



Phillip A. Trussell, right, MIT director of real estate, and Ronald P. Suduiko, left, special assistant in the office of the Chairman of the Corporation, present to Cambridge City Manager Robert W. Healy the final portion of the Institute's annual payment in lieu of taxes, which this year amounts to \$774,000. Total payments, including taxes and fees will come to \$5.7 million this year.

—Photo by Andrew Silber

Head count

Use of the duPont Athletic Center facilities will be monitored Saturdays through July to determine if demand for the facilities is sufficient to keep the building open Saturdays from July 29-August 19.

A sign-up sheet will be available at the Murphy Equipment Center in the duPont Lobby and in the Class of '74 Health Fitness Center. Patrons should sign one of the sheets when using the building facilities so that an accurate count may be made.

New lines

We have outgrown our telephone system again—not 5ESS, just the number of lines available—according to Morton Berlan, director of Telecommunications Systems.

Accordingly, beginning July 7, a new exchange prefix, 252, will arrive on the campus, bringing numbers 252-1000 through 252-1999. It will join exchange prefixes 225, 253 and 258.

On-campus dialing will continue to be five digits but users are reminded to use all five digits when leaving messages.

Club closed

The Faculty Club will close at the end of business Friday, June 30, for the second stage of renovations to the public areas—the elevator-lobby space and the main dining room.

The Club is expected to reopen in early September with expanded services for the whole community. Tech Talk will have further details in August.

The next Tech Talk will be issued July 19. The deadline for listings in that issue is noon Friday, July 14.

Honoraries, medal awarded to eight

Institute Professor Emeritus Philip Morrison led the parade of MIT faculty members being honored by other institutions at 1989 commencement exercises. He was the speaker at Lesley College in May and received an honorary Doctor of Humane Letters degree.

Others were:

—Institute Professor Emeritus Morris Cohen, the honorary Doctor of Science degree from Northeastern University.

—Institute Professor Mildred S. Dresselhaus, the honorary Doctor of Science degree from Rutgers University.

—Institute Professor Hermann A. Haus, the honorary Doctor of Science degree from Union College, Schenectady, N.Y.

—Institute Professor Emeritus Franco Modigliani, the honorary Doctor of Laws degree from Michigan State University.

—Assistant Professor David C. Page of biology, the honorary Doctor of Science degree from Swarthmore College.

—Professor Mary Lou Pardue of biology, the Wilbercross Medal for alumni/ae distinction from Yale University.

—Institute Professor John S. Waugh, the honorary Doctor of Science degree from Dartmouth College.

Info Systems lists summer offerings

Recently all MIT faculty and staff were mailed the IS Summer '89 Computer Training Catalog. The catalog covers Macintosh and IBM hands-on courses offered during July, August and September, as well as the Summer Seminar series (July 11 through August 3). New courses include introductory level courses on PageMaker, FileMaker and TeX, a scientific word processing program. The selection of short Institute Business Modules has also been expanded this quarter.

Early enrollment has been heavy, so those considering taking a course during the summer quarter are encouraged to enroll as soon as possible.

“MIT: Growing businesses for the future”

300,000 Mass. jobs are in alumni-founded firms

By KENNETH D. CAMPBELL
Staff Writer

The entrepreneurial alumni of MIT are responsible for creating more than 600 companies which have directly and indirectly created 300,000 jobs in Massachusetts alone, according to a study by the Economics Department of the Bank of Boston released Monday at MIT.

The 636 MIT alumni firms, found in more than 20 industries and located in 104 Massachusetts cities and towns, generate at least \$10 billion in income throughout the state.

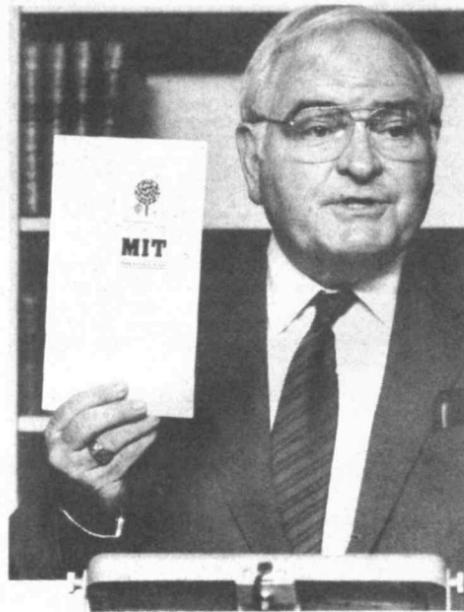
The firms—which include the state's two largest employers, Digital Equipment Corp. and Raytheon—directly employed more than 192,000 people in Massachusetts and had 1988 worldwide sales totaling \$39.7 billion, according to the Bank of Boston study.

The report, “MIT: Growing businesses for the future,” said the combined effects of the economic activity of these companies generates at least another 108,000 jobs in the state, for a total of “over 300,000 jobs in the state.”

“These figures are impressive but, by themselves, fall short of conveying the overall impact of the MIT alumni-founded companies on the Massachusetts economy. For example, of the 250 largest publicly held manufacturing companies in New England, 119 are in Massachusetts. Companies created by MIT alumni account for more than half of the sales of these Massachusetts-based firms,” the report said.

Noting that firms created by MIT alumni in the 1950s and 1960s foreshadowed later economic developments, the report said this about present and future developments:

“Advances in biotechnology and the medical sciences based on MIT research,



President Gray introduces the Bank of Boston study at Monday's press conference.

—Photo by Donna Coveney

with the subsequent creation of biotech companies in the early 1980s by MIT alumni, also may be ‘foreshadowing’ an important new industry for the state and region.”

The report pointed to these signs of economic vitality:

- 224 of the 636 firms—35 percent—were founded since 1980.
- 183 patent applications were made last year alone at MIT's Technology Licensing Office—one-third of these were in the life sciences.
- At least 20 biotech firms were started by MIT alumni since 1980.
- In eight industries, half or more of the MIT-founded companies have been founded since 1980.

(continued on page 4)

Benney to head mathematics

Professor David J. Benney, a distinguished applied mathematician whose specialty is fluid mechanics, waves and stability, has been named to head the Department of Mathematics.



Dr. Benney

The appointment, effective July 1, was announced by Professor Gene M. Brown, dean of the School of Science.

Professor Benney succeeds Professor Arthur P. Mattuck, head of the department since

1984, who will return to teaching and research. Dean Brown said, “Professor Mattuck has served with distinction and dedication. His efforts for the past five years have been instrumental in keeping the Mathematics Department among the best in the world.”

“Professor Benney is particularly well-qualified to head the department. He is a long-time member of the mathematics faculty; he brings administrative experi-

ence to the position, and he has the strong support of his fellow faculty members in mathematics,” said Dr. Brown. “I look forward to working closely with Professor Benney in our common objective of keeping the Mathematics Department strong and vibrant.”

The new department head has been a member of the MIT faculty since coming here as an instructor in 1957. Prior to that he was a lecturer in the Department of Mathematics at Canterbury University College. He became an assistant professor at MIT in 1960, an associate professor in 1963, and became a full professor in 1966. He was chairman of the Applied Mathematics Committee from 1983 through 1985.

Professor Benney, 59, who was born in Wellington, New Zealand, holds both the BS (1950) and MS (1951) degrees from Victoria University College, New Zealand; BA and MA degrees (1953) from Cambridge University, England, and a PhD from MIT awarded in 1959.

Professor Benney was a Guggenheim Fellow in 1964-1965. Dr. Benney has been managing editor for the journal, *Studies in Applied Mathematics*, since 1969. He has published extensively on nonlinear wave phenomena in fluid flow.

INSTITUTE NOTICES

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

Announcements

T.C.C. Openings** - Technology Children's Ctr has several full-time and part-time openings for the summer and fall for children ages 2.9-5 yrs. Info: x3-5907 or visit TCC at Eastgate.

Serials in the MIT Libraries, 33rd Edition** - Microfiche listing (published twice a year) of approximately 24,000 titles includes information on holdings, dates, call numbers and title changes. This edition contains over 1,000 new titles and is published in 2 sections: an alphabetical list (8 fiche), and a keyword index (8 fiche). *Prepayment required.* Price: \$20; \$5/MIT students & staff. To order send check, payable to MIT to MIT Libraries, Office of the Director, Rm 14S-216.

Tennis Court Reservations - Outdoor tennis courts adjacent to Amherst Alley may be reserved. Reserve one day in advance by phoning x3-2914 9-11am daily. Reservations can be made in person at the courts by signing up on reservation sheet posted on the tennis shack. This sheet will be posted daily at noon.

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

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

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

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

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

Nightline** - a student-run campus hotline open every evening of the term, 7pm-7am. If you need information about anything or you just want to chat, give us a call. We're here to listen. x3-8800.

Club Notes

MIT Student Cable Television** - Channel 36 seeks students interested in producing programs and running student-operated tv station. Seeking summer members, too. Info: Brian Krause, x5-7638 dorm.

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

MIT/DL Bridge Club* - Duplicate bridge, Tues, 6:30pm, Student Ctr Rm 407. ACBL masterpoints awarded; come with or without partner, newcomers always welcome. Handicap game, 3rd Tues every month. Info call Gary Schwartz, x8-2459 Draper, or Mark Dulcey, 247-2300. Admission for regular games: \$1/ students, \$2/non-students.

MIT Student Bridge Club* - Duplicate games Mon, Thurs, Sat and Sun and teams following 7:30pm, usually at Student Ctr (see posters). Lessons, 7pm, if required. Refreshments. Info: Bo-Yin, x5-9865 dorm or David, x5-7522 dorm.

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

MIT Entrepreneur's Club* - Regular meetings, Tues, 6pm, Rm 66-144. Club members present new ideas; support source for undergraduates with business interests. Info: Doug Ling, x3-0757 or Richard Shyduroff, 876-2271.

MIT Science Fiction Society* - The world's largest open collection of science fiction books and magazines is located in Student Ctr Rm 473. Meetings, Fri, 5:30pm. Info: x8-5126.

Hunger Action Group** - Meets Tues, 7pm, Baker Master Suite Lounge. Volunteers at soup kitchens, Boston Food Bank; sponsors forums, films addressing hunger- and development-related issues. Contact Susmitha, x5-8528 dorm or Irene, x5-8492 dorm.

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

Club Latino at MIT** - Organization of people interested in the Hispanic culture meets at least one a month. Info: Miguel Torres, x3-2349.

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

MIT Soaring Association* - Weekend Soaring - Learn the exciting sport of soaring. We fly from the Mansfield airport every weekend and some holidays (weather permitting). Mansfield is 45 minutes south of Cambridge, off Rt 95. Student membership: \$175; typical flight: \$16. Contact: Cathy Keller, x0814 Linc or 327-3193 eves.

MIT Sport Parachute Club** - Learn to skydive. First jump course, first jump Sat, June 10, Turner's Falls, MA. Details: Carl, 225-0408 or Paul, x3-6717 or 923-0658.

MIT Nautical Association** - Sailing Pavilion on Charles River open every day, 9am-sunset. Sailing, windsurfing and coastal cruising. Free basic sailing classes, Wed, 5:15pm and Sat, 9am. Membership cards on sale at Cashier's Office: \$15 students, \$35 staff/faculty, \$45 alumni.

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

MIT Aikido Club** - Non-competitive martial discipline, meets M-F, 5:30pm, DuPont Exercise Rm. Beginners always welcome. Info: Mitch Hansberry, x8-1272.

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

MIT Wu Tang Martial Arts Club** - Learn Northern Chinese kung fu. Long fist and praying mantis styles, short sabre and sword. Meets T/Th, 8-10pm; Sat, 9am-12noon, Burton Dining Hall. Info: Matt Cordery and Paul Filmer, x3-1911.

MIT Karatedo Doshinkan Club* - Classical noncompetitive Okinawan Karatedo, MWF, 5:30-7pm, meet outside Dupont (W31) by BBQ pits. Rain schedule: MWF, 4:30-6pm, W31-225 Dance Studio. Info: Jim, x3-0472.

Religious Activities

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

Tech Catholic Community* - Roman Catholic Masses, Summer Schedule: July 2, 10am, Kresge Little Theatre. July 9-Aug 27, 10am, Chapel. Tues, Aug 15 (Feast of the Assumption), 12noon, Chapel. Info: x3-2981.

MITJHillel* - Shabbat services will resume and the Kosher Kitchen will reopen, Fri, Sept 1. Info: x3-2982.

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

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

Graduate Christian Fellowship** - Come join other grad students, faculty and staff in learning about and growing in the Christian faith. Activities open to both Christians and those interested in learning more about Christianity. Info: Curt Bronkhorst, x3-4414 or Roz Picard, x3-7314.

MIT Islamic Society* - 5 daily prayers in the prayer room (Ashdown House basement). Friday prayer, 1:10-1:45pm. Qur'an study groups in English and Arabic meet 8pm & 9pm at the prayer room. Info: x8-9755.

Christian Science Organization at MIT* - Weekly Testimony meetings, Thurs, 7pm, MIT Chapel.

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

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

Noon Bible Study* - Every Wed, Rm 1-132, bring lunch. Ralph Burgess, x3-8121. (Since 1965.)

MIT Bible Study Group* - The Economy of God, a look at God's eternal purpose to dispense Himself into man based on the revelation of the Bible, Fri, 8pm, Student Ctr Rm 407. Singing, prayer, Bible reading, fellowship.

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

International Opportunities

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

Student Jobs

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

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

On Campus Non-Technical

Summer: part-time position available for the summer and possibly beyond at the Cell Culture Center. Duties involve the performance of routine animal cell culture techniques, including large-scale production of anchorage-dependent and anchorage-independent cell lines. Hours: flexible, some weekend work. Salary: to be discussed. Contact: Don Giard, x3-6430.

On Campus Non-Technical

Clerical secretarial support needed for the extremely busy Housing Section of the office of the Dean for Student Affairs. Familiarity with Macintosh and Microsoft Word or other word processing software required. Typing: 45-50 wpm, accuracy more than speed. Promptness, organization, and willingness to stick to schedule important and appreciated. Available August 15, 1989. Hours: Two positions; maximum 20 hrs/wk. Salary: \$6.25/hr. Contact: Jack Keefe, staff associate, Residence Programs, W20-549D, x3-6777.

Off Campus Non-Technical

Summer: busy futon store needs summer sales help. Must work until September. Hours: 20-35/wk including weekends. Salary: \$6/hr+ commission with experience. Contact: Ms. Tryts, 864-6000.

Put up posters on MIT and other various college campuses, as well as stores, etc. Must be attractively dressed and have a congenial manner and be assertive as well as friendly. Students urgently needed. Hours: flexible. Salary: \$6.25/hr. Contact: Marcia Weiss or Carol Schneider, 134 Cornell St, Newton, MA, 244-7172, please leave a message and include the best time to call you back.

Off Campus Technical

Help categorize metallographic specimens. Titrations, electrical measurements. 10 minute walk to MIT. Hours: 20/wk, flexible. Salary: \$6.25/hr. Contact: Ken Sandbag, American Superconductor Corp, 21 Erie St, Cambridge, MA 02139, 499-2600.

THE INSTITUTE CALENDAR

June 28 - July 9

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

Seminars and Lectures

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

Wednesday, June 28

Adaptive Control: Robustness and Performance Enhancement** - Prof Ioan Landau, ENSIEG, Grenoble, France, Dept of Mechanical Engineering Nonlinear Systems Laboratory Seminar, 11am, Rm 1-133.

Misregulating Segmentation Gene Expression in Drosophila** - Dr. Susan Parkhurst, ICRF Developmental Biology Unit, Oxford, England, Whitehead Institute Seminar, 2pm, Whitehead 7th Floor Conference Rm.

Thursday, June 29

Hemopoietic Regulation: From Blood Cells to the Embryo** - Dr. Nick Gough, Walter Eliza Hall Institute, Melbourne, Australia, Whitehead Institute Seminar, 12noon, Whitehead 7th Floor Conference Rm.

Thursday, July 6

Recent Work on ECR Sources at Grenoble* - Dr. R. Geller and Dr. G. Melin, Centre d'Etudes Nucleaires, Grenoble, France, Plasma Fusion Ctr Seminar, 3pm, Rm NW17-218.

Monday, July 10

Digital Halftones* - Jim Hamilton, color and graphics application analyst, Linotype Company, Information Services luncheon presentation, 12-1pm, Rm 10-105.

Tuesday, July 11

Claris' SmartForm Designer* - Heather Roberts, Claris Corp., Information Systems Seminar featuring demo of product that can be used to design professional-quality forms quickly, 12-1pm, Rm 37-252 (Marlar Lounge).

Wednesday, July 12

Microsoft Word (for the PC) User Group Meeting* - Information Systems Seminar featuring demo of Word 5.0, 12-1pm, Rm 37-252 (Marlar Lounge).

Thursday, July 13

MIT and the Internet Virus* - Jon Rochlis, assistant network manager for telecommunications, Information Systems Seminar describing the virus that hit MIT last November and the community reaction to it, 12-1pm, Rm 37-252 (Marlar Lounge).

Tuesday, July 18

WordPerfect (for the PC) User Group Meeting* - Information Systems Seminar featuring question and answer session and demo of how to define forms in WordPerfect, 12-1pm, Rm 10-105 (Bush Rm).

Wednesday, July 19

Microsoft Word (for the Mac) User Group Meeting* - Information Systems Seminar featuring question and answer session and demo of a popular Word feature, 12-1pm, Rm 10-105

Thursday, July 20

MacroMind Director* - Jafar Hosseinzadeh, MIT Microcomputer Center, Information Systems Seminar of new product from makers of VideoWorks based on traditional animation techniques, 12-1pm, Rm 10-105

Community Meetings

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

Al-Anon** - Meetings every Fri, noon-1pm, Health Education Conference Rm E23-297; every Tues, noon-1pm, Rm 1-246; and every Mon, 12-1pm, Lincoln Lab School House (P-Bldg). The only requirement for membership is that there be a problem of alcoholism in a relative or friend. Call Sarah, x3-4911.

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

Co-Dependents Anonymous (CoDA)* - Meetings every Thurs, 6:30-8pm, Rm 66-144. Info: Sarah, x3-4911.

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

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

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

Women's Forum Steering Committee Meeting** - Tues, June 20, 12:10-1pm, Rm 8-219. Brief review of Women's Forum history and accomplishments by Mary Rowe; reports and plans and programs for next fall. New members and visitors invited. Info: Joan Doucette, x3-8244 or Binah Golek, x3-6301.

Office Workers Issues Group** - Women's Forum informal support staff meetings, Wed, 12:10-1pm, Rm 8-219. Bring your lunch; network or talk about office worker's issues.

MIT's History of Women Bood Discussion Club** - Women's League Club, Tues, July 11, 1-2pm, Rm 10-342. Subject area is psychology of women; first book discussed is *Toward a New Psychology of Women*, by Jean Baker Miller, MD. Info: Eleanor Bonsaint, x3-5763 or Pam Daveta, x3-3656.

Child Care Discussion for Expectant Parents* - Rae Goodell, coordinator, Parent Programs, Child Care Office Discussion, 12-1pm, Rm 4-144.

Working Mothers Support Group** - Meets every other Tuesday, 12-1:30pm (drop in any time), Rm 4-175. Next meetings: July 11, 25. An ongoing support group that meets to discuss parenting-related issues in a casual atmosphere. Info: Janette Hyde, x3-4290.

Lunch Hour Exercise** - Women's League program to gently and thoroughly exercise, relax and connect all parts of the body and mind. "Keepfit," Tai Chi, yoga. Wear loose clothing. \$4/session. Info: Jane Edwards, instructor, 247-9698 or Pam, Women's League office, x3-3656.

Informal Embroidery Group* - MIT Women's League Group meets, Tues, July 12 & 26, Aug 9 & 23, Killian Court. In case of rain, Rm 10-340.

MITAC

MITAC, the MIT Activities Committee offers discount movie tickets for General Cinema (\$3.50) and Showcase (\$3.75). **Please Note:** Due to the recent purchase of USA Cinema by another cinema chain, USA Cinema tickets are no longer available. Tickets are good 7 days a week, any performance.

Tickets may be purchased at MITAC Office, Rm 20A-023 (x3-7990), 10am-3pm. Mon through Fri. Tickets are sold in Lobby E18 on Fridays, 12-1pm. (Please note: There are no ticket sales in Lobby 10 June, July and Aug. Tickets are sold in Lobby E18, Fri, noon-1pm through June 30 only; there are no ticket sales in E18 July and Aug.) Lincoln Lab employees may purchase tickets in Rm A-263 from 1-2pm, Thurs and Fri only (through July and August).

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

An Afternoon at Tanglewood. Sun, July 9. Morning at Stockbridge, afternoon at Tanglewood for Mozart, \$26.50/pp. Bus leaves West Garage at 8:30am, returns approx. 6:30pm.

Talbot House Weekends Available July 7-9, 14-16, August 11-13, lodging (dorm style) and meals \$50/pp. You provide your own transportation. Reservations must be made by June 30. MIT ID required for each room.

The City Books are Here. Only \$1 ea (reg \$7.50). Discount coupon books, from dining to health clubs to car washes and more. (Coupons valid through Oct 15, 1989.)

Riverside Park Discount Coupons. Riverside Amusement Park, Agawam, MA. Admission \$10.95 (reg \$14.95), or \$7.95/child under 48" height (reg \$10.95). Available in MITAC Office, valid through Oct 1.

The Steamship Authority Discount Coupons are Here. Offering reduced fares to Nantucket and Martha's Vineyard. With the discount coupon, round-trip fare to Martha's Vineyard is \$6/adult (reg \$7.50), \$3/child (reg \$3.80), and round-trip fare to Nantucket is \$13.60/adult (reg \$17) and \$6.80/child (reg \$8.50). Discount coupons are available in the MITAC office.

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

PLEASE NOTE: Museum of Science tickets no longer available. Due to the recent revamping of the Museum of Science Corporate Discount Ticket Program, the \$1 discount tickets are no longer available.

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

Social Activities

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

Music

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

(continued on next page)

TECH TALK (USPS 002157)



June 28, 1989
Volume 33 Number 37

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Permission is granted to excerpt or reprint any material originated in Tech Talk.

CLASSIFIED ADS

Tech Talk ads are intended for personal and private transactions between members of the MIT community and are not available for commercial use. The Tech Talk staff reserves the right to edit ads and to reject those it deems inappropriate.

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

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

Deadline is noon Friday before publication.

For Sale

Wden bar w/2 stools, exc cond, \$90 or bst. Josie, x3-6334.

Scand-Design sofa-bed, \$125; DR tbl & 4 chrs, \$75; sm desk w/dwr, \$35; tel or tv stand w/cbnt, \$15; cmprtbl, \$25; lmps & misc items, \$5+. Henry, x3-8719 or 494-5432.

Samsung S300 PC 640K RAM & Panasonic KX1081i pmtr, 8 mo old, bth \$650 or nearest offr. Jafa, x3-1457 or 868-3643.

USAir RT tckt, Bos-Phila-W Palm FL, any dates, \$300, Lv mssg, x3-3161, Box 4140.

Mac 40MB SCSI tape drv, Laserwrt II NTX logic brd, 20 & 30 MB Compaq hrd disks w/cntllrs, 256K 150 ns Simms for Mac, 4MB xtnded memry brd for AT's, Monitem Viking 1280x960 mntr, Wyse WY-700 1280x800 mntr & video card, mch more. Julius, x3-6921 or email julius@premise.zonel.com.

9x12 Searsbest screen hse, 9x12, \$500 nw, \$200 inc outdr carpet. Bob, x8-2357 Draper.

Sears Kenmore a/c, 11,500BTU, 115 volt, 2 yr old, exc cond, \$200. Cal x3-0586.

Mahog DR tbl w/leaf, buffet, sofa, chrs, lmps, sleep sofa, K-z mtrss, box spr, frame, Q-sz mtrss, box spr, bst offr. Pat, x8-3513 Draper or 868-0455.

Tough Traveler chld carrier, hvy-duty, grt for hiking, holds to 40 lbs, orig \$85, now \$42.50; sm red Hedstrom tricycle, \$25. Call x3-7225 or 277-6629.

19" RCA XL100 solid state colr tv, wrks fine, \$60. Marilyn, x3-8584 or 773-7546.

Q-sz sleep sofa, gd shape, \$350; lvseat, \$75; lrg desk & file cabnt. Elaine, x5141 Linc.

The Cambridge Chamber Players* - Preview of the 1989 Marblehead Summer Music Festival, sponsored by MIT Music and Theater Arts/MITAC/Draper Labs, Fri, June 30, 8pm, Kresge Auditorium. Haydn, Weber, Villa Lobos, Schoenberg and Brahms.

Dance

MIT Ballroom Dance Club** - June 28, Swing/Jive; July 5, Quickstep; July 12, Cha Cha; July 19, Viennese Waltz; July 26, Lindy Hop, 7:30pm, Morse Hall, Walker, admission \$5/0 member, \$1/nonmember. General dancing, 8:30-9:30pm; no partner necessary. Further info: x8-6554.

MIT Folk Dance Club* - weekly dancing-Sun, International Dancing, 7:30pm, Student Ctr Sala de Puerto Rico; Tues, Balkan and Western European Dancing, 7:30pm, Student Ctr Rm 407; Wed, Israeli Dancing, 7:30pm, Student Ctr Sala de Puerto Rico. Info: x3-3655.

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

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

Aerobics Classes* - MIT Dance Club classes, through Aug, M/W/F, 6-7pm, Dance Studio (2nd floor DuPont Gym). Info: 492-1369.

Exhibits

LIST VISUAL ARTS CTR

Erik Bulatov: Paintings. First American showing of this Soviet painter who layers Constructivism, Socialist Realism and language into large-scale paintings. Through July 2. **James Coleman: Inspection.** Irish artist in residence to create a slide-tape installation intertwining crime-romance with examination of the photograph as an objective representation of past and present realities. Through July 2. **Beverly Pepper: An Autobiography in Form.** Part of an on-going series exploring 20th Century sculpture through the work of artists represented by a major work in the MIT Permanent Collection. Through July 2. Hours: Weekdays, 12-6pm, Weekends, 1-5pm. Closed holidays.

THE MIT MUSEUM

MIT Museum Bldg (N52) - Graphic Madrid. Architectural drawings by students from the University of Madrid School of Architecture representing both analytical studies of architecture and a panorama of Madrid. Through July 9. **Chung-Shin Lee: Korean Paintings.** Oriental ink paintings by contemporary artist Chung-Shin Lee, internationally acclaimed artist. Through July 2. **Getting to the Surface: Mathematics of Soap Film and Soap Bubbles.** Dazzling computer-generated images representing the first discovery in more than 200 years of a new complete minimal surface: includes 2 epoxy models and a videotaped interview with mathematician David Hoffman. Through Aug 6. **Math in 3D: Geometric Sculptures** by Morton C. Bradley, Jr. Revolving sculptures based on mathematical formulae. Form and color relations lend these works

Mving: mtching sofa & chr, \$250; Steelcase desk, \$50; buffet & DR tbl & 6 chrs, \$300; mtd tbl, \$25; assttd chrs, \$25; bureaus, \$50. Call x3-6833 or 484-0489.

Raleigh 3-spd W's bike, lrg rear baskets & kickstnd, usd only 1 yr, bough for \$245, sell for \$130. Jill, x3-4417 or 625-1387.

Lotus M's 12-spd bike w/Krypto lock, exc cond, \$150; 16" 3-spd oscil fan, usd 2 mo, \$30. Hongbo, x3-3975 or x5-9563 dom.

Bargello (needlepoint) lined tote bag/handbag, hndmd in Italy, wden handls, 13x14", green, brwn & bge, nvr usd, \$25 or bst. Rosalie, x8-1201 Draper.

DEC Rainbow 100, LA50 dot matr pmtr, LQP03 ltr qlty pmtr, inc BASIC, Turbo Pascal, Wordstar, D-Base, \$1,500 or bst. Call 784-4562.

25" colr tv, like nw, less 2 yr old, quartz tuned, \$175; Scandinavian audio cbnt, \$39; Teletv terminal 910 w/modm, cabl, \$80; chst, \$20; trs, BR78-13, DR78-14, ER78-14. Sue, x3-7006 or 969-4260.

Q-sz box spr & frm, gd cond, \$50. Bob, x855-2743 Linc or 648-6603.

Frigidaire fridge, 14 c.f, \$25; Kitchenmail DW, \$25. Call x7275 Linc.

Ibanez Saber guitar, mint cond, 2 sgl coils & 1 humbucker w/Floyd Rose tremolo, hrd shl case, fluorescent chartreuse colr, \$450. Bob, x8-2357 Draper.

M's 10-spd bikes, \$65 & \$85; 7' sofa, \$150; lrg tbl desk, \$85; med mapl desk w/chr, \$120; Hamadan Orient 5'2"x6'8", \$375; stereo component, \$25; 2 sm spkrs, \$25; 2 lrg spkrs, \$55; stereo bnch, \$25; misc chrs, \$5-35. Call x3-3175 or 332-8251.

Cffee tbl & end tbl, solid oak w/smokd glass, \$100 for bth or bst. Susan, x2306 Linc.

Harman Kardon stereo, hk3305, 20watt rcvr, T40 trntbl, Nakamichi BX-1 cass deck, Infinity RS-8a 3-way spkrs, \$600 or bst. Mathew, x3-7950 or 646-8639 eves.

2 1-way tix to Italy, bookd for 7/25 but can be changd to any date, will sell 1 or both, make an offr. Paula, x3-7022 or 769-1423 eves.

Thunderscan digital scannr for Mac w/Version 4-D sftwr, 1 yr old, exc cond, \$125. John, 494-8847.

Mving sale: HP700/22 terminl (VT200 compatbl), nw, \$450; Microterm VT100 compatbl, like nw, \$250; Everex xtm modm, 1200/2400, nw, \$150; 19" tv, \$100; cmpr chr, \$30 or bst; more stuff. Call 782-4259.

Vehicles

'70 Chevelle, green, hi mi but exc cond, nw distrib, ign sys, hting, cooling, v dpndbl, \$869 or bst. Rob, x3-5005.

'77 Datsun F-10 hthcbck, exc rning cond, nw trs, alt, rad, chassis, start, shck absorbrs, rear-A-frames, etc, \$450 firm. Rasheeq, x3-3095 or 262-4016.

'78 Honda Accord, 5-spd hthcbck, sell for parts, but can still m, rsty bdy, passd inspcn last Dec, \$180. Ming, x3-0596 or 661-2565.

'78 Toyota Corolla, 2-dr, bl, 5-spd, dpndbl, nvr brk dwn in 7 mos, lttl rst, passs inspcn grt, \$500 firm, nd to sell fast. Amy, x3-6966.

'79 Subaru, 4WD, gd wrking cond, 83K, nw brks & alt, some rst, \$650 or bst, call aftr 7/4, x3-8167 or 322-4726 aftr 6pm.

'79 Dodge Colt, silvr, nw fuel pump, oil pump, head gaskt & batt, jst tnd up, 85K, no rst, 2 xtra mtd trs, service mnl, etc, \$900 or bst. Mark, x3-2631 or 729-8133.

'80 VW Rabbit, 4-dr, 69K, sunfr, stereo, silvr, diesel, \$1,000 or bst. Call x3-4548 or 625-9645.

a unique visual appeal, ongoing. **Holography: Types and Applications.** Changing exhibit demonstrating the uses of this three-dimensional imaging medium. Works include scientific, medical, technical, and artistic imaging drawn from the work of the Spatial Imaging Group at MIT's Media Laboratory, ongoing. **Light Sculptures by Bill Parker, MIT '74.** Changeable, touchable plasma sculptures by the artist who developed this medium, ongoing. Hours: Tues-Fri 9am-5pm. MIT Museum closed to the public on Mondays; Open 12-4pm Sat-Sun.

Compton Gallery - Stopping Time. Photographs, instruments, memorabilia documenting Harold E. Edgerton's invention and use of the strobe light, Through Sept 15. Gallery hours: Weekdays 9am-5pm, closed Saturdays.

Hart Nautical Gallery

Ongoing exhibits: George Owen '94: Yacht Designer - Line drawings and half-models designed by one of the early professors of naval architecture at MIT. **Half Models in Naval Architecture and Ship Building** - Half-models, ship drawings and photographs illustrate how the half model has aided ship and yacht designers and builders.

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

Corridor Exhibits

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

OTHER EXHIBITS

Institute Archives and Special Collections - 1887: The Founding of the Lawrence Experiment Station. Second in a series of three exhibits in commemoration of the Lawrence Experiment Station's 100th anniversary. **Jerome C. Hunsaker, Father of Aeronautics at MIT.** Chronicles his founding of aeronautics at the Institute; his design and construction of Navy airships and NC-4, the first airplane to cross the Atlantic, and his role in leading the Dept of Aeronautical Engineering from 1939-51. **Happy 50th, Class of '39.** Hall exhibit cases in 14N, 1st floor.

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

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

Send notices for Wednesday, July 19 through Sunday, August 13 to Calendar Editor Rm 5-111, before 12noon Friday, July 14.

'81 Datsun wgn, std, reliable, gd cond, nds minr brk wrk; '79 Datsun wgn, auto, grt eng, nw exh, rolling studnt debris mobile but v reliable, grt summr car, \$300. Martha, x8-7892 or 926-8408.

'81 Chevette, 2-dr hthcbck, a/c, only 58K, no rst, mst sell by 6/28, living cntry, \$600. Patrick, x3-6217 or 868-7246.

'81 Chevette, gd mech cond. Katy, x3-8803 or 325-0141.

'81 Suzuki GS 450 mtrcycl, 16K, nw trs, cvr, 2 helmts, \$550. Gene, x8-2907 Draper or 247-8691 eves.

'82 Renault Le Car, 72K, nw batt & frm brks, drivn daily to wrk, \$650 or bst. Mark S, x3-3146 or Eric, 508-664-0801.

'83 Chevy Cavalier SW, 100K, nds brk job, exc bdy, eng, trs, \$600 or bst. Gerard, x3-5893 or 964-7347.

'83 Honda mtrcycl Nighthawk 550, 5.5K, exc cond, kpt garagd, hrdly usd, \$1,150 or bst. Chris, x8-5236 Whitehead or 491-4904.

'84 Buick Century wgn, 6 cyl, 3.0L, ps, pb, a/c, FM, rack, 65K. Tom, x8-2191 Draper or 508-528-9173.

'85 Renault Alliance, 4-dr, 5-spd, AM/FM/cass, 57K, no rst, \$950 or bst. Rich, x3883 Linc.

'85 Ford LTD Broomham, 4-dr, blk, ps, pb, pwr lcks, wndws, AM/FM stereo, a/c, red clth int, cruise, tilt steering whl, no rst/rot, 2nd ownr, \$3,200. Call x3-6202 or 739-0644.

'86 Renault Alliance, 36K, no damage or rst, mst sell soon, \$2,500 or bst. Call x3-6888 or 868-0309.

'86 Escort L, 4-dr, 5-spd, ms exc, 54K FMY mi, nw inspcn, \$2,750. John, x3-0831 or 603-437-6001.

'86 Buick LeSabre, 2-dr, wr whls, all pwr, nw trans, rec'd co car, 58K, \$6,450. Joan, x3-2039 or 245-5375.

'87 Ford Tempo, 2-dr, 4-cyl, Sport GL, rear wndw def, AM/FM/tape stereo, a/c, pb, ps, \$6,000; '87 Ford Taurus, 4-dr, 6 cyl sdn, rear wndw def, AM/FM/tape stereo, climate cntl, a/c, pwr evrything, bth have ext service plan, \$9,600. Art, x5278 Linc.

'87 Kawasaki EX500, exc cond, 2K, wh, w/cvr, \$2,000 firm. Call x3-6418 lv mssg or 508-388-4253.

'88 S-10 4x4 Blazer, loaded w/opt, \$11,500. Dennis, x3-4765 or 396-6201 eves.

'88 Nissan Sentra sprts cpe SE, a/c, AM/FM stereo, sunfr, 5-spd, v lo mi, \$8,100. Paula, x2267 Linc or 272-7321.

Honda Trac Olympic moped, virtually nw, only 300 mi, 1 yr old, \$600. John, 643-4276.

Housing

S Wellfleet on Cape, on wtr, summr mtl, 3BR, avlbl 7/16-8/6, \$550/wk, min 2 wks. Call x3-8206 or 484-4767 eves.

Glencoe, Nova Scotia, vac retrt, v priv 12-acre site overlooking E Rivr Valley, 2BR, 1/2 loft, swim in wtrfall pools, relax, hike, bird wch, rck hnt, \$250/wk. Call x3678 Linc or 508-369-3973.

Twnhse, Lake Winnepesaukee, 4BR, 2 mastr suites, 3-1/2 baths, like nw, btl restr community on Paugus Bay, jacuzzi, screend prch, boat docking avlbl, reduced to \$199,000. Bob, x8-2357 Draper.

Brookline, lrg 1.587 s.f, elegnt 3BR, 1b condo, archtctrl detail, bay wndws, 2 frplcs, nw ktchn, access to rfdeck, \$235,000. Margaret Ross, x3-2916.

Cambridge, summr sublt hse, yrd, quiet, exc nbhd, nr T, gmd piano, dshwshr, W/D, suitbl for visting faculty, 2BR. Call x3-1783 or 354-4551.

Sweden, ME, lakefmt cabin, 2BR, sleeps 5-6, avlbl 7/2-8, 7/15-21, 7/23-29. Mark, x3-1505 or 508-443-4246 or 207-647-3757.

Mashpee-Falmouth line, 3BR, 2b, deck, wtrview, mooring avlbl, quiet, shrt drv to S Cape Beach, all amenities in well-furn hse, 2 wk min, \$550/wk. Nick, x3-1664.

Brookline, exclusive 2-1/2BR condo, deeded prkg, lots of storage, v lo taxes & condo fee, exc locatn, nr Coolidge Cmr, nr T, 10 min to MIT, for immed sale @ \$171,000. Alex, x3-8401 or 566-7124.

Londonderry, NH, 2BR condo, end unit, finshd bsmt, nice area for chldrn, exc schools w/conv tmsprtn, swimming pool, tennis crt, othr amenities, only 45 mins to dwntwn Bos, will pay 6 mo of condo fee. Roy, x8-3454 Draper or 603-434-5386 eves.

Vac mtl, Cape Cod Yarfmouthport, priv tidal inland, salt marsh, swim, boat, fish, nature wlk, hufe deck, sleeps 6, \$700/wk. John, x8-4118 Draper or 603-938-2964 eves.

Jay, VT, secluded, mtside, contemp chalet, 3BR, 2b, fully furn, frplc, hike, fish, relax, pool, tennis nrby, \$350/wk, \$850/mo thru Sept. Sherry, x3-7758.

Hyde Pk Boston, 3BR cape hse, quiet, safe, prtly furn, lrg yrd, nr grade school, tmsprtn, golf course, Int'l families welcome, \$975+ utils. Joan, x3-8246 or Stanley, 876-1242.

Back Bay, Comm Ave & Exeter, 825 s.f, contemp 1BR, 1-1/2b, mod ktchn, hdwd flrs, priv yrd, a/c, W/D hook-up, \$162,500. Call 354-6837.

Sebago Lake, ME guest cottage, 1 min wlk to sandy beach, swim, fish, hike, 2-1/2 hr to Boston, sleeps 4, avlbl Aug-Sept, \$275/wk. Steve, x8-3383 Draper or 508-745-6511 eves.

Arlington, garrison Colnl, 3BR, conv to Rt 2, Alewife, Linc Lab, finshd bsmt, priv yrd, \$215,000. Call x2676/5666 Linc or 643-3525.

Summr sublt, 1BR & stdy in 3BR MIT apt, L.R, ktchn, nw bath, W/D in bsmt, hdwd flrs, fum, deck, Red line & bus, 15 min to MIT/Hrvd, \$300/mo. Itziar, x3-4140 or 491-2688, lv mssg.

Mt cottage, Goshen, NH, view of Mt Sunapee, mst comfrts, exc hiking, swimming, fishing, etc, \$20/wk. Call 508-369-4484 eves.

Graves Landing, E Camb, lrg 1BR lux apt, deck overlooking canal, Charles & cityscape, undgrmd grg, all appliances inc W/D in apt, w-w carpet, 24-hr concierge, 1 blk to green line, \$1,175 inc all cept electricity. Janet, x3-8242 or 508-875-5168 eves.

Summr/fall vac rntl, village of Loon Mtn, Lincoln, NH, 2BR, 2b, sleeps 7-8, tennis, swimming, all amenities. Jack, x3-2772 or 396-4421 eves.

Medford, historic 14 rm hse in Lawrence Est, 3-1/2b, 6 frplcs, 4,400 s.f living space, 21,000 s.f prop w/reflecting pool, slate terrace, flowering shrubs, fruit trees, nr Tufts, MIT & Hrvd, exc cond. Rosalie, x3-1055 or 396-7704.

Westboro, 2BR condo, exc mtl prop, 1,000 s.f, w-w, a/c, fully appliancd, dshwshr, pool, tennis, picnic, grt locatn, nrt to Rt 90, 495, 290, by ownr, ask \$82,500, will offr \$2,500 @ closing. Call x2935 Linc or 508-366-1732.

Virgin Isl invstmnt/retiremnt condo, studio in Point Pleasant Resort, fum & eqppd, tax-sheltrd income, price appreciat & cheap vac in totally-managd vac resort, not timeshare, \$190,000. Don Malpass, x2709 Linc or 275-2452 ans mach.

Melrose, 2BR, 2b condo, brick bldg, grg & prch, 10 mi to MIT, nr Rts 93, 128, MBTA, commutr rail & shopping, exc cond, \$139,900. Call x3-8904 or 665-3665.

Belmont, 6 rm, 1 fmly hse in Belmont, 12,000 s.f, fenced yrd, nr bus line, avlbl 7/1, \$1,600/mo. Call 623-2998.

Brookline hse, quiet st, 4BR, 2-1/2b, completely fum, fenced yrd, piano, avlbl 9/89-6/90, \$2,100/mo. Call x3-6263 or 277-5932 anytime.

Porter Sq sabbatical hse, renovated Victrn, 3 min wlk to Red Line, 3BR, Indry, yrd, fum, quiet nbhd, no smkrs/pets, avlbl 9/1-1/3/90, \$1,500+ utils. Suzanne, x3-7821 or 625-3441 eves, lv mssg.

Camb, Mass Ave, 2BR, 2b, balcony, prkg, a/c, in hi rise w/E view, 20 min wlk to MIT, avlbl 8/24, \$139,000. Pat Mock, x3-7466 or Realtor, 497-1000.

VT cottage, lakefrnt, idyllic, in wds, \$425/wk Jrt, \$450/wk Aug, mod int, fully fum, rustic surroundings, grt swimming, wlks, fishing. L. Rodwin, x3-1783 or 491-0696.

W Stockbridge summr mtl, 7/1-9/4, 5 min Tanglewood, 2BR, 2b, fum, utils, frplc, deck, secluded. Call 484-0266.

Arlington, 2BR twnhse on quiet st, DR, LR, finshd bsmt, lrg deck, lots of storage, deeded prkg, nr public tmsprtn, \$160,000. Call x3-2595 or 646-2421 eves.

Allston, 1BR apt avlbl 7/1, a/c, W/D, elevtr bldg on B Green Line, 10 min to MIT by bike, \$610/mo. David, x3-0729 or 738-0784.

Animals

Zebra finches, 2 w/huge cage, \$35. Carrie, x3-6717.

Baby rabbits, free to gd hm, 9 wks old, 5 avlbl: 3 blk, 2 tan, v cute. Roy, x4010 Linc or 631-2011.

Sk living hm for btl gd-naturd M cat, 5 yrs old, neutrd & declawd. Constance, x3-4563 or 666-3144.

Wanted

Israeli visting prof sks swap of his Tel Aviv hse for Boston-area apt or mtl for Aug. Thea, x3-4837 9am-3pm or 489-5133, lv mssg.

Musical instrumnts: sax, oboe, Eng hm & bass clarinet; ruby ring & emerald ring. Larry, x4503 Linc or 332-7152 aftr 6pm.

Hosts for Spanish stdnts (18-26 yrs) from Eng Lang Progrm in Spain, 7/1-29 or 8/5-22 or bth, provide rm/brd, receive \$70/wk stipend. Tracey/Steve, x3-8094 or 581-9293.

Native spkr of French to give informal lessns to 7 yr old. Debbie, x3-7112 or 232-5272.

Usd Port-a-Crib for infant to 25 lbs. Kim, x3-6224 or 508-371-2850.

Empty nst, mid-aged pro cpl w/lng distance commute sk rm in priv hse wkdays starting 9/89, prkg & ktchn use pref, will hse-it. Mike, x3-7959.

300,000 Mass. jobs are in alumni-founded firms

(continued from page 1)

About one-half of MIT alumni who start a business do so while they are still students or within five years of leaving school, according to one survey.

Overall, the software industry, with 85 firms, has the most MIT-founded companies. These industries round out the top 15: consulting (54), instruments (48), R & D engineering (40), computer hardware (35), medical (30), equipment (28), other services (27), architecture (25), advanced technologies (21), biotechnology (20), financial services (19), systems (14), specialty materials (14) and real estate (13).

MIT President Paul E. Gray, releasing the study at a news conference at the President's House, noted, "When Institute Professor Robert Solow won the Nobel Prize in

economics in 1987, one member of the selection committee said, 'Solow showed us that in the long run, it is not the increase in quantity that is so important. It is the increase in quality through better technology and increased efficiency. Better technology will be the engine for increased growth.'

Dr. Gray said, "What we've got amounts to a large experiment going in this state that is proving Bob Solow is right."

The 15-page report stated, "Since the mid-1950s, MIT alumni have been creating businesses year-in, year-out, during business cycle peaks and downturns. At the same time, the number of start-ups has been accelerating at a remarkable pace. When one examines company start-ups by decade, it is possible to see new technological innovations showing up in MIT alumni start-ups well before these were applied elsewhere."

The bank's Economic Department, using data supplied by MIT about companies founded by its alumni, analyzed the information as part of its ongoing research on the New England economy.

The companies range in location from Pittsfield and Northampton to East Orleans and Haverhill. About 80 percent of them are in the Greater Boston urban area, and two-thirds of the companies are located in ten communities. Indeed, one-third of them are in Cambridge and Boston alone.

Those 10 leading high-tech communities, and the number of MIT alumni-founded companies in them are: Cambridge, 138; Boston, 89; Waltham, 35; Newton, 31; Burlington, 20; Billerica, 18; Bedford, 16; Woburn, 16; Framingham, 15; and Lexington, 14.

Dr. James M. Howell, chief economist of the Bank of Boston, commented in a preface: "A pattern of economic renewal emerges from our analysis that is an encouraging sign." Dr. Howell said, "Over the past two decades, the Economics Department of Bank of Boston has undertaken considerable research on the relationship of innovation and business formation to economic growth and renewal."

"Our analysis has shown that the creation of new technology-based companies—many of which were started by alumni of the Massachusetts Institute of Technology—has played a positive role in promoting rapid structural change in the Massachusetts economy. Indeed, business formation has been the cornerstone of job creation and income enhancement; this clearly can be seen as small, independently owned businesses 'grow up.' Certainly, this phenomenon is evident when one reviews the growth of such important Massachusetts-born companies as Apollo Computer, Digital Equipment, EG&G and Raytheon. Today, all are significant employers in the Commonwealth; all were founded by MIT graduates..."

"The importance of a great technological university to the economy of the Boston metropolitan area, the state of Massachusetts, and the nation is evident from our analysis," Howell said.

Marx honored

Professor Gary T. Marx has been awarded the prestigious Jensen Lectureship given biannually by the American Sociological Association and Duke University. The lectureship, which carries an honorarium of \$8,000, is intended to encourage and make more visible sociological investigations that enrich the common good.

Professor Marx will give a series of lectures on the topic, "Windows into the Soul: Surveillance and Society in an Age of High Technology." These will provide the basis for a book to be published jointly by the lectureship sponsors.

Dr. Marx is professor of sociology in the Department of Urban Studies and Planning. He recently published *Undercover: Police Surveillance in America*.

Summer sports notes

By ROGER F. CROSLY
Director of Sports Information

Eric Reifschneider, a 1989 MIT graduate, has been named the winner of an NCAA Postgraduate Scholarship awarded for combined academic and athletic excellence. A four-year letter winner in gymnastics, Reifschneider also finished his MIT career with a perfect 5.0 grade point average in a double major of physics and math. A native of St. Louis, Mo., Reifschneider will attend Harvard University Law School in the fall. Reifschneider was one of only 24 winners selected from all sports other than basketball and football in Division II or III throughout the country, and is the seventh MIT recipient of an NCAA Scholarship since 1976.

MIT track coach Gordon Kelly was recently named New England Division III Indoor Coach of the Year by the New England Intercollegiate Track Coaches Association. Kelly, whose teams have not lost a dual or triangular meet since April 18, 1983, won the award for the third consecutive year on the indoor circuit. It is Kelly's ninth Coach of the Year award in his tenure at the Institute.

MIT men's tennis coach Jeff Hamilton recently won the Junior Veteran Division of the White Mountain Tennis Classic held in Waterville, N.H. Hamilton, who was the top seed in the tournament, defeated four other players in his bracket to defend the title he had also won in 1988. It was the first tournament of the season for Hamilton, who will compete in the National 40 Hard Court Championships at Flushing Meadow, N.Y., in July.

MIT lacrosse player Dave Chang, a 1989 graduate, ended the 1989 season ranked in a fifth place tie for most points per game by a Division III player. Chang, who was

also 11th in the country in goals per game (3.46), averaged a combined six goals and assists in each game he competed in, in his senior year. The native of Lexington, Mass., was named New England Player of the Week the week of May 10.

MIT senior basketball center Maureen Fahey from Bannockburn, Ill., has been selected to the Metro Team in the Open Division of the Bay State Games.

Final national rankings for Division III tennis teams and individuals have been released, and MIT is well represented in both men's and women's standings. The Engineers finished in a tie for 16th in the men's rankings, and the women's team earned the 20th spot in the country. 1989 graduates Kai-Yee Ho of Okemos, Mich., and Brian Brown from North Caldwell, N.J., were ranked 23rd in men's doubles, and Ho was rated 40th as a singles player. Junior Fiona Tan of Singapore earned the number 47 position in the women's listings.

The MIT men's rugby team was recently crowned Northeast Collegiate Champions, by virtue of winning the Rockaway (N.Y.) Rugby Sevens Tournament. The Engineers, who did not allow a try throughout the tournament, crushed Northeastern University in the final game by a 20-3 count. The Engineers also defeated Drew University (10-0), Manhattan College (24-0), Vassar (18-0), and defending champion Xavier High School Alumni (6-0). Eighteen colleges were represented in the tournament. Trophies were presented by Emil Signes '63, who is coach of the American Eagles Sevens Rugby Team. Graduate student Tom McCallum was named tournament Most Valuable Player.

ROTC student killed in Mexico accident

Paul E. McKenzie, 20, a junior in political science from Flemington, N.J., died June 17 from injuries sustained in an automobile accident in Mexico. Mr. McKenzie lived at 500 Memorial Drive and was a midshipman in the Navy ROTC program on active duty at the time of his death.

He was captain-elect of the track team and earned All-American honors in both the 400 Meter Intermediate Hurdles (in which he set an MIT record), and as a member of the MIT 1600 Meter Relay team at last month's NCAA Division III Championship.

He is survived by his parents, Dr. and Mrs. Basil McKenzie of Flemington, and a brother, who is a freshman at the University of Virginia.

Joseph J. Barowski

Joseph J. Barowski, 77, of Lexington, a retired guard at Lincoln Laboratory, died April 8. He worked at Lincoln from 1966 until his retirement in 1977. He is survived by his widow, Helen Barowski.

James Betts

James Betts of Cambridge, a custodian in Physical Plant until his retirement in 1981, died February 9. He leaves his widow, Florence Betts.

Donald Branagan

Donald Branagan, 77, an audiovisual operator at Graphic Arts from 1960 until his retirement in 1977, died April 28. A resident of Brockton, he is survived by his widow, Evelyn, and a son, Paul Branagan.

Rudolph Carlson

Rudolph Carlson, 83, of Dedham, a machinist at Lincoln Laboratory from 1955 until his retirement in 1973, died May 8. He leaves a sister, Hilda Murray, and two brothers, Walter and Earl Carlson.

Benedetto Di Santo

Benedetto Di Santo, 61, a custodian in Physical Plant since 1978, died on May 30. A resident of Somerville, he leaves his widow, Josephine; a son, Cosmo, and a daughter, Civita Fulchini.

Arthur Girouard

Arthur Girouard, 65, of Fitchburg, a retired electrician at Lincoln Laboratory, died May 8. He worked at Lincoln Laboratory from 1958 until his retirement in 1988. He leaves a widow, Eleanor Girouard.

George H. Leach

George H. Leach, 66, of Westwood, a former senior technician in the Research Laboratory of Electronics, died May 27. Mr. Leach worked at MIT from 1960 until his retirement last year.

He leaves a daughter, Catherine A. Leach of Westwood, and a son, Thomas W. Leach of North Attleboro.



The in-water *Icarus* team of Al Cangahuala, left, and Hauke Kite-Powell poses with the sub in Florida.

MIT sub cited for innovative design

Icarus, MIT's entry in the first human-powered submarine races held last weekend in Riviera Beach, Fla., garnered the prize for most innovative student design.

The team from the US Naval Academy prevailed, winning the \$5,000 prize for overall performance, including ingenuity, engineering and endurance. Altogether 19 teams from industries, colleges and universities competed in the race.

The challenge was to design, build and race a human-powered, "flooded" submarine. Sponsor of the race was H.A. Perry, president of Perry Co., maker of advanced systems. He hoped to inspire students and others in various disciplines to investigate the broad area of underwater technology.

The MIT sub was operated by students using Scuba gear. Hauke Kite-Powell, a graduate student and triathlete, was responsible for propulsion, while Al Cangahuala, a graduate student and student glider pilot, was the pilot.

Other members of the team were graduate students Anthony Joseph, Evan Mead, Paul Friedman and Mitch Dmohowski; undergraduates Patrick Nee and Russell Cohn, and Clifford Goudey of Sea Grant, the project advisor.

Choppy seas of 3-5 feet with 1-3 knot currents made conditions for the competition less than ideal. The turbulent waters churned up the bottom, making it difficult—sometimes impossible—for navigators to locate underwater marker buoys and stay on course.

It's a fact

According to Peace Corps representatives, MIT is one of their major recruitment emphases in the Boston area because of graduates' technical skills. Since the Corps began in 1961, 162 volunteers have come from MIT.