Luria's memory may be made to one of the following: American Friends Service Committee, Peace Education Division, 2161 Massachusetts Ave., Cambridge, Mass. 02140; Resource Center for Non-Violence, 515 Broadway, Santa Cruz, Calif. 95060; Children's Defense Fund, 122 C St., NW, Suite 400, Washington, DC 20001.



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#### 3 NEW SHOWS

# List Visual Arts Center Reopens

Three new exhibitions open with a public preview and reception, Friday, Feb. 22 from 5-7pm, at the List Visual Arts Center on the entry floor of the Wiesner Building (E15). Artist Barbara Broughel will attend.

The Sculpture of Juan Francisco Elso Padilla. The first US showing of work by a Cuban sculptor who died of leukemia in 1977 at the age of 32. Elso was a part of the Cuban Renaissance of the late 1970s. His art embodied a highly personal blend of secularism, mysticism, magic and ethics seeking to identify and embody a Latin American mythology.

Robert Arneson's Jackson Pollock Series. In 1982, Arneson began exploring the life, death, art and myth of

the abstract expressionist painter Jackson Pollock. This exhibition contains works in both disarmingly small and disconcertingly large scale. The portraits of Pollock range from facial masks to full heads to a sculpture bust atop a high pedestal, a type derived from ancient Rome but pushed here to colorful and expressive extremes. Several works document the painter's death in unsentimental reenactments of the car crash that also claimed the life of a young and reluctant passenger.

> As critic Donald Kuspit has written, "Arneson's identification

with Pollock recovers the sense of Pollock as victim, as disturbed, even deeply pathological—which is the only way to be 'authentic' in the modern world.'

Born to Raise Hell, 1987, pictured above.



Harvest Chair, 1991

Barbara Broughel's Storytelling Chairs. This ensemble of eight richly doctored and decorated early American chairs by the New York-based sculptor creates an environment for reflecting on the little-appreciated extent to which colonial American culture was indebted to Indian example and precedent, and on the devious and deceitful conquest of Native-American lands by the European "settlers."

In his essay for the exhibition's accompanying catalogue, critic Edward Ball likens Storytelling Chairs to a "kind of remedial history." Incorporating, among other things, arrows, harvested vegetables, gunstocks, tools, Native American symbols, and embroidery, these chairs function like found artifacts, deftly inserting poignant references to the sophisticated culture of the Iroquois or Haudenosaunee people.

A Gallery Talk by Barbara Broughel occurs at 3pm, Saturday, Feb. 23.

These exhibitions will be in place until April 14, 1991. Weekdays 12-6, Weekends 1-5. 253-4680.

#### LIVE INSTRUMENTS/INTERACTIVE COMPUTERS

# Collage Performs Music from the Media Lab at Symphony Hall



Tod Machover

**Photo by Donna Coveney** 

S ome of the newest and most groundbreaking music to come out of the Media Lab is performed by Collage, conducted by David Hoose and Tod Machover, associate professor of the MIT Media Lab, above, on February 24 at Symphony Hall at 8pm.

"Collage at Symphony Hall" gives an exciting glimpse into the future of music.

Featured on this program will be music that is diverse both in its expressive content, and in its visionary use of technology. The program includes a piece for large ensemble and computer-generated tape by Associate Professor Peter Child of MIT Music and Theater Arts. Collage will also perform a piece for solo piano which is "listened to" by an intelligent computer, which in turn "improvises" its own musical response to the live pianist, composed by Media Lab PhD candidate Robert Rowe.

Also performed will be From Silence, a work for soprano, six instruments, and live computer interaction, commissioned in 1989 by the Media Lab from British composer Jonathan Harvey.

Closing the program will be two works by Tod Machover: Flora, featuring the cosmic images of Japanese computergraphics master Yoichiro Kawaguchi; and Towards the Center, co-commissioned by Collage. This piece which combines the energy and exuberance of rock music with the most disciplined classicism, is scored for six instruments and two computer "hyperinstruments" developed at the Media Lab. The computers follow every nuance of live instrumental gesture, expanding the playing into a vast and intricate kaleidoscope of sound.

The Boston Phoenix wrote of the recently released recording of Towards the Center: "(It) starts by showing the rhythmic connection between minimalism and rock, then takes them both to some unearthly oasis neither has ever been to before... Beautiful and compelling."

Tickets are \$10, available at the Symphony Hall box office or SymphonyCharge: 266-1200

#### **Off Campus**

Stacia Conklin, senior office assistant for the Office of the Dean for Undergraduate Education will perform "AFrench Valentine," music by Ravel, Debussy, Chausson and Piaf, with pianist Eric Kamen at the French Library, 53 Marlborough St., Boston, Sunday, Feb. 17 at 4pm. \$6 at the door.

#### **BLACK HISTORY MONTH OBSERVED AT MIT**

# A Sampling of MIT Minority Community Presentations

South African Author Speaks: Mark Mathabane lectures on "From Apartheid,

South Africa, to Kaffir Boy in America, an Overview," today (February 13) at 7:30pm in Kresge Auditorium. A voluntary \$1 donation goes to the Fund for a Free South Africa. His autobiography, Kaffir Boy: The True Story of a Black Youth's Coming of Age in Apartheid South Africa won the Christopher Award for achieving highest honors in

> Sweden and the Commonwealth nations. Born of illiterate parents who could not afford to pay the rent for their shack or put food on their table, Mathabane spent his first 18 years in Alexandra, a one-squaremile ghetto outside of Johannesburg. In Kaffir Boy, he describes a childhood of devastating poverty, terrifying and brutal police raids, and relentless humiliation that

drove him to attempt suicide at the age of ten.

France, Germany, Norway, Denmark,

His latest book, Kaffir Boy in America chronicles his ten-year odyssey in America and also compares the American black experience with the South African black experience.

Ivan Dixon Tribute: Actor/director Ivan Dixon is honored with showings of two of his films, February 14-15. Nothing But a Man (photo below) will be shown on February 14 at 7pm in the Black Student Union (BSU) Lounge (50-105). And, on February 15, Ivan Dixon makes a guest appearance at a screening of The Spook Who Sat by the Door at 7pm in Killian Hall (14W-111).



Abbey Lincoln and Ivan Dixon in a scene from Nothing But a Man

Other upcoming BSU films include Tongues Untied, a look at the lifestyle of black gay males and the issues they confront, shown on Friday, Feb. 22 at 7pm in the BSU Lounge. This film is co-sponsored by GAMIT (Gays at MIT), which will lead a follow-up discussion. The film series is funded by a grant from the Council for the Arts at MIT.

Theatrical Presentation: Students portray outstanding figures from African and Afro-American history as "exhibits" in The African American Living Museum, presented on Wednesday, Feb. 27 in the BSU Lounge.

For information contact Ayida Mthembu, 253-4861.



"To Hell with English" (above) one of four comical vignettes in Bakayarol ("I'm Plenty Mad"), shows a young executive's desperation trying to master English in preparation for running his company's Chicago office. The MIT Japan Program and the Japanese Language Program film focuses on the difficulty of maintaining the traditional Japanese facade of polite impassiveness in the face of extreme provocation. Monday, Feb. 25 at 7:30pm in Rm 10-250. \$2 donation.

# Love Poems by MIT Poets for Saint Valentine's Day

#### Dry Winter

Gone just now, you leave behind an irreducible space, like the rush again of domestic air out into the cold at the back door's opening this morning.

The air is brittle as glaze. Even inside any surface crazes, catching the light like the sign of some creature's passing. I can find you when you're not here, in the arc of the curtain as the heat comes up, something I catch, nearly, sight of as you say your belly catches your eye unexpectedly as you dress.

I carry you with me almost as you do the child, and will when it's born and growing and moved on for good, leaving us perhaps indifferent as primitives again to any number greater than two.

This occupation I never intended, this sense of you in-grown, indelible as stain, trailing always your sum of names like an old spirit of drought or harvest, called a little differently by hour or country or season: lover, familiar, healer, passer of thresholds.

John Hildebidle

#### Vegetable Love

The eggplant hides shyly its drooping purple globes, shiny, discrete, among the dense, stiff leaves.

The virginal tomato shocks easily, its best started under glass. When green and hard, old, ornamental love-apple, it blushes, and softens red.

The squash lies among the eggplant, heavy and narrow-waisted, dreaming how it sprouted from the blossom's throat.

Showy, yellow, velvet head dangling on its spindly stalk, the fragile nasturtium climbs the tomatoes. The marigold, blunt and brilliant, traps the beetle in its orange heart,

while the small, exuberant parsley stretches its curly fronds in all directions, hides nothing, digs its roots in, and like the ancient, self-sufficient fern, prepares to winter over.

Naomi Feigelson Chase, from Listening for Water, Archival Press, 1980

#### XVI

I love the handful of the earth you are. Because of its meadows, vast as a planet, I have no other star. You are my model of the multiplying universe.

Your wide eyes are the only light I know from extinguished constellations; your skin throbs like the streak of a meteor through rain.

Your hips were that much of the moon for me, your deep mouth and its delights, that much sun; your heart, fiery with its long red rays,

was that much ardent light, like honey in the shade.

And so I pass across your burning form, kissing you—compact and planetary, my dove, my globe.

Pablo Neruda, from 100 Love Sonnets, University of Texas Press, 1986, translated by Stephen J. Tapscott



# Students Have Busy HS Program

(continued from page 1)

that intuitive feel for nuclear science via talks and demonstrations that start with the structure of the atom and conclude with state-of-the-art applications of nuclear phenomena.

Their vehicle is the High School Speakers Program, organized by the MIT student chapter of the American Nuclear Society. The program, staffed by volunteers, has been around for 15 years but has been especially active over the last four. This year Mr. Hechanova sent out speaker request forms to 311 high schools around New England; 24 said they'd like the MIT students to visit their school and talk to their students about nuclear technology and its relevance in our world.

Actually, HSSP speakers don't just talk to students; they give demonstrations, show colored overheads, and ask lots of questions of the class. "We try our best not to lecture to them, but to bring them out," Mr. Hechanova said.

Teachers interested in the program can choose from more than a half dozen topics on the speaker request form. That's because "nuclear engineering is a very, very broad field," Mr. Hechanova said. Topics include nuclear technology in the space program, nuclear fusion research, energy and environmental issues, and nuclear fission power plants.

The most popular topic, Mr. Hechanova said, is medical applications of nuclear technology, which includes a discussion on medical imaging. That technology can create 3-D images of the living human brain and other organs (a few curious nuclear engineering students have used it on their own brains).

Often HSSP speakers give several talks a day on different topics. As Mr. Hechanova explained: "Since two students are available for the day, if one teacher responds to us, we ask why don't you talk with the other teachers and see if they'd like us to talk to their classes on the same day?" So HSSP speakers might give a talk on medical applications for an AP biology class, then switch to fusion research for a general chemistry class. "Recently Bill Holloway [president of the MIT student chapter of the ANS] and I gave five talks total, and there was one student who went to three of them," Mr. Hechanova said.

One important goal of the program, said Mr. Hechanova, is to educate young people about nuclear science so they won't grow up fearing the technology as many adults do. "Among high-school students there's a great openness for understanding this technology," Mr. Hechanova said. "For older generations, though, radiation can be something that's scary, ominous. For some

people just mentioning the word nuclear throws them into a tizzy, and yet they themselves are naturally radioactive."

To help prevent such fears, "one thing we want to teach the kids is that radiation is very well understood," Mr. Hechanova said. "We can measure it, and we know exactly what nuclei are going to do."

Education is important, say Mr. Hechanova and Mr. Martin, because today's high-school students will have to make tomorrow's decisions on nuclear technology, especially as they concern nuclear power. "These issues are going to come back," Mr. Hechanova said.

The program will reach about 2,500 high-school students this school year. So far, feedback has been positive, as the following excerpts from letters written by students show:

"I learned a lot from the guest speaker. A majority of the things he talked about I didn't have a clue about. This influenced me to go out and find out more about nuclear reactions."

And from another: "I would like to thank you for your presentation on nuclear science. Even though I don't like science, and I am not interested in any of its fields, I really enjoyed the presentation because it gave me more knowledge about some advances of technology."

#### QUARTERLY JOURNAL

# SMR Winter Issue Is Out

The Winter 1991 issue of the Sloan Management Review, the Sloan School's quarterly journal, leads off with an article by Edward Roberts, David Sarnoff Professor of Management of Technology.

The article, "High Stakes for High-Tech Entrepreneurs: Understanding Venture Capital Decision Making, explores how venture capitalists decide what to spend their money onand what entrepreneurs can do about it. Dr. Roberts has looked at the hightech entrepreneurial community that has grown up around MIT from all angles-as a researcher, an entrepreneur, and a venture capital decision maker. He reports on that world in his forthcoming book, Entrepreneurs in High Technology: Lessons from MIT and Beyond (Oxford University Press, 1991), from which this article is adapted

The issue also includes the article "The Check's Not in the Mail: Strategies for Electronic Integration in Tax

Return Filing," co-authored by N. Venkatraman, Richard S. Leghorn Career Development Associate Professor at the Sloan School, and doctoral student Ajit Kambil. This year we can file our tax returns electronically; the authors trace the fascinating ripple effects created by this apparently straightforward development.

Karen Katz, Blaire Larson, and Richard Larson studied customer satisfaction when a bank introduced electronic newsboards and clocks that estimated the length of the wait in line. Their article, "Prescription for the Waiting-in-Line Blues: Entertain, Enlighten, and Engage," grew out of a Sloan master's thesis Ms. Katz and Ms. Larson wrote under the supervision of Dr. Larson, Professor of Electrical Engineering and Computer Science.

Readers interested in copies of these articles, or in copies of the Review, should call Alexandra Burke at x3-7170. Sarah Cliffe, Sloan School

#### **New Tennis Products Tested Here**

(continued from page 1) sion," and "nodes" of high frequency vibration in the racquet.

A number of Dr. Ramnath's tests are carried out with simple balancing apparatus, or jigs that measure the deflection of a racquet when it is bent by various hanging weights. He and his colleagues learned "a lot of counterintuitive things" about racquets, he noted, when they used some of the late Doc Edgerton's high-speed photography equipment.

For example, the frame of a racquet continues to deform *after* the ball loses contact. They also found that a tennis ball typically has about five-thousandth's of a second "dwell time" when it is in contact with a racquet.

The Wilson Corporation now uses an expensive, fully automated ballfiring testing machine, Dr. Ramnath noted, that checks the dynamical properties of its racquets. Wilson relies on concepts that have been uncovered in the MIT research.

Recently, Dr. Ramnath was asked to test a Soviet tennis racket, which is now being produced by a former USSR aerospace agency in an effort to re-tool for the Western consumer market. "The

racquet is not bad," says Dr. Ramnath, "but it has to be much better to appeal to the sophisticated American taste."

On Dr. Ramnath's recommendation, a vintage tennis racquet with steel strings is being donated to the MIT Museum by Mrs. and Mr. Bissell Alderman (MIT '35), the daughter and son-in-law of Karl T. Compton, MIT's tenth president.

The shape and feel of racquets are changing; some are beginning to resemble overgrown ping-pong paddles, it would seem. In general, the string area of racquets is climbing—from ones with less than 90 square inches to "super-oversize" paddles with more than 120 square inches. More mass is also being put into racquet rims to boost their "moments of inertia."

The MIT work has serious implications for sports medicine. Proper tuning of a racquet—damping certain vibrations—might help to forestall the painful "tennis elbow" syndrome, says Dr. Ramnath. In general, the public's responsiveness to his torrent of tennis racquet numbers and technical commentary pleases him. "For a scientist, that is very gratifying." It's not just some kind of racket.



NUCLEAR OUTREACH—Jerry Martin, a graduate student in nuclear engineering, uses a Geiger counter to show a chemistry class at Quincy High School that even common household goods—like this plate of Fiesta-ware—can be radioactive. Mr. Martin's talk was organized through the High School Speakers Program of the MIT student chapter of the American Nuclear Society. Christine Martin, another member of the HSSP, stands at center. (Jerry and Christine are married.) Photo by Donna Coveney