November 14, 1984 Volume 29, Number 15



Fair schedule

The Office Automation Fair, organized by the Working Group on Support Staff Issues will begin at 10am today (Wednesday, Nov. 14) in the Sala de Puerto Rico. Fair hours are 10am-3pm today and Thursday. A number of special events have been planned in conjunction with the fair. The schedule is:

Wednesday, Nov. 14, noon-Professor James D. Bruce, director of Information Systems, will speak on "Office Automation: MIT's Present and Future," in

Kresge Auditorium.
Thursday, Nov. 15, noon—Christine
Bullen, assistant director of the Center for Information Systems Research, will discuss "The Challenge of New Office

Technology," in Kresge Auditorium.
Thursday, Nov. 15, 1:15pm—Panel
Disussion, "Office Automation: On-Line
Issues at MIT," with panelists Cecelia D'Oliveira, Project Athena; Ann Finn, Laboratory for Computer Science; Jeffrey Meldman, Sloan School of Management: Linda Suter, Department of Nuclear Engineering, and Susan Warshauer, Personnel Office, as moderator, in the Student Center Mezzanine Lounge.

Thursday, Nov. 15, 2:45pm-Announcement of door prize winners in the Sala de Puerto Rico.

No Tech Talk

Tech Talk will not be published November 21 because of Thanksgiving vacation. Publication will resume Wednesday, Nov. 28. The deadline for inclusion of listings in that issue will be noon Friday, Nov. 23.

Management talk

"Managing toward Excellence" will be the topic of the next Perspectives talk. It will be given by Professor David G. Anderson of the Sloan School on Tuesday, Nov. 27, at noon in Rm 9-150.

For several years Professor Anderson was associated with McKinsey & Co., a major consulting firm, where he managed a research project on industrial innovation which became known as McKinsey's "Excellent Companies" study and became the basis of the best-selling book, In Search of Excellence, written by two of his colleagues. In his Perspectives talk, Dr. Anderson will describe subsequent research on how mediocre or poor companies can be turned into top performers in their industries.

Perspectives talks are open to all members of the community and are sponsored jointly by the Office of the Provost, the Sloan School of Management and the Personnel Office.

Skating classes

The Department of Athletics again will offer a series of eight Saturday morning skating lessons for children (ages 6 to 14) of members of the MIT community. The lessons begin December 8, running for three consecutive Saturdays, with a Thursday lesson on December 27. Saturday lessons resume January 5 for another three weeks. Beginners will meet at 10am; advanced skaters at 11am.

Skates must be single blade hockey or figure skates. Parents are urged to make sure that skates are properly fitted to the child. Hockey helmets are encouraged for beginning skaters.

Classes will be limited to 30 children. A current athletic card is required and there is a \$20 fee for the lessons. Registration forms must be filed at the du Pont Equipment Desk (W32-004) by Wednesday, November 28.

MIT Press posts surplus and looks to future

By CHARLES H. BALL Staff Writer

Frank Urbanowski sat in his third-floor office in the MIT Press building on Carleton Street, facing a floor-to-ceiling bookcase crammed with Press-published volumes in their colorful jackets.

Looking at the wall of books seemed to lift his spirits. So did last year's financial

The MIT Press, one of the nation's largest university presses, is running in the black once again.

"We had some very good years back to back in the late seventies," he said, "and in '79 and '80 we produced surpluses. It seemed reasonable at the time to expand our operation and to launch some new projects.

Then some problems arose, largely triggered by "perturbations in the economy, inflation, higher interest rates and the weakness of the pound and the yen. We met our targets in fiscal '81," Urbanowski recalled, "but as fiscal'82 began to unfold

we became less optimistic about our expectation for the coming year. We did some reforecasting, but many of our major ex-

pense commitments were in place."
"What happened to us," Urbanowski said, "was a reflection of what was happening to the economy. The recession hurt all aspects of the publishing world and affected MIT as well." Even before the end of fiscal 1982, Urbanowski said, "we began to make significant cuts to consolidate our operations in our areas of strength and to focus our resources."

This coincided with the planned threeyear reduction in staff at the Institute as a whole. "While our problems were not directly related," Urbanowski said, "the same factors influencing the Institute's decisions influenced ours. The only difference was we felt the need to make a turnaround in short order rather than the three-year schedule the Institute had. Since we rely on sales to support our operation rather than Institute funding, the Press

could not afford another year of serious deficits-which, incidentally, are not funded but are retained on our balance sheet to

be cleared by future earnings."
"Fiscal '83 and '84 were good years," he said, "and the credit for it goes to the MIT Press staff. Last year, fiscal 1984, the Press produced a modest surplus of \$50,000, and expects to continue to produce surpluses. The staff turned the Press's operation around in two years," Urbanowski said, "while publishing the best and biggest list in a decade. A remarkable group of

Summing up the turnaround, Urbanow-ski said: "We set out to accomplish a difficult task in the summer of 1982 and we believe we have stabilized our operation at a new level. Our list is growing and improved in depth and in sales. For the current fiscal year we are expecting total sales of approximately \$8.4 million which is made up of \$5.6 million for books and

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Fowler to give Feshbach Lectures on nuclear processes in physics

Staff Writer

Dr. Willam A. Fowler, Institute Professor Emeritus at the California Institute of Technology and corecipient of the 1983 Nobel Prize

in Physics for his work on the origin of the elements that make up the universe, will present the first Herman Feshbach Lectures in Physics during the first full week of December.

Professor Fowler's first lecture will be at 4pm Monday, Dec. 3, in Huntington Hall (Rm 10-250) and will deal with 50 years of experimental and theoretical work at Caltech and elsewhere on the nuclear processes which generate energy in the sun and in the other stars and which have brought about the synthesis of the chemical elements that make up the universe. Dr. Fowler has described these as "years of great excitement" in the development of nuclear astrophysics-the designation he gives for the application of nuclear physics to astronomy. Moreover, Professor Fowler says, excitement remains in the field since several key basic problems have not yet been resolved.

The second lecture in Professor Fowler's Feshbach series will be at 4pm Wednesday, Dec. 5, in Huntington Hall and will deal with the age of the universe and the use of radioactive elements as nuclear chronometers. While earlier work using the red shift and luminosity observations have placed the age of the universe-in others words, the time of the original "big bang" that brought the universe into being-as anywhere from 10 to 20 billion years ago, more recent nuclear studies analyzing elements have narrowed

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Nobel laureate William A. Fowler

Astronaut Bonnie J. Dunbar Astronaut to discuss materials tests in space flights

Astronaut Bonnie J. Dunbar, a materials scientist scheduled to go into space as a mission specialist aboard the National Aeronautics and Space Administration's Space Shuttle flight in October of next year, will present a lecture Monday, Nov. 26, on the processing of materials in space.

Dr. Dunbar's lecture will begin at 4pm in Huntington Hall (Rm 10-250) and is being sponsored by the Department of Materials

Science and Engineering Professor Merton C. Flemings, head of the Department, said the lecture will have particular interest for MIT faculty, graduate students and undergraduate students. Research sponsored by NASA and aggregating more than \$1 million a year is presently underway in the Department and several of the experiments that Dr. Dunbar and others are scheduled to conduct in space are being designed in the Department.

"In reviewing the field of materials processing in the environment of space, Dr. Dunbar will touch on many of the projects underway here," Professor Flemings said.

Dr. Dunbar received the SB degree in 1971 in ceramic engineering from the University of Washington and spent two years with Boeing Computer Services before returning to UW for graduate studies, receiving the SM degree there in 1975. Her thesis research dealt with mechanisms and kinetics of ionic diffusion in sodium beta-alumina.

In 1975, Dr. Dunbar was a visiting scientist at Harwell Laboratories, Oxford, England, where she worked on wetting behavior of liquids on solid substrates. Following that, she joined Rockwell International's Space Division where she worked on NASA Space

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Travel Committee announces hotel, car rental discounts

The MIT ad hoc Travel Committee has recently completed negotiations with two major car rental firms and more than a dozen local hotels to provide discounts to members of the community.

Avis and Hertz, with whom MIT has had discount agreements for many years, have posted their rates for 1984-85. The Avis rates are \$31-34/day; the Hertz rates are \$31.50-\$35.50/day, both depending on the size of the car rented. The rates apply nationwide to cars rented and returned to the same location. When the two companies offer lower promotional rates, those rates will apply. The rates are \$3/day higher in the New York area and not available on weekends and holidays.

A sticker from the MIT Travel Office may be affixed to any credit card and will guarantee the discount and assure that the car rental is (continued on page 7)

horal Society to sing 'Messiah

A record-breaking 170 voices from the MIT Choral Society, conducted by John Oliver, will perform an uncut version of Handel's Messiah, on Friday, Nov. 30, at 8pm in Sacred Heart Church at the corner of Sixth and Otis Streets in East Cambridge.

Tickets are \$7 general admission and \$3 for MIT/Wellesley College students. Information:

Mr. Oliver, a senior lecturer in music at MIT, said he decided to present the complete Messiah as a celebration of the tercentenary of the composer's birth.

He explained that the oratorio was written as a drama around a religious theme rather than as sacred music. It is concerned not only with the birth of Christ but also with his death and resurrection and the redemption of mankind, Mr. Oliver said.

There will be four professional soloists and a 29-piece professional orchestra assembled by concertmaster Maynard Goldman, who also serves as concertmaster for the Opera Company of Boston and the Boston Ballet.

Soloists will be: baritone James Kleyla, a soloist with the Boston Symphony Orchestra at Tanglewood last summer; mezzo-soprano Gloria Raymond who recently made her operatic debut with the Boston Lyric Opera Company; and tenor Mark Fularz and soprano Martha Elliott, both soloists with the John Oliver Chorale.

INSTITUTE **NOTICES**

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

***--Open to members only

Announcements

Project STEP Seeks Info - AICUM (Association of Independent Colleges and Universities of Massachusetts) is attempting to document the activities of its member colleges with public school systems. If, as a member of the MIT Community, you are working with the Boston or Cambridge Pub-lic Schools, please call x3-7063. It matters not to AICUM whether the nature of the work or pro bono, contract or funded by an external agency. Alan Dyson, Director, STEP.

Class of '87 Open Class Council Meeting *** - Sun, Nov 18, 4pm, Student Center Rm 407. All sophomores welcome and encouraged to attend.

Talbot House Available - The first three weekends in December are still available and are now being booked on a first come first serve basis. Any MIT group 15 to 27 in number may apply to use the house. Talbot House is a guest house located in South Pomfret, VT (near Woodstock) and is ideal for informal gatherings in a country setting. For more information, contact Renee Caso or Peter Brown, x3-4158.

Career Planning and Placement Company Recruitment Presentations** – Texas Instruments/Advanced Systems Division, Wed, Nov 14, 7.9pm, Rm 4-153. Narional Systems Division, Wed, Nov 14, 7-9pm, Rm 4-153.

Morgan Stanley & Company, Wed, Nov 14, 7-9pm, Rm 4-153.

Peace Corps, Wed, Nov 14, 7-9pm, Rm 4-159.

National Semiconductor, Wed, Nov 14, 7-8:30pm, Rm 4-169.

Schlumberger International, Wed, Nov 14, 8-10pm, Attucks Room-Hyatt Regency Hotel, Cambridge. Bank of Boston, Thurs, Nov 15, 6-8pm, Rm 4-153. Dept of the Army, Aeromechanics Laboratory, Thurs, Nov 15, 7-8pm, Rm 32:206. Kulikle & Soffa Industries, Inc. Thurs. Spm, Rm 33-206. Kulicke & Soffa Industries, Inc, Thurs, Nov 15, 7-9pm, Rm 4-159. Vitesse Electronics, Wed, Nov 28, 7-9pm, Rm 4-149.

CPR Training Courses* - Accredited by American Red Cross, Alpha Phi Omega sponsored courses (two 4-hour sessions), 12/1-12/2, Student Center, Center Lounge. Course fee \$4; to enroll, call x-3-3788.

Tech Community Women Winter Crafts Faire Applications** – now being accepted for Faire held Dec 11-12. Call Shelley Weinstein, 489-2805 after 7pm, before Nov

International Students - The Boston Chamber of Com merce has agreed to send to the various US chambers of commerce throughout the world the resumes of foreign stu-dents from member schools interested in returning home to work. Please submit these resumes by Fri, November 16 to Mr. Jonathan Plamer, The Fletcher School, Tufts University, Medford, MA 02155

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

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

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

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

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

Club Notes

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

MIT Student Cable Programming Group** — Looking for students interested in programming the MIT Cable Tele-vision channels. Contact Randy Winchester, x3-7431.

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

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

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

MIT Rugby Football Club** - Men: practice T/Th, 5-7pm, Field 8. Contact Mike Murphy, x3-8118 or Rich Selesnick, x3-2401. Women: practice M/Th, 5-7pm, Field 8. Contact Caroline Richardson, x3-3191. No experience necessary.

MIT Go Club* - Players of all strengths, boards & stones provided, M & Th, 5-8pm, 3rd floor playroom in NE43, Tech Sq. For more info contact Michael Greenwald, x3-6061, or Steve Berlin, x3-6018.

MIT Table Tennis Club** - meets Sats and Suns, 6pm T-Club Lounge. For info call Kenny, x3-8771 dorm or David 492-4317.

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

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

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

MIT No-Frills Theater Improvisation Workshops** — Sundays, 3:30-5pm, Rm 14E-304. Beginners welcome, as well as more experienced actors.

MIT Outing Club* - Camping, cycling, climbing, canoeing, cabins: meets M/Th, 5-6pm, Student Center Rm 461.

Expedition Style Canoe Trip or What the Outing Club is All About - MITOC Staff, Nov 5, 5:15pm. Slides & food. Also, see our bulletin board in "Infinite Corridor" next to

MIT Nautical Association** — Memorial Dr. opposite Walker Memorial, x3-4884. We are open 7 days/wk, 9amsunset. Come enjoy your final fall Sails! Last day to sail is Nov 15. For info, call x3-4884.

MIT Offshore Sailing Association** — Speed Potential of 12-Meter Yachts with Winged Keels — Prof Jerome Milgram, Initial meeting, Nov 15, 7pm, Rm E38-302. Discussion follows. Refreshments served at 5:30pm; light dinner at 6:15pm. Fee: \$7.50. Contact Norm Doelling or Kathy Doyle, x3-7042/7131 if planning to attend.

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

How Buddhism Works for World Peace* — MIT Nichiren Shoshu Buddhist Study Group, Fri, Nov 16, 7pm, Rm 4-145.

Women's Ice Hockey Club** - Practices: M/T/Th eves. Club is open to all women of the MIT Community. Beginners welcome. For more info, call Sparky x3-3887.

MIT Women's Water Polo Club** — Women' students, faculty, staff & others: Club practices M & F5-7pm; T & Th/3-5pm, MIT Alumni pool. All levels of experience are welcome — try it, you'll like it! For more info, call Amy, 628-0821 or George, x5-9321 dorm, or just show up at a practice.

MIT Women's Soccer Club** - Play women's soccer. Beginners and all levels of experience welcome. Practice three times a week - work out all your aggressions, have fun, make friends and get exercise. For additional info: Leslie or Inge, x3-6799. MIT Women's Rugby Club** - Practices, M/Th, 5-7pm.

For info, call Angela Lowrey, president, x5-7370 dorm; Caroline Richardson, captain, x5-6194 dorm or x3-3191 (mssg only); or Cindy Woolworth, treasurer, 254-0863. Lesbians at MIT (LAMIT)* — Weekly study breaks with topics for discussion scheduled regularly, Tuesdays, 7-10pm,

Rm 50-306. MIT Wu-Tang Club* - teaches northern Chinese kung fu, Tues & Thurs, 8pm, Burton Dining Hall; Sat, 10am, Athletic Center. Beginners welcome.

Boston Wu-Tang Chinese Martial Arts Association**

— Praying Mantis class, Mon, 8-10pm, Lobby 13, Thurs, 8-10pm, T-Club Lounge. Beginners welcome. For more info, call x5-8841 dorm or 497-4459.

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

Scuba Club . The club sponsors dives throughout the term. Call scuba locker (x3-1551) for info and equipment ren-tals. Meetings held Tues, Nov 13, & Dec 11, 7pm, Rm 20E-017. Pool sessions will follow. For more info contact Dave Summa, x3-6464 or Mike Fox 492-4407.

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

Religious Activities

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

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

Tech Catholic Community - Roman Catholic Sunday Masses: 9am, 12pm, 5pm; Weekday masses: T/Th, 5:05pm, Fri, 12:05pm (except 11/22-23), MIT Chapel. Morning Prayer: M.F. 8am, Chapel Basement. Charismatic Prayer Group, Mon, 6:45pm, Rm 1-114. Prayer through Scripture Group, Mon, 8pm, Chaplaincy Library. Office: x3-2981.

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

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

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

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

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

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

United Christian Fellowship ** - (MIT chapter of Inter Varsity Christian Fellowship), Campus fellowship meeting, Fridays, 7:30pm, Rm 18:290. Call Ray, x5:7560 dorm. For small group Bible study in your dorm, call Chavonne, x5-8537

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

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

Morning Bible Studies - Fri, 7:30-8:30am, L-217. Ed Bay-

Noon Bible Study* - Every Wed, Rm E17-438, bring lunch Ralph Burgess, x3-8121. (Since 1965).

Edgar Cayce Study Group* - Tuesdays, 6:30-9pm, Ashdown House First Floor Lounge, Edgar Cayce's Search for God material will be used as the basis for group discussion & meditation. For info: Dave Rosenblitt, 267-7693, Douglas McCarroll, 497-5539 or Scott Greenwald, 494-8530.

Building a Successful Marriage** - by Paul Dahl, MIT Latter Day Saint Association series, T. Th. 8am, Student Center, Center Lounge, through December, Contact Eric Evensen, 494-1191 or Lori Peterson, 876-3214 for more info.

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

Graduate Studies

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

Marvin E. Goody Prize in Building Arts. \$5,000 award offered annually to a graduate student about to prepare (i.e., expected to be completed in May 1985) a MS or equivalent (e.g., M. Arch or MCP) thesis in the building arts, to encou age work that explores the bond between good design and good building, that extends the horizons of existing building techniques and materials, and that encourages links between the academic world and the building industry. The Goody Perkins; William R. Dickson, senior vice president; John P. de Monchaux, Dean of the School of Architecture and Planning and Joseph M. Sussman, head of the Department of Civil Engineering. Applications should consist of the student's curriculum vitae, a copy of the thesis proposal, letters of support from the respective thesis supervisor and at least one other faculty member, and a one-page statement by the student relating his/her thesis topic to the intentions of the Marvin E. Goody Prize. Application forms available from Jackie Sciacca in the Dean of the Graduate School Office, Rm 3-134. Completed applications should be submitted to Profesor Frank E. Perkins, Dean of the Graduate School, Rm 3-132, by Monday, December 3, 1984. The winner will be announced by January 15, 1985.

University of California, Berkeley Professional Stu-dies Program in India. For graduate students interested in doing research, field work, or interning in India. Fields of study include agriculture, architecture, business administrastudy include agriculture, architecture, obsiness administration, city planning, education, engineering, environmental planning, forestry, law, librarianship, medicine, public health, public policy, and social welfare. Applicants must be US citizens and have completed at least one year of graduate work. For information, contact Dean Eugene R. Chamberlain, Rm 5-106. Application deadline: January 7, 1985.

US Dept of Energy (DOE) Research Residency Appointments. To enable qualified graduate students in disciplines related to energy policy and energy statistical analysis to obtain practical research experience in Washington, DC. Appointments will be with the DOE Office of Policy. Safety, and Environment. Two types of apointments avails ble: summer (11-week) appointments beginning June 3, 1985, with \$375/wk stipend; and 12-month appointments beginning September 3, 1985, with \$1,250/mo stipend. Round-trip travel expenses between the resident's home base and Washington will also be paid. An institutional allowance up to \$1,500 will be provided to the 12-month resident's university to fully or partially defray costs of tuition and fees levied because the student remains in a matriculated status. Dead-line: March 8, 1985. Announcement of awards: April 1985. Applications and additional information may be obtained from: Argonne Division of Educational Programs, DOE Research Residencies Program, Argonne, IL 60439.

US General Accounting Office Doctoral Research Program 1985. To provide Congress with information, analyses, and recommendations concerning operations of the Government. The professional staff encompasses such academic disciplines as accounting, all majors of administration (business and public), engineering, economics, political science, operations research, and law. Applicants must have completed all course work leading to a doctoral degree, be a US citizen, be willing to move to Washington, DC for the period of employment, and to sever ties that violate the conflict of interest laws applicable to Federal employees. Appointments will begin on or after October 1, 1985 and may not exceed a period of one year. Announcements are available from Jackie Sciacca, Dean of the Graduate School Office, Room 3-134. For additional information, contact: Domonic DelGuidice, Coordinator, Doctoral Research Program, US General Accounting Office, 441 "G" Street, NW, Room 7614. Washington, DC 20548, (202) 275-5495.

Woodrow Wilson Women's Studies Research Grants for doctoral candidates for 1984-1985 encourages original research about women on topics such as the evolution of women's role in society, women in history, the psychology of women, and women in literature. Applicants in doctoral pro grams who have completed all predissertation requirements in any field of study at graduate schools in the US are eligible. Winners will receive grants averaging \$1,000 to be used for research expenses in connection with their dissertations. Deadline: November 12, 1984. Notification of awards: January 31, 1985. For further information, contact: The Woodrow Wilson National Fellowship Foundation, Box 642, Princeton, NJ 08540, (609) 924-4666.

White House Fellowship Program announces the open ing of the application period for the 1985-1986 fellowship year. Each year between 13 and 29 outstanding Americans are named by the President as White House Fellows and are assigned to serve as special assistants to cabinet offices, to the Vice President, or to members of the President's principal staff. This program is open to all US citizens with the exception of Federal Government employees. Leadership, intellec-tual, and professional ability and commitment to public service are criteria employed in the selection of the Fellows. Application deadline for this year's competition is December 1, 1984. Contact: The President's Commission on White House Fellowships, 712 Jackson Place, NW, Washington, DC 20503, (202) 395-4522.

American Association of University Women Interna-tional Fellowship. Approximately 60 non-renewable tional Fellowship. Approximately 60 non-renewable \$10,000 awards (not covering travel and research costs) granted for 1 year's graduate study or advanced research at a US institution for women who are citizens of countries other than the US, for 12 months beginning in September 1985. (Six awards for advanced research in any country other than the Fellow's own for women who are members in their own country of National Associations affiliated with the International Federation of University Women are also available.)
Deadline for receipt of applications: December 1, 1984. For further information, contact Dean Jeanne Richard.

American Association of University Women Dissertation Fellowships. Available to women who will have completed all course requirements and examinations for the doctorate except the dissertation by December 31, 1984 and whose degree will be received by the end of the fellowship year. Applicants must be US citizens or hold permanent resident status. Period of Award: 12 months beginning July 1985 Awards: \$3.500-\$8.000. Deadlin For further information, contact Dean Richard.

American Association of University Women Fellowships for Women in Selected Professions. To assist women in their final year of professional training in the fields of law, dentistry, medicine, veterinary medicine, and rchitecture, or their final year of a 2-year Master's Business Administration (MBA program). Awards range from \$3,500 \$9,000 for one academic year beginning September, 1985. Deadline: December 15, 1984 (February 1, 1985 for MBA applicants.) For further information, contact Dean Richard.

American Association of University Women Postdoctoral Fellowships. For postdoctoral research for women who hold the doctorate at the time of application. Applicants must be US citizen or hold permanent resident status. Funds may not be used for research equipment, publication costs, travel grants, or tuition for further course work. Awards up to \$10,000 and one Founders Fellowship of \$12,000 for period of 12 months beginning July 1, 1985. Deadline: December 15, 1984. For further information, contact Dean Richard.

Amelia Earhart Fellowship, Zonta International 1985 competition for grants of \$6,000 to women for graduate study and research in aerospace related sciences and engineering. 32 women received Earhart Fellowships for 1984-85. Deadline for applications is January 1, 1985. For further info and applications write: Zonta Amelia Earhart Fellowships, Zonta International, 35 E Wacker Dr. Chicago, IL 60601.

National Science Foundation Graduate Fellowships For study leading to master's or doctoral degrees in the mathematical, physical, biological, engineering and social sciences, and in the history and philosophy of science. The fellowships provide a cost-of-education allowance in lieu of tuition and required fees, plus a stipend of \$925/mo. Applicants must be US citizens or nationals at time of application and must not have completed postbaccalaureate study in excess of 20 semester hours in any field of science, engineer

ing, social science or mathematics. Scores of GRE's taken since October 1, 1982 are required. Pre applications available in the Office of the Dean of the Graduate School, Rm 3-138. Deadline: November 21, 1984.

Lady Davis Fellowship Trust. Open to seniors, graduate students, and those who have recently completed doctoral studies in any field; tenable at the Hebrew University of Jerusalem and the Technion Israel Institute of Technology, Haifa. Grants cover tuition, travel, and living stipends in Israel. Renewal for a second year is possible. Applications available in Rm 3-138. Deadline: Nov 30, 1984.

Alice Freeman Palmer Fellowship for women for study or research abroad or in the US, sponsored by Wellesley College. Fellows must be 26 or younger at time of appointment, and must remain unmarried throughout her tenure. Stipend: \$4,000. Must be nominated by undergraduate institution. Contact Dean Richard, Rm 3-138, or write directly to: Secretary to the Committee on Graduate Fellowships, Office of Financial Aid, Box GR, Wellesley College, Wellesley, MA 02181 for applications. Application must be postmarked no later than December 1, 1984.

Mary McEwen Schimke Scholarship for women, to help financially with child care and household responsibilities, sponsored by Wellesley College. Based on scholarship and need. Candidates must be over 30 and currently pursuing graduate study in literature and history. Stipend: \$500-\$1,000. Contact Dean Richard, Rm 3-138, or write directly to: retary to the Committee on Graduate Fellowships, Office of Financial Aid, Box GR, Wellesley College, Wellesley, MA 02181 for applications. Application must be postmarked no later than December 1, 1984.

M.A. Cartland Schackford Medical Fellowship for women for the study of medicine with a view of general pend: \$3,500. Contact Dean Richard, Rm 3-138, or write directly to: Secretary to the Committee on Graduate Fellow. ships, Office of Financial Aid, Box GR, Wellesley College, Wellesley, MA 02181 for applications. Application must be postmarked no later than December 1, 1984.

Harriet A. Shaw Fellowship for women for study and research in music and allied arts in the US or abroad, sponsored by Wellesley College. Candidates must be 26 or younger at time of appointment. Preference given to music candi-dates; undergraduate work in history of art required for other candidates. Stipend: \$2,000-\$3,000. Contact Dean Richard, Rm 3-138, or write directly to: Secretary to the Committee on Graduate Fellowships, Office of Financial Aid, Box GR, Wel-lesley College, Wellesley, MA 02181 for applications. Application must be postmarked no later than December 1, 1984.

Charlotte W. Newcombe Doctoral Dissertation Fellowships. Approximately 47 fellowships awarded to stu-dents enrolled in doctoral programs in the humanities and social sciences at US graduate schools. All requirements, except thesis must be completed by January, 1985. Winners will receive grants-\$8,000 for 12 months of full-time disserta-tion reearch and writing. The award does not pay for tuition and fees and MIT does not waive these charges. Deadline for request of applications: December 21 and the completed application must be returned by January 4, 1985. For further information see Dean Richard or write directly to: Newcombe Fellowship, Woodrow Wilson National Fellowship Foundation, Box 642, Princeton, NJ 08540.

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

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

Other Opportunities

American-Scandanivian Foundation. Technical training opportunities in firms in Denmark, Finland, Norway and eden for American engineering students during Summer Fall 1985. No foreign language required. Program lasts 8-12 weeks and income is provided to meet living expenses. Send inquiries directly to the American-Scandinavian Foundation, Exchange Division, 127 E 73rd St, New York, NY 10021. Also see Dean Eugene R. Chamberlain, Rm 5-106, Foreign Scholarship Committee. Application deadline: December 15,

Internships

The following is a list of selected internships. For more information on these and others, please see the Internship Infor mation notebook in the Office of Career Services, Rm 12-170.

Consulting Resources Corporation, Lexington, MA. Offering part-time internship for student in chemistry or chemical engineering with a career interest in business management or consulting. This international management consulting firm specializes in strategic planning and business research for the chemical process and biotechnology industries.

Museum of Fine Arts, Boston. Internship in the Curatorial Department to catalogue and register paintings and objects, pursue a research problem, participate in condition assessment and basic restoration procedures, 35 hrs/wk from Jan 2 to Dec 31, 1985.

National Broadcasting Company, Inc., New York City. Winter Spring Internship Program designed to allow students the opportunity to explore careers in the broadcasting industry, volunteer basis

The Townscape Institute, Inc., Cambridge. Opportunity for art historic preservation, architecture, and art history to be responsible for assimilating new books and resource materials into an already existing system. Hours flexible.

US News & World Report, Washington, DC. Intern to work in the Magazine Manufacturing Department; graphic arts knowledge, ability and experience a plus. Position available from Nov 15, 1984 to Feb 15, 1985, salary \$300-325/wk.

(continued on page 7)

TECH TALK

November 14, 1984 Volume 29 Number 15

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Vibration control means developed

By ROBERT C. Di IORIO Staff Writer

Both people and machinery can quiver with excitement in outer space. Humans have an elaborate self-regulating mechanism built in, but mechanical systems have to rely on the skill of their designers to control potentially damaging vibrations.

An MIT engineer has proposed a unique solution which can be applied both in outer space and on earth.

Dr. James E. Hubbard Jr., assistant professor of mechanical engineering, has developed a way to control vibrations in a mechanical system by using an active distributed-parameter damper. The active element is piezoelectric film.

Piezoelectric material has the ability to generate a voltage when mechanical force is applied or to produce a mechanical force when voltage is applied. The material Professor Hubbard is using in his experiments is com-mercially available, but he is the first to use the film to control vibrations.

Professor Hubbard and his students have designed a feedback loop that allows them to monitor and control the voltage and the

mechanical vibrations along the entire length of a beam. Conventional methods of damping vibrations sense vibrations at the point where they are attached to the structure and do not control all of the significant vibrational modes of which the structure is capable. In principle, Professor Hubbard's control mechanism can sense and control all the significant vibra-

MIT has applied for a patent on the applica-

Dr. Hubbard says that the piezoelectric film becomes, in his application, "a distributed parameter structure in the sense that it is an extended flexible structure theoretically capable of damping an infinite number of vibrational modes

Vibration control is critical in aircraft, robotics and satellites. In space, there are special problems because there is no natural damping effect other than that which the internal structure presents.

Dr. Hubbard illustrated the problem by describing a communications satellite that must deploy arms bearing solar panels to obtain power.

"When the arms lock into position there is a slight jar," he said. "That jar sets up a vibration in the arms. On earth, a vibration of that magnitude would damp itself out quickly due to air damping and gravity effects, but in space there is nothing to keep the arms from vibrating. Vibrations have caused some satel-

lites to destroy themselves," he said.

A scale model of a satellite with flexible arms is being used in Professor Hubbard's experiment. Accelerometers at the tip of the arms monitor the vibrations of the structure and the damping effect is applied to the flexible arms.

A smaller bench model developed by Professor Hubbard and graduate student Thomas Bailey was used in initial testing. It consists of a flexible piece of metal about the size of a hacksaw blade which is fastened at one end to a support frame. When the flexible piece of metal is deflected two centimeters and released it vibrates back and forth for about 90 seconds. However, when a current is passed through the piezoelectric film bonded to one side of the strip of metal, the vibrations are damped out in 1/20th of that time.

workshop set Entrepreneurial

More than 500 entrepreneurs and other business executives will attend the MIT Enterprise Forum's fifth annual Entrepreneurial Workshop in Cambridge on Saturday, Nov. 17, at MIT.

The all-day workshop, entitled "Excellence in Entrepreneurship: Building a Quality Company," will feature an opening discussion by several business executives and an MIT management professor, and a keynote luncheon address by William H. Hewlett, vice-chairman of Hewlett-Packard Company.

Later, presidents and senior officers from well-known companies will lead 12 small group discussions focusing on a series of topics related to developing successful companies. The topics include: Analyzing Strategic Decisions; Finding and Keeping Talented Employees; Financial Controls; Selecting and Using Outside Professional Support; Effective Use of Directors; Transition from Entrepreneur to Business Manager; Marketplace Strategies; and Moving from R&D to Profitable Sales.

The participants in the opening discussion will include David G. Anderson, professor of management at the Sloan School of Management and chief researcher for the book. In Search of Excellence; Amar G. Bose, chairman of the Bose Corporation of Framingham, Mass.; William P. Murphy, Jr., chairman of Cordis Corporation of Miami; Phillippe Villers, chairman of Automatix, Inc., of Billerica, Mass.; and Milton D. Stewart, president of the Small Business High Technology Institute of Washington, D.C.

Among the senior executives serving as panelists for the small group sessions will be: Gordon B. Baty, president, Wormser Engineering Corp; J.P. Barger, president, Dynatech Corp.; John P. Bowen, president, Geographic Systems, Inc.; Alexander V. D'Arbeloff, president, Teradyne, Inc; Bernard M. Gordon, chairman and chief executive officer, Analogic Corp.; Lawrence Gould, former chairman, MA/COM; George N. Hatsopoulos, chairman, Thermo Electron Corp.; Winston R. Hindle, Jr., vice president, Digital Equipment Corp.; Stephen Levy, chairman, Bolt, Beranek and Newman; James N. Little, senior vice president, Zymark Corp; and Douglas T. Ross, chairman, Sof Tech, Inc.

The MIT Enterprise Forum is an entrepreneurial business analysis clinic organized under the auspices of the MIT Alumni Association. It offers businesses at a critical stage of development an opportunity to obtain counsel from experienced experts on possible steps to take to achieve their goals.

In addition to the annual workshop, the Forum holds monthly clinics at which chief executive officers present their business cases to panels of selected professionals (MIT alumni and others), who donate their time and expertise. Each presentation is open to the public free of charge. The Forum also conducts counselling sessions for start-up ventures and publishes a monthly newsletter.

Vanmarcke receives ASCE's Huber Award

Dr. Erik H. Vanmarcke of the Department of Civil Engineering, who is ranked among the leaders of the movement to apply formal probabilistic methods to civil engineering practice, has won the Walter L. Huber Civil Engineering Research Prize given by the American Society of Civil Engineers

Professor Vanmarcke was cited for his ... research on the application of probabilistic techniques in geotechnical, structural and seismic problems in civil engineering.

The research recognized by the award in-

Cook to give lecture

Professor Nathan H. Cook of the Department of Mechanical Engineering will deliver the 1984 Ralph E. Cross Sr. Lecture in Manufacturing Sciences on Tuesday, November 20, in Rm 9-150.

He will discuss "Manufacturing at MIT: An Historical Perspective.'

In his lecture, Dr. Cook will trace the history of manufacturing-related research at MIT. He will discuss his own manufacturing research and the activities at the Laboratory for Manufacturing and Productivity.

His remarks will include the roles teaching, research and consulting play. Dr. Cook will also point out some of the problems relating to manufacturing in the future.

Kepes photos to be shown

An exhibition of several kinds of photographs by Gyorgy Kepes, Institute Professor Emeritus and director Emeritus of the Center for Advanced Visual Studies, will open at the MIT Museum with a reception next Monday, Nov. 19, from 5-7 pm.

Professor Kepes will attend the opening for this exhibit, which will present early photographs and recent large-format Polaroids as well as color and black-and-white photographs. The exhibit will continue view through June 29, 1985.

volved stochastic modeling of earthquake and wind loads and their effects on structures, on reliability analysis and design, and on the use of risk management in engineering for protection against natural hazards.

In geotechnical engineering, Professor Vanmarcke developed practical methods to describe the spatial variability of soil properties and to handle important probabilistic aspects of site exploration and soil behavior.

He has published widely on random vibration, earthquake engineering and risk analysis, and is the author of Random Fields: Analysis and Synthesis (MIT Press). He is also editor-in-chief of the international journal Structural Safety.

Professor Vanmarcke, who joined the faculty in 1969, holds the engineer degree from Catholic University of Louvain, Belgium (1965), the MS from the University of Delaware (1967) and the PhD from MIT (1970). He is on sabbatical leave at Harvard University this

League plans seminar

The MIT Women's League Fall Luncheon Seminar will be held Friday, Nov. 16, noon-2pm in the Emma Rogers Room (10-340). Speakers will be Institute Archivist Helen Samuels and Reference Archivist Kathy Marquis whose talk is entitled "On the Record: Documenting the History of Women at MIT."

They will describe the Archives, its functions and collections, with special emphasis on the sources about women. Correspondence and documents of Ellen Swallow Richards, the first woman to graduate from MIT (in 1873), and Eleanor Manning of the architectural firm of Howe, Manning and Almy, and other alumnae and faculty will be displayed and discussed.

Luncheon will follow the seminar. Reservations (\$3.50/person) are required and must be made by today (Wednesday, Nov. 14), at

x3-3656 (leave message).



The sneakers above are red, in honor of two firsts: the first concert ever to be given at MIT this Friday, Nov. 16, at 8pm by the Composers in Red Sneakers and the first "guest sneaker" appearance by Professor of Music John Harbison, who will perform a new

Harbison plans two appearances

Professor of music John Harbison will be "Guest Sneaker" in the first performance ever given at MIT by the Composers in Red Sneakers, Friday, Nov. 16, at 8pm in Kresge

Admission is \$3; MIT students and faculty and anyone wearing red sneakers admitted free. Information: 864-4911.

In addition to a new work by Professor Harbison, the concert will feature six world premiere compositions, including one by Michael Carnes, former research specialist with MIT's Experimental Music Studio. The other five are: Thomas Oboe Lee, Herman Weiss, Christopher Stowens, Robert Aldridge and Richard Cornell.

Violinist Melissa Howe, lecturer in music at MIT, and the MIT Brass Ensemble, Richard Given, conductor, will be among the featured performers. Others will be Virginia Eskin, Leslie Amper, Your Neighborhood Saxophone Quartet, Nancy Zeltsman and Jeff Fischer.

This is Concert XV for Composers in Red Sneakers, a consortium of composers who organize and produce their own concerts. A Christian Science Monitor reviewer wrote that their "success has been a step toward demystifying the image of composers.'

The group will be releasing a first record album soon from Northeastern Records.

Their appearance here is cosponsored by the Music Section of the Department of Humanities and the Council for the Arts at

Professor Harbison will appear for the first time in his new position as co-artistic director of COLLAGE, Boston's new music ensemble, when he conducts the first of three concerts at Harvard's Sanders Theatre Monday, Nov. 19, at 8pm. Featured will be the world premiere of Frederick Rzewski's Mary's Dream, which deals with the Frankenstein legend. The program also will include works by Harbison, Alvin Singleton, Robert Helps and Donald

Tickets are \$7 or \$5 for students and seniors. Information: 437-0231.

Vinge to speak in scifi series

Writer Joan Vinge will present the third reading in the Science Fiction series, "1984

and Counting. . .," on Thursday, Nov. 15 at 8pm in Huntington Hall (10-250). Admission is

Ms. Vinge is considered one of the most popular of the generation of female writers who came to science fiction in the late 60s and early 70s, according to Visiting Associate Professor Joe Haldeman, chairman of the fall reading series presented by the writing program.

Professor Haldeman said she is considered

unusual for having invaded the male-domi-nated preserve defined as "hard science fiction," meaning that which leans toward highly technological themes.

Her novel, The Snow Queen, and short story "Eyes of Amber," both won Hugo Awards for excellence in science fiction.

Her latest novel, World's End, was just released from Bluejay Books which next month will publish Phoenix in the Ashes, a collection of short stories.

Vinge also writes for younger readers. Her novel, *Psion*, was named a "Best Book for Young Adults" by the American Library Association. Her movie tie-in, The Return of the Jedi Storybook was on The New York Times best-seller list for two months, and was the first movie tie-in ever to reach number one on the list.

Nierman works on view at Museum

Mexican artist/sculptor Leonardo Nierman will come to MIT for the opening reception of his one-man exhibit at the MIT Museum tomorrow (November 15) from 5-7 pm

'Orient Express' due

A concert of drama, music and poetry designed to celebrate the variety, history and depth of Asian/Pacific people in this country will be presented in Huntington Hall (Rm 10-250) Saturday, Nov. 17, at 2 pm.

Coordinator Robert Chu '85 said the program, entitled "On The Orient Express," will be the first Asian/Pacific American performance at MIT. It also occurs during the first East Coast tour for the artists, Glen Chin, Saachiko and Dom Magwili, all based in Los

All three have appeared on network television shows such as General Hospital, Little House on the Prairie and Streets of San Francisco. Ms. Saachiko was cofounder of the Los Angeles Chinatown Teenpost Theatre Arts Program.

Dr. Nobuya Tschida of the University of Minnesota described "On The Orient Express" as having "comic observations, ballads, blues, poetry and a touch of drama against the backdrop of Asian Pacific immigrants, inventors, soldiers and pioneers. It touches life as contemporary as a teenager's first date and history as old as America itself," he said.

Admission is free for this event, sponsored by the MIT Chinese Student Club and supported in part by the Council for the Arts at MIT.

The artist's work is included in many important collections, including those of Boston's Museum of Fine Arts, the Rose Art Gallery at Brandeis and the Fogg Art Museum of Harvard University. A monumental Nierman sculpture is scheduled to be installed next year in New York City's Lincoln Center/ University complex

His style is abstract, characterized by bold use of vibrant colors.

Born in Mexico City of a Lithuanian father and Ukranian mother, the artist grew up there, receiving his BS degree in physics and science at the University of Mexico. He has studied the violin for most of his life and turned to art in his late 20s because he felt his hands could not create the music his ears

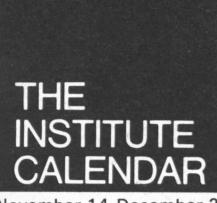
He has been named a life Fellow of London's Royal Society of the Arts. His other honors include the Presidential Award of the Municipal Art League of Chicago.

His work has been described as reflecting the richness of his dual Mexican/Jewish heritage. In Jerusalem a Nierman tapestry is displayed at the National Theatre and a 33foot stainless-steel sculpture is a central piece at the Plaza of Shaare Zedek Medical Center.

In 1980 the Mexican government chose a Nierman tapestry to present to the Organization of American States in Washington.

His exhibition at the MIT Museum, 265 Massachusetts Avenue, will be on view through December 30. Museum hours are 9-5 weekdays, 10-4 Saturdays.

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November 14-December 2 **Events of Special Interest**

Office Automation Fair** — Working Group for Support Staff Issues presentation, Nov 14-15, 10am-3pm, Student Center Sala de Puerto Rico. Keynote speakers at noon each day, so support staff able to attend.

Seminars and Lectures Wednesday, November 14

The Social Responsibility of the Scientist: James Franck and the Lessons of History*—Alan Beyer-chen, associate professor of history, Ohio State Uni-versity, Program in Science, Technology, and Society Colloquium, 4pm, Rm E51-144.

Operation of Individual Diode Lasers as a Coherent Ensemble, R. Rediker, MIT, EECS/RLE Seminar or Optics and Quantum Electronics, 11am-12noon, Rm 36-428

Patterns of Paragraphs**-Writing Center series on "Writing a Paper," 12:30pm, Rm 14N-317.

The Yellowstone Magma Chamber ** - Dr. Robert Christiansen, US Geological Survey, Menlo Park, CA, Dept of Earth, Atmospheric, and Planetary Sciences Conoco Lecture Series, 4-5pm, Rm 54-915. Tea at 3pm, Rm 54-923.

Vertical Action and Energy Fluxes in the Equatorial Pacific* - Benno Blumnenthal, MIT, Oceanography Sack Lunch Seminar, 12:05pm, Rm 54-425. Coffee & tea served; bring your lunch.

Airline Deregulation: Industry in Transition** - Col. Frank Borman, chairman, Eastern Air Lines, Sloan School of Management's 1984-85 Distinguished Speaker Lecture, 4:30pm, Rm E51-329.

The Politics of Food in the Middle East* - Prof Alan Richards, University of California, Santa Cruz, CIS Middle East Seminar, 4-6pm, Rm E38-516.

Current Trends in Inertial Navigation* - David Buechler, Northrop Precision Products Division, Dept of Aeronautics and Astronautics Division of Instrumentation, Guidance and Control Seminar, 4pm, Rm 33-418.

Thursday, November 15

The Subways: New York City's Greatest Public Work'—Robert R. Kiley, chairman, Metropolitan Transportation Authority, Civil Engineering James A. Henderson Memorial Lecture, 4-5pm, Rm E25-111.

Integrated Telecommunications* - representatives of companies bidding on the integrated telecommuni-cations systems planned for MIT, Communications Forum Seminar, 3-6pm, Kresge Auditorium.

Global Optimization* — A.H.G. Rinnoöy Kan, Eras-mus University, Operations Research Center Seminar, 4pm, Rm E40-298. Coffee & cookies served after the talk.

Getting Computers to Explain Themselves** - Dr. Roger C. Schank, chairman, Dept of Computer Science, Yale University, Laboratory for Computer Science Distinguished Lecturer Series, 3:30pm, Rm 34:101. Refreshments served at 3:15pm.

Sources of Indian Urbanization, 1960-1980* — Prof Charles M. Becker, Vanderbilt University, MIT/Har-vard Research Seminar on Migration and Development, 4-6pm, Harvard Center for Population Studies, 9 Bow St.

Particles, Cosmology, and an Accelerator for the Nineties** – Leon Lederman, Fermilab, Physics Collo-quium, 4pm, Rm 26-100. Refreshments served at 3:30pm, Rm

Self-Help Housing Rehabilitation in Israel* - Naomi Carmon, Architecture and Planning Spurs Fellows Seminar, 5pm, Rm 3-404.

Work* - Siah Armajani, public/environmental artist, Architecture Lecture, 6:30pm, Rm 6-120.

Cardiac Conduction and the Game of Life**-Joe Smith, doctoral candidate, Medical Engineering-Medical Physics, Harvard MIT Division of Health Scienand Technology Seminar, 4-5:30pm, Rm E25-117. Refreshments served.

Don't Mourn-Organize! The Task of the Democratic Left in Reagan's Second Term' — Jeremy Karpatkin, National Youth Organizer, Democratic Socialists of America, MIT Democratic Socialist Forum, 1:30 pm, Student Center Center Lounge. For more info call Matteo Luccio, v3.8884

Health Professions Scholarship Program* - Virginia DiRosario, Army Medical Dept, Army ROTC seminar,

Friday, November 16

A Study of Diffusion in ZSM-5 Catalyst** — Thomas W. Mo, Chemical Engineering Seminar, 2pm, Rm 66-110.

Physical and Chemical Processes in Soot Formation**-Tom McKinnon, Chemical Engineering Seminar, 3pm, Rm 66-110.

The Eye Never Rests: Oculomoter Tonus and Visual Performance* – Dr. Alfred Owens, Franklin and Marshall College, Lancaster, PA, Psychology Colloquium, 4:30pm, Rm E25-111. Coffee and doughnuts served at 4:15pm.

Controlled Delivery of Macromolecules in the Animal and Health Care Area** — Charles Seeney, IMC Corp, Nutrition and Food Science Seminar, 4pm, Rm E25-335c.

Internal Wave Tomography*-Stanley Flatte, La Jolla Institute, Center for Meteorology and Physical Oceanography Seminar, 4pm, Rm 54-915.

Weak Location in Quasi-One-Dimensional Metal Films** — Dr. G.J. Dolan, AT&T Bell Labs, Murray Hill, NJ, Center for Materials Science and Engineering Coloquium, 12:15pm, Rm 12-132. Lunch provided at 12noon.

Urban Design Workshop** — Paul Friedberg on the Fort Worth Cultural District, Environmental Design Pro-gram through Nov 30, Rm 10-485, times TBA. Preregistration required, call x3-5115.

Numerical Solution of Multi-Dimensional Phase Change** — Kevin O'Neill, research civil engineer, US Army Cold Regions Research and Engineering Laboratory, Hanover, NH, Mechanics and Materials Seminar, 4plm, Rm 1-114.

On the Record: Documenting the History of Women at MIT* — Helen Samuels, Institute archivist and Kathy Marquis, reference archivist, MIT Women's League Seminar, 12-2pm, Rm 10-340. Call 253-3656 for luncheon reservations by Wed, Nov 14; cost \$3.50/person.

Hippocampal Neurons That are Concerned With an Animal's Location and Direction in Space** — Dr. R.U. Muller and colleagues, Dept of Physiology, Downstate Medical Center, SUNY, Brooklyn, Man-Vehicle Lab Meeting, 2pm, Rm 37-232.

Monday, November 19

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

Handel's Sacred Oratorio: Messiah* - Lowell Lindgren, professor of music, MIT, Music Lecture, 4pm, Rm 4-152.

Optical Fiber Technology and Applications: LAN'S** - Dr. Stewart Personick, Bell Communica-tions Research, Communications Forum & EECS Seminar, 3-4:30pm, Rm 6-120.

Operation of the Columbia River Reservoirs** - Dr. Charles D.D. Howard, Charles Howard & Associates, Vancouver, Division of Water Resources and Environmen-tal Engineering Seminar, 4pm, Rm 48-316. Chemistry of Corphinoids** — Albert Eschenmoser, Laboratory of Organic Chemistry, Swiss Federal Institute of Technology, Karl Pfister Visiting Profes-sor, Dept of Chemistry Lecture, 4pm, Rm 4-270.

Recent Work* - Prof Ada Karmi-Melamede, Columbia University/architect, Architecture Lecture, 6:30pm, Rm

Manufacturing at MIT: An Historical Perspective** — Prof Nathan Cook, 1984 Ralph E. Cross, Sr. Lecture in Manufacturing Sciences, 3-5pm, Rm 9-150.

Wednesday, November 21

TBA*-TBA, Oceanography Sack Lunch Seminar, 12:10pm, Rm 54:915. Coffee & tea served; bring your lunch.

Sea Ice Indentation Accounting for Strain Rate Variation**-Prof S. Shyam Sunder, MIT, CFD Seminar, 4-5pm, Rm 1-350. Refreshments served at 3:30pm.

Monday, November 26

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

Optical Fiber Technology and Applications: Analog Links for Video, Telemetry and RF** – Dr. Stewart Personick, Bell Communications Research, Communications Forum & EECS Seminar, 3-4:30pm, Rm 6-120.

Progress and Prospects for Ocean Acoustic Tomography** - Prof. Carl Wunsch, Dept of Earth, Atmospheric and Planetary Sciences, MIT, Division of Water Resources and Environmental Engineering Seminar, 4pm, Rm 48-316.



Mime Trent Arterberry, just named "Performing Artist of the Year" by the National Association of Campus Activities, will appear here Friday, Nov. 16, at 9pm in the Sala de Puerto Rico of the Student Center. His one-man show of comedy, dance and drama was termed "magnificent" by the Village Voice. He began his career in California, moved to Boston where he studied and appeared as a soloist with the National Mime Theatre, and has performed in Germany, Italy and Belgium, in addition to appearing for four sold-out shows at New York's Radio City Music Hall. Opening for him will be "Billie West and Friends" from WBCN Radio. Admission: \$1, with free refreshments. The event is sponsored by the Student Center Committee.

Electromagnetic Parametric Inversion* – Prof Donald Dudley, Dept of Electrical and Computer Engineering, University of Arizona, Research Labora-tory of Electronics Seminar, 1pm, Rm 36-335.

Computer-Aided Control System Design* - Dr. Michel Floyd, Integrated Systems, Inc. Dept of Aeronautics and Astronautics Division of Instrumentation, Guidance, and Control Seminar, 4pm, Rm 33-418.

Tuesday, November 20

High Resolution Flash Kinetic Spectroscopy of Free Radicals** - C. Bradley Moore, University of California, Berkeley, Seminar on Modern Optics and Spectroscopy, 11-12noon, Rm 37-252. Refreshments served following

Health and Safety in Microelectronics** — Joseph LaDou, University of California, San Francisco, VLSI Seminar, 4pm, Rm 34-101. Refreshments served at 3:30pm.

High Technology-High Risks: The Designer's spective* - William L. Maini, President, & Mario J. Loiacono, Director, Mechanical and Electrical Engineering Services, Symmes, Maini & McKee Associates, Inc., Construction Engineering and Management Seminar,

Zoning for Daylight: Referencing the Past to Build the Cities of the Future** – Sue Stuebing, Prof Harvey Bryan, Energy Efficient Buildings and Systems Seminar, 12-1pm, Rm 1-214.

Atmospheric Angular Momentum Fluctuations, Short Period Changes in the Earth's Rotation, and Motions in the Earth's Liquid Core** – Raymond Hide, Earth, Atmospheric and Planetary Sciences Lecture, 4pm, Rm 54-

Heat Transfer Measurements in the MIT Blowdown Turbine Facility** – Mr. Gerald Guenette, Dept of Aeronautics and Astronautics, Gas Turbine Laboratory Seminar, 4pm, Rm 31-161, Refreshments served.

Dark Matter and Background Radiation Anisotropies* - Prof Richard Bond, Stanford University, Astrophysics Colloquium, 4:15pm, Rm 37-252. Coffee

High Angle of Attack Aerodynamics for the F-18** — Jack M. Abercrombie, McDonnell Aircraft Company, Aeronautics and Astronautics Center for Aerodynamic Studies Seminar, 4pm, Rm 37-252. Coffee served at 3:45pm.

Synthesis and Chemistry of Bleomycin Group Antibiotics** – Prof Sidney M. Hecht, University of Virginia, T.Y. Shen Visiting Professor in Medicinal Chemistry, Dept of Chemistry Lecture, 4pm, Rm 4-370.

International Developments in Ocean Shipping: The North-South Dialogue Continues' - John Shkor, US Coast Guard Commander, MIT International Shipping Club Lecture, 4:15pm, Rm E51-136. Short discussion will follow: refreshments provided.

Tuesday, November 27

Subordination, Coordination, and Transition, Part 1** - Writing Center ESL workshop, 4:15pm, Rm 14N-317.

Studies of Short Lived Nuclei** - Michael S. Feld, MIT, Seminar on Modern Optics and Spectroscopy, 11-12noon, Rm 37-252. Refreshments served following

Future Applications of CADD to Engineering and Architectural Design* - William Roy Laubscher, President, Great Lakes Region, URS, Architects and Engineers, Construction Engineering and Management minar, 4-5pm, Rm 1-350.

Stabilization of Immobilized Heparinase** - Steve Foster, Nutrition and Food Science Seminar, 4pm, Rm E25-

A Systolic VLSI Engine for Real-Time Raster Graphics** - Christopher Pottle, Cornell University, VLSI Seminar, 4pm, Rm 34-101. Refreshments served at

Viscous Flow Computations for Turbomachinery** Dr. Chunhill Hah, GE Company, Gas Turbine Laboratory Seminar, 4pm, Rm 31-161. Refreshments served.

Scintillation and Timing Effects in Pulsars* - Prof Roger Blandford, California Institute of Technology, Astrophysics Colloquium, 4:15pm, Rm 37:252. Coffee served

The History of the Strobe** – Prof Harold E. Edgerton, EECS: The Past 50 Years Lecture and Discussion Series, 7-9pm, Rm 34-101.

Wednesday, November 28

Laser Remote Sensing of Atmospheric Species, D.K. Killinger, Lincoln Laboratories, EECS/RLE Seminar on Optics and Quantum Electronics, 11am-12noon, Rm 36-

Evaluating Your Audience** — Writing Center series on "Writing a Paper," 12:30pm, Rm 14N-317.

Laboratory Experiments on Mantle Plumes** - Prof Peter Olson, Johns Hopkins University, Dept of Earth, Atmospheric, and Planetary Sciences Conoco Lecture Series, 4-5pm, Rm 54-915. Tea at 3pm, Rm 54-923.

Derivation of One-Dimensional Kinetics Equations Based on Nodal Theory** – Antonio F.V. Dias, Seminar in Nuclear Engineering, 3-4pm, Rm 24-213.

Representing Science: Realism, Writing, and Disfiguration in Thomas Eakins' Gross Clinic' - Michael Fried, Prof of Humanities and the History of Art, Johns Hopkins Univ, Program in Science, Technology and Society Seminar, 4pm, Rm E51-144.

Instabilities in Strongly Non-Linear Surface Waves* — Ken Melville, MIT, Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915. Coffee & teaserved; bring your

Natural Products that Cleave DNA** - Prof Sidney M. Hecht, University of Virginia, T.Y. Shen Visiting Professor in Medicinal Chemistry, Dept of Chemistry Lecture, 4pm, Rm 4-270.

Downtown Shopping Malls and the New Public-Private Strategy* – Bernard Frieden and Lynne Sagalyn, DUSP PhD Colloquium, 5pm, Rm 7-335.

The Pave Paws Early Warning System*—James Wade, Raytheon Equipment Division, Dept of Aeronautics and Astronautics Division of Instrumentation, Guidance & Control Seminar, 4pm, Rm 33-418.

Thursday, November 29

Subordination, Coordination, and Transition, Part 2** - Writing Center ESL workshop, 4:15pm, Rm 14N-317.

Media Diplomacy* — Dan Mica, chairman, House Sub-committee on International Ooperations; Michael Schneider, US Information Agency; Hewson Ryan, director, Murrow Center of Public Diplomacy, The Fletcher School, Tufts University, Research Program on Communications Policy Seminar, 4-6pm, Rm 37-252.

Migration Selectivity and the Consequences of Government Programs** - Prof Mark R. Rosenzweig, University of Minnesota, MIT Harvard Research Seminar on Migration and Development, 4-6pm, Center for Population Studies, Harvard, 9 Bow St.

TBA** - Dr. Sidney Mindess, CFD Seminar, 3-5pm, Rm 1-350. Refreshments served at 3:30pm.

Solidification Patterns** – James S. Langer, Santa Barbara, Physics Colloquium, 4pm, Rm 26-100. Refresh-ments served at 3:30pm, Rm 26-110.

Friday, November 30

The Effect of Carbon Conversion on the Gasification Reactivity of Coal Char** - Robert H. Hurt, Chemical Engineering Seminar, 2pm, Rm 66-110.

The Etching of Polysilicon With SF6 Plasmas** — Brian E. Thompson, Chemical Engineering Seminar, 3pm, Rm 66-110.

Prevention of Deep Vein Thrombosis: From Labora-tory to Clinical Trial** — Ascher H. Shapiro, MIT, Mechanical Engineering 1984 Den Hartog Award Lecture, 3pm, Rm 9-150. Refreshments served at 4pm, outside of lec-

The Roles of Alpha and Gamma Motoneurons in the Control of Limb Movements* — Dr. Richard Stein, University of Alberta, Edmonton, Alberta, Canada, Psychology Colloquium, 4:30pm, Rm E25-111. Coffee and doughnuts served at 4:15pm, Rm E25-101.

Macroscopic Quantum Tunneling in Josephson Junctions** – Dr. Richard A. Webb, IBM Watson Research Center, Yorktown Heights, Center for Mate-rials Science and Engineering Colloquium, 12:15pm, Rm 12-132. Lunch provided at 12noon.

Readings

1984 and Counting*—Joan Vinge, author of World's End, MIT Writing Program Science Fiction Readings, Nov 15, 8pm, Rm 10-250.

1984 and Counting __* - Jack Dann, author of Star-hiker, Junction and The Man Who Melted, Science Fiction Reading, Nov 29, 8pm, Rm 10-250. Free.

Films

Fluid Dynamics of Drag, III and IV** - Fluid Mechanics Film, Thurs, Nov 15, 4-5pm, Rm 3-270.

Waves in Fluids and Channel Flow of a Compressible Fluid** - Fluid Mechanics Film, Thurs, Nov 29, 4-5pm, Rm

Community Meetings

President Gray's Office Open Hours** — Thurs, Nov 29, 4-6pm. Appointments for time with the president are accepted only on the day of Open Office Hours, and may be

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

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

Support Group for Young Adult and Adult Children of Alcoholics** - Support group now forming, starting Nov Alcoholics** - Support group now forming, starting Nov 14, 8pm, W2A 1st flr (312 Mem Dr), enter from Amherst St, xt door to Ashdown House. Call facilitator Barbara Smith

MIT Faculty Club** — The Club is open Mon-Fri. Luncheon hours: noon-2pm; dinner hours: 5:30-8pm. For dinner and private party reservations, call x3-4896 9am-5pm daily. Cheese & Crackers, Nov 14, in the lounge; Closed for regular dinner business, lounge open til 9pm, Nov 21. Closed for Thanksgiving, Nov 22-23; Stuff Your Burrito, Nov 28, 5-7:30pm in the lounge.

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

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

Fertility Awareness** - Heather Steckel, MSW, Medical Dept Health Education Program, second session Nov 14. 6:30-8pm, Rm E23-297, Pre-registration required - call x3Infertility** - Martha Griffin, MSN, Medical Dept Health Education Program, Nov 19, 12-1pm, Rm E23-297.

Weight Control Follow-Up** — Medical Dept Health Education Program, Nov 20, 12-1pm, E23-501.

The Daily Struggle of the Working Parent* - Lois Eichler, psychologist, MIT Medical Dept, Child Care Office Open Discussion, Nov 19, 12-1pm, Rm 4-144. Bring brown bag lunch; beverages and cookies will be provided

Wives' Group** - Morning Group: Wed, Nov 14, Museum of Science; Nov 21, New England Aquarium, Nov 28, Faneuil Hall Marketplace. For all trips meet at 9:15am in front of Eastgate (60 Wadsworth St, near Kendall Sq.). Children welcome. Wear comfortable shoes. Afternoon Group: Wed, Nov 14, Thanksgiving and Other American Holidays — Collie Cook, faculty resident, MacGregor Hall, Women's League member. Nov 21, Germany — Birgit Strlitz, Mathilda Sarh and Gisela Schaeffer, Wives' Group members. Nov 28, The Impact of Changing Technology on Careers, Family, and Society: Japanese and American Perspectives — Eleanor Westney, MIT Sloan School of Management Mitsubishi Career Development Assistant Professor of International Management. All meetings: 3-5pm, Rm 491, Student Center. All women in the MIT community welcome. Nov 21, New England Aquarium, Nov 28,

The Language Conversation Exchange** — sponsored by the Wives' Group. Needs conversation partners for per-sons interested in practicing languages and exchanging lan-guage lessons, including practice in English with native speakers. Effort is made to match persons with similar interests and training. After they are put in contact, the partners make own arrangements. If interested, phone Julie Roberts, x3-1614.

The Wild Life of Kenya** — Laya Wiesner, MIT Women's League Travel Club, Nov 29, 10am, Neva Han's home, 242 Otis St, West Newton. Call 332-4947 if you plan to attend or

An Evening of International Cuisine** - Tech Community Women evening of international cooking, Nov 14, 7:30pm, Rm 10-340. Admission: \$.50/members, \$1/non-members. Come join us for a demonstration and sampling of Japanese cooking.

Wardrobe Planning Workshop** - Gilda Selchau, time management consultant, Tech Community Women workshop, Tues, Nov 27, 7:30pm, Rm 10-340.

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

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

MIT Activities Committee

MITAC, the MIT Activities Committee offers discount movie tickets for General Cinema (\$2.50), Showcase and Sack Theaters (\$3.00). Tickets are good 7 days a week, any performance.

Tickets may be purchased at MITAC Office, Rm 20A-023

(x3-7990), 10am-3pm. Mon through Fri and Lobbies 10 and E18 on Fri, 12-1pm. Lincoln Lab employees may purchase tickets in Rm A-270 from 1-2pm, Tuesday through Friday only. Check out our table of discounts for camping, dining, musical and cultural events available to you through MITAC and MARES (Mass Assoc of Recreation and Employee

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

New York City Christmas Shopping Madness! Sat, Dec 8. Even if you don't believe in Santa, just go and have a good time! Bus leaves West Garage at 7am sharp (bring coffee and donuts); bus leaves New York at 8pm. A full day in the Big Apple. Cost: Only \$16/person/round trip. Make your reserva

Twelfth Night, Wed, Dec 12. Delight in the wonder of Sha-kespearean romance with this masterful tale of ardor, infa-tuation, and true love: "If music be the food of love, play on." Playing at the Boston University Theatre. Tickets \$12.25

The Nutcracker, Thurs, Dec 13; Sat, Dec 15; Sun, Dec 16. A traditional holiday celebration, performed by the Boston Ballet Company at the Wang Center: 7:30pm on Thurs and Sat evenings; and 2pm on Sun afternoon. Tickets \$17 (reg

Handel's Messiah, Sat, Dec 15, 8pm, Symphony Hall; a nagical Christmas experience. Capture New England's longest running holiday tradition. Tickets, \$23/person.

Jean Pierre Rampal in Concert, Fri, Jan 18, 8pm, Symphony Hall. Tickets, \$15.75 (reg \$17.50).

Loon and Heron Theatre's Birds of a Feather (Children's Show), Sat, Jan 19, 1pm, Rm 34-100. A lively troupe of apprentice actors performs Alexander and the Terrible, Horrible, No Good, Very Bad Day and Mr. Snorf and Snow Mountain, for young people between the ages of 37. Between the stories, the actors invite the audience to join with them in songs and participatory activities. Tickets, \$1.50/person.

To the Dogs! An Evening at Wonderland, Sat, Jan 26, 6:30pm. Try your luck at Wonderland for only \$11. Price includes Clubbouse Admission, Racing Program and dinner featuring succulent boneless stuffed breast of chicken. Won-derland accessible by MBTA Blue Line — or, free parking is available. Reserve your space now

Uncle Vanya, Wed. Jan 30, 8pm, Boston University Thea tre. Rejoice in this tender and heartfelt comedy of unrequited love by Anton Chekhov. An uplifting affirmation of the strength of the human spirit — the ebb and flow of hope and disappointment, progress and frustration, achievement and folly. Tickets, \$12.25 (reg \$17.75).

City Books containing valuable coupons for Boston restaurants, shopping and services (valid through Feb) are here for only \$.50!

Ski Buffs: Over \$1,000 worth of skiing values are available for you in the Alpine Ski-Key Discount Books — containing coupons for up to \$10 off lift tickets at 52 major ski resorts

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

Social Activities

Tech Community Women Muddy Charles Pub Party** – A TCW Annual, all members & friends welcome for evening of beer, munchies, games & good times, Nov 17, 8pm-12am, Rm 50-110

Table Francaise ** - sponsored by Foreign Languages & Literatures Section. Venez dejeuner avec nous et parler cais! Votre hote: Will Doherty. Tous Jes mardis, de 12:15 a 13:45, Muddy Charles Room a Walker Dining Hall.

Movies

Never Cry Wolf** - LSC Movie, Nov 16, 7&9:30, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

King Kong** - LSC Classic Movie, Nov 16, 7:30pm, Rm 10-250. Admission: \$1 w/MIT or Wellesley II).

Splash**-LSC Movie, Nov 17, 7&10, Rm 26-100. Admisn: \$1 w MIT or Wellesley ID.

The Seven Percent Solution ** - LSC Movie, Nov 18 6:30&9:30, Rm 26-100. Admission: \$1 w MIT or Wellesley ID. The Goodbye Girl **- LSC Movie, Nov 23, 7&9:30, Rm 26-100. Admission: \$1 w/MIT or Welleslev ID.

The Sword in the Stone ** - LSC Movie, Nov 24, 2,7&9:30,

Rm 26-100. Admission: \$1 w MIT or Wellesley ID

Godspell**-LSC Movie, Nov 25, 6:30&9, Rm 26:100. Admission: \$1 w/MIT or Wellesley ID.

Richard Pryor: Here and Now**-LSC Movie, Nov 30, 7&9:30, Rm 26:100. Admission: \$1 w/MIT or Wellesley ID.

Seventh Seal**—LSC Classic Movie, Nov 30, 7:30 pm, Rm 10-250. Admission: \$1 w/MIT or Wellesley ID. Local Hero** - LSC Movie, Dec 1,7&10, Rm 26-100. Admis sion: \$1 w/MIT or Wellesley ID.

Casablanca**-LSC Movie, Dec 2, 6:30&9, Rm 26-100. Admission: \$1 w/MIT or Wellesley ID.

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

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

Rhythmic Gymnastics Classes** - T/Th, 5pm, Dance Studio. For information call Yana, x3-2427 or Helena, 596-2396. Free

Yoga Classes** — ten classes: intermediates on Mons. @ 5:45pm; beginners on Mons, 7:20pm. Special Fri lunchtime class, 12:05 pm, \$30. Ei Turchinetz 862-2613.

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



A scene from Dramashop's 1977 production of A Marriage Proposal (1888) by Chekhov, being presented again this week, November 15-17, at 8pm as part of the celebration of 30 years of performances in Kresge Little Theatre. Another one-act "parlor play," Ionesco's The Bald Soprano (1950), also will be presented with a critique and coffee hour following. Admission is free. Dramashop director Robert N. Scanlan said these two one-acts will lead into the projected major production for this academic year: a Belle Epoque Parisian sex farce by Georges Feydeau. Many character types are needed for this raucous, Can-Can era comedy, Mr. Scanlan said. Auditions are December 3-5, 7:30pm, in the Little Theatre. Dramashop alums, above, are Elizabeth Jones and Michael Fink.

Music

Noon Hour Chapel Concert* - Andrew Waldo, recorder and Gail Hennig, organ, Thurs, Nov 15, 12noon, MIT Chapel.

MIT Faculty Concert* — Composers in Red Sneakers, Fri, Nov 16, 8pm, Kresge. Free for MIT community and anyone in red sneakers, General Admission \$3.

First Official Chorallaries Concert With No Name* -Chorallaries of MIT w/guest groups including the Williams Octet, Sat, Nov 17, 7:30pm, Rm 10·250. Free admission. Many "new" songs will be performed!

Songs of Three Centuries* — Deborah Harrington, soprano; Deborah Callas, mezzo-soprano; Edith Hemenway, pianist-composer present soli and duets of Brahms, Debussy, Hemenway and others, Wed, Nov 28, 8pm, Rm 10-340. Free.

Noon Hour Chapel Concert* - Carol Lewis, viola da gamba and Chris Henriksen, theorbo and baroque guitar, Thurs, Nov 29, 12noon, MIT Chapel. Free.

MIT Affiliated Artist Concert* - Marek Zebrowski, piano, Fri, Nov 30, 8:30pm, Kresge. Free.

MIT Choral Society*—John Oliver, director, perform Handel's Messiah, Fri, Nov 30, 8pm, Sacred Heart Church, East Cambridge. Tickets: MIT students free; Students and Seniors with ID/\$3; General/\$7, available at door. For info,

MIT Concert Band*—John Corley, director. Premiere of "Gothic Images" by Rod Levitt; "The Eve of St. Agnes" by Edward Madden; premiere of "Fanfare and Canon" by Ira Schwarz, Sat, Dec 1, 8pm, Kresge. Free.

MIT Chamber Players* - Marcus Thompson, director, Sun, Dec 2, 4pm, Kresge. Free.

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

Chinese Intercollegiate Choral Society* — Rehearsals, Sun, 3-5pm, Student Center Rm 491. All who like to sing and can speak a Chinese dialect welcome; currently rehearsing "The Yellow River Cantata."

Theater

That's Entertainment* - World-renowned mime Trent Arterberry performs his show Silent Moves; also featured, WBCN'S Billie West and Friends, Fri, Nov 16, 9pm, Student Center Sala de Puerto Rico. Tickets, \$1 available in W20-347, and Lobby 10 from Nov 12.

MIT Dramashop Evening of One-Act Plays* - A Marriage Proposal by Anton Chekhov and The Bald Soprano by Eugene Ionesco, Nov 15, 16, 17, 8pm, Kresge Little Theatre. Free—critique and coffee hour to follow.

On The Orient Express - Three-person program of drama, music and poetry, a creative expression of Asian-American vitality presented by MIT Chinese Student's Club, Nov 17, 2pm, Rm 10-250. Free

Leide Stumbre, Hippolytus and Anderson (performed in Lat-vian) sponsored by The Writing Program, Fri, Nov 23, 7:30pm, Kresge Auditorium. Admission: \$1/students; \$8-10/general.

Dance

Tech Squares* — Western square dancing, accelerated beginners class, round dancing to a live caller (Dennis Marsh) & cuer (Hope Kaltenthaler), Tues, 8-11 pm, MIT Student Center 2nd floor. Call Richard, x5-9621 dorm or Ron,

MIT Ballroom Dance Club* - Workshops on Sun, Nov 18: Beginning Foxtrot/Rumba, 1-2pm, \$.50/members, \$.75/nonmembers; Intermediate Rumba, 2:30-3:30pm, \$.75/members. \$1/non-members. Workshops on Sun, Dec 2: Beginning Tan-go/Cha Cha, 1-2pm, \$.50/members, \$.75/non-members; Professionally-Taught Swing, 2:30-3:30pm, \$2/members, \$3/ non-members, Burton Dining Hall. No partner necessary

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

Exhibits

COMMITTEE ON THE VISUAL ARTS

Hayden Gallery - Philip Guston: The Last Works, through November 25. Hours, M.F., 10-4, Weekends, 1-5pm.

Hayden Corridor Gallery - Local Visions IV: Por-traits. Works on paper in wide range of mediums by Boston area artists, through November 25. Hours: Daily, 8am-10pm.

THE MIT MUSEUM

Weavings of Guatemala, early 20th-century ceremonial and everyday clothing demonstrates technical skill and use of color dynamics, through Feb 20. Journey to the Land of the Navajos, Alice Giubellini's photographic glimpses of life on an Indian reservation, Nov 7 through Dec 30. Leo-nardo Nierman: Recent Works, Abstract paintings by the Mexican artist, Nov 16 through Dec 30. Gyrogy Kepes at The MIT Museum, Early photographs, recent large-format polaroids, and color and black-and-white photograms by the MIT artist, educator and innovator in the arts. Kepes was founder of the Center for Advanced Visual Studies at MIT. Opening reception* — Nov 19, 5-7pm. November 20 through June 29. Hours: Weekdays, 9am-10pm M·F, Saturdays 10am-

Compton Gallery

Leonardo: Inventions. Models built according to scientific and technical drawings by Leonardo da Vinci, through Dec 21.

Hart Nautical Gallery

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

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

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

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

Corridor Exhibits

Corridor Exhibits: Building 1 & 5, 2nd floor: John Ripley Freeman Lobby, Building 4: Rogers Building, Norbert Wiener, Karl Taylor Compton. Community Service Fund, Ellen Swallow Richards. Women at MIT. An overview of the admission of women at MIT. Five photogra phic panels with text documenting the circumstances that increased the number of women in the classroom since Ellen Swallow Richards. Building 6: Laboratory for Physical Chemistry. Building 8: Solar Energy, Society of the Sigma XI. Building 14N, across from Rm 14N-118.

OTHER EXHIBITS

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

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

Lincoln Laboratory Gallery** - Patriotism In Another Era: Original Posters from World War I, continuous through Dec 1. For info call Lease Plimpton, x7030

Kochan is honored

Dr. Thomas A. Kochan, professor of industrial relations at the Sloan School, has won the 1984 Willoughby Abner Award for excellence in research on public sector collective bargaining from the Society for Professionals in Dispute Resolution. He accepted the award at ceremonies in San Francisco last

The list of books and articles Professor Kochan has written as the result of his research is long. Most recently, he edited Challenges and Choices for American Labor (MIT Press), a collection of papers first presented at a 1983 conference of representatives of the labor movement held at MIT's Endicott House.

Professor Kochan is a member of the mediation and fact-finding panels of the New York State Public Employment Relations Board and of the Labor Panel of the American Arbitration Association. He has been a consultant to the German Marshall Fund of the United States and the Occupational Safety and Health Administration.

He received the BBA, SM and PhD degrees, the last two in industrial relations, from the University of Wisconsin. Prior to joining the Sloan School faculty as professor in 1980, he was associate professor at Cornell University's School of Industrial and Labor Relations.

Schank to speak here

Dr. Roger C. Schank of Yale University, coauthor of a just published popular book on artifical intelligence, will present a lecture— "Getting Computers to Explain Themselves" -at MIT's EG&G Education Center auditorium (Rm 34-101) starting at 3:30pm Thursday.

Dr. Schank's talk is part of the MIT Laboratory for Computer Science Distinguished Lecturer Series. He is professor of computer science and psychology at Yale, chairman of the Yale Department of Computer Science, and director of Yale's Artificial Intelligence Project.

He is coauthor with Peter B. Childers of the book, The Cognitive Computer: On Language, Learning and Artifical Intelligence, just published by Addison-Wesley, which gives this advice to lay readers who may fret about their inability to understand computers: "Stop worrying. The computer revolution has not passed you by. In fact, quite the opposite is the case. The computer revolution hasn't caught up to where you are. If you can't use today's computers, just wait. It is the computers that will have to change, not you.

Student loses election

Joseph H. Solano '85 lost his bid for the Back Bay/Beacon Hill seat in the Massachusetts House of Representatives when incumbent Democrat Thomas J. Vallely was returned for his third term with 8,339 votes. But Mr. Solano did made a respectable showing, with 3,868 votes.

Sports

HOME EVENTS: Nov 17: Pistol vs Coast Guard. 9am: Rifle vs St. John's, 8am. Nov 24: Men's Ice Hockey vs Hartford 2pm. Nov 29: Squash vs Navy, 7pm.

Wellesley Events

Jewett Arts Center - The Permanent Collection, Jewett Arts Center – The Fermanent Confection, through Jan 20; Honore Daumier: A Modern Language of Grime and Gesture, through Nov 27; Master Workson Paper, through Nov 27; Museum Seminar Exhibition, Dec 4-Feb 10. Hours: M-Sat, 10am-5pm, Sun 2-5pm. Free.

The Beautiful Book - Exhibition celebrating the 150th anniversary of William Morris' birth, Outside Special Collections, 4th fir Margaret Clapp Library, through Jan 15.

Preciosite Et Feminsme Au XVIIe Sciele** - Carlo Francois, Opening celebration for La Maison Francais lecture in French, Nov 14, 4:14pm, 33 Dover Rd, Wellesley

Concert* - Wellesley Collegium Musicum, Nov 16, 8pm,

Pride and Prejudice* — Wellesley College Theatre production of Helen Jerome dramatization of Jane Austen's novel, Nov 16-Nov 18, 8pm, Alumnae Hall. Tickets \$5/general; el: Free/Wellesley & MIT students with ID.

Les Contes Paysans de Maupassant* - French one-man show performed by Gerard Guillaumat, opening celebration for La Maison Francaise, Nov 17, 8pm, 33 Dover Rd.

"The Holy Family" by Lavinia Fontana: A Renaissance Mother's Lament' - Liana Cheney, chairperson, Art Dept, U. of Lowell, ArtBreak Talk, Nov 27, 12:30pm & 4:15pm, Wellesley College Museum.

The Alvin Ailey Repertory Ensemble* - Nov 28, 8pm,

Feminsm and Science: Issues and Challenges** — Sandra Harding, Mellon Faculty Development Scho-lar and associate professor of Philosophy, Univ of Delaware, Tenth Anniversary Luncheon Seminar Series of Center for Research on Women, Nov 29, 12:30-1:30 pm, Cheever House. Bring bag lunch, coffee provided. Call x2500.

Concert* - Wellesley Chamber Orchestra, Nov 30, 8pm

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

Send notices for Wednesday, November 28 through Sunday December 9 to Calendar Editor Rm 5-113, before noon, Friday November 23.



Tech Talk ads are intended for per sonal and private transactions between members of the MIT community and are not available for commercial use. The Tech Talk staff reserves the right to edit ads and to reject those it deems inappropriate. MIT-owned equipment may be disposed of through the Surplus Property Office, x3-2776.

INSTRUCTIONS: Ads are limited to one (of approximately 30 words) per per-son per issue and may not be repeated in successive issues. All must be accom panied by full name and extension. Per sons who have no extensions or who wish to list only their home telephones, must come in person to Rm 5-113 to present Institute identification. Ads using extensions may be sent via Institute mail

Deadline is noon Friday before publication.

For Sale

Sampo entrtnmnt ctr inc colr 5" tv, AM/FM/cass, v strng ant for free HBO, exc as cmptr trmnl w/storg. Chen, 494-8838

Furn: dintte set, chst, Imps, couch, etc; househld itms; '83 Subaru wgn, nw \$7,500. Call 327-2474.

DR tbl, 2 lvs, 8 chrs, 6 drwr-2 dr bufft, mahog wd. Debbie, x3-1508.

Sears dog house, x-lrg, exc cond, \$50. Alan, x3941 Linc or 358-7615.

Chev Cit whl rim w/tr, used, gd for spare, \$20. Mary, x7712 Linc. JVC-DD-99 st hm cass, dk, 3-hds, dB Housing

B&C, comp tape bias, \$250. Malcolm, x4014 Linc or 628-4736. 2 br nw Visual-300 smrt trmnls, will nulate VT-100 & VT-52 hand rate 50

19.2kb, nw \$1,200, now \$600 ea. Gil, x8-3938 Draper.

Alto sax, Martin-Pro mdl, exc playing cond, \$200. E.C. x4503 Line or 332-7152 after 6pm.

Pr Bauer hcky skts, boy's sz 5, exc cond, \$40. Jim, x3-3886.

All-seasn rad trs, like nw, only 1K on them, \$60/pr. Leo, x3-4956. Goalie hcky eqpmnt, full set inc eqpmnt

bag & sticks, skts sz 10, \$600 for all. Peter, x3-3046 or x5-9693 dorm or 494-

Furn: beds, chsts of drwrs, dsk, ktchn tbl & chrs, wndw fan, 10-spd Raleigh bike, more, Gideon, x3-2657 or 547-3311.

Mink pillbox hat, blck-dyed, wrn twice, sm W's sz, retails \$180, selling @ \$75. Call 876-0302 7-9am or 9-11:30pm.

Round-trip NY Air tckt to Orlando, FL, trvl anytime, \$180. Steve, x3-5946 or 267-5576.

GE colr tv, 19", wrks well, asking \$150; Magnavox Odyssey video game & crtrdgs, bsktball, race drver, etc. Jean, x3-2102

Wedding gwn, Priscilla orig, off-white lace & pearls, sz 6-7 petite, rsnbl. Call x3-3431 10-2pm M-F, or 471-8455.

Lthr carry-on satchl, zip top, gd cond,

\$20. Rosalie, x8-1401 Draper. Pro W's ice skts, sz 5-6. Call x3-1784 10:30-11:30am only.

2 LR lmps, 26"h w/17" shds, gld & tur quoise trm, \$75 or best. Therese, x3-4274

or 438-3663. 2 acoustc studio mntrs, 3-way spkrs, n comptbl w/my sys, but comptbl w/most, nw, unopnd boxes, 5-yr wrrnty, list \$849, will sac \$300. John, x5-9675

57mm Klein bike, full campy eqpmnt, \$800. Bruce, x3-5691 or 547-9784.

Pr Orientl hndmd rugs, Kilim, nw. 3x6'. \$580/both. Nasrin, 494-5391

Cmptr prntr, Anadex DP-8000, 120cps, gd cond, \$150. Call 648-6389.

Brass & glss frplc scrn, \$30; 2 s rckrs, \$35 ea, 2/\$60; oak ktchn tbl. \$15 hall tbl, \$20; bufft cbnt, \$30; pine mntl shlf, \$15; silvr & trquois bracks, \$30-40; pendant, \$20. Mr. Ciaglo, x3-5668 or 523-

Sofa-sleepr, Q-sz, brgndy colr, \$150; prtbl radio/8-trk, \$25; Pentax x1000 /flash, \$80; Seiko wtch, nw, list \$219, w/flash, \$60; Selko witch, hw, list \$219, sell \$100; leaded glss lght fixt, \$35. John, x3-7287 or 523-1909.

Clck thrmstat, \$40. Ivan, x3-7324.

Rugs: lght bl, 9x9', \$30; gld, 12x11', \$40; 5' tall clck w/3 shlvs \$10: armchr. \$10: sofa-bed, \$70. Call 494-0896 9am-11pm.

Lined wool tan waistcoat w/hood, exc cond. 38R. \$40: M's bootcut Levi's jeans 31wx34l, unusd, \$10, Amercn Tourstr brwn sft suitcs, approx 10x24x36, fair cond, \$10. John, x3-8117 or x5-9757

Stereo compnts: Sony diret dry trntbl, Onkyo tapedck, EPI spkrs, Vector Research rcvr. Call 492-4407 eves. Radio Shack TRS-80, Mdl III w/Epson

MX80 prntr, 32K, Scripsit wrd pressing prgrm, \$500. Adam, x5-6179 dorm or prgrm, \$500. Adam 577-1561 after 6pm.

\$40 of auto bdy filler/putty/dscs/pri-mer for \$10; 17" Conrac b&w mntr w/o cvr, \$35; Pioneer PL-10 trntbl, \$35 Craig, x3-5019.

Magnavox 19" tv. perf cond. \$175: DR tbl & 2 chrs, \$50; vac clnr, \$20; ITT rotry dial phone, \$10. Han, 641-4215 eves.

Vehicles

'72 Buick Skylark, 4-dr hrdtp. AM/FM, ps, 84K, exc rnning cond, some rst. Jack, x3-2772 or 396-4221.

prts & trs, crrnt insp stckr, sold to top

'66 VW Bug, reblt eng, no rst, so

biddr. Elizabeth Reed, x3-4733.

'73 Plymouth Valiant, 73K, auto, slnt-6,

rns well, bdy dnted, \$550. Alan, x3-2485. '74 Renault R-12 sdn. southrn car, no rst but could use paint, rns well, \$750. Lucky, x3-7707.

'74 Dodge Colt wgn, 63K, reblt eng @ 56K, gd cond, \$1,400. Call x3-5824.

75 Toyota Corolla, 77K, a/c, eng grt, bdy ok, \$950. Call 492-1425

'76 Ford Grand Torino wgn, fully loaded, mny nw prts, v rlbl, \$795. Harold, x7133 Line or 862-4960.

'76 Ford Mustang II, exc cond, 61K, 4 cyl, auto, ps, pb, radio, nw batt, brks, belts, rad trs, snws & whls, \$1,950. Call x3-1892 or 492-2145 eves.

'78 Honda Civic htchbck, 4-spd, 71K, exc cond, rfrck, nw exh sys, no rst \$1,800. Call 484-2006 eves.

'78 Chrysler LeBaron wgn, exc cond, 8 cyl, auto, a/c, 66K, orig ownr, well-maint, \$3,200 or best. Tom, x3-2822.

'78 Pinto, 2-dr sdn, 68K, 1 ownr, auto AM/FM, rear wndw defrstr, exc cond, \$1,595 or best. Anthony, x8-4074 Draper or 924-1766 eves

'79 Yamaha X-S Specl 750, 3 cyc, shft drv; lugg rck, 20K, \$1,100 or best. John,

'79 Toyota Corona L.E. 4-dr htchbck 55K, like nw, 5-spd, \$3,900. Larry x3 5531 or 324-3536 after 4pm

'80 VW Rabbit diesl, AM/FM/cass, a/c, 67K, nw cltch, \$2,800, Peter, x3-5903.

'80 Malibu classc sta wgn, 38K, exc cond, a/c, AM/FM stereo, frnt split seat, rfrck, elec rear wndw defog, \$4,800 Call 738-4633 6pm/wkends.

'83 Mazda RX-7, slvr gray, like nw, 12K, a/c, sunrf, Blaupunkt radio cass, 4 spkrs, alum whls, \$11,800. Call 899-5678 (Weston).

Back Bay, cntmp 1BR apt, frplc, d/w, disp, Indry, rf dck, furn, dishes, linens, avlbl 1/1, ideal for prof, wlk to MIT, T, shops, \$1,000/mo. Call 262-9025 eves.

Cambridge sublet, 2BR apt avlbl 1/10-Tamar, x3-5788 or 491-6704 eves.

Watertown, 2BR apt to rnt frm 12/1 carpts, dispsr, nw ktchn cbnts, fridge & nw stv, gas ht, v cln, only \$600. Pat, x3-0291 or 924-1671 or Elizabeth, 926-

Jamaica Plain, 2nd & 3rd flr 2BR suplx, sunny, btflly renvtd, opn plan, totlly insltd & wthrtgnt, avlbl 12/1, \$650/mo, no utils, rnt & move-in date nego for partl wrk exchng. Joan, x3-5993 ams or

Beacon Hill, 1BR apt ovrlks State House, opn frplc, hrdwd firs, nw furn avlbl at lrg discnt, indry in bsmnt, avlbl arnd Xmas, \$725/mo, lease expires 8/31/85. Call x3-7166 or 742-8076.

Animals

2-yr-old F shphrd mix dog to gd hm. splayd, gd w/kids & othr dogs. Antonio, x3-5109 or Jeanne Russel, 492-2181 days or 851-1274 eves.

Mst sell, 7-mo-old Rottweiler F puppy, blck & tan, AKC membr, affetnate, lvs kids, gd dispositn, nds gd hm. Margaret, 868-5007 after 5pm.

Wanted

Rspnsbl retired cpl sk condo sublt nr gd medicl facilities, 2-3 mo this wntr, ideal for anyone nding housesittr. Linda, x3-

Hcky skts, sz 71/2-8, rsnbl cond. Roland Siezen, x3-6804 or 646-8628

M's hcky skts, sz 10-11, inexpnsv but useabl pref. Ted. x5-8338 dorm

Families/indvdls to go togthr to annual Plymouth, MA puble Thnksgvng Day dinnr, \$11.95/adult, \$8.95/child; also Pilgrm procssn, ecumnel chrch srvc, grst mill, etc, car/bus. Lisa, x3-4380 or 868-5140 to 11pm, keep trying.

Physics tutor for hgh school stdnt. Barbra, x3-6788.

Solid-state oscilloscope for tv & genrl hobby use. Mel Miller, x4180 Linc.

Roommates

M wntd. \$250/mo + 1/4 utils, avlbl immed, 2 blcks frm Draper (8 min wlk to Bldg 38), full ktchn, LR, BR, bath, prkng. Bill, x3-2372 or 868-8293.

F sks same to shr 3BR Brookline apt own entrnc, \$215/mo inc ht, avlbl 12/1/84. Alla, x3-7057.

on-smkng M/F for 3BR Belmont apt LR. DR. prchs. vrd. dw. \$275/mo+utils Rob Armstrong, 495-4999 or Cliff Left-wich, 495-7908 or 484-0406.

Beacon Hill, furn BR in well-managd mod bldg, avlbl 12/20, 24-hr sec, Indry, rfdck, d/d, microwv, own phn, quiet, nr Park St T, grócrs, Haymrkt, \$205.50/mo inc ht. Kelly or Anna, 227-6249.

Carpool

Rd wntd to Bergen County, NJ, especily Allendale, for Thiksgving vac, will hlp pay exprises. Dan, x5-8229 dorm.

Lost and Found

Lost, eyeglasses in bl case. Philippe, x3-5021 or 494-0180.

Miscellaneous

Baby sittng avlbl, \$2.50/hr, ft/pt, flxbl schdl, exc Westgate envrnmnt w/playgrnd. Call 494-8838.

Typst avibl for theses, resumes, lttrs, Call 494-5251.

Qlity daycare for 2-3 yr olds, licned New ton hm, nr Mass Pike Exit 17, ft/pt. Call 332-9101

Typing, IBM Corr Sel II & or wrd ressng on Wang, theses, propsls, orrspndnc, resumes, etc, 17 yrs exp. Debbie, x3-3386.

Will type theses, trm paprs, etc, rsnbl Call x3-7303.

Respnsbl rlbl prsn sks houseclning, yrd wrk, etc, jobs after 3:30pm/some wkends, refs, some tsks 3hr min, N Shore/Cambridge suburbs. Call 324-7672.

Do you have free time, enjoy chldrn & would like a lttl xtra income? Technology Children's Cntr has periodic nd for sub tchrs for AM or aftrnoon hrs. Call

POSITIONS AVAILABLE

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

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

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

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

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

Lar Alliams	3-1094	
Dick Higham	3-4278	
Virginia Bishop	3-1591	
Therese McConnell	3-4270	
Ken Hewitt	3-4267	
Kenneth W. Chin	3-4269	
Sally Hansen Appointments:	3-4275	
Darlene McNeil	3-4268	
Susan Gaskell Appointments:	3-4266	
Nancy McSweeney	3-4076	

Administrative and Academic Staff

Asst. Biohazards Assessment Officer, Medical, to serve as staff to the mittee on Assessment of Biohaz-Provide advice on laboratory safety procedures, pest control, security, and management of infectious waste. Inspect facilities; review experimental procedures for compliance with federal, state, and municipal requirements for rDNA activity and the use of etiologic agents. Develop emergency procedures; supervise or perform emergency decontamination procedures. Represent the Environmental Medical Service at department safety committee meetings and on the Infection Control Committe Requires BS or MS preferably Environmental Biology or Public Health. C84-127

Technical Writer, Information Services, to help produce documentation for users of IS's IBM and Honeywell computer systems (CMS, OS/VS1, TROLL, and Multics), and associated microcomputer work stations. Includes some journalism and public relations writing. Requires Bachelor's degree or equivalent experience, excellent writing ability and some knowledge of computing. Strong verbal communication skills essential. Writing sample requir-

Staff Assistant/Staff Associate (part-time), Office of Dean for Student Affairs, Student Assistance Services, to provide support to activities, organizations and programs on behalf of women students. Will handle programming in the Cheney Room and produce the Cheney Room Papers including solic iting news, writing, editing and produc-tion. Review material for appropriate ness and maintain bulletin boards and kiosks that are specific to women students; prepare and present reports as necessary. Attend student meetings including some evening activities Requires Bachelor's degree or equiva lent experience in working with women's groups and organizations. Excellent organizational skills necessary. (Perm. 10 month appt. and 57% time) A84-459

Technical Writer, Project Athena, to research, write, edit and develop documentation to support Project Athena under supervision of a Docu-mentation Manager. Includes user documentation, public relations mate rial, systems documentation and other general documents. Requires Bachelor's degree or equivalent combination of education and experience, plus excel-lent communication skills in written and verbal form. Experience in creating technical documentation for nontechnical users and in using and teaching computer systems within a university setting helpful. Writing sample required.

Sponsored Research Staff

Technical Assistant, to study the physicochemical properties of antigen antibody complexes and antibody hapten conjugates within the Depart ment of Chemical Engineering. Includes tissue culture techniques, monoclonal antibody production, immunoassays and biochemical analytical and separa tions techniques. Perform some anir work and oversee ordering supplies a other general maintenance tasks Requires BS in Biology or Chemistry Previous lab experience and extensive coursework in immun ology and bio chemistry preferred, R84-558

Research Specialist, Chemical Engineering, to help design and install a fermentation and recovery pilot plant. Work with construction personnel to coordinate space modification with equipment installation, piping and electrical needs. Facility includes fermenter, centrifuge, filter, cell ho-mogenizer, centrifugal extractor, chromatographic columns and drying equip ment. Once installed, will operate and maintain facility for use in research, teaching and biological material pre-paration. Requires BS or MS in Chem-ical Engineering or equivalent. Experience with operating similar equipment installation, piping diagrams and routine chemical process instrumenta-tion or analytical equipment helpful. R84-557

Research Scientist, Biology, to con duct research on the regulation of phosphate metabolism in E. coli, including studies of phosphate transport; identification of regulatory genes, products and functions; cofactors modulating the regulation, accumula-tion, structure and metabolism of high energy storage polyphosphates. Requires PhD in Biology or Microbiology with background in biochemistry, biochemical engineering, cell and molecular biology, and bacterial genetics R84-556

Technical Assistant, Whitaker College, to participate in a multidisciplinary research effort into the mechanisms research effort into the mechanisms which guide the early stages in the development of the vertebrate brain. Involves recombinant DNA technology, hybridoma technology, neuroanatomy and biochemistry. Requires Bachelor's degree in Neurophysiology and experience with cell culture and advanced physiological techniques. R84-555

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

Registered Nurses, Clinical Research Center, responsible for general and specialized nursing procedures and medications on a 12-bed research unit. Work closely with laboratory and dietary departments. Accurate observations and charting necessary. Two fulltime positions: Nights (11:30 p.m.-7:30 and Days rotating to evening/ s. Must be reliable, assume nights. responsibility and work well with others. Graduate of accredited nursing program with Massachusetts registration. Minimum 2 years experience Pediatric nursing experience helpful.

Library Support Staff

Library Assistant IV, Science Library, to assist the collection development librarians in the acquisition of new materials. Check publisher's brochures and ads against card catalogue; type order forms, file. Perform special projects. Direct student assis-tants as needed. Requires minimum 2.5 years direct/related library experience. Post high school education can count toward experience. Excellent organiza-tional, interpersonal skills and attention to detail important. typing necessary. NON-SMOKING OFFICE L84-334

Secretary/Staff Assistant

Administrative Secretary, Chemis try, to type manuscripts, coursework and correspondence including technical typing on word processor; monitor research accounts; answer telephones; arrange appointments; process mail; and file. Requires excellent typing, familiarity with technical typing, experience with dictaphone, and word rocessing skills or willingness to learn. Strong organizational skills and ability to work independently essential. Minimum 4.5 years direct/related experience required. B84-341

Administrative Secretary, Sloan School of Management, to provide secretarial and administrative support to the Director and Program Manager of the Management in the Nineties Program. Requires excellent secretarial skills including word processing and dictaphone. Knowledge of accounting procedures necessary. Ability to set priorities, handle detail, work as team member important. Good judgment, tact and excellent interpersonal skills essential. Minimum 4.5 years experience or equivalent combination of education and experience required. NON-SMOKER preferred. B84-324

Sr. Secretary, Information Services, to provide secretarial support to the Director of Information Services and occasional work of other staff members. Answer phones; schedule classes; arrange travel; maintain office supplies file; type and proofread documents and letters on line. Excellent organizational skills, interpersonal skills, and familiarity with computers helpful. May direct student assistants Requires minimum of 2.5 years direct/related experience. Knowledge of MIT helpful. B84-339

Sr. Secretary, Electrical Engineering & Computer Science, to provide secre tarial support to the Director of the Microsystems Program and the Pro-gram Administrator. Type correspondence and other materials using computer word processor, schedule app ments and travel; answer and screen telephone calls: receive visitors; process mail; perform other projects as assigned. Must have good interpersonal skills, ability to work independently, and knowledge or willingness to learn computer word processing Minimum 2.5 years secretarial experience required. NON-SMOKING OFFICE B84-336

Sr. Secretary, Materials Science and Engineering, to provide secretarial support to two faculty members and ncipal research associate. Answer phones; type correspondence, course materials, technical manuscripts; photocopy, and perform other office duties Must be flexible in handling multiple assignments, and have at least 2.5 years direct/related experience. Knowlof CPT word processor desirable

Sr. Secretary (part-time), Aeronautics & Astronautics, to type technical material, screen phone calls, process mail, and arrange travel and meetings for one professor. Must have excellent typing and proofreading skills, at least years secretarial experience and ability to work independently. Familiarity with word processing helpful. (12-15 hrs/wk, 9-11:30) B84-332

Sr. Secretary, Civil Engineering, to provide secretarial support in Head-quarters office. Type correspondence, reports; maintain filing system; answer phones; greet visitors; distribute mail and information; make deliveries throughout the Institute: photocopy arrange schedules; and assist in processing student and hourly payrolls. Requires excellent typing and interpersonal skills; at least 2.5 years direct/related experience; and flexibility. Experience with DECmate II strongly professed. BR4.397 preferred. B84-327

Sr. Secretary, Laboratory for Com puter Science, to provide secretarial support to two faculty members and a large research group. Prepare class notes, reports, research proposals and technical memos; maintain files and databases; use computer-based support including text editor, formatters, and file systems as appropriate. Process correspondence, answer phones; ar-range travel, etc. Must have 2.5 years secretarial experience; interest in learning computer-based support sys-tems; ability to work independently; good technical typing and interpersonal skills. B84-326

Sr. Staff Assistant, Telecommunica tions Systems, to assist the Administra-tive Assistant for billing in maintain ing and updating inventory files of telecommunications lines and equip-ment. Prepare and process invoices and sales records. Interact with phone center customers. Perform other office tasks as needed. Requires some typing, at least 2.5 years of related experience and attention to detail. Good interpersonal skills and previous telecommuni-cations or accounting experience preferred. B84-288

Secretary, Center for Cancer Research, to provide secretarial support to two professors. Type letters and manuscripts, file; answer phones; order lab supplies; maintain records on research grants; assist in processing purchase orders and requisitions. Requires good typing, good grammar and spelling, some familiarity with scientific terminology helpful. Dictaphone experience and familiarity with word processor and MIT procedures helpful. NON-SMOKING OFFICE B84-343

Receptionist/Secretary, Laboratory for Nuclear Science, to act as switch board operator for Bates Linear Accelerator in Middleton, Mass. Will receive visitors, type memos, letters, travel vouchers, and technical reports. Maintain records; file purchase requisitions and assist with other office duties as needed. Excellent interpersonal skills and professional manner important Ability to work independently and handle diverse situations necessary. Minimum one year related experience required. B84-329

Secretary, Laboratory for Nuclean Science, to perform secretarial duties for large research group. Schedule appoint-ments; type correspondence, technical and nontechnical reports; file; arrange travel, etc. Requires excellent typing and word processing experience. Re-sponsibility, flexibility, tact, and reliability are important. Minimum one year related experience. B84-328

Secretary, Safety Office, to type industrial accident forms, reports and correspondence. Process requisitions for safety glasses and maintain records for safety shoes and material safety data sheets. Answer phones, file, and distribute mail. Requires good typing and interpersonal skills, and ability to work independently. Minimum one year of related experience necessary. Non-Smoker preferred. B84-330

Technical Support

Technical Assistant, Haystack Ob-

servatory, to supervise the maintenance and calibration of high power radar control and data acquisition system using multiple mini- and microcomput-ers at the Millstone Radar facility. Assure system integrity using existing computer driven test routines and ing with system software people to modify or improve these routines as required. Assist in planning for inte-gration of new hardware while main-taining operational capability. Design temporary or permanent hardware or software modifications to meet develop mental or short-term experimental requirements. Should have minimum of Associate's degree in EE or EE/Computer Science or equivalent combina tion of education and experience. At least 3 years experience working with digital electronics required. Familiarity with Multibus and GPIB standards highly desirable, as well as experience with radar systems. T84-340

Sr. Data Entry Operator, Alumni Association, to process data for inter-active update of alumni records on a complex data base management infor mation system. Maintain source material files; answer telephone inquiries; compile statistics; assist in special projects as assigned. Requires good typing skills or data entry experience. Attention to detail, flexibility, and ability to work closely with others important. T84-338

Office Assistant

Administrative Assistant, Sloan School of Management, to provide secretarial support to the Director and Master's Program Coordinator. Assist with admissions process from receipt to mailing decisions. Type correspondence mailing decisions. Type correspondence and reports; answer and screen phone calls; schedule meetings and travel; provide information to students, faculty and applicants. Requires 4.5 years direct/related experience. Excellent typing, word processing, organization interpersonal skills essential. S84

Administrative Assistant, Harvard-MIT Division of Health Sciences and Technology, to provide administrative support to the Administrative Office of the department. Will assist in compiling HST Research Directory, monthly HST Research Funding Bulletin, and preparation of special reports and documents. Will also assist in preparation of boiler plate and compilation of large, complicated consortium research proposals and reports. Will perform independent projects as assigned by the Administrative Officer. Requires ability to synthesize information from a variety of sources. Willingness to perform tasks of varying difficulty essential. Good command of English grammar and syntax necessary. Familiarity with DECmate II preferred. College degree preferred. Minimum 4.5 years direct/related experience required. NON-SMOKING OFFICE S84-190 plicated consortium research proposal

Editorial Assistant (part-time), Nutrition & Food Science, to work with Editor of Biotechnology and Engineering. Log in manuscripts, send to referees, re-log upon return and send to publisher. Maintain files on DECmate II word processor. Type correspondence; answer phones; maintain postage meter and office supplies. Requires excellent typing and editorial skills. Minimum 2.5 years direct/related experience sary. (18 hrs/wk) S84-342

Office Assistant, Credit Union, to process requests via telephone or in person; type share withdrawal checks and general correspondence; communi-cate policies to members. Requires good typing, interpersonal skills, and facility with figures. Ability to use adding machine and at least one year related experience necessary. S84-322

Office Assistant, Comptroller's Ac counting Office, to process invoices using CRT; review statements; assist others as needed. Requires good typing skills and knowledge of CRT operation. Minimum one year related experience required. S84-320

Office Assistant, Registrar's Office, to prepare student records, transcribe grades, prepare data for entry via CRT terminals for approximately 2000 student records. Answer frequent phone inquiries on records, reports or office procedures. Requires good typing skills, attention to detail, and willingness to interact with students and faculty on a daily basis. Minimum one year of office experience required. Some college preferred. S84-154

Service Staff

Cooks' Helper, Food Service, to prepare food products for all meal periods. Provide general assistance to kitchen staff. Maintain clean and sanitary work area. Perform other related duties as assigned. Must speak English. Ability to compute variations in standard recipes, understand funda-mentals of grill, saute, roast and steam preparations required. Must have experience in quantity food preparation H84-060

Kitchen/Potwasher, Food Service, to be responsible for the potwashing area, cleaning and sanitizing all wares, major equipment, floors, walls and refrigeration units. Remove all trash. Clean the serving and dining areas daily. Perform other duties as assigned. Must have ability to follow verbal Must have ability to follow verbal instructions. Must speak and under stand English. H84-059

Project Technician (Electronic), Plasma Fusion Center, experienced with analog, digital, and RF circuit prototyping, debugging, and assembly, set-up, troubleshooting, calibration of large CAMAC-based data acquisition system. In-depth knowledge of Ops Amps, TTL, CMOS, low level RF circuits, phase controlled SCR's and system operation. High degree of responsibility for performance of elec-tronics on a \$15M fusion research experiment. Assist in circuit design and modifications; direct lower grade tech-nicians in troubleshooting and circuit assembly techniques. Requires graduation from 2 year day technical school or equivalent and at least 10 years applicable experience. H84-056

Technician B (Electronic), Plasma Fusion Center, to construct and test prototype electronic circuits under the direction and supervision of a technical supervisor. Assist in troubleshooting and calibration of electronics instruments and the installation and cabling of the instruments in a large research facility. Requires graduation from 2 year day technical school or equivalent. Should have thorough understanding of operation of analog and digital electronic devices and construction techniques. H84-053

Technician A (Electronic), Plasma Fusion Center, to assist in laboratory research of analytical work under direction or supervision of scientific personnel. Operate highly technical experimental apparatus. Has demo strated considerable skill and good performance in particular field of activity. Requires some supervision. Will construct and test prototype electronic circuits. Troubleshoot and calibrate electronics instruments, including high power pulse supplies of both low voltage and high current (300 kW) and high voltage (1 Mwatt). Requires graduation from 2 year day technical school or equivalent and at least 2 years applicable experience. H84-052

Sr. Technician (Electro-Mechanical), Electrical Engineering and Com-puter Science, to troubleshoot, main-tain, repair and operate equipment associated with the processing of

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Fowler to discuss physics

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that estimate to 12 to 18 billion years and work planned for the future promises to bring the two methods into closer concordance

The final lecture in Professor Fowler's Fesbach series will be at 4pm Thursday, Dec. 6, in the Karl Taylor Compton Lecture Hall (Rm 26-100) and will be devoted to the search for neutrinos from the sun and the scientific mystery produced by experiments thus far, what Professor Fowler has called the Case of the Missing Solar Neutrinos. Fundamental to man's knowledge of the sun is the beliefbased on terrestrial experiments-that the conversion of hydrogen into helium-the fusion process at work in the sun-should cause the sun to emit neutrinos as well as light. But experiments at the bottom of the one-mile deep Homestake Gold Mine at Lead, S.D., where the national Brookhaven Neutrino Laboratory is located, have determined that the flow of neutrinos from the sun is only one-third of what calculations show it should

be. Where are the missing neutrinos, Professor Fowler asks.

The Herman Feshbach Lectures in Physics were established earlier this year by the faculty in the Department of Physics to honor one of the department's most respected members-Institute Professor Herman Feshbach, a former director of the MIT Center for Theoretical Physics and a former head of the Department of Physics. Professor Feshbach came to MIT in the late 1930s as a graduate student, received his PhD in physics from MIT in 1942 and has been a member of the teaching staff ever since. He is a former president of the American Physical Society and presently is president of the American Academy of Arts and Sciences. He was awarded the rank of Institute Professor—the highest academic rank MIT confers—in 1983.

Professor Fowler, also a former president of the American Physical Society, has been an Institute Professor at Caltech since 1970 and has been Institute Professor Emeritus since

Travel discounts announced

(continued from page 1)

credited to the volume of use by MIT people. The discount rates are available for personal as well as business use of rental cars.

The discounted hotel rates are also arranged on the basis of the volume of MIT use and are available for visitors to the Institute as well as for community members themselves. Persons making hotel reservations are urged to request the MIT discount at the hotels listed below. Students are also encouraged to request the MIT rate when making arrangements for visiting family and friends.

Additional discounts also may be available for meetings or conferences for which a commitment for a specific number of rooms for a given period of time can be made.

Participating local hotels and their discounted rates (in most cases the lower rate applies to a single room, the higher rate to a

Boston Marriott Hotel, Copley Place, 236-5800-\$95-105.

Boston Park Plaza Hotel, Back Bay, 426-2000-\$55-67.

Colonade Hotel, Back Bay, 424-7000-\$60-68

Astronaut to talk

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Shuttle thermal protection system and represented Rockwell on a NASA/industry committee evaluating prospective space industrialization concepts.

Dr. Dunbar joined NASA's Johnson Space Center in 1978 as a ground-based flight controller and served in mission control as a guidance and navigation officer for the 1979 Spacelab flight.

She was selected as an astronaut candidate in 1980 and, upon completion of a year of training, she was designated a mission specialist and ultimately was assigned to the Space Shuttle flight 61-A scheduled for launch in October of 1985. That flight will be conducted in cooperation with the Federal Republic of Germany and has been titled the German Spacelab Mission.

Dr. Dunbar, while serving with the astronaut corps, continued graduate studies at the University of Houston, receiving the PhD degree in biomedical engineering there in

Dr. Dunbar is a private pilot with more than 200 hours in single engine aircraft and has logged more than 300 hours flying time in T-38 jets as copilot.

Edgerton to speak

Institute Professor Emeritus Harold E. (Doc) Edgerton will be the next speaker in the lecture series devoted to the past 50 years in the Department of Electrical Engineering and Computer Science. The talk, entitled "The History of the Strobe," will be given Tuesday, Nov. 27, 7-9pm in Edgerton Hall (Rm 34-101).

Man's Control over Time, a 12-minute film on the use of strobes, will precede Doc's talk. The talk itself will be illustrated with early strobe equipment and slides of equipment that is no longer in existence. There will be a question and answer period and refreshments following the lecture.

Copley Plaza Hotel, Back Bay, 267-5300-\$85-100.

The 57 Hotel, Downtown, 482-1800—\$75-85.

Howard Johnson, Cambridge,

492-7777—\$62-70. Hyatt Regency, Cambridge,

492,1234-\$90-100

Logan Airport Hilton, Logan Airport, 569-9300-\$86-101.

Meridien Hotel, Downtown, 451-1900-\$95-115.

Parker House, Downtown,

227-8600-\$58-85. Ritz-Carlton Hotel, Downtown,

536-5700-\$110-130.

Royal Sonesta Hotel, Cambridge, 491-3600-\$75-85.

Sheraton Boston Hotel, Back Bay, 236-2000-\$48-\$86.

Westin Hotel, Back Bay, 262-9600-\$110-160.

MTG to present 'A Funny Thing. . .'

The MIT Musical Theatre Guild will present A Funny Thing Happened on the Way to the Forum, November 29-December 2 in the Sala de Puerto Rico. All performances are at 8pm except for Sunday, at 7pm.

Tickets are \$5, \$4 for students and seniors.

and \$3 for MIT students.

This production of the Stephen Soldheim musical is directed by Michael Martineau and produced by John Port '86. The musical offers a modern interpretatin of a style of comedy which goes back through Shakespeare to Roman times, where the show is set. Interspersed with the musical numbers is a mesh of mistaken identities, conniving slaves and slapstick.

The production staff includes music director Steve Kaminski, choreographer Maura O'Connell '88, technical director Stephen Berczuk '87, set designer Barry Berenberg '88, lighting designer Matt Giamporcaro '85, costume designer Lisa Kroh '87, and stage manager Maren Kay Johnson '87.

The cast is made up of senior Warren Madden; juniors Rina Cerulli, Allen Meisler and Lauren Singer; sophomores Carl Dashfield, Hollie Mahaney and Stephen Hoenig; freshmen Michael Elkins, Mutsumi Mizuno, Ernest Prabhakar and Abon Ruiz; graduate student Robert Fonacier; Wellesley College junior Cynthia Millington and Jennifer Hogue: Lynn Heinemann of the MIT News Office, Kathleen Ahearn and Mr. Martineau.

Benefit concert planned

A benefit concert by several exceptional student musicians is planned for Sunday, Nov. 18, at 4pm in Kresge Little Theatre to raise money for renovation of the piano at Senior House.

Concert coordinator Susan Lee '88, piano commission chairman at the house, has announced that there will be no admission fee but donations will be requested. The program includes works by Chopin, Debussy, Beethoven, Gershwin and Bartok. For more information call Dorm x5-6650.

Institute Notices

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UROP

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

Writing and Computers; Humanities and Computers Students needed to do library research and possibly to visit other colleges to examine and evaluate existing uses of computers in teaching writing and humanities. Good writing skills essential. Contact Dr. Janet H. Murray, 20B-231, x3-2094. Credit or PAY. Open to FRESHMEN

Student Jobs

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

General Aide Technician openings to assist in the construc tion of superconducting magnets for the magnetic res imaging program. Positions require good mechanical skills and the desire to work on a fast project. If interested, contact Ron DeRocher, x3-7847 or Bob Schwall, x3-3254, NW14-3219.

Person needed to do light bookkeeping and errands. Interrerson needed to do light blookeeping and errands. Inter-ested persons should call Peggy Huddleston, 523-2232. Hours are flexible and pay is \$6 hr.

B&R Services Inc. needs students for house-sitting, party services, or special errands. Hours: 4 wk minimum; pay: \$5 hr. If interested, call Mrs. Kaye, 527-4896, 196 Mouton St., Newton, MA.

> microelectronics semiconductor devices such as Ion-Implanter; diffusion and oxidation furnaces; LPCVD systems;



MIT Press staff members attend weekly "launch" meeting, so named because it launches manuscripts into the editorial and production process. Frank Urbanowski is at far end of table in shirt and tie.

MIT Press looks to future

(continued from page 1)

\$2.8 million for journals. We have plans to grow while keeping the lessons of the last few years in front of us."

MIT supports the activities of the Press in a number of ways, most importantly with capitalization and faculty support.

The Institute provides less than 50 per cent of the working capitalization of the Press, the balance being made up of various publishing funds, reserves and trade financing by vendors. The Press relies entirely on its sales revenues to finance its year-to-year operations, unlike its sister presses which have access to endowed sources of revenue to take the edge off expenses.

MIT's faculty provides invaluable intellectual support of the Press's publishing program through its Editorial Board and Managagement Board, and through in dividual faculty members who serve as authors, readers, advisors and series editors.

"About 20 per cent of the books the Press publishes each year are written by MIT faculty," Urbanowski said, but about 80 per cent of the Press's publishing effort, both in the books and journals departments, has serious faculty commitment and participation."

The Press has had a very successful experience with its four-year-old MIT Press bookstore. "It has," he said, "exceeded all expectations. We did \$160,000 in business there last year and we think it could approach \$200,000 this year, even though they're erecting fences around us because of the construction on Main Street. The reasons are good books and ambience.

Urbanowski thinks that, in the long term, the MIT Press should develop an endowment "both to support the publication of the strictly scholarly component of our list, which is now supported by text and trade books; and to give us a cushion to fall back on in case of a bad year." Endowment prospects depend on the number of alumni, their love of books, and their consciousness of the Press.

Last year The MIT Press published 147 books, 109 of them originals and the others quality paperback reprints of hardcover books published in previous years. "We sell twice as many paperbacks as hardcovers," Urbanowski said, "most of them slated for text sales. They're a growing part of our business." Urbanowski explained that export sales are critical to the MIT Press, which has the highest percentage of these sales among university presses. "Foreign sales are rising," he said. "Our books travel well given the character of our list."

tion of journals. "It's our fastest growing activity," Urbanowski said. "We now publish 14 quarterly journals and one monthly, and we plan to add more each year." The MIT Press is now second only to the University of Chicago Press in publishing journals, which Urbanowski said "accounts for a third of our revenues.'

Another, nonfinancial reason for publishing journals, Urbanowski said, is that "they represent the best way to publish in some of the areas we're interested in, such as the biological sciences, because they are changing so fast. In this sense the journals complement our book publishing efforts."

In addition to publishing in clearly defined subject areas, the Press has long been committed to publishing serious interdisciplinary work, such as Barbara Stafford's new book Voyage into Substance: Art, Science, Nature, and the Illustrated Travel Account, 1760-1840, which the New York Times Book Review characterized as "enthralling... a book that has a permanent effect on one's way of looking at things," and which garnered a lead review in The New Yorker. The Press will recommend it for several major awards and fully expects it to win. Tilman Buddensieg's study, Industriekultur: Peter Behrens and the AEG and the two-volume study by Martin Shubik, Game Theory in the Social Sciences, Hal Abelson and Andrea diSessa's Turtle Geometry: The Computer as a Medium for Exploring Mathematics and Peter Reuter's Disorganized Crime: The Economics of the Visible Hand, are other recent examples of the Press's interdisciplinary offerings. In the future, the Press plans to publish an interdisciplinary study of the Georges Bank, an ambitious project considered by many to be the largest scale interdisciplinary study ever made of a single ecological system. A new edition of The Encyclopedic Dictionary of Mathematics is also underway.

Another area in which the Press will continue to publish is that of the serious "university press trade book," books written by high-level experts discussing and explaining matters of current concern to the educated layman. Recent examples of this area of the Press's list are Herbert Scoville's MX: Prescription for Disaster, Philip Kitcher's Abusing Science: The Case Against Creationism, Nicholas Steneck's The Microwave Debate, MIT's International Automobile Program's The Future of the Automobile, Richard Meehan's The Atom and the Fault, and Patrick Winston and Karen Prendergast's The AI Business: Commercial Uses of Artificial Intelligence.

While about 85 per cent of what the MIT Press publishes falls within defined programs, it manages to reserve about 15 per cent of its list for what Urbanowski calls "off-beat but worthy" projects. For example, it is preparing to publish-at a rate of about one a year-the collected "This is a definitive edition of his work, and the project probably will go through the year 2000," Urbanowski said.

The MIT Press, it appears, is definitely looking ahead.

Golf posts 6-1-1 victorious season

MIT's golf team continued its winning ways this fall by posting a 6-1-1 record. Since 1972, the Engineers have won 48 of 76 matches in fall competition under the direction of Coach Jack Barry.

After losing to Merrimack by nine strokes and tving Northeastern in the season opener. MIT posted consecutive wins over Massachusetts Maritime, Bentley, Boston College, Assumption, Springfield and Bowdoin. The Engineers then fared well in tournament play finishing 17th among 42 schools at the New England Championships (held at New Seabury Country Club) and tying for eighth among 16 teams at the Eastern College Athletic Conference Northern Regional Qualifier (held at Hanover Country Club, N.H.).

MIT's top player this fall was sophomore Eric Asel (Brookville, Penn.), a NCAA Division III honorable mention All-America last season. The 19-year-old Asel compiled a 78.9

average for 10 rounds, finished eighth among 210 players at the New Englands, and participated in the ECAC Tournament at the Essex Country Club (Manchester, Mass.).

'Eric has been the key performer for us the past two years," says Barry. "He's a very steady, dependable player. As he matures, he has an excellent chance to become an outstanding college player."

Other top players for MIT were seniors Brent Foy (Muncie, Ind.), Rob Irion (N. Ferrisburg, Vt.), Dave Lineman (Sterling Heights, Mich.), juniors Alex Romeo (Old Lyme, Conn.), Mike Ungureit (Tunkhannock, Penn.), and sophomores Rich Chleboski (Gibsonia, Penn.), and Gary Zentner (Montreal, Quebec, Canada).

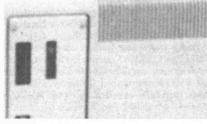
systems and interface with building facilities system. Requires graduation from 2 year day technical school or equivalent and at least 5 years applicable experience. H84-050

deposition systems such as multi-gun sputtering systems, E-beam evaporators, leak detectors, reactive-ion-etchers; wafer processing equipment, and more. Maintain ancillary process support photolithography equipment, vacuum



Interested passersby, taking advantage of window walls at the Building 11 Athena complex, gave students the feeling of living in a fishbowl, moving some of them to do a litle decorating.





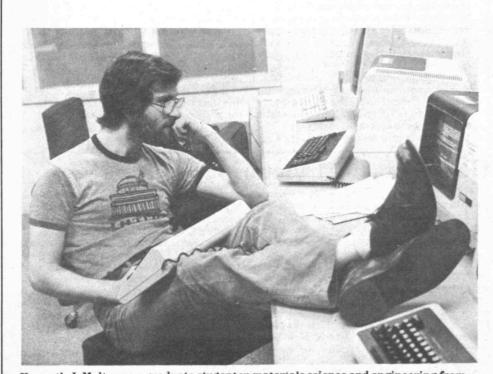
Jeffrey B. Flaster, senior in mathematics from Rockville Centre, N.Y., is up to his eyes in work.



Got a problem? See an Athena consultant. On duty is Dexter M. Sealy, a junior in electrical engineering and computer science from Laurelton, N.Y., who is deep into a textbook.



Annette M. Rahm, a junior in biology from Walden, N.Y., and Michael R. Candan, a senior in electrical engineering and computer science from Bayside, N.Y., team up on a problem.



Kenneth J. Meltsner, a graduate student in materials science and engineering from Brighton, finds the relaxed approach helps.

Athena at work

Project Athena, taking its first steps toward operational reality, is receiving close attention from all segments of the Institute community. An especially visible component is the Building 11 cluster where these photos were made recently.

A status report on Project Athena, a five-year experiment in the use of computer technologies to improve the education of students at MIT, will be presented starting at 3:30 on Thursday, Nov. 29, in Rm 34-101. Professor Steven R. Lerman of the Department of Civil Engineering, director of Project Athena, will present the report and then answer questions from the audience. All members of the MIT community are invited.



Athena terminals are put to work.

Photos by Calvin Campbell



John W.R. Lepingwell, foreground, graduate student in political science from Regina, Saskatchewan, Canada, works side-by-side with David F. Cheung, a sophomore in electrical engineering and computer science from Rockville, Md.