Massachusetts Institute of Technology

August 9, 1989 Volume 34 Number 2



\$417,403,722 said the cake. But that number was outdated, said MIT Vice President and Treasurer Glenn P. Strehle (above right) at the recent annual closing celebration of the Alumni Fund. The actual total of the Campaign for the future, Mr. Strehle said, was \$421.7 million, which included a handsome \$14.4 million this year from the Alumni Fund. Joining Mr. Strehle were, from left, Joseph S. Collins, director of the Alumni Fund; William J. Hecht, executive vice president of the Alumni Association; David S. Saxon, chairman of the MIT Corporation; Harris Weinstein, 1989-90 president of the Alumni Association; and **President Paul E. Gray.** -Photo by Donna Coveney

## Bell back

Starting January 1, MIT will use AT&T for long-distance telephone service. Currently, MCI Telecommunications Corp. provides student long-distance service and MCI and AT&T jointly provide faculty-administration service. The announcement was made by Morton Berlan, director of telecommunications services.

## Lunch talk

An Office Workers' Issues Group of the Women's Forum meets every Wednesday in the Women's Lounge, Rm 8-219, 12:10-1pm. Those interested are invited to join for networking or discussion of other office topics.

## More trips

Plan ahead for two more trips being offered under the auspices of the MIT Activities Committee.

Fall Foliage/Oktoberfest Weekend at Lake Winnepesaukee will begin October 7, leaving West Garage at 10am for the Wolfeboro Inn in New Hampshire. Following an afternoon of leisure, trippers will board the Mt. Washington for an Oktoberfest evening of dinner and dancing. After Sunday brunch, the bus will tour the lake, returning to West Garage about 7pm October 8. The price is expected to be \$96/person, double occupancy, or \$71 without Oktoberfest. Call Liz Mulcahy, x3-1674, for more information. A three-day, two-night Philadelphia Trip by Train is scheduled October 27-29. The trip includes a welcome dinner and lodging in a hotel in Independence Square; a walking tour of the historic district and Society Hill with lunch at the Dickens Pub. After Sunday breakfast there will be time for shopping before boarding the train for Boston. The price is estimated at \$249/person. Joan Doucette, x3-8246, has further details.

## Parr wins Lottery

Michael J. Parr, assistant manager of labor relations, and his wife Karen are MIT's first instant millionaires. They won \$2.8 million in Saturday's Megabucks drawing with a "Quic-Pick" num-

The Parrs have been playing Megabucks and Mass Millions for several years and began using Quic-Pick when it was introduced about six months ago.

Mr. Parr, who has been at MIT for 21 years, has a few plans for the new riches.

We'll get a boat and a home computer, and maybe some new furniture," he said.

# Receiving area to be closed temporarily

The Building 3 shipping/receiving dock will be closed from September 6 through mid-October while the steel for the Rotch Library addition is delivered and erected.

A recent note from Joseph Salvatore, project manager in Physical Plant, urged department and laboratory heads, account supervisors and administrative officers to plan ahead in ordering supplies to be delivered at the Building 3 receiving room.

# Plasma detector nears Neptune

**By EUGENE F. MALLOVE** Staff Writer

Aboard Voyager 2, fast approaching planet Neptune, is a sensor that has been in the halls of MIT, but whose destiny will be interstellar space.

Completing its grand tour of the solar system, Voyager 2 is fast nearing its fourth and final encounter with a planet. After it passes within several thousand miles of Neptune on August 25, it will escape the solar system forever and will be bound on an infinite voyage among the stars.

A team of about a dozen investigators at the Center for Space Research led by physics professor John W. Belcher, the principal scientific investigator, has shepherded the successful space plasma science package known as PLS aboard Voyager 2. The Space Plasma Group eagerly awaits data from its experiment as Voyager 2 rushes toward a fly-by of Neptune.

The PLS experiment sensor was designed to detect low-energy positively charged ions as well as electrons. It has already contrib-

#### Neptune on TV

On August 25, members of the MIT community who wish to witness more of Voyager 2's encounter with Neptune than is available on the evening news are invited to tune into MIT cable channel 13 between 1-4pm, for "live" NASA Select channel coverage. The Edgerton Room, 34-101, has been reserved for Neptune viewing during this time. Other classrooms and lecture halls that have television monitors and are set up to receive MIT cable may also be available.

Sometime after the Neptune encounter, the Center for Space Research is planning to make available to the MIT community previously taped NASA news conferences that will be held daily from August 21-29.

# Revised policy manual issued

The revised MIT Personnel Policy Manual, containing statements of Institute personnel policy and practice for all nonacademic employees at the Institute, has been published by the Personnel Office and will be available to departments beginning August 10.

uted significantly to understanding the space plasma environments around the three other planets that Voyager 2 has met.

Voyager 2 was launched on August 20, 1977, and after its Neptune encounter will have visited all of the giant outer planets-Jupiter (July, 1979), Saturn (August, 1981), and Uranus (January, 1986). By contrast, its Voyager 1 twin visited only Jupiter and Saturn. Aboard Voyager 1 is a duplicate PLS sensor package that made fruitful observations near those planets.

The signal from Voyager 2's radio transmitter, now about 2.7 billion miles from the Earth, takes over four hours at light speed to arrive here. It is a tribute to modern digital communications technology that high-resolution pictures and other data can be received from that distance with a transmitter power of a mere 20 watts.

Moreover, with the exception of mechanical difficulties near Saturn, Voyager 2 has been a reliable scientific emissary for almost twelve years. Its broadcasts from increasingly remote reaches of space are expected to be receivable through the year 2013, when Voyager 2 will be slightly more than a hundred times further from the Sun than Earth. The MIT graduating class for that year has not yet been born. Researchers not alive when Voyager 2 left Earth will some day study its transmissions.

The Voyager PLS experiments have given researchers new insights into the complex plasma phenomena that surround the outer planets. At Jupiter, but still far from the planet, it detected the movement of the boundary that marks the interaction of the solar wind with the planet's magnetic field.

The PLS also mapped the complex interactions going on between some of Jupiter's moons and the magnetosphere-the elongated region in which the planet's magnetic field is shaped by the flow of charged particles from the Sun. At Saturn and Uranus, Voyager 2 detected similar com-

(continued on page 4)

Members of the editorial group for the Manual were: Carl Belforti, Marilyn Bodnar, Kim Bonfiglioli, Richard Caloggero, Brian Donahue, Jack Foley, Cynthia Froeber-Vallino (chairperson), Susan Gaskell, John Hynes and Nancy Lombardi. Members of the advisory group for the Manual were: Richard Adams, Donna Behmer, Sheelah Britt, Nancy Cavanagh, Richard Cerrato, John Cochrane, Joyce Cooper, James Fandel, Ronald Fleming, Jane Griffin, Paul Honiker, Susan Lester (editor and coordinator of the 1979 edition of the Manual), Junco Norton, Frances Page, Evelyn Perez, Susan Pritchard, Mary Rowe, Janet Snover, Phil Waldron, Clarence Williams and Sally Wright. Other advisors to the project were: Fred Crowley, John Fresina, Deborah Kelley, Kathy Lalor, Kathryn Lombardi, Virginia Lyons, Jane Smith and Kerry Wilson. Department supervisors will be notified by mail of the Manual distribution schedule. Manual copies will be made available in all department administrative and headquarters offices, as well as the Personnel Office reception area, for access by all Institute employees. Questions relating to the Manual or personnel policies may be directed to the Personnel Office at x3-1591 or x3-4278.

During the shutdown, deliveries can be made at the Building 20 (20C-018) receiving area. Deliveries of some materials may be made on the north side of Building 13 and hand-trucked along the walkway to the receiving doors.

Questions on shipping and receiving should be directed to Austin Petzke of Physical Plant, x3-3927.

The annex of the main parking lot also will be closed during this period. Replacement space will be available in the TRW-Carr Fastener Lot, accessible through the East Garage entry. Parking questions should be directed to Dorothy Shannon of Campus Police, x3-9897.

## It's a fact

In 1988-89, some 20 percent of MIT's student body was composed of international students. With 180 each. China and Canada were the most well represented.

The revised manual is the result of a 15month effort coordinated by Cynthia Froeber-Vallino of the Personnel Office, who was assisted by Rose Rizzo, Michelle Aimone, and Deborah Santoro.

The revision project involved the participation of a 10-member editorial group, chaired by Ms. Froeber-Vallino, that met bimonthly to review and revise all policies sections in the previous manual.

The project was the first comprehensive revision of the Manual since 1979. Many new policy sections were added as well, referring to topics such as the employment of students, the MIT nonsmoking policy, procedures for temporary agency employees, and employee development resources.

A 21-member advisory group also participated in the final review of the Manual draft, as well as giving input and assistance throughout the course of the revision project. Several other Institute staff were called to act as advisors for particular policy sections relating to their areas of expertise.

# THE INSTITUTE CALENDAR

## August 9 - August 20

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

## **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 Bldg 1218, Family Support Ctr. 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, sored by MIT Social Work Service. For info call 7:30-9am. st 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 eating compulsively. Info: Sarah, x3-4911.

MIT Faculty Club\*\* - Closed for renovations, through early Sept.

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

Working Mothers Support Group\*\* - Meets every other Tuesday, 12-1:30pm (drop in any time), Rm 4-175. Next meetings: Aug 22 & Sept 5. An ongoing support group that meets to discuss parenting-related issues in a casual atosphere. Info: Janette Hyde, x3-4290.

MIT Women's Book Discussion Club\*\* - Women's League discussion of Freud, Women and Morality by Eli Sagan, Thurs, Aug 17, 1-2pm, Rm 10-342. Info: Ellie Bonsaint, x3-5763 or Pam Deveta, Women's League Office, x3-3656.

# INSTITUTE NOTICES

#### - Open to public

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

# Announcements

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 frie ship. All financial and academic problems handled by specific MIT offices. Info/volunteer forms: Kate Baty, 861-6725 or Pam Daveta, x3-3656.

Lunch Hour Exercise\*\* - Women's League program to gent ly 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 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. (*Please note: There are no ticket sales in Lobby 10 or Lobby 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.

Preview of Autumn MITAC events. Please note tickets for these events will not be sold until after the October MITAC flyer has been distributed, shortly after Labor Day. For further information, please call the group leaders, not the MITAC  $\,$ Office.

Fall Foliage, Lake Winnipesaukee. Oct 7-8. Stay Wolfeboro Inn and enjoy Oktoberfest on board the Mt. Washington (dinner, dancing and entertainment). Sunday breakfast, cruise and return to the Inn for brunch. Price: approx \$96/person double occup. (\$71 without Oktoberfest.) Details: Liz, x3-1674.

Philadephia Weekend by Train. Oct 27-29. Stay at a hotel in Independence Sq for 3/2 nights. Welcome dinner; walking tour followed by lunch at Dickens Pub. Sunday breakfast. Transfers and more. Approx \$249. Details: Joan, x3-8246.

Veteran's Day Weekend in New York. Nov 10-12. Trip includes hotel and round trip bus fare. Approx \$140/person double occup. Info: Alice, x8-9299.

Montreal Christmas Shopping Spree. Nov 24-26. Enjoy Thanksgiving at home and spend the rest of the weekend in Montreal. Approx \$120/person inc round trip bus fare and 2 nights hotel. Details: Alice, x8-9299.

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 Amuseument 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 Vinevard. 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 D passes employees may borrow for free admission to the luseum 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.

MIT Radio Society and UHF Repeater Association Monthly Ham Exams\*\* - All classes, Novice to Extra, Aug 23, Sept 20, Oct 18, Nov 22, Dec 20, Rm 1-150. Reservations re-quested 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, Stu-dent 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 idea; support sour undergraduates with business interests. Info: Doug Ling, x3-0757 or Richard Shyduroff, 876-2271.

MIT Science Fiction Society\* - The world's largest open col lection of science fiction books and magazines is located in Stu-dent 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 develop-ment-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 Info: Miguel east one Torres, x3-2349

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 purchases are non-refundable due to the non-profit nature of our organization

## Social Activities

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

#### Iheater

Ruddigore\* - MIT Community Players' Gilbert and Sullivan production, Aug 10-13, 17-19, 8pm, Kresge Little Theatre. Tickets: \$9/general, \$\$/MIT ID, seniors and children. Tickets and reservations, x3-2530.

Little Shop of Horrors\* - MIT Musical Theatre Guild produc-tion, Aug 25-27, Sept 1-3, Sept 7-9, Spm, Kresge Little Theatre. \$8, \$7 MIT faculty & staff, \$6 students & seniors, \$5 MIT stunt ID. Info: x3-6294. Mail order: PO Box 3, MIT Branch, Cambridge 02139.

#### Dance

MIT Dance Workshop First Meetings\*\* - Composition/Im-provisation: Tues, Sept 12, 11-12:30pm, Walker 201; Inprovisation: Tues, Sept 12, 11-12:30pm, Walker 201; In-termediate Modern Technique, Tues, Sept 12, 5:30-7pm, Walker 201; Beginning Modern Technique, Wed, Sept 13, 3:30-5pm, Dupont Ctr, T-Club Lounge; Repertory/Improvisation, Thurs, Sept 14, 11-12:30pm, Walker 201. Come prepared to dance.

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/Ad-vanced: 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 THE MIT MUSEUM

MIT Museum Bldg (N52) - Math in 3D: Geometric Sculptures by Morton C. Bradley, Jr. Revolving sculptur based on mathematical formulae. Form and color relations le these works 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, in-struments, memorabilia documenting Harold E. Edgerton's in-vention and use of the strobe light, Through Sept 15. Gallery hours: Weekdays 9am-5pm, closed Saturdays.

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, Sum-mer Schedule: through 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 Ser-vice 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. Qu'an study groups in English and Arabic meet 8pm & 9pm at the room. Info: x8-9755.

# Masubuchi honored

Professor Koichi Masubuchi, who has joint appointments in the Department of Ocean Engineering and the Department of Materials Science and Engineering, has received three significant honors recognizing his outstanding contributions in welding science and technology.

The Japan Welding Society has elected him a Guest Member, a title reserved for honorary members from abroad. Professor Masubuchi, a native of Japan, is a US citizen. He is the third guest member from America. The election came at the national spring meeting of the society at which Professor Masubuchi gave a lecture on welding in space.

At the second international conference on welding research, held in Gatlinburg, Tenn., in May, he was one of three recognized for outstanding contributions to his field.

The third honor was his election to life membership by the American Welding

**Hart Nautical Gallery** 

Ongoing exhibits: George Owen '94: Yacht Designer – Line drawings and half-models designed by one of the early pro-fessors of naval architecture at MIT. Half Models in Naval Ar-chitecture 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.

Send notices for Wednesday, August 30 through Sunday, eptember 10 to Calendar Editor Rm 5-111, before 12noc Friday, August 25.

#### Student Jobs

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.

Off Campus: Non-Technical Summer: Kendall Square software company needs clerical sup-port. Will work with Mac. Ideal candidate will have previous of-fice experience. Must be able to continue part time into the fall fice experience. Must be able to continue part time into the fall. Hours: 10am-3pm Mon.-Fri, or 12-5pm Mon-Fri. Salary: \$6-8/hr. Contact: Jeane or Carol, Aware Inc, One Cambridge Center, Cambridge MA 02142, 225-0666.

Read Chinese history and archeology textbooks onto tape for visually impaired student. Texts in English, but applicant must be able to pronounce Chinese names. Equipment provided. Must be able to speak English well. Hours: 6-10/wk. Salary: \$7/hr. Contact: Christina, 527-0452.

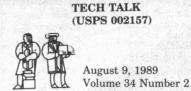
Free room and board in exchange for care of a 43-year-old invalid. Must be male. Location accessible by bus. Hours: 10-15/wk. Contact: Ida Defina, Somerville, 623-6447 (after 4pm).

On Campus: Non-Technical

Summer: Collect and wash lab glassware. Job lasts until end of ummer. Hours: 40/wk. Salary: \$7.25/hr. Contact: Kerry Bruno, E17-115, x8-6465.

#### Off Campus: Technical

Programmer needed. Use C and Assembler, plus Dbase, Rbase or Oracle. Hours: flexible. Salary: \$12.\$25/hr. Contact: Joe Ahearn, Beacon Technologies, Box 563, Waltham, MA, 02254. 890-8290.



MIT Language Conversation Exchange\*\* - Medical Dept min Language conversation Exchange — Induct Population 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 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: experienced jumpers go out every weekend; beginners, call for information on our first jump courses. AFF and Static-line. Carl, 225-0408.

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

MIT Hobby Shop<sup>••</sup> - 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.

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

ratory 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 Line

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 op portunity 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.

Tech Talk is published weekly except for most Monday holidays by the News Office, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139. Telephone (617) 253-2700

Postmaster: Send address changes to Tech Talk, Room 5-111. Massachusetts Institute of Technology, Cambridge, MA 02139

Tech Talk is distributed free to faculty and staff offices and residence halls. It is also available free in the Informa-tion Center and the News Office.

Mail subscriptions are \$18 per year. Checks should be made payable to MIT and mailed to Business Manager, Room 5-111, MIT, Cambridge, MA 02139.

Second Class Postage paid at Boston MA.

News Office Director: Kenneth D. Campbell; Associate Director: Robert C. Dilorio; Assistant Directors: China Altman, Charles H. Ball, Naomi F. Chase, Donna Coveney, photojournalist; Eugene F. Mallove; Joanne Miller, Tech Talk editor; Elizabeth A. Thomson, Tech Talk assistant editor; Reporter Lynn Heinemann (Insti-tute Calendar, Classified Ads, Institute Notices). Production by Geneviève T. Parent and Karen Sklut of MIT **Graphic Arts** 

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

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 Percent accompanied by full name and extension. Persons who have no extensions or who wish to list only their home home telephones, must come in person to Rm 5-111 to present Institute identification. Ads using extensions may be sent via Institute mail. Ads are not accepted over the telephone

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

Deadline is noon Friday before publication.

#### For Sale

Kenmore hvy-duty wshr, exc cond, \$100; Sears 16 c.f fridge, \$75. Susie, x8-5626.

Hoover upr vac clnr, \$20; drssmakr's form, \$15; steam im, staind louvrd drs, \$20; utsmart's for tv w/stad, \$45; mapl staind louvrd drs, \$20; walnut BR furn: tripl drssr w/mirror, nite tbl, sm drssr, \$230. Arthur, x3-2720 or 272-2220.

DC2000 backup tapes, 3 mo old, barely usd, 7 avibl, \$10 ea. Call 648-6389.

BR, DR/office furn, off-wh chr, rattan day bed, sm wardrobe, wool area rugs, Dansk walnt conf/DR tbl & more. Call x3-0440.

Solid blck sofa, imitatn lthr, gd cond, approx 6'L, \$20. Lori, x3-8259.

Centurian 10-spd bike w/rear rack, exc cond, \$90. Dan, x3-8192 or 628-3666.

Blue Marlin wind surfr, \$425, perf brd up to intermed levl, inc 6.5m Mylar sail, 5.0m hi wind sail, lo cavitatn skeg, exc cond. Call x8-4284 Draper or 876-5178.

2 twin-sz beds, frames, bx sprs, mttrssrs, \$40 ea or \$75/both. Call x3-0457 or 924-6294.

Eletre stv, 30" Whirlpool, 4 burnrs, ovn, broilr, clock, harvst gld colr, \$50 or bst. Chris, x3-0412 or 938-6994.

Couch & 2 chrs, \$260, twin mttrss, box, frame, \$100; drawr, \$90; desk & chr, \$50; sm tbl, \$30; desk lmp, \$10; bed lmp, \$10; Veneth blind, \$10. Franco, x3-7139 or 742-2622.

Q-sz waterbed, \$250; couch & chr, \$150. Tom, x8-2909 Draper or 648-7045.

15-gal aquarium, htr, pump, filt, gravel, \$50 or bst. Neal, x3-6220 or 625-3438.

Nw 40-gal gas hot wtr htr, stll in seald crate, \$265+ tax @ Somerville Lumber, sell for \$200. Tony, x3-3922.

Haas & Sohn coal stv, brwn enamel finish w/hearth protetr + 3 (50#) bags of coal, \$500 or bst. Jim, x4615 Linc.

Crocheted tbl clth, 58'Wx94"L, exc cond, \$100; various sz baskets for plants. Kim, x3-1740 or 483-7355 eves

se WY-700 monitr & video card, 1280x800 res, compat Wyse W 1-700 monitr & video cara, 12807800 res, compar w/IBM PC & MS windws, \$750; Compaq 30MB HD & cont, \$275; Mac int HD, 80MB, \$750; Mac Plus logic brd, \$400. Julius, x3-6921, julius @ premise.zone1.com, or premiseljulius@EDDIE.MIT.EDU.

Dirct flight, Bos-San Fran, 8/22, 1-way, male, bst offr. Elaine, x3-6062 or Chris, 861-8064 eves.

M's grey lthr drivng glvs, sz XL, nvr wm, pd \$40, askg \$20; M's Frye brwn lthr boots, sz 11-1/2D, still in box, pd \$135, askg \$75 or bst. Susie, x3-5916.

Wshr/dryr, 10 mos, orig \$550, \$395; 8,000BTU a/c, 1 yr, orig \$462, \$335; spkrs Acoustic Monitor PSM1250 100W, orig \$900, \$195; 6-pce rattan LR set, gd cond, orig \$1,000, \$300; btl hdwd vanity w/stool, lvseat brocade uphlstry, \$150; antq oak hoosier cupbrd c 1915, \$395; Natl Telecastr elec guitr, \$45. Scott, 648-0211 eves or mssg.

Apt-sz electrc wshr/dryr, stackbl, 1 yr old, exc cond, \$400. Gary, x3-6923 or 648-2805.

Mving, mst sell: teak tbl, 51x33-1/2" w/blt-in xtensns & 4 Windsor chrs, like nw, \$500. Gene, x3-6424 or 277-9688 aftr 6pm.

Apple II Plus cmptr, 64K, monochrome mntr II, floppy disk drv II, mntr stand, therml prntr, game paddls, \$695. Pete, x3-7253.

Conran's wh 70x36 bkcase, \$70; 110 lbs barbell & dumbell set, \$50; Maxima hot plate, nvr usd, \$40; Smith Corona elette typwrtr w/hrd case, Coronet XL, \$150. Lv mssg 566-0922

Century baby carriage, \$65; x-lrg playpen, \$100; bth \$150; 2 glass top end tbls & 1 glass top cffee tbl, \$300/set, will sep; 5" b&w tv, br nw, stll in box, \$60; phone, nvr usd, \$20. Demetri, x3-3908.

Mving sale: Q-sz brass bed; walnt DR set inc htch, tbl w/leaf (sits 8), sidebrd; microwy stnd; cffee tbl, entertainmnt ctr. bet

bst; 5 Kores ribbn cartridgs, multistrike for Olivett Epson LQ pmtrs, nw, \$20 or bst. Call 508-687-4479.

Free: uphlstrd swivl rckr, wing-bck, Ethan Allan, 12 yrs old, cln & sound but wear spots in uphlstry, in Medford nr Tufts. Louise, x3-7607 or 391-8045.

Mving sale: oak DR tbl, 4 chrs, seats 6/8 w/leaf, \$250; Q-sz bed, \$100; 19" colr tv, \$75; 4 bureaus, \$30 ea; desk, \$25; 5 shlf bkcase, \$20; dishes for 8, \$25; misc appliances. Mathew, x3-7950 or 646-8639 eves.

#### Vehicles

75 Granada, only 63K, a/c, Chapman lock, \$500 nego. Call 229-6349 or 508-263-5396.

'77 Datsun F-10 htchbck, rad, strt, alt, chassis, brks, etc nw, mst sell, only \$450. Rasheeq, x3-3095/0061.

'78 Datsun VW Rabbit, 120K, reliable, nw brks, trs & inspetn, AM/FM/tape stereo, \$500 or bst. Annette, x3-6750 or 232-2824.

79 Mercury Bobcat, auto, radio, 49.5K, nw trs, shcks, rad, \$750 or bst. Zeng, x3-7237 or 864-2651.

'79 VW Rabbit, no radio or speedomtr, evrythng else grt, 32K on nw eng, make rsnbl offr. Mike, x5-9246 dorm.

79 Honda Accord LX, 3-dr, a/c, AM/FM stereo, ps, pb, nw brks, exh, wtr pump, bdy rst, reliable eng. Narayan, x3-6925 or 577-9945 (mssg).

'81 Mercury Lynx, 2-dr htchbck, std, gd cond, 81K, ownr lft for Europe, book valu \$1,400, sell for \$900 or bst. Call x8-4118 Draper or 864-7725.

'81 Olds Cutlass, 62K, a/c, all pwr, no rst, \$1,000 or bst. Call x3-6263 or 277-5932.

'82 Pontiac Phoenix, auto, 4-dr, AM/FM, 86K, no rst, v gd cond, \$900 or bst. Call 621-0605, lv mssg.

'82 Nissan Stanza, 5-spd, a/c, sunrf, ps, AM/FM w/ 4 spkrs, nw brks, xtra parts inc 2 nw trs, metallic red, no rst, \$2,500. Call 623-2850.

'82 Olds Cutlass Ciera Brougham, exc cond, 83K, 4-dr, V6 has evrything, pwr locks, pwr drs, cruise cntrl, ps, etc. \$3,800 or bst. Jim, 862-1793.

'82 Yamaha SECA 550 mtrcycl, jst 8.5K, nr mint cond, orig ownr, always garaged, all service recpts avlbl, only \$666 inc cvr & helmt. Graham, x8-5164 or 666-3966.

'84 Honda Civic Si H/B, 5-spd, air, AM/FM/tape stereo, 74K, 1 ownr, nw trs, eng wrk, lock/cutout, \$2,750; also '80 VW Rabbit, nds cltch, make offr. Tony, x3-0425 or 237-3402.

'84 Nissan 300ZX, H.B, wh, T-tops, loaded, 66K, nvr seen snw, ownr mving ovrseas. Greg, x8-2929 Draper.

'84 VW Corolla, 4-dr sdn dlx, AM/FM/cass stereo, sunrf, auto, ps, nw exh, 58K, \$3,200 or bst. Call x3-1760 or 734-1680

'85 Caprice Est sta wgn, auto, ps, pb, air, AM/FM stereo, cruise, tilt steer, rfrck, only 15K, \$8,000. Tony, x3-3922.

'85 Celebrity sdn, 24K, 1 ownr, 4 cyl, auto, ps, pb, AM/FM stereo v gd cond, askg \$5,350 or bst. Len, x8-3454 Draper or 325-4853.

'86 Ford Mustang LX, 36K, auto, 2-dr, a/c, ps, pb, AM/FM, askg \$4,500. Sue, x7612 Linc or Bob, 508-264-4518 eves.

'87 Ford Taurus, \$8,000 or bst. Tom, 241-9387.

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

'88 Toyota Corolla FX, a/c, pw, AM/FM/tape, 2-dr, rstprf, almst br nw, only 4.5K, \$7,500. Call x8-5406 or 891-7371.

## Housing

ME islnd cottage for 3, fall rate, \$350/wk. ocean view, fully eqppd, wlk to village shops, nature preserve, biking, gd restmt. Call x3-3490 or 547-1311.

# Professor Egon Orowan dies

Professor Emeritus Egon Orowan of the Department of Mechanical Engineering, known internationally as an authority on



Dr. Orowan

metals, died August 3 at Mt. Auburn Hospital after a brief illness. He had turned 87 years old the day before.

the physics of

A memorial service is being planned by his MIT colleagues for later in August. Professor

Orowan was considered unique for his ability to combine fundamental knowledge of physics and metallurgy with the point of view of the mechanical engineer. He had the unusual distinction of being both a fellow of the Royal Society of London and a member of the US National Academy of Sciences.

One of Professor Orowan's major contributions was the concept of dislocations in metals, one of the century's outstanding advances in the understanding of how materials plastically deform under stresses. Professor Orowan introduced his theory in 1934 when he was only 32 years old. His later research overthrew the classical theory of the brittle fracture of steel and led to the realization that the speed with which a piece of steel is deformed is the most important factor in the problem of brittleness. His work was of great value in providing answers to the problem of brittle fracture that plagued American shipbuilding in the early days of World War II.

In 1984 he received a special award from the American Institute of Mechanical Engineers at a meeting in Detroit celebrating the 50th anniversary of the concept of dislocations. In 1985 he received the Acta Metallurgica medal and the Heyn Memorial Medal.

Although his central field was physics and materials science, Professor Orowan was trained in his undergraduate years as a mechanical and electrical engineer. He retained an affinity to engineering throughout his career as an educator and was considered a unique teacher of materials science to students of engineering. His wide ranging interests included research on the mechanisms of earthquakes and the formation of mountains.

In 1973, Professor Orowan was awarded the Danish Metallurgical Society's Paul Bergsoe Medal for his contributions to his field. His other awards include the Tho-

Graves Landing, Camb, Irg 1BR lux apt, deck ovrlooks canal, Charles & city, undrgmd grg, all appliances inc W/D, w-w carpet, 24-hr concierge, 1 blck to Green line, \$1,150 inc all but elec, avlbl 9/1. Janet, x3-8242 or 508-875-5168.

Reading, MA, 4BR, 2-1/2b, split lvl, bordrs, conservatn Ind, screend prch, Irg deck, remodeld ktchn, LR, DR, fmly rm, 2-car grg, wlk to twn, \$289,000. Call x4778 Linc or pref 944-2156.

Cape, E Sandwich Beach, sm cottage w/deck, sleeps 4, acrss frm beach, avlbl wk of 8/26, \$400. Call 508-877-9518.

Arlington, 2 apts 1st flr/2nd flr: 6 rms, 2BR, quiet, 2 blcks to bus, shops nrby, prkg, avlbl 8/10 & 9/1, \$870. Call 646-8972.

mas Hawksley Gold Medal of the British Institution of Mechanical Engineers, the Bingham Award of the American Rheological Society, the Carl Friedrich Gauss Medal, and the Vincent Bendix medal of the American Society of Engineering Education

He was also a member of the American Academy of Arts and Sciences, a corresponding member of the Gottingen Academy of Sciences in Germany, the Physical Society of London and the American Institute of Mechanical Engineers.

A native of Budapest, Hungary, Professor Orowan attended the University of Vienna from 1920 to1922. He received the degrees of Diploma of Engineering in 1929 and Doctor of Engineering in 1932.

In 1941, he and the former Jolan Schonfeld, also of Budapest, were married in England. In 1950 they came to the United States with their daughter, Susan. Mrs. Orowan died in 1986.

Professor Orowon came to the United States to accept a visiting faculty position at MIT. Later in1950 he was appointed to the permanent faculty in mechanical engineering. In June 1951 he was named George Westinghouse Professor of Mechanical Engineering. He retired from the active faculty in 1968.

Professor Orowan is survived by his daughter, Susan K. Martin of Washington, D.C., and his nephew, Lorant Toth of Hungary.

A funeral service was held Sunday, August 6, at Short, Williamson and Diamond Funeral Home in Belmont.

# Karel is honored

The International Association for Engineering and Food has presented an honorary fellowship to Dr. Marcus Karel, professor emeritus of chemical and food engineering at MIT.

Part of the award-the first time the association has given such an honor-was a travel fellowship for a former student of the award recipient to the 5th International Congress on Engineering and Food in Cologne, Germany. Professor Karel selected Dr. Shimon Mizraki of Israel, who was a postdoctoral student and research associate at MIT in 1968-69 and a visiting professor in1975-76.

Professor Karel was cited for his "outstanding contributions of original research in the field, significant influence upon the approach and ideas of others, leadership in engineering and food science and promotion of international cooperation."

ImageWriter I or II prntr. Merlyn, x3-7174 or 661-7068.

22 yr old F stdnt frm Netherlands wrkng at MIT for 4 mos sks rm in hse/apt w/ktchn privilgs, thru 12/1/89. Ellie, x3-4721.

Early music or baroque musicians whith to perform for lo fee @ Xmas concert, 12/15-16, w/ballet & baroque dancrs. Silvana, x3-3733.

Startr set of usd W's glf clubs, sz C3 or C4/bag. Jennifer, x3-9774 days.

#### Roommates

2 rcnt Wellesley grads sk 1 or more fmdly neat M/F rmmate to shr hse/apt in/nr Boston (\$300-350/prsn). J.B, x3-1592 or

# offrs. Call x2935 Linc or 508-366-1732 aftr 9pm

Lrg metl typing desk, grt for cmptr/stdy, \$25; NEC daisy whl pmtr w/tractr feed, \$150. Craig, x3-8434 or 891-4191.

Chinon camra, fully auto multi focus, 35mm, yr old, \$100 or

Olivetti ET or

desk, grt shape, in Arlington, \$30. Al, x8-5686 or 646-1973, lv mssg.

DR tbl & 4 chrs, like nw, solid cherry, 2.5 yrs old, nw set sold for \$1,700, \$545 or bst. Call 524-3466.

nolta 7000 Maxxum camra w/2 lenses, 35-70mm zoom 100-200mm zoom, Minolta flash, filtr, eqpmnt case, too mch camra for too littl photographr, \$500. Bill x3-6249.

Metl card files, 3x5 sgl, 3x5 dbl, 5x8 sgl; flowr pots, asst colrs & szes; hot plate; all rsnbl prices. Sylvia, x3-4084.

Fuji jr 10-spd boy's bike, exc cond, \$100 or bst. Tali, x3-4791 or 391-7829.

504 Peugeot parts, nw & usd: startrs, distributr caps, carbs, etc. Call 508-475-5628 aftr 6pm.

Guitr amps: Musicman 100W, tube output, channl switchng, Ovrdrv, reverb, premium Electro-Voice spkr, etc, \$275 or bst; Dean Markley 20W mini, hdphone output, etc, \$85 or bst. Tugnulbey, x5-9578 dorn.

Office desk, \$120; a/c, br nw cond, \$135; mapl desk w/mtching chr, \$120; lrg tbl desk, \$85; wh md ktchn tbl, \$85; wd ktchn chrs, \$20 ea; desk chr, \$35; Encycl Brit 1943, \$55; misc lmps & fixtures. Call 332-8251.

Radr detectr: Beltronics, stll in seald box, retails \$139, sell for \$120; Ski Pass, 2 days for 2 ppl, mid-wk, Wilcat Mt, \$120. John, x3-0831 or 603-437-6001.

Red velvt LR set: lv seat, 2 chrs, cocktail tbl & 1 end tbl, gd cond, \$350 or bst. Josie, x3-6334.

Waltham, 128 & Mass Pike, 3BR hse, 1-1/2b, frplc, hdwd firs, grg, all nw utils, yard, \$224,000. Doris, x8-5207 Whitehead.

VT cottage, lakefrnt, idyllic, in wds, \$425 or \$450/wk depnding whn rntd, mod int, fully furn, isolatd, grt swimming, wlks, fishing. L. Rodwin, x3-1783 or 491-0696.

Huge BR in lrg 3BR hse in Belmont/Watertown line, avlbl 91/89-9/90, \$350+ utils, fum/not--your choice. Helen, x3-6840 or 926-4064 eves.

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

Westboro, 2BR condo, 1000 s.f. w/w, a/c, fully appliancd, tennis, pool, rec area, prkg, conv to Mass Pike, Rt 495, 290, exc mtl prop, by ownr askg \$82,500. Call x2935 Linc or 508-366-1732 aftr 9pm.

Worcester main south, 3-fmly hm, 6-6-6, exc cond, \$159,900. Tom, x3-4978 or 749-6645 eves.

Arlington Hts, sm furn rm w/full bath, sep entrance, no ktchn, on trnsprtn & stores, no smkrs, \$330/mo+ utils & prkg. Dana, x4611/4580 Linc.

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

Brookline, exclusive 2-1/2BR condo, exc locatn, nr Cool Comr, 10 min to MIT, deeded prkg, v lo taxes & condo fee, \$172,000. Alex, x3-8401 or 566-7124.

Lvly 1BR for mt, v close to campus. Call 494-1594.

Lexington, 3BR hse, w/w carpets, frplc, priv bckyrd, deck, finshd bsmnt, lndry, quiet st, \$1,450/mo, avlbl 8/15-9/1 for 1 yr/longr. Call x3-4364 or 862-6211.

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

Boston/Hyde Pk, partly fum sgl fmly hse, 2-3BR, LR, fmlc, DR, all appliances, yrd, nr school, public trnsprtn, \$950+. Joan, x3-8246 or 720-2069.

Derry, NH, nw constrctn, custm design 4BR Colnl, 2400 s.f., 2-1/2b, entry ktchn, forml DR, frpled LR, lrg fmly rm, mny xtras. Lee, x8-8473.

Medford/Wellington, 4BR apt, LR, DR, btfl ktch & br nw bath, D&D, W/D, 1/2 bsmnt, off-st prkg, frplc, hdwd fir, currnt occup MIT stdnt, avlbl 9/15, \$975/mo. Call x3-9761.

Melrose, 3BR Victm, LR, DR, eat-in ktchn, grg, yrd, office, nr T & train, avlbl 9/1, \$1,300+ utils. Alfredo, x183-333 Bates or 665-8456.

Time shr, The Cove @ Yarmouth, W Yarmouth, Cape Cod, Feb school vac wk, 1BR condo, 2 full baths, indr pool, hlth club, sauna, jacuzzi, indr courts, etc, sleeps 4. Penny, x3-4252 or 646-1876.

Arlington, 3BR on quiet st, conv to Rt 2, nr T, yrd, prch, hdwd firs, \$950+ utils. Bill, x8-2438 Draper or 508-475-5224 eves, lv mssg.

#### Wanted

Rspnsbl person sks hsesitting positn, summr or longr. Laura, x3-5658.

248-8355.

#### Miscellaneous

Priv rm/brd for babysitting 5 yr old boy, 2-6:30pm, M-Th, begin late Sept, Belmont, 3 blcks to Red line, wages avlbl for additnl hsehld hlp. Susan, x3-3479 or 489-3355.

Pro typing by exp'd sec, v rsnbl rates & prompt service, legible hndwriting please. Diane, MIT Press, x3-5646.

#### Surplus Property

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

\$DA01Case 2610--Transfer of funds required: Phillips 3000 word processing sys. To inspect call Carol Solomon, x3-

Case 2532--Transfer of funds required: IBM AT 5170 microcomputer w/IBM Quietwriter printer. To inspect call Kathy Taylor, x3-4733.

Case 2358: 2 Kaypro PC's, TEC printer.

Case 2532: HP 2601A printer.

Case 2617--At Dean's Office, School of Science: IBM 5160 XT microcomputer system. To inspect, call Bill, x3-8903.

# Panel finds civil rights progress

Two MIT scholars have participated in a landmark study of the economic, political and social status of black Americans since World War II

Dr. Michael Lipsky, professor of political science, and Dr. Phyllis A. Wallace, professor emeritus of management, were among 22 members of a study commission assembled by the National Research Council, an arm of the National Academy of Science and Engineering.

The council's 608-page report, released July 28, concludes that a "great gulf" continues to separate the black and white races, despite important economic and social gains made by blacks in the past 50 years.

It also found that racial discrimination is only one of several major barriers to improvement in the condition of the nation's 30 million blacks, citing black and white disparities in such areas as infant mortality, poverty and access to quality education and health care.

All of these areas in which blacks lag significantly behind whites "constitute major challenges for public policy," the report said.

Professor Lipsky said the report, in his opinion, "demonstrates the critical role of government in advancing the state of black Americans."

"We demonstrate that substantial progress was made in the 60s and early 1970s, resulting from the passage of the Civil Rights law and an emphasis on antidiscrimination issues," he said. Therefore, he said, a subsequent "withdrawal in civil rights enforcement and indifference toward black employment issues" has become a matter of "considerable public concern."

Dr. Lipsky said the study commission was evenly divided between blacks and whites. Its chairman, Robin M. Williams, Jr., a social science professor emeritus at Cornell University, said it was designed to bring together a body of research that would serve as a follow-on to Swedish sociologist Gunnar Myrdal's benchmark book on race relations in the United States, An American Dilemma, published in 1944.

The report, A Common Destiny: Blacks and American Society, is available from the National Academy Press for \$35 by writing to 2101 Constitution Avenue NW, Washington, DC 20418.

# 2 win fellowships

Two postdoctoral associates at MIT have received Lawton Chiles Fellowships in Biotechnology from the US Department of Health and Human Services.

They are among 20 in a new program to encourage the applications of engineering, mathematics, chemistry and physics to the analysis of biological processes. Lawton Chiles, a former senator from Florida, played an instrumental role in establishing the program.

The fellows at MIT and their projects are: Deborah E. Leckband, PhD, of chemical engineering, "An Immobilized Enzyme System for Heparin Removal," and Timothy M. Swager, PhD, of chemistry, "Molecule Based Biosensors from Functionalized Microelectrode Arrays."



Brian Lasher, former vice president of Lambda Chi Alpha fraternity, poses with a section of the sidewalk from the Harvard Bridge. The Massachusetts Department of Public Works recently cut out the 300-Smoot section and gave it to the fraternity which has repainted the Smoot marks twice annually since 1958. -Photo by Donna Coveney

# Memorial held for J.T. Norton

A memorial service was held recently for Dr. John T. Norton of Cambridge, a faculty member for 38 years and cofounder



of AMRAY, Inc., of Bedford, Mass., manufacturer of scientific instruments. Professor Norton died at his home on July 18 at the age of 90.

Dr. Norton, professor emeritus of the physics of metals, retired from the faculty in

1964, ending nearly 75 years of service to MIT by the Norton family. His father, the late Professor Charles L. Norton, was for many years the head of the Department of Physics at MIT, and a brother, the late Professor Frederick H. Norton, a noted authority on ceramics, was a member of the MIT faculty for 35 years.

Professor John Norton's field of research was the application of physical methods, particularly x-ray techniques, to the study of the science of metals. In 1951 he was awarded the Plansee Plaque by the Plansee Society of Austria for fundamental contributions in the field of metal physics.

After retirement from MIT, he undertook a business career as one of the found ers of Advanced Metals Research Corporation, now AMRAY, Inc. He served as president from 1961 to 1973 and was chairman of the board from then until his death. AMRAY is the nation's largest manufacturer of scanning electron microscopes, which can magnify objects up to 200,000 times their size. They are used in medical research but primarily in industrial research, particularly to detect flaws in computer chips and in metal analysis. Dr. Norton was born in Medford, Mass. He graduated from high school in Nashua, N.H., in 1914 and received a bachelor of science degree in physics from MIT in 1918 at the age of 19. He joined the staff as a research associate in 1920 and was appointed to the faculty as assistant professor of physics in 1926. He became associate professor of metallurgy in 1930 and received a doctor of science degree in 1932. In 1941 he was promoted to professor of the physics of metals, a position in which his two major interests were united, recognizing the interaction of physics and metallurgy. He started his teaching career in the Department of Physics but spent most of it in the Department of Metallurgy, now the Department of Materials Science and Engineering

During World War II, as head of the Radiographic Laboratory at MIT, Professor Norton conducted a number of projects using x-ray inspection to determine the extent of various kinds of stress in metals. One result of this research has been increased safety in ships and other large welded structures.

Later research dealt with the bonding properties of pressed powdered metals to form new alloys stronger than the pure metals of which they are composed.

In addition to his teaching and research, Professor Norton was active in the MIT administration as chairman of the faculty from 1956 to 1958, as acting dean of the Graduate School in 1961, as a member of a number of departmental committees and as director of a program for overseas study. This latter assignment came about after he was asked by the MIT president to conduct a review of opportunities for overseas study by students at the Institute.

Professor Norton was the author of 65 papers concerning his research. He was a fellow of the American Academy of Arts and Sciences, and a member of the Electron Microscope Society of America, the American Physical Society, the American Institute of Mining and Metallurgical Engineers, the British Institute of Metals, the American Society for Testing Materials, the American Society for Metals and the Society of Sigma Xi. For many years he was active in the American Scandinavian Foundation, and he received its fellowship for Scandinavian study in 1930 while on a leave from MIT. He also served on the scientific advisory board of the Boston Museum of Fine Arts, using x-ray techniques to determine the authenticity of ancient works of art, and on the board of visitors of the Boston University School of Medicine. His wife, the former Rose Demmon, died several years ago. They were married in 1930. He leaves three sisters, Dorothy and Margaret Norton of Annisquam, Mass., and Frances Batchelder of Durham, N.H., and a brother, Charles L. Norton, Jr., of Augusta, Ga.

# Plasma detector nears Neptune

#### (continued from page 1)

plexities associated with those planets' plasma environments.

It may take a plasma physicist to digest and appreciate the information on magnetic fields and particles that pour in as Voyager approaches Neptune, but pictures speak for themselves. The views of Neptune already received as the spacecraft approaches the planet show a bluish world with Jupiter-like markings. These include bands and a large feature that some have compared to Jupiter's famous "great red spot" that scientists liken to a centuriesold storm

Neptune's color, incidentally, is due to methane in its mostly helium and hydrogen atmosphere. Virtually no detail was previously apparent from ground-based observations of the distant world, so Voyager 2 has literally opened up a new world.

As of this writing, four new moons of

Lazarus, Dr. John D. Richardson, Dr. George S. Gordon, Dr. John T. Steinberg, Pamela Milligan, and Joan C. Quigley; graduate students Adam Szabo, Louis Villanueva, and Ming Zhang; and undergraduate Jeff Jewell.

Also involved in the encounter operations and data analysis are Professor Fran Bagenal of the University of Colorado, Boulder, and Professor George Siscoe of UCLA. Professor Bagenal graduated from MIT in 1981 and is a former member of the MIT research staff. Professor Siscoe graduated from MIT in 1964 and was an assistant professor here from 1966 to 1968.

# More get-togethers are scheduled

Roommate Get-Togethers have re-

Neptune have been seen in Voyager images, joining the known satellites Triton and Nereid. Scientists are also on the lookout for Neptunian rings or partial "ring arcs," which the Voyagers revealed attend not only Saturn but also Jupiter and Uranus

The Space Plasma Group will continue to receive data that will keep members busy for a long time, trying to blend the information with theories on how a planet's magnetic field interacts with the solar wind. They will also be looking for a new kind of plasma boundary as both Voyager 1 and 2 travel beyond the domain of the solar wind out into the interstellar medium. Between 1995 and 2010, either spacecraft may cross the scientifically interesting boundary between these regions that is known as the heliopause.

Among those at MIT who have been and who will be examining the Voyager data are: Professor Herbert S. Bridge, Professor Ralph L. McNutt, Dr. Alan J.

sumed, according to an announcement from the Office of Housing and Food Services.

Get-togethers are informal gatherings to provide an opportunity for community members who have housing to find needed roommates or for those who need housing to find an affinity group for a housing search.

"They also enable newcomers to become acquainted, so everyone should feel free to drop by even if their housing situation is settled," said Linda Patton, manager of housing services.

Get-togethers are scheduled for Mondays, Aug. 14, 21 and 28 and Tuesday, Sept. 5, 5-7pm in the Hulsizer Room at Ashdown House. Refreshments will be served.

In conjunction with the get-togethers, the Housing Office will be open until 7pm on Fridays, August 11, 18 and 25.

For further information, visit or call the Housing Office, Rm E32-121, x3-1493.