

## Environment Engineer Appointed



Carl W. Hagge

After a seven-month search, MIT has hired its first full-time environmental engineer to direct the Institute's energy conservation program.

He is Carl W. Hagge, 37, of Winchester, who received a bachelor of science degree in electrical engineering from MIT in 1958.

Hagge has done engineering work related to the space sciences for several organizations and since October, 1970, has been self-employed in the field of income property management and as a real estate broker.

Hagge was an Alfred P. Sloan scholarship winner while at MIT.

He was employed at American Science and Engineering, Inc., of Cambridge, in 1970, as an electrical engineer, providing technical support for satellite instrumentation designed and manufactured by the company for the National Aeronautics and Space Administration; at the Smithsonian Astrophysical Observatory, from 1959 to 1970, as project electrical engineer for a meteor research project and engineer in charge of a satellite tracking program engineering group and at Edgerton, Germeshausen and Grier, Inc., in 1957-58 as an engineering assistant.

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Dr. Victor E. Weisskopf, Institute Professor, will present the first of two James R. Killian, Jr., Faculty Achievement Award Lectures in Rm 26-100 at 5:15pm, today (Wednesday, April 3). Title is: "The Search for the Ultimate Structure of Matter." Second lecture will be presented next Wednesday (April 10).

## Quarter Century Club Initiates Record Number

It was a banner year for admission of new members in the MIT Quarter Century Club this year.

A total of 132 men with 25 or more years' service to MIT were inducted to membership at the Club's annual dinner Thursday (March 28) at Walker Memorial.

The new group included 50 regular new members and 82 professors emeriti who retired before the Club rules were changed to allow faculty membership about five years ago.

An effort to reclaim the "lost professors" began last year when one faculty member of the Club noticed that an old friend and colleague was not among the membership.

During the ensuing year, a major effort was undertaken to identify retired faculty members who were eligible for membership. Eventually 82 were invited to membership and initiated at the dinner.

The search was aided by Vincent A. Fulmer, Secretary of the Institute, who was the featured speaker at the dinner. Funding for the momentous required by substantial increase in membership was provided by Chancellor Paul E. Gray and MIT Treasurer Joseph J. Snyder. President Jerome B. Wiesner presented certificates to each of the new members.

New regular members are:

Orlando J. Annese, Prof. Raymond F. Baddour, Steven Bonfiglioli, John G. Brangwynne, Prof. Gordon L. Brownell, William J. Carbonneau, Albert D. Coonrod, Edward J. Cox, Jr., Philip S. Crocker, William G. Denhard, Ernest W. Dimarzio,



Cockpit simulator in the Department of Aeronautics and Astronautics will be one of the attractions at MIT's 1974 Open House program, Saturday, April 13, from noon to 5pm. The simulator, used for air traffic control experiments, will be demonstrated for visitors by students. At the controls is Bruce Morgenstern of Springfield, Pa., a graduate student.

—Photo by Margo Foote

## Open House to Exhibit Variety of Life at MIT

By JOANNE MILLER  
Staff Writer

Ever wondered what a virus looks like? Or wanted to see the world's most powerful magnet? Or bring in an airplane for a simulated landing at a busy airport?

These and nearly 150 other exhibits and demonstrations will be featured at the 1974 Open House at MIT Saturday, April 13, from noon to 5pm.

The program will also include a number of dramatic, musical and dance performances, a major environmental art exhibit in Hayden Gallery, the MIT Historical Collections and other cultural

and sports events.

Open House, held every two years, is organized and carried out by MIT students who want to show their parents and the public the things that make MIT an interesting place.

This year's program is organized around a dozen tours covering as many areas of the campus. Guided tours will run continuously and visitors may take as many as time and endurance permit. Visitors will also be free to roam on their own to see exhibits that are of particular interest.

One tour, called "Brodding-  
(Continued on page 3)

## New Grant to Support Methanol Studies

A Minneapolis industrialist has made a \$100,000 gift to the MIT Energy Laboratory for the establishment of a methanol study center.

The center will focus on work started by two Lincoln Laboratory scientists, Thomas B. Reed and Robert M. Lerner, who recently wrote an article on "Methanol—A Versatile Fuel for Immediate Use" (*Science*, Dec. 28, 1973, p. 1299).

Dr. Reed and Dr. Lerner say that methanol is a clean, liquid fuel which can be produced from a variety of sources and which can be added to gasoline to improve fuel economy, increase octane and decrease emissions in cars with no alteration.

One interested reader was John B. Hawley, president of the Northern Pump Co. in Minneapolis.

"Mr. Hawley owns a number of oil and gas wells, and is keenly aware of the ultimate depletion of our valuable petroleum," Dr. Reed said. "He decided that if we waited for the government to initiate the necessary programs, we would wait too long."

Mr. Hawley called Dr. Reed Jan. 2 to suggest the possibility of making a donation for methanol study through MIT. Dr. Reed flew to Minneapolis the following weekend and discussed with Mr. Hawley the various strategies for introducing a methanol economy into the US. After two months of further study and after discussions at MIT and with representatives from the oil, mining and automotive companies, Dr. Reed sent his conclusions to Mr. Hawley.

"Last week Mr. Hawley sent a check for \$100,000 for the MIT Energy Laboratory," Dr. Reed

## X-ray Probe to be Tested in Lobby 7

Center for Space Research scientists late next week hope to suspend a 1,500-pound x-ray telescope inside the 100-foot Bldg. 7 Lobby to test its stabilization and pointing accuracies preparatory to a balloon launch from Texas next month.

The x-ray telescope, designed and built under the direction of Dr. George H. Ricker, Jr., Dr. Anton Scheepmaker and Professor Walter H.G. Lewin, will be launched from the National Center for Atmospheric Research's balloon facility at Palestine, Tex., sometime during May.

A 25 million cubic foot balloon will carry the telescope to an altitude of some 135,000 feet where it is expected to float for some 17 hours recording—with film on-board and by telemetry via a radio link back to the ground—the intensity and direction of x-ray emissions from the Perseus cluster of galaxies and from the Coma

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## Hearings Set On Grading

The Ad Hoc Committee on Grading will hold an open hearing Thursday, April 4, 4-6 p.m. in the Marlar Lounge (Rm. 37-252).

The hearing is the first of two that are planned to discuss possible changes in the grading system. The second hearing will be held April 11, also in the Marlar Lounge at 4 p.m. Hearings will be open to all interested members of the community.

Discussion at the first hearing will focus on four main areas, Professor Roy Kaplow, chairman of the committee, said. They are: the number of different grades; mechanisms for recognizing outstanding work; the possibility of optional faculty comments in addition to letter grades, and the possibility of not recording an F grade on the student's permanent transcript.



\$100,000 CHECK, being passed by Dr. Thomas B. Reed of Lincoln Laboratory, right, to Dr. David C. White, director of MIT's Energy Laboratory, will be used to establish a Methanol Study Center. The check is the gift of John B. Hawley Jr., a Minnesota business man, who read of the methanol work of Dr. Reed and Robert M. Lerner. Center is Albert G. Hill, vice president for research at MIT.

Music Notes  
Theatre Guild to Present  
'Funny Thing' Apr. 5



REHEARSING SOME ROMAN delights in *A Funny Thing Happened on the Way to the Forum* are Ghiziana Iosif, '74, of Kansas City, Mo., as "Tintinabula," a dancer; Thalia McMillan, an MIT secretary playing "Philia," and two Proteans, Paul 'Shorty' Fallon, '77, of Norman, Oklahoma, and (background) Robert Lustig, '77 of Brooklyn, N.Y.

By SALLY HAMILTON  
Staff Writer

"A Funny Thing Happened on the Way to the Forum," the MIT Theatre Guild's spring production, will open Friday evening, April 5 in Kresge Auditorium for six performances.

Performances will be given Friday and Saturday, April 5 and 6, and Thursday-Saturday, April 11-13, curtain time 8:30pm in Kresge Auditorium with a Saturday matinee, April 13 at 2pm, (the date of MIT's Open House).

"Forum," a comedy with music, set in Rome 2,000 years ago, was first produced in 1962. The score is by Stephen Sondheim, who also wrote the music and lyrics for "A Little Night Music."

Murray Biggs, assistant professor of humanities is production director, Bill Grossman, MIT '69, a frequent director of Guild productions in the past, is musical director. Sets and lighting were designed by Jack Peers, an MIT graduate student in architecture.

"'Forum' embodies all the original elements of ancient Roman comedy," according to Professor Biggs. "The ancients knew only one kind of comedy, and that was musical comedy: a ribald, farcical drama spiced with song and dance, which is what 'Forum' is.

"'Forum's' narrative elements are simple and prototypical: slaves gain their freedom and lovers each other, through mistaken identities, disguises and recognition of long-lost siblings who sport the family jewels. The characters are similarly stock."

Special cast additions further spice the guild's production—jugglers and acrobats have been added to provide greater comical momentum.

Some of the leads of the production are Bill Hadge, freshman from Needham as Hero; Mitchell

J. Rothstein, freshman from South Nyack, N.Y., as Pseudolus; and Erland van Lidth de Jeude, sophomore from Mont Vernon, N.H., as Miles Gloriosus.

Last week the MIT Symphony Orchestra, under David Epstein, successfully concluded a spring tour of three concerts in upstate New York and Canada, marked by large and enthusiastic audiences and praise from area music critics.

The tour included performances in Hamilton Place, a new concert hall in Hamilton, Ontario, sponsored by McMaster University and Kleinhans Music Hall, the home of the Buffalo Philharmonic Orchestra, presented under the auspices of the State University of New York at Buffalo.

The final concert in London, Ontario, was held at the University of Western Ontario, at the end of which the orchestra was given a standing invitation to return by Dr. Hugh MacLean, director of music at the university.

Reflecting on the tour, David Epstein said early this week, "It was stimulating for all of us to have contact with these campuses and in particular to see the growth and stimulation in the arts and education underway in Canada."

"It was also gratifying to realize thru these contacts that the music program at MIT has developed in scope and quality to a level that compares favorably with these universities where the arts have been long established," he added.

An Eichendorff *Leiderabend*, an evening of German songs composed by famous 19th century composers for the lyrical poems of Joseph von Eichendorff, the ultraromantic German poet, will be presented by Professor Rufus E. Hallmark, tenor, 8pm Thursday, April 11 in Burton House.

Professor Hallmark will sing the Eichendorff lieder by Robert Schumann, Felix Mendelssohn,

Courier Express  
Lauds Symphony  
Performance

(Following is a review by Thomas Putnam in the Buffalo, N.Y., Courier-Express March 28 following the Buffalo concert presented by the MIT Symphony Orchestra, David Epstein conducting.)

It is only natural that besides science and technology the students of the Massachusetts Institute of Technology (MIT) should show an aptitude for the chemistry of tones.

Filling the stage of Kleinhans Music Hall with more than 100 players, the MIT Symphony Orchestra under its energetic and persuasive music director David Epstein played a concert Wednesday night that was really quite remarkable for its depth and feeling.

The young musicians were here as guests of the University of Buffalo Music Dept.

The evening amply demonstrated MIT's new depth in the musical branch of the humanities. John Harbison, a faculty composer, was represented by his *Incidental Music for Shakespeare's "Merchant of Venice,"* which utilizes a string orchestra for music of strained, dramatic expression.

Marcus Thompson, a young and impressive violist who is on the MIT faculty, was soloist for Bloch's "Suite Hebraique," which he played with a lovely singing tone. It was a clean and light performance, not at all cloying.

The orchestra passed the real test of musical commitment in its performance of Mahler's Symphony No. 1, which Epstein shaped beautifully. The music sounded with shining warmth, lilt, and power which belied the amateur status of the source.

Johannes Brahms, Hugo Wolf, Robert Franz and Hans Pfitzner. Boston pianist James Busby will accompany Professor Hallmark.

The recital, which is open to the public free of charge, is part of a spring undergraduate seminar—Music and Musicians (21.S07)—



Ali Akbar Khan

Sarod Concert Sunday

The noted Indian sarodist, Ali Akbar Khan, one of the world masters of Indian music will give his second MIT concert, 8pm, Sunday, April 7 in Kresge Auditorium.

Khan who appeared at MIT last year, will be accompanied by Zakir Hussain, a tabla player and Susan Roseblum, vocalist and sitarist.

A descendent of a famous 16th century court musician, Khan began studying music as a child under his father, the late Dr. Allauddin Khan, one of the foremost teachers and musicians of India.

Khan has toured extensively through out the world, frequently appearing with sitarist Ravi

Shankar and western musicians, notably Julian Bream, Yehudi Menuhin and jazz saxophonist John Handy.

He has performed in the Newport Folk Festival, the Festival from India at Philharmonic Hall and the Berkeley and Monterey Jazz Festival.

In 1956 he founded the Ali Akbar College of Music in Calcutta, and in 1967 he opened a similar school in Marin County, Calif., where he now lives and teaches.

The concert is sponsored by the Center for Asian Music at MIT and produced by Tritantri Kala Kendra, a school of Indian music in Boston. Tickets, available at the door, are \$3 and \$4.

Weinberg Named ACS Scholar

Dr. Robert Weinberg, MIT assistant professor of biology and a researcher in MIT's Center for Cancer Research, has been awarded a Cancer Research Scholar certificate from the Massachusetts Division of the American Cancer Society.

Dr. Weinberg is one of five Cancer Research Scholars in Massachusetts receiving certificates this year. The certificates mean the Society will support the major portion of the scholar's salary that is directed toward research for the coming year.

Dr. Weinberg hopes to isolate and characterize the molecules produced by the mouse leukemia virus—molecules which integrate themselves into cell chromosomes and instruct the cell to become a tumor cell. He also hopes to learn whether or not the growth of a virus depends upon the growth of the infected cell.

taught by Rufus Hallmark and his wife Anne.

Professor Hallmark is a musicologist, specializing in the 19th century German lieder. He is a tenor soloist at Emmanuel Church, Boston, and also sings with the Boston Camerata.

New UROP Listings

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

Summer UROP

UROP will have a summer program again this year. Eligibility will be limited to undergraduates who are continuing ongoing UROP projects. Support for research and personal expenses will be awarded according to the usual UROP proposal procedures and negotiations. Such proposals are now welcome, and should be submitted through the faculty supervisor's department UROP Coordinator. Award decisions will not begin until the end of April. Summer proposals will receive priority according to the date of receipt in the UROP office and evidence of faculty enthusiasm for the proposed activity. A new option this summer includes the case where a faculty member agrees to support the full wages of a student. By submission of a suitable proposal to UROP, overhead charges on these wages can be waived. Call the UROP office for more information on this option.

New England Consortium on Environmental Protection (NECEP)

NECEP is seeking qualified students for participation in the Regional Environmental Program for this summer's intern activities. Of particular interest will be air quality aspects of urban and transportation planning, energy conservation, and environmental impact assessment. The summer program will consist of a 12 week internship with a federal, state or local air pollution control agency, transportation department, state or regional planning agency, or a public interest group. The emphasis of the summer working experience will be in air use management and air quality information. The Regional

Program is considering students with physical science, engineering, legal and planning background. However, those students with other strengths and environmental interest are encouraged to apply. Possibility of pay. Contact the UROP office for an application. Selection decisions will be made in late April.

Department of Nutrition and Food Science

An opportunity is available to carry out research to study the hormonal control of cellular metabolism. The model system is the response of human thyroid cells in culture to Thyroid-Stimulating Hormone. Both normal and neoplastic cells will be studied with emphasis on learning more about the biochemistry of thyroid cell function. Experience gained from work on this project should acquaint the student with numerous basic analytical techniques in biochemistry and cell biology as well as involve some immunological studies. Interested students should contact Dr. Deanna Talley or Dr. John Stanbury, Room E18-566, ext. 3-6737, ext. 3-6738.

Museum of Science Boston

The Museum of Science is involved in the planning and designing of six medical exhibits to be displayed in the Museum for the Boston Bicentennial Celebration. The proposed exhibits are being planned to enlighten visitors as to how their own body works and will be broken down into four areas: what is the normal body, what can go wrong with it, what can be done to prevent or cure whatever has gone wrong, and what has been Boston's contribution to medicine in this area. MIT undergraduates are needed to research a specific division of the human body such as the cell, heart, brain, etc. Project will involve occasional interviews, library research and the collation of material into report form. The student will be expected to select the most important information about his subject and suggest ways it can best be communicated to the public. Project is available this semester with a possibility of continuing during the summer. Pay through the College Work Study Program or credit available.

Graduate Studies

The following brief descriptions of selected graduate fellowships have been received by the Graduate School Office recently. More complete descriptions are available in the Office, Room 3-136.

Pharmaceutical Manufacturers Association Research Grants Program

The Pharmaceutical Manufacturers Association announces its 1974 Doctoral Dissertation Research Grants Program. This program is designed to encourage original research in areas pertaining to the socioeconomic aspects of the health care industry, including the economics of the prescription pharmaceutical industry. The grant is a \$2,500 stipend for one twelve-month period beginning September 1, 1974. To be eligible, applicants must be full-time students pursuing a degree in economics or related social and administrative sciences. They must have a) completed all course work leading to a doctoral degree, b) passed all qualifying examinations, and c) obtained faculty approval of the dissertation proposal. Deadline: June 15, 1974.

TECH TALK  
Volume 18, Number 37  
April 3, 1974

Tech Talk is published 50 times a year by the News Office, Massachusetts Institute of Technology. Director: Robert M. Byers; Managing Director, News Office Publications: William T. Struble; Assistant Directors: Joanne Miller, Margo Foote (Photojournalist); Charles H. Ball, Dennis L. Meredith, Robert C. Dilorio; Reporters: Sally M. Hamilton, Damon P. Wright; Calendar of Events/Want Ads: Susan E. Walker. Address news and editorial comment to MIT News Office, Room 5-111, Massachusetts Institute of Technology, Cambridge, Ma. 02139. Telephone Ext. 3-2701.

Mail subscriptions are \$6 per year. Checks should be made payable to MIT, and mailed to the Business Manager, Room 5-111, MIT, Cambridge, Mass.

# Campus Religious Groups Schedule Special Services

Various campus religious groups are planning special services in connection with upcoming holy days.

Passover Services will be held at Hillel House, 312 Memorial Drive, 7pm, Saturday, April 6; 9:30am and 7:30pm, Sunday, April 7, and 9:30am, Monday, April 8.

The birthday of the Prophet Muhammad, Maulid-Un-Nabi, will be celebrated by the MIT Islamic Society with a service in the Sala de Puerto Rico at 7:30pm, Saturday, April 6.

Roman Catholic services planned for Holy Week begin with a Communal Penance service prior to Mass at 5:05pm, Tuesday, April 9 in the Chapel.

The Catholic community will celebrate a Seder Supper at 6:30pm in the Interface Room in the basement of 312 Memorial Drive following a 5pm Chapel Mass, Thursday, April 11.

A noon Mass will take place in the Chapel on Good Friday, April 12, followed by an Ecumenical Prayer service from 1pm to 3pm. An Easter Vigil service will be held in the Chapel at 7:30pm on Saturday, April 13.

Catholic Easter Sunday services, April 14, will be held in the Chapel at 9:15am, 12:15pm and 5:15pm.

MIT United Ministry Holy Week services will begin with a celebration of Holy Communion in the Chapel at 5:05pm, Wednesday, April 10. On Good Friday, April 12, there will be a service in the Chapel at 10am. A sunrise Easter

## Methanol

(Continued from page 1)

grant to Texas A&M University to continue work there on methanol production in coal.

"For most of his 74 years Mr. Hawley has been active in the invention, engineering and management which has produced our phenomenal growth and wealth in this country," Dr. Reed said. After graduating as a civil engineer from Cornell in 1920, he ultimately became President of the Northern Pump Company and the Northern Ordinance Company.

"During World War II he produced \$900,000,000 worth of ordinance and machinery for the Armed Forces and never missed a deadline," Dr. Reed said. "He hopes that America's scientists and industrialists will seek solutions for our fuel shortage with equal urgency. Now, at 74, Mr. Hawley's chief pleasures are raising Hereford cattle, the oil business and financial gambling. He is placing his bet on the methanol economy."

## Nutrition Program Planned

A special Advanced Study Program in International Nutrition Planning will be initiated in September by MIT's International Nutrition Planning Program and the Center for Advanced Engineering Study.

### Richard Morse Named

Dr. Richard S. Morse, president of the MIT Development Foundation, Inc., and a senior lecturer at the Alfred P. Sloan School of Management, has been named to the Commerce Technical Advisory Board of the US Department of Commerce.

The board, on which 14 scientific and technical leaders from industry and the university community serve, will study and evaluate the technical activities of the department. Board chairman is Dr. Betsy Anker-Johnson, assistant secretary of commerce for science and technology.

service on April 14 will be held at 5:45am on the roof of McCormick Hall.

## Quarter

(Continued from page 1)

Mark J. Dondero.

John D. Eisenhaure, Edward J. Ferreira, Prof. Morton Finston, George E. Furlong, Prof. Samuel A. Goldblith, Prof. Leonard A. Gould, Edward Karaian, Prof. William D. Kingery, Sumner D. Lewis, Prof. Edward N. Lorenz.

Prof. Kevin Lynch, George E. MacNair, Peter D. Matthews, Harding D. Montesanti, Francis A. Moran, William F. Mugridge, Prof. Robert B. Newman, John B. Nugent, Gordon W. Oro, Prof. Louis S. Osborne.

Joseph D. Palermo, Joseph W. Palmer, Prof. S. Curtis Powell, Prof. Campbell L. Searle, Prof. Louis D. Smullin, Prof. Robert M. Solow, Prof. Kenneth N. Stevens, William G. Strovink, Charles J. Strumski, Prof. Tau Yi Toong, Henry Trantham, Jr., S. Richard Tringale, Dr. Frederick J. Viles, Jr., Prof. George W. Whitehead, Prof. Robert V. Whitman, E. Clayton Whittaker, and Dr. Emmett A. Witmer.

Emeritus professors initiated are:

Frederick J. Adams, William P. Allis, John B. Babcock, Howard R. Bartlett, James A. Beattie, Herbert L. Beckwith, Frank B. Bentley, Alexander J. Bone, Douglas V. Brown, Earle Buckingham, Martin J. Buerger.

Evers Burtner, John Chipman, Samuel C. Collins, Jacob P. DenHartog, Georgio D. DeSantillana, Raymond D. Douglas, Charles S. Draper, Cecil G. Dunn, Herbert B. Dwight, Marcy Eager, Walter C. Eberhard.

Harold E. Edgerton, Nathaniel H. Frank, Richard H. Frazier, Murray F. Gardner, William C. Greene, Arthur C. Hardy, Louis Harris, Robert S. Harris, George R. Harrison, Harold L. Hazen.

Lawrence J. Heidt, James Holt, Hoyt C. Hottel, Henry G. Houghton, John T. Howard, Joseph H. Keenan, Frederick G. Keyes, Charles Kingery, Jr., Richard F. Koch.

Otto C. Koppen, Yuk-Wing Lee, Frank M. Lewis, Warren K. Lewis, Kurt S. Lion, Milton S. Livingston, William H. MacAdams, Earl B. Millard, Eugene Mirabelli.

Parry Moon, Philip M. Morse, Avery A. Morton, Frederick H. Norton, John T. Norton, Shatswell Ober, Norman J. Padelford, Paul Pigors, Augustus R. Rogowski, Bruno B. Rossi.

John T. Rule, Francis O. Schmitt, Robert R. Shrock, Stephen G. Simpson, John C. Slater, Cyril S. Smith, C. Richard Soderberg, Dirk J. Struik, Carl L. Svenson.

Charles F. Taylor, Edward S Taylor, Donald S. Tucker, Bertram E. Warren, John B. Wilbur, Karl L. Wildes, Gordon B. Wilkes, Hurd C. Willett, Robert S. Woodbury, John Wulff, Ralph C. Young, and Jerrold L. Zacharias.

Next on the agenda for the Quarter Century Club is a dinner dance to be held May 18, in conjunction with the MIT Silver Club, the organization for long-time women employees. The Silver Club spring meeting will be held May 10.

The program is primarily for officials of governments and international agencies who are or may become involved in the planning, implementation or evaluation of programs designed to combat malnutrition in low-income countries.

A small number of persons will be accepted each year as Fellows for the non-degree program. Each person accepted will undertake a special program of coursework, seminars, and in some cases field work developed in a way which most sensibly supplements existing talents and experience.

Program coordinator for the new activity is Dr. John O. Field, a research associate at MIT's Center for International Studies and a member of the International Nutrition Planning Program, which was established in 1972 by the Center and the Department of Nutrition and Food Science.

## NSF to Fund 57 New MIT Grad Students

MIT leads the nation in the number of new National Science Foundation Fellowships for first year graduate students in 1974-75.

Altogether 57 students—11 percent of the national total—will take up graduate study at MIT next fall. Twelve of the students will have completed their undergraduate work at MIT and 45 will come from other universities.

In addition, ten MIT students have received NSF Fellowships they will use to study elsewhere.

The NSF Fellows were selected from more than 5,700 applicants nationally who competed for fellowships awarded on the basis of merit. Altogether 525 fellowships—including 146 to women—were awarded this year. Stanford University was second to MIT with 55 fellowships, followed by Harvard University with 50.

Each fellowship is awarded for three years of study. Life of the fellowships, however, is five years so that NSF Fellows may incorporate other forms of financing—such as teaching or research assistantships—into their graduate careers.

The new students in the fall will bring the total number of NSF Fellows at MIT to 192, an increase of 16 over this year.

## Advisors Sought

Faculty and staff members are being sought to serve as freshman advisors to the class that will enter next September.

Each freshman is assigned an advisor to help ease his or her transition into MIT. Though advisors are responsible for helping to guide the freshman's academic program, the emphasis is for the advisor to form a supportive one-to-one relationship with the new student.

Most advisors have upperclass students as associates. These students are helpful in providing detailed information on both academics and student life.

Those interested in becoming freshman advisors may call the Freshman Advisory Office, X3-6771, for further information.

## NSF Grant Supports Ocean Teaching

The National Science Foundation has announced award of \$72,908 to MIT as part of a program to improve undergraduate education in naval architecture and ocean engineering design.

The award is part of a cooperative program that includes the University of Michigan at Ann Arbor, the Webb Institute of Naval Architecture, Glen Cove, N.Y., and MIT—the three US institutions that award undergraduate degrees in naval architecture.

Dr. C. Chryssostomidis, assistant professor of naval architecture will head the MIT effort.

## Two Seniors Named Danforth Fellows

Two MIT students were selected among 100 nationally to receive prestigious Danforth Fellowships for graduate study from the Danforth Foundation of St. Louis, Mo.

They are David A. Shiang, a senior in humanities and science from Winchester, and Janet E. Stoltz, a senior in electrical engineering, who also recently received the 1974 Association of MIT Alumnae award for the outstanding woman senior.

Danforth Fellowships provide tuition and living expenses for up to four years of study for the PhD degree for students planning to enter college teaching.

## Laboratory of Architecture And Planning in Operation

MIT's Laboratory of Architecture and Planning, formed recently by the School of Architecture and Planning, held a well-attended open house Thursday (March 21).

The laboratory, charged with fostering research which will contribute to the understanding, the education and the practice of architecture and planning and closely related fields, is directed by William L. Porter, Dean of the School of Architecture and Planning. David L. Judelson is assistant director.

In his remarks of welcome Dean Porter thanked Provost Walter A. Rosenblith and the Committee for Research and Space Planning for their help in finding and refurbishing space for the laboratory.

Four major projects currently are housed in the laboratory's office, Rm. 4-209. They are:

—Urban Public Safety Systems (Prof. Richard Larson): A study of law enforcement, ambulance, fire and other systems in Boston and elsewhere, using advanced modeling techniques and limited interventions into the systems being studied.

—Public Urban Space (Prof. Stanford Anderson): A study of the design professional's representations of public space, urban form and human activity.

—Professional and Group Behavior (Prof. Benson Snyder): A study of the mental models which professionals construct of their professional-client situations in particular and, in general, the role of the human sciences in professional education in the School of Architecture and Planning.

—Concentrated Program in Environmental Design (David Judelson): A study under the general direction of Gary Hack of the feasibility of offering a one-year program in environmental design to early- and mid-career professionals.

The open house was preceded by introductory seminars given by Professors Anderson, Snyder and Larson, who described their projects.

In addition, the laboratory offers a number of services through its Offices of Computing Services, Field Services, Research Administration and Educational Services.

Dean Porter and Mr. Judelson report to a faculty committee which sets priorities and directions for the laboratory. Other members of the committee are Professors Aaron Fleisher, Stanford Anderson, Donald Schon, Benson Snyder, Richard Larson, Gary Hack, Edward Allen, Mrs. Laura Giroux, Ms. Ann Gordon

## Women's Crew, Sailing To Begin

MIT's women's crew and the women's sailing team will begin their seasons Saturday April 6.

The crew, coached by Dave Burns, a former coxswain on MIT's heavyweight crews, will open its first season of varsity competition against Connecticut College and Middletown High School in New London. The six-regatta season will conclude May 12 with the New England

## Baroque Concert

A concert of Baroque music will be presented at noon, tomorrow, Thursday (April 4) in the MIT Chapel.

Performing in the concert will be Nancy Roth and Carol Epple, both on baroque flutes; Frances Fitch, harpsichord and Margaret Panofsky, viola da gamba. The concert, sponsored by the MIT Music Section, will be open to the public free of charge.

and Mr. Wren McMains. Professors Donlyn Lyndon and Lloyd Rodwin as heads of departments of architecture and urban planning respectively, are members ex officio.

## Open House

(Continued from page 1)

nia," will take guests through five of MIT's large interdepartmental laboratories, including the Francis Bitter National Magnet Laboratory, the Nuclear Reactor, the High Voltage Laboratory, Project MAC, and the Parsons Hydrodynamics Laboratory, and the MIT Historical Collections. Buses, running at 10-15 minute intervals will transport visitors to these facilities.

Specific exhibits will include light and photography experiments in Professor Harold E. Edgerton's "Strobe Alley," creation of newspaper ads via computer, building models in the architecture department, a mock-up and flight simulator of the Concorde supersonic transport cockpit, a live microwave-cable link up between the television

### Guides Needed

Student tour guides are needed for Open House. The Open House Committee will hold two orientation sessions for volunteer guides Wednesday and Thursday, April 10 and 11, at 8pm in Rm 5-134. To sign up, call x3-5430.

centers at Harvard and MIT, and a demonstration of glass blowing techniques.

Several lectures have been scheduled. A major panel discussion, "Economics and the Future of Energy," will be presented at 1pm in Room 1-120. Speakers include Professors Morris Adelman, Henry D. Jacoby, Paul W. MacAvoy, Paul W. Joskow, with Eric Rosenfeld, a junior in economics, as moderator.

Also on the program will be several events which have proved popular at previous Open Houses. One is "The Ultimate Magic Show, or Chemistry in Action," an action-packed demonstration scheduled for 1pm. In the Center for Materials Science and Engineering there will be a demonstration of metal castings and sample MIT medallions will be given to visitors.

Complete programs for open house are available by calling the Open House office, (617) 253-5430.

Sprint Championships at Middlefield, Conn.

The sailing team, coached by Stuart Nelson, will compete for the Regis Bowl at Jackson College and sail the next day (April 7) at Yale University. The women's sailing team finished first in the National Intercollegiate Women's Sailing Championships last year.

## NSF Materials Grant

The National Science Foundation has awarded a grant of \$1,700,000 to MIT's Center for Materials Science and Engineering to support the Center's activities for fiscal year 1974. The grant is one of 14 made to similar centers at academic institutions throughout the country to encourage research in materials science.

# THE INSTITUTE CALENDAR

April 3  
through  
April 14

## Events of Special Interest

**Nominations Committee** – Hearings to appoint two students to new Institute Committee on Privacy and to select four students to serve on newly reconstituted MIT-Wellesley Joint Exchange Committee. Wed, Apr 10, 7:30pm, Stu Ctr Rm 400. Appointment, x3-2696.

**The Search for the Ultimate Structure of Matter\*** – Victor F. Weisskopf, Institute Professor, Killian Award Lecturer. James R. Killian, Jr. Faculty Achievement Award Lectures. Wed, Apr 3, 5:15pm, Rm 26-100.

**Changing Visions of Crime and Criminal Justice\*\*** – Jerome H. Skolnick, chairman, Center for the Study of Law and Society, University of California, Berkeley; panel discussion moderated by Robert M. Fogelson, urban studies & planning. Respondents: Gary Marx, urban studies; Richard Larson, electrical engineering, urban studies. Compton Lecture Series. Wed, Apr 3, 4pm, Rm 9-150.

**Bake-Book Sale\*** – Sponsored by Technology Wives Organization. Thurs, Apr 4, 8am-sellout, Bldg 10 Lobby.

**Ad Hoc Committee on Grading\*\*** – First of two open hearings to discuss changes in the grading system. Thurs, Apr 4, 4-6pm, Rm 37-252.

**MIT Open House\*** – Departments and centers will offer special programs, lectures and demonstrations, with student guides. Sat, Apr 13, 12n-5pm, Bldg 7 Lobby.

**The Frontiers and the Limits of Science\*** – Victor F. Weisskopf, Institute Professor, Killian Award Lecturer. James R. Killian, Jr. Faculty Achievement Award Lectures. Wed Apr 10, 5:15pm, Rm 26-100; Dutch treat supper, Stu Ctr; open discussion, 7:30pm, Stu Ctr Rm 473.

**Blacks in Technology and Science\*** – Professors and students will describe their experiences at MIT. Sponsored by Admissions Office, Office of Minority Affairs and MIT Open House Committee. Sat, Apr 13, 4pm, Rm 10-105.

**Technology and the Future of Democracy\*** – Walter Dean Burnham, political science; Richard Eckaus, economics; Herbert Holloman, engineering; Lewis Mumford, Visiting Institute Lecturer. Moderated by Loren Dessonville, student. MIT Open House Committee. Sat, Apr 13, 7:30pm, Sala.

## Seminars and Lectures

### Wednesday, April 3

**Professional Energy: How to Plug into the Outlet\*\*** – Natalie Low, psychologist; Esther Westervelt, alumni professor, director, institutional studies, Simmons College. Matron's Seminar. 10am, Rm 10-105.

**Cumulative Probabilistic Performance Optimization for Process Control\*** – Paul W. Chin, Jr, G. Aero/Astro Doctoral Thesis Seminar. 1pm, Rm 33-206.

**Thermal Fluctuations in Fluid Mixtures** – Juan I. Castresana, G. Nuclear Engineering Doctoral Seminar. 2pm, Rm 24-117.

**Nodal Methods for Solutions of the Neutron Diffusion Equations** – J. H. Mason, G. Nuclear Engineering Doctoral Seminar. 3pm, Rm NW12-222.

**Experiment Design for Measurement of Turbulent Properties in Rod Bundle Arrays** – P. Carejilescov, G. Nuclear Engineering Doctoral Seminar. 4pm, Rm NW12-222.

**Creative Design\*** – David Gordon Wilson, mechanical engineering. Mechanical Engineering Undergraduate Seminar. 12:15pm, Rm 10-105.

**Innovations in Oilfield Technology** – Joseph G. Debanne, ocean engineering. Ocean Engineering Invention Seminar. 3pm, Rm 3-133.

**Transmission and Reception of Wide Band Acoustic Signals in the Deep Ocean\*** – Robert T. Porter, Woods Hole Oceanographic Institution. RLE & EE Communication Theory Seminar. 3pm, Rm 36-428.

**The Impact of New Technology on Construction\*** – Harvey Steinberg, vice president, Beacon Companies. Project Management Program Construction Management Seminar Series. 4pm, Rm 1-350.

**Consumer Durables\*** – Robert Lund et al, CIS. Telecommunications Policy Planning and Research Seminar. 4pm, Rm 9-450.

**Lessons of High Technology Entrepreneurship\*** – Dr. Mitch A. Maidique, vice president for operations, Analog Devices Semiconductor. Electrical Engineering Seminar. 4:15pm, Rm 26-217, RLE conference rm. Refreshments 4pm.

**Course 4.603 Aesthetic Perspectives in Science and Technology Seminar** – Cyril Smith Institute Professor, professor of metallurgy history of science and technology, emeritus. 8pm, Rm 3-133.

### Thursday, April 4

**Education, Youth and Social Change in Contemporary India** – Y.B. Damle, sociology, India. CIS Seminar. 11am, Rm E53-482.

**Institute Benefits** – Allan J. Urquhart, benefits officer. Pre-Retirement Seminar. 3pm, Rm 39-400. Open to employees.

**The Australian Rocket Expedition** – Alan Levine, Center for Space Research. X-Ray Astronomy Lunch. 12n, Rm 37-696. Bring lunch.

**Communications Activities in ESL\*** – J.E. Ward, electrical engineering, deputy director ESL. ESL & Decision and Control Sciences Group Seminar. 4pm, Rm 39-500.

**Some Investigations of Sound Attenuation by Plants and Soil\*** – Donald Aylor, Connecticut Agricultural Experiment Station. Interdepartmental Acoustics Seminar. 4pm, Rm 5-134. Coffee 3:30pm, Rm 1-114.

**Bi-Component Textile Fibers** – Dr. James Saunders, director, nylon & polymer research, Monsanto Textile Co. Polymer Science & Engineering Seminar. 4pm, Rm 4-231. Tea 3:30pm, Rm 8-314.

**Acculturation and Food Habits: the Case of the Afro-American\*** – Dr. Norge Jerome, human ecology, University of Kansas Medical Center. Nutrition and Food Science Seminar. 4:15pm, Rm 54-100. Coffee 4pm.

**Department of Electrical Engineering: Freshman Orientation** – Student-Faculty Committee, Electrical Engineering. Introduction to organization and the new academic programs of the department. 7:30pm, Rm 10-250. Refreshments.

**Transfer RNA: It's Structure and How it Works** – Alexander Rich, biology. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

**Ancient Greek Ideas about Heat** – Irving Kaplan, nuclear engineering, Thermodynamics Seminar. 4:10pm, Rm 3-343. Coffee 4pm.

### Friday, April 5

**Rosch? Bosch? Which is it and What is it?\*** – M. Manning, G. Chemical Engineering Doctoral Seminar. 2pm, Rm 10-105.

**Simulation and Control of a Biological System\*** – R. Wilcox, G. Chemical Engineering Doctoral Seminar. 3pm, Rm 10-105.

**The MBTA: Problems & Prospects** – Jack Doolittle, chairman of the board, MBTA. Center for Transportation Studies Luncheon Seminar. Buffet 12n, lecture 12:45pm, Stu Ctr Mezzanine Lge. Buffet \$1, lecture free.

**Designing Products to be Quieter** – Richard H. Lyon, mechanical engineering. Mechanical Engineering Seminar. 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

**Materials Problems in Fusion Reactor Technology\*** – A.L. Bement, nuclear engineering, metallurgy & materials science. Plasma Dynamics Seminar. 4pm, Rm 36-261.

**A Hierarchical Approach to the Analysis of Water Resources Systems** – Dr. Derek Jamieson, Department of the Environment, Great Britain. Civil Engineering Water Resources and Hydrodynamics Seminar. 4pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

**Dynamics of Liquid Rb: Neutron Scattering and Computer Molecular Dynamics Results\*** – J.M. Rowe, National Bureau of Standards. Materials Science Colloquium. 4pm, Rm 9-150. Refreshments 3:30pm.

### Monday, April 8

**Chemical Engineering Seminar** – For freshmen and undesignated sophomores. Mon, Apr 8, 4pm, Lewis conference rm, Bldg 12.

**The Future of Japanese Politics?\*** – Rei Shiratori, political sociology, Dokkyo University; director, Institute of Political Studies, Japan. CIS Seminar. 1pm, Rm E53-482.

**Applications of Urban Dynamics\*\*** – Louis E. Alfeld, Walter W. Schroeder, III, DSR staff. Systems Dynamics Group Seminar. 3pm, Rm E52-461. Coffee.

**Ft. St. Vrain Fuel Quality Assurance and Initial Performance; Status of the Start-Up Program\*** – Jack Scarborough, nuclear engineering. Nuclear Engineering ANS Seminar. 3pm, Rm NW12-222. Refreshments.

**The Number of Animals with n Cells** – Dr. David Klarner, mathematical sciences, SUNY at Binghamton. Applied Mathematics Colloquium. 4pm, Rm 2-338. Tea 3:30pm, Rm 2-349.

**Implications of Bayesian Hydrologic Time-Series Modelling** – G. J. Vicens, G. Civil Engineering Water Resources and Hydrodynamics Seminar. 4pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

**Science Undergraduates: An Endangered Species?\*** – Dorothy Zinberg, sociology, Program for Science and International Affairs, Harvard University. Technology Studies Workshop. 4:10pm, Rm 14E-304. Coffee 4pm.

**Mechanisms of Thermal Damage in Tissue\*** – Padmakar P. Lele, M.D., mechanical engineering, nutrition & food science; William L. Hsu, G. MIT-Harvard Program in Health Sciences and Technology/Interdisciplinary Program in Biomaterials Science Seminar. 4:30pm, Rm 37-212. Coffee 4pm.

### Tuesday, April 9

**Dissipative Trapped Ion Instability** – D. Ehst, G. Nuclear Engineering Doctoral Seminar. 12n, Rm 38-166.

**School Health Program** – Dr. Phillip Porter, Cambridge Hospital; Marjorie Stone, Mayor's office. Course 11.547 Human Life Cycle: Children & Adolescents Seminar. 1:30pm, Rm 7-102.

**The Next Transformation of Man\*** – Dr. Lewis Mumford, Visiting Institute Lecturer. Technology and Culture Seminar. 4pm, Rm 9-150. Open discussion, 5pm.

**A Survey of Computer Methods in Optimal Linear Control\*** – David Kleinman, electrical engineering, University of Connecticut. Electrical Engineering Decision and Control Sciences Group Seminar. 4pm, Rm 39-500.

**Social Security – Pre-Retirement Seminar.** 3pm, Rm 39-400. Open to faculty and staff.

**Reflection Spectroscopy and Imaging Techniques in Remotely Sensing Mineralogy\*** – Thomas McCord, earth & planetary sciences. Aero/Astro General Seminar. 4pm, Rm 33-206. Refreshments 3:30pm, Rm 33-411.

**The Evolution of a Convective Planetary Boundary Layer – A Higher-Order-Closure Model Study\*** – Dr. John C. Wyngaard, Air Force Cambridge Research Labs. Meteorology Seminar. 4pm, Rm 54-100.

**Saving Historic Urban Waterfronts: The South Street Seaport Redevelopment Plan\*** – Peter Stanford, president, South Street Seaport Museum, New York City. Architecture, Planning & Ocean Engineering Seminar. Slide presentation of planning & problems – financial, political, design – encountered by a private museum undertaking a large scale urban renewal. 7pm, Rm 7-431 ("New X"). Wine & cheese. Info, J. Devanney, x3-5941.

**Regulation and Importance of the Lipid Phase Transition of E Coli Membranes** – Dr. John E. Cronan, Jr, Yale University. Biology Colloquium. 4:30pm, Rm 6-120. Coffee 4pm, Rm 54-520.

### Wednesday, April 10

**Types of Phase Equilibria Observed in Binary Mixtures** – Ted A. Postol, G. Nuclear Engineering Doctoral Seminar. 2pm, Rm 24-117.

**Finite Element Method in Hexagonal Geometry** – T. Wei, G. Nuclear Engineering Doctoral Seminar. 3pm, Rm NW12-222.

**The Effect of Fast Reactor Size on Blanket Performance** – A. Tagishi, G. Nuclear Engineering Doctoral Seminar. 4pm, Rm NW12-222.

**Theories of Expression: Descartes to the Stickleback** – Jennifer Montague, curator, Inconographic Archives, Warburg Institute, University of London. Course 4.603 Aesthetic Perspectives in Science and Technology Seminar. 8pm, Rm 3-133.

**Competitive Bidding for Construction Contracting\*** – Neal B. Benjamin, University of Missouri. Civil Engineering Seminar. 4pm, Rm 1-350.

### Thursday, April 11

**Adolescence** – Judith Huizenga, M.D. Course 11.547 Human Life Cycle: Children & Adolescents Seminar. 1:30pm, Rm 7-102.

**Abnormal Nuclear States and Vacuum Excitations** – T. D. Lee, Columbia University. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

**Social Security – Pre-Retirement Seminar.** 3pm, Rm 39-400. Open to employees.

**Molecular Aspects of Rheology** – William W. Graessley, chemical engineering, Northwestern University. Polymer Science & Engineering Seminar. 4pm, Rm 4-231. Tea 3:30pm, Rm 8-314.

**Sequential Monte Carlo Methods for the Optimization of Unconstrained and Constrained Stochastic Systems\*** – Harold Kushner, Brown University. Operations Research Center Seminar. 4pm, Rm 24-121. Refreshments, Rm 24-221.

**Time-Dependency Character of Earth Pressure in Tunnels\*** – Dr. Sakuro Murayama, director & professor, Disaster Prevention Research Institute, Kyoto University, Japan. NSF ASCE/JSPS US-Japanese Eminent Scientist-Engineer Exchange Program Seminar. 2:30pm, Rm 1-350.

### Friday, April 12

**Anomalous Infrared Conductivity in TTF-TCNQ and NMP-TCNQ\*** – Dr. Jerry Torrance, IBM-T.J. Watson Research Lab. Materials Science Colloquium. 4pm, Rm 9-150. Refreshments 3:30pm.

**Shear Dependent Mass Transport in Flowing Blood\*** – Kenneth H. Keller, chemical engineering, University of Minnesota. Faculty Visitation Seminar. 3pm, Rm 54-100. Refreshments 4pm, Walker Lge, Bldg 12.

**Southeast Asia and the Energy Crisis\*** – Malcolm Caldwell, Oriental & Asian Studies, University of London. CIS Seminar. 12n-2pm, E52-461.

## Community Meetings

**Cambridge Business & Professional Women's Club** – Dr. Mary P. Rowe, Special Assistant to the President & Chancellor for Women & Work, will speak at Wed, Apr 3 meeting, Faculty Club. Cocktail hour precedes dinner at 6:30pm. Call Marion Hoxie, x3-1456, for reservation.

**Easter Cake Decorating Workshop** – Sponsored by Technology Wives Organization International Cooking Group. Wed, Apr 3, 8pm, Rm 10-340. Fee: 50 cents members, 75 cents community. Info, Julie Miller, 494-8474, evgs.

**AWARE** – Formerly known as Employees for Improved Conditions at MIT, the Association to Work for Reforms in Employment will meet Thurs, Apr 4, Stu Ctr West Lge. Information, Cathy Sheil, x3-4160, or Susan Sokalner, x3-5335.

**Grievance Committee\*** – Sun, Apr 7, 6pm, Stu Ctr Rm 401.

**Women's Forum\*** – Mindy Lipton & Tom Sheridan, mechanical engineering, will lead a discussion of how husbands and wives decide to split responsibilities of family life, using a recently developed anonymous voting system. Mon, Apr 8, Rm 10-105.

## MIT Club Notes and Meetings

**Bridge Club\*** – ACBL Duplicate Bridge. Matchpoint pairs Thurs, 7-10:30pm; non-masters (less than 20 master points) Fri, 10pm-12m; small IMP-scored team of 4 (advance registration required) Fri, 8pm & Sat, 2pm; all Stu Ctr Rm 473. Jeff, 864-5571.

**Chinese Choral Society\*\*** – Sun, 3pm, Stu Ctr Rm 473.

**Goju Karate Club\*** – Beginners join class first week of each month. Meetings Mon, Thurs, 7-9pm, 4th fl Stu Ctr. Terry or Dick, 440-9631.

**Hobby Shop\*\*** - Mon-Fri, 10am-6pm, Rm W31-031. Fees: \$10/term for students, \$15/term for community. x3-4343.

**Israeli Student Club** - Meetings Wed, 8pm, Stu Ctr Mezzanine Lge.

**Judo Club\*\*** - Sport and self defense. Mr. M.H. Yanagi, 5th degree Black Belt, chief instructor. Mon, Wed, Fri, 5pm; Sat 1pm, Exercise duPont. Beginners welcome. Info, Mike Portnoff, x3-7319.

**MIT/DL Bridge Club\*\*** - ACBL Duplicate Bridge. Tues, 6pm, Stu Ctr Rm 473. Jeff, 864-5571.

**MIT-Harvard AAU Water Polo Team\*** - Competition with local teams and in tournaments in NY, Virginia and Canada. If interested, attend biweekly practices, Mon & Wed, 5pm, Alumni Pool.

**MIT Karate Club\*\*** - Evening classes Mon, Wed, 8-10pm, duPont Wrestling Rm. Harry Koba, x3-6232.

**MIT Kung Fu Club\*** - Chinese boxing, northern praying mantis. Meetings Tues, Thurs, 7:30-9pm. Call, 876-5071 or 661-8765.

**MIT Outing Club\*** - Meetings Mon, Thurs, 5-6pm, Stu Ctr Rm 461.

**MIT PDP 11 Users Group\*** - Information Processing Service. Thurs, Apr 11, 2:30pm, Rm 13-5002. Coffee 2pm.

**MIT Scuba Club\*\*** - Compressor hours: Mon, Fri, 4-6pm, Alumni Pool.

**MIT Tiddlywinks Association\*** - Meetings Wed, 8-11pm, Stu Ctr Rm 491. New members always welcome.

**MITV News** - The student operated television news organization tapes its weekly program Thurs, 8pm, CAES B&W studio, Rm 9-355.

**MIT Wheelmen\*** - Meetings Tues, 7:30pm, Rm 1-203.

**Motorcycle Tour\*** - Tour from MIT to Wellesley College, sponsored by Tech Motorcycle Rallyists. Sun, Apr 7, 11am. Bring picnic lunch. Info, Eric, 494-0369, x9363 Dorm; or Robin, x9455 Dorm.

**Rugby Club\*\*** - Practices Tues, Thurs, 5pm; games Sat, 1:30pm, Briggs Field.

**Soccer Referee Clinic for IM Soccer Officials** - Anyone interested in high school officiating should also attend. Wed, Apr 3, 7:30pm, 4th fl Stu Ctr.

**Strategic Games Society\*** - Offers opponents and discounts on merchandise to members plus gaming and periodical library. Sat, 1pm-1am, Walker Rm 318. Info, Kevin Slimak, x0389 Dorm.

**Student Homophile League\*** - Meetings 1st and 3rd Sun of every month, 4pm, Rm 1-132; next meeting Apr 7. Info, talk, help in coming out, Hotline 494-8227.

**Student Information Processing Board Meeting\*** - Mon, 7:30pm, Rm 39-200.

**Tech Engineering News\*\*** - April board meeting. Staff & staff candidates invited. Sun, Apr 7, 5pm, Stu Ctr Rm 453.

**Technique\*** - Yearbook staff meetings Sat, 11:30am till late afternoon, Stu Ctr Rm 451. New staffers & responsible critics welcome.

**Volleyball Club\*\*** - Practice, advanced level team competition. Sun, 1-4pm, duPont Gym.

**Women's Gymnastics Club\*** - Mon-Fri, 4-6pm, duPont Gym. Info, Ursula, x3-5954.

## Wellesley Events

**The Ascent of Man\*** - A series of 13 films on the history of science as a history of man, written and narrated by Dr. Jacob Bronowski. Wellesley Centennial Film Series. This week: "Knowledge of Certainty" and "Generation Upon Generation." Sun, Apr 7, 2pm, 112 Pendleton East; Mon, Apr 8, 7:15pm, 105 Pendleton West.

## Social Events

**Hillel Coffeehouse\*** - Wed, 8pm, 312 Memorial Dr, basement. Refreshments.

**Pot Luck Coffeehouse\*** - Fri & Sat, 8:30pm-12m, Stu Ctr Mezzanine Lge, sponsored by Stu Ctr Committee. Live music, free coffee, cider, donuts. Come & listen. If you want to perform call Ernest Perevoski, x9610 Dorm, for audition.

**Friday Afternoon Club\*\*** - Music, conversation, condiments, all the cold draft beer you can drink. Fri, 6pm, Ashdown basmnt. Admission: \$1 men, 50 cents women. Must be 18 or over.

## Movies

**Corn & the Origins of Settled Life in Mesoamerica; Archaeology in the Laboratory; The Archaeologist and How He Works** - Humanities Film. Thurs, Apr 4, 4pm, 7:30pm, Rm 4-370.

**Secondary Flow: An Interview with G.I.Taylor** - Fluid Mechanics Film. Thurs, Apr 4, 4pm, Rm 33-419.

**Future Studies: Future Shock; Claud; 6-5-4-3-2-1** - BEL Spring Film Series. Thurs, Apr 4, 5pm, Projection Rm off 10-400. Coffee.

**Future Studies; Future Shock; Claud; 6-5-4-3-2-1** - BEL Spring Film Series. Fri, Apr 5, 12n, Projection Rm off 10-400. Coffee.

**Radical Cinema - A Great Treasure-House; 8 or 9 in the Morning\*\*** - Science Action Coordinating Committee. Fri, Apr 5, 6:45pm, Stu Ctr Rm 407. Admission \$1.

**Antonio Das Mortas** - Film Society. Fri, Apr 5, 7:30pm, 9:30pm, Rm 6-120. Admission \$1.

**Au Pair Girls** - LSC. Fri, Apr 5, 7:30pm, 10pm, Rm 26-100. Admission 50 cents, ID required.

**King Kong** - Midnite Movie Series. Fri, Apr 5, 12m, Sala. MIT or Wellesley ID required. Free admission & popcorn. Bring blanket.

**Midnight Cowboy** - LSC. Sat, Apr 6, 7:30pm, 10pm, Rm 26-100. Admission 50 cents, ID required.

**Yaar Mera\*** - SANGAM. Indian with English subtitles. Sun, Apr 7, 3:30pm, Rm 26-100. Admission 50 cents with ID. Indian refreshments.

**Sapporo Winter Olympics\*** - MIT Japanese Student Association. Sun, Apr 11, 7:30pm, Rm 26-100. Admission \$1.

**Dr. Strangelove** - LSC. Sun, Apr 7, 7:30pm, 9:30pm, Rm 10-250. Admission 50 cents.

**Secondary Flow; Surface Tension** - Fluid Mechanics Film. Tues, Apr 9, 4pm, Rm 33-419.

**Low Reynolds Number Flow; An Interview with G.I.Taylor** - Fluid Mechanics Film. Thurs, Apr 11, 4pm, Rm 33-419.

**Campeños & Farming on Isla Del Sol; Market at La Paz; Pocomania; Ancient Art of Peru** - Humanities Films. Thurs, Apr 11, 4:30pm, Rm 14N-0615.

**Cybernetics: Robots Get Smarter; Genesis.** BEL Spring Film Series. Thurs, Apr 4, 5pm, Projection Rm off 10-400. Coffee.

**Cybernetics: Robots Get Smarter; Genesis.** BEL Spring Film Series. Fri, Apr 12, 12n, Projection Rm off 10-400. Coffee.

**Grapes of Wrath** - Humanities Films. Fri, Apr 12, 2pm, Rm 14N-0615.

**Radical Cinema: Red Flag Canal \*\*** - Science Action Coordinating Committee. Fri, Apr 12, 6:45pm, Stu Ctr Rm 407. Admission \$1.

**High Plains Drifter** - LSC. Fri, Apr 12, 7:30pm, 10pm, Rm 26-100. Admission 50 cents, ID required.

**Hamlet** - Midnite Movie Series. Fri, Apr 12, 12m, Sala. Free admission & popcorn. MIT or Wellesley ID required. Bring blanket.

**M\*A\*S\*H** - LSC. Sat, Apr 13, 7pm, 10pm, Rm 26-100. Admission 50 cents, ID required.

**Tom Jones** - LSC. Sun Apr 13, 7:30pm, 10pm, Rm 10-250. Free.

## Music

**Gabrieli String Quartet\*** - Students from the Interlochen Arts Academy. Thurs, Apr 4, 5pm, Music Library. Free.

**Concert\*** - Indian sarodist, **Ali Akbar Khan**, will give his second MIT concert Sun, Apr 7, 8pm, Kresge Auditorium. Sponsored by the Center for Asian Music. Tickets: \$3 & \$4, available at door.

## Theatre

**A Funny Thing Happened on the Way to the Forum\*** - Presented by MIT Musical Theatre Guild. Apr 5,6,11,12 & 13, 8:30pm; plus matinee, Sat Apr 13, 2pm; Kresge Auditorium. Tickets: \$3 evening, \$2.50 Sat matinee, \$1 discount for MIT students purchasing more than 1 reserved seat (limit: 2 discount tickets).

## Exhibitions

**Music Library Exhibit** - Chinese musical instruments.

**Photograph by Jerry Greenfield\*** - Black & white prints by the Boston Photographer. Thurs, Mar 7-Thurs, April 4, 12n-7pm, Creative Photography Gallery, 120 Mass Ave. Free.

**Hart Nautical Museum\*** - Permanent exhibit of rigged merchant and naval ship models, half models of yachts and engine models. Open daily in Bldg 5, 1st floor.

## Athletics

**Wednesday, April 3** - W Tennis. Boston College, 3:30pm. **Friday, April 5** - V Baseball. Lowell Tech, 3pm. **Saturday, April 6** - Lt Crew. University of Massachusetts, F-10am, JV-10:15am, V-10:30am, informal. **V Tennis.** Bowdoin, 2pm. **Track.** University of New Hampshire, 12:30pm. **MV Sailing.** Owen Trophy at MIT. **Tuesday, April 9** - V Tennis. Harvard, 4pm. **Wednesday, April 10** - V Lacrosse. Tufts, 4pm. **JV/F Lacrosse.** Governor Dummer, 4pm. **V "B" Tennis.** Eastern Nazarene, 4pm. **Friday, April 12** - V Tennis. Colby 4pm. **Saturday, April 13** - V Baseball. Suffolk, 2pm. Lt Crew. Joy Cup, Yale, F-10:15am. **W Crew.** WPI, JV-11:45am, V-12n. **JV/F Lacrosse.** Proctor Academy, 2pm. **V&F Tennis.** Wesleyan, 2pm. **Track.** Bates, 12:30pm. **MV Sailing Invitational.** **Sunday, April 14** - MV Sailing. Geiger.

## Dance

**Folk Dance Club\*** - International. Sun, 7:30-11pm Sala. **Balkan,** Tues, 7:30-11pm, Stu Ctr Rm 491. **Israeli,** Thurs, 7:15-10:15pm, T Club Lge, duPont. **Afternoon Dance Break,** Fri, 12:30-1:30pm, Kresge Oval.

## Religious Services and Activities

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

**Baha'i Discussions** - Informal discussion about the principles & beliefs of the Baha'i Faith. Thurs, 8-10:30pm, Rm 1-136.

**Campus Crusade for Christ/College Life\*** - Family time, singing, prayer, teaching from God's word. Fri, 7:30pm, Rm 37-252.

**Celebration of Holy Communion\*** - The Revs John Crocker, Episcopal Chaplain; Peter Johnson, Boston/Cambridge Ministries; and Constance Parvey, Lutheran Chaplain. Wed, 5:05pm, Chapel. Supper following, 312 Memorial Drive.

**Christian Bible Discussion Group\*** - Thurs, 1pm, Rm 20B-031. Prof. Schimmel, x3-6739, or Ralph Burgess, x3-2415.

**Christian Science Organization\*** - Weekly meetings, including testimonies of healing. Tues, 7:15pm, Rm 8-314.

**Hillel\*: Services** - Mon-Fri, 8am, Rm 7-102; Fri, Traditional 5:30pm, K kosher Kitchen, Non-Traditional 8:30pm, Chapel; Sat, 9am, Chapel. **Classes** - many interesting classes offered, for full schedule call Hillel office, x3-2982. **Shabbos Meal** - enjoy a traditional Fri evening meal at K kosher Kitchen, must order by Tues each week. Info and to order, Herbie Levine, x8403 Dorm.

**Islamic Society\*** - Juma prayers Fri, 2:10pm, Kresge Rehearsal Rm B. Discussion on the Qur'anic Interpretations, Sat, 4pm, ISC Lge, 2nd fl Walker.

**Malid-Un-Nabi\*** - Celebration of the birthday of the prophet Muhammad, sponsored by MIT Islamic Society. Muzammil Siddiqui, Harvard Divinity School; Dr. F. Azizi, Essam Ismail, MSA representatives. Speeches, Qur'anic poetry & recitations, songs, slide show, children's program. Sat, Apr 6, 7:30pm, Sala. Refreshments. Info, x0137 Dorm or x0356 Dorm.

**Latter Day Saints Student Association\*** - Discussion of beliefs. Thurs, 8am, Stu Ctr West Lge.

**Protestant Worship Services\*** - Sun, 11am, Chapel. Sunday school and nursery at the same time in Stu Ctr Mezzanine Lge.

**Roman Catholic Masses \*** - Sun, 9:15am, 12:05pm, 5:15pm; Tues, 5:05pm; Thurs, 5:05pm; 12:15pm. Chapel.

**Tech Catholic Community Programs\*** - **Wrestling with Prayer:** Lenten services lead by Fr. MacNevin, with a free, simple supper; Thurs, Feb 28-April 11. **Ecumenical Bible Study:** Tues, Feb 26-April 30, 12n-1pm, 2nd fl seminar rm, Religious Counselors Bldg.

**United Christian Fellowship\*** - Meet for dinner Thurs, 5pm, Walker; singing, sharing, praying meeting, 6pm, Rm 6-321.

**Vedanta Services\*** - Fri (except for school holidays), 5:15pm, Chapel.

**Westgate Bible Study\*** - Covering the gospel of Mark. Wed, 8pm, Westgate apt 1202. Info, 494-8778.

## Announcements

**Candidates for Medical School, Sept, 1975** - Important meeting Wed, Apr 10, 4pm, Rm 3-270. **Bernard S. Gould**, chairman, Premedical Advisory Council, will speak.

**Reminder** - Fri, Apr 5, is the deadline for submission of nominations for Karl Taylor Compton Awards and William L. Stewart Awards for students or student activities, Everett Moore Baker Award for teaching, and James N. Murphy Award for an employee. Nominations, in letter form, should be addressed to Rm 7-101.

**Maggie's Exercise Class** - Spring schedule; Mon-Fri: 12n-1pm (except Tues), 1-2pm, duPont Wrestling Rm; 5-6pm, duPont T-Club Lge.

**Student Summer Project Workshops** - Planning workshops to answer student questions and to discuss specific project ideas will be held Wed, April 3, 9am-12n; and Mon, April 8, 1-4pm, Rm 10-280.

**BSU Tutorial Program** - Black Student Union offers a full program of assistance to minority undergraduates for second semester. Teaching assistants available Mon-Thurs, 7:30-10:30pm, Rm 4-145, 146, 148 & 149 by appointment. Info, Karen Scott, x0351 Dorm.

**Graduate Student Committee on Housing & Community Affairs \*** - Agenda includes filling student environment committee vacancy, budget, housing orientation & survey, rate review, social & athletic events. Wed, Apr 3, 5pm, Rm 8-105.

**Graduate Student Committee on Academic Projects & Policy\*** - Meeting on vacancies on Institute committees, budget authorization & policies. Wed, Apr 3, 7:30pm, Rm 8-105.

**MIT Community Players\*** - Are looking for people interested in any aspect of theater. We have an ongoing program of monthly meetings, workshops, and five productions per year. Steve Ivester, 864-6000, x2839.

## Dining Service

**Dining Specials** - **Wednesday, April 3** - Lunch: chicken pot pie. Dinner: beef stroganoff over noodles. **Thursday, April 4** - Lunch: spaghetti & seafood creole. Dinner: veal parmesan. **Friday, April 5** - Lunch: fish tempura. Dinner: French dip roast beef. **Monday, April 8** - Lunch: dixie style chicken. Dinner: chili con carne. **Tuesday, April 9** - Lunch: beef pot pie. Dinner: Chicken chow mein over toasted noodles. **Wednesday, April 10** - Lunch: meatball stroganoff over noodles. Dinner: french fried haddock bits.

## Placement Interviews

The following companies will be interviewing Wed, April 3 - Fri, April 5. Those interested may sign up in the Career Planning and Placement Office, Mon-Fri, 9am-4pm, Rm 10-140, x3-4733.

**Wednesday, April 3** - Varian Associates.

**Thursday, April 4** - National CSS, Inc, Stamford, Ct.

**Friday, April 5** - National CSS, Inc, Norwalk, Ct.

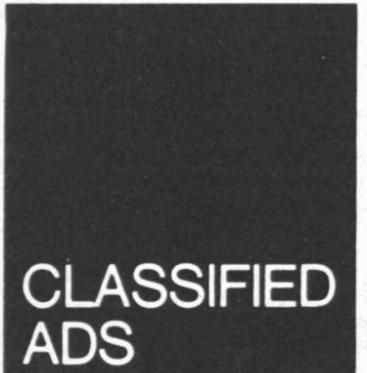
Freshman are encouraged to attend departmental lectures and seminars. Even when these are highly technical they provide students one means to learn more about professional work in a department and field.

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

Send notices for April 10 through April 21 to the Calendar Editor, Room 5-111, Ext, 3-3279, before noon Friday, April 5.



MIT graduate student Daniel R. Ford of Cambridge was in the news this week after a petition he filed with the Atomic Energy Commission prevented the Boston Edison Co. from reactivating its nuclear power electric plant in Plymouth. The plant, which had been closed for repairs, apparently will remain shut down at least until Ford's challenge—in which he questioned the safety of recent design changes in the plant—has been heard by the AEC. The 25-year-old Ford, a Harvard graduate in 1970 and now a student in the Science and Public Policy program of MIT's Department of Political Science, has worked closely for three years with the Union of Concerned Scientists, which opposes nuclear power plant operations on the grounds that they are dangerous. Ford entered the case under an Atomic Energy Act provision allowing a citizen to intervene in a public proceeding if its outcome could threaten his interests.



Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Only Institute extensions may be listed. Members of the community who have no extensions may submit ads by coming in person to the Tech Talk office, Room 5-111, and presenting Institute identification. Ads may be telephoned to Ext. 3-3270 or mailed to room 5-105. Please submit all ads before noon, Friday, April 5.

## For Sale, Etc.

- Trailer hitch, frame, mount, \$10. Kim, x7418 Linc.
- Lving cntry, must sell 16" color tv, gd pix, \$175 or best. Call, 494-8446.
- HP-35 calculator, nd \$, \$200. Paul Houpt, x3-7267.
- Sears zigzag sew mach, 2 yrs, nvr used, buttonhole attach, stretch stitch, slip-covers, coating, \$100. x3-2335.
- Radial tires, 4 used 5K; 4 Keystone mag whls, guaranteed 4K; 2 snows, used 1 seas. Nina, x8-3333 Draper.
- SF mags, 300+: Analog, Astounding, F & SF, etc., '52-'72, \$100 or best. Mike, x3-2152.
- Tires, 7.75x14, mtd & balanced, gd cond, 2/\$25 or 5/\$50. Bob J, x8-3477 Draper.
- Astra (Tour de France) 10 spd bike, yr old, exc cond, \$55. Joe, x3-3212.

Antique late Victorian oak china

closet, exc cond, \$175. Pete, x7284 Linc.

Fisher X-100-C 50 W stereo amp; Scott 315-B stereo tuner; Garrard mdl 50 changer w/Empire crtrdg, \$150. Call, 891-6653, aft 6.

Stereo, AR amp, Dual 1219 trntbl, home-made spkrs; '73 brass rat; SCM port typwrtr; self-wind watch. x3-1938.

Leath & fur coat, sz 13/14, gd cond, nw Dec, full lgth, fur trim, \$60. Linda, x3-5117.

'66 Starcraft 18 1/2' alum cabin cruiser, w/2 yr old MerCruiser 110 hp I/O eng, trailer, ask \$1,700. Elaine, x3-5486.

Health freaks! Vita-mix blender, 2 hp motor, reverse blades, crack ice cubes & other features, was \$85, yr old, only in catalogs, \$59 firm. Jessica, x3-2281.

Port r-t-r tape machine, suitable for secretarial use, best. Lydia, x3-4645.

Frye boots, sz 11 D, \$25. Chuck, x0526 Dorm.

Electrodryer BHC dehumid, sz 0-A, 110 V, internal timer, brly used; Perkin-Elmer mdl 12 B infrared spectrometer, no amp & rcrdr; mechanical integrator, compl, gd cond. Dr. Lombardi, x3-4814, Rm 6-010.

Antique wd burning cast iron heat & cook stoves; lg cast iron pots; brass gas lamps. John, x3-6710.

Revere 8 mm movie camera, var spd, sgl frame, 3 lens turret; B&H 8 mm proj, frwr & reverse, sgl frame, var spd; 2 lamp lite bar; ask \$100/all. Call, 489-3726.

Sgl bed w/matt, spr, wd frame, v gd cond, 4 yrs, \$40; dbl matt, \$10. David, x8-3541 Draper.

Microscope, A-O Microstar w/case, 4 obj, 4 eye pc, 4 yrs old, exc cond, nds stage clips, cost \$340, ask \$150 or best. Bill, x3-6849.

Coleman catalytic heater, adj 5,000-8,000 BTU, exc cond, \$20. Al, x5873 Linc.

Sun lamp & stand, little used, \$10 or best. Gary, x8-1106 Draper.

Tw sz box spr & matt, exc cond, \$30. Leona, x3-5117.

Wl trade or buy plate blocks; full down den couch, 72x42, heather, \$50; red rug, yr old, 9x12, \$20; 2 antique mahog end tbls w/glass tops; or best. Rebecca, x3-1782.

Ham equip, Heath Mohawk rcrvr, DX-10 Xmtr, TA 33 Jr beam, rotor, misc other, Best. Claude, x3-7500.

Sears garden cart, gd cond, \$9. Tony, x3-5717.

K dinette set, 4 chrs, lk nw. x8-4061 Draper.

'71 Bell Quay dory, 13'6", w/50 hp motor, elec start, atuo bilge pump, run lites, exc cond, best over \$1,250. Dick, x3-5940.

Atala bike, 24", Columbus db tubing, \$250. Dennis, x8-1560 Draper.

Best deal on b nw expensive cameras, eg, Cannon f-1, Olympus OM-1, etc. David, 494-9194, evgs.

Kette set: tbl w/4 chrs, formica, exc cond, \$50. x3-6733.

Aquarium, 26 gal, stand, hood, lites, 2 filters, pump, \$30. Steve, x8-4133 Draper.

Nw 12 V high voltage batt from demolished '69 VW, \$20; VW trailer hitch, \$20. x8-1234 Draper.

Bike, m 3 spd, well maintained, ugly, gen lites, toe clips, 3 Clementi tubular tires, Lyotard pedals, 14-28 fresh!; Hallicrafters SX-110 am/sw rcrvr. John, 354-8170.

B nw Minolta SRT 100 w/case, filter, \$200. Call, 267-8476, aft 6pm.

Audiovox auto 8 trk tape player mdl C920, w/10 W amp, \$35. JK, x8-3977 Draper.

Mtrcycl crash helmets, 2, \$15/ea. Jurate Barnes, x3-3842.

Waterfront lot, 150' Eidelweiss 4 seas vac commnty nr Conway, NH, pool, tennis, play area, skiing, owner w/ finance. Call, 646-7258.

Save gas, electronic ignition Delta Mark 10 B, fully assembled, installs easily 5 min, list \$60, quantity \$35/ea, nd 23 orders for discount, w/ order 4/12. Bill, x217 Linc.

Sofabed, dark brn, \$30. Steve, x3-6893.

Orig Phase Linear 700, 24th made, perf cond, questions welcome, demo on request. Lenny, 266-4796, evgs.

Nordica ski boots, sz 9 1/2, 3 yrs, gd cond, \$15. Dave, x8629 Dorm.

Sm yel dresser; bl antiqued desk; \$8/ea, nego; unfinished ladderback chr. x3-7359.

Wool cream carpet, 12x12, w/pad, \$130; wool prpl rya rug, 12x8, w/pad, \$110; qn sz matt & box spr, x firm, \$100; v lg brn cotton suede bean bag, \$25. Call, 262-2543.

Raleigh Sprite 27, 5 spd m bike, 21 1/2" frame, 10 mos, exc cond, \$70. Bob, x3-3695.

Olympia man typwrtr, gd cond, \$35; GE b&w 19" tv, UHF, \$35; binoculars, 12X50 w/tripod adapter, exc cond, \$40. Steve, 494-9248.

Comtemp wint tbl lamp, oatmeal shade, 30", lk nw, orig \$50, \$30; f genuine lamb sheerling midi coat, med, cocoa suede, trimmed & lined w/wht lamb fur, worn 5x, orig \$170, \$70. x8-2577 Draper.

Sturdy elec juicer, \$40; elec frypan, \$5; braided bl rug, 5x9, \$10. Bonnie, x3-5513, Tues or Thurs.

B nw calculator, constant function w/memory, nvr used, gift, \$85; depend calc w/constant key, \$35; w/charger. Danny, x8346 Dorm.

GE upright vac clnr w/hose attach, \$45. David, x3-7275.

Zenith 23" b&w tv, \$60. Call, 235-0962.

Wool rug w/pad, lt gray, perf cond, 13 1/2x14, \$100 or best; infant carseat, \$7; bassinet, \$10; safety gate, \$150; playtex nurser set, \$3. x3-6322.

DCM stereo power amps, 125-125 W RMS/ch at 8 ohms, b nw, full grnty, \$300. Chip, x3-1558.

Free Sears Kenmore washer, working cond. x8-1284 Draper.

## Vehicles

'61 Mercedes, leath interior, strong eng, gd tires, nds paint, \$350. Susan, x8819 Dorm.

'62 Ford Gal 500, v gd run cond, ac, 80K, \$100. Arnold Phillips, x3161 Dorm, lve msg.

'64 Olds F85, 71 K, nw tires, batt, shocks, p st & br, ac, r, 18-20 mpg, v gd cond, \$250 or best. Martin, x3-4944.

'66 Dodge, perf cond, 6 nw tires, 18 mpg, \$400. Sara, x3-4872.

'67 Saab 96, V4, nw clutch, brakes, tans, etc, \$1,000. John, x8-2570 Draper.

'67 VW sqbk, amfm, 5 K on new eng, xtra snows & whls, perf run cond, \$1,050. x8-1457 Draper.

'68 Merc Cougar, spec 8 cyl, 35 K, auto, ac; pwer, gd tires, nw snows, am, nds some body work, \$400. Rebecca, x3-5812.

'68 VW, auto, '69 rebtl eng, wht, body, tires & eng exc cond, ask \$950. Call, 623-1336.

'69 Alfa Berlina, as nw, service rcrds. Andy, x3-5113.

'69 BMW, chasis damaged, eng gd cond, many nw parts, exc for spare parts. Giri, 547-1217, evgs.

'71 Volvo 142 S, 4 spd, amfm, dark grn, exc cond, \$2,450. Call, 391-4008.

'71 Saab 99E, fule injection, tape deck, \$1,800 or best. Call, 776-7253.

'71 Toyota Corona, 4 dr, red, std 4 spd, am radio, exc drive cond, v cln, \$1,200. Ken, x3-3487.

'72 International sta wgn, auto, p st & br, exc cond, must sell, ask \$3,250. Call, 648-8199.

'72 VW super Beetle, exc cond. Call, 227-9472.

'73 VW bug, lt blue, May, 17K, r, exc cond, \$2,000 nego. Call, 494-8240.

'74 Vega, 8K, am + amfm radios, snows, 4 spd trans, \$2,300. Eric, 277-7787.

'72 Honda 750 cc, 8" extension, custom paint. \$1,495. Ken or Roger, x7148 Linc.

## Housing

Arl, Lex line, nw mod 5 rm apt, ww, \$295. Ms. Forsythe, 646-9010.

Back Bay, crnr Mass Ave & Beac St, BR, furn, frpl, slp loft, avail 6/1 w/opt. Bill, x3-7113.

Bos, 131 Park Dr apt 36, beaut view MFA on Fenway Park, BR recently repainted, avail 6/1. Call, 266-8267, evgs.

Bos, BR, ww, frpl, bay wndw, south exposure, cln, safe, bow-front Marlborough St, 2 blks T or bus, parking avail. Call, 266-8133.

Camb, Tang Hall, sum sub, BR, reduced rates. Nikil, 492-8943, evgs.

Newton Ctr, 3 BR, 1 1/2 B, brick colonial, study, fam rm, gd schools & transp, \$53,900. Larry, x3-3623.

Somerville, Northgate, 2 BR, ww, dishwasher, ac, \$235 incl h. Call, 661-0981.

Martha's Vineyard sum rental (June & July), gambrel cape, secluded wooded area, water view, 4 BR, 2 B, K w/nw appliances (incl wash & dry), DR, LR, ww up & pine inl down, full bsmt, well water, furn. x3-2991.

Nantucket, sum sub, spac hse on moors, water horizon, slps 8, 2 B, LR w/ping pong, elec h, washer & dw, ref, avail June, \$850. x3-2203.

Sandwich cottage, ocean view, wilderness, nr priv beach, slps 4, beaut furn, frpl, h, family only, \$650/mo incl util, seas rent nego. Call, 492-1480, aft 6pm.

Cottage NH lakefront, 4 BR, boat, beach, avail last 2 wks Aug. x5869 Linc.

## Animals

V gentle red & brn f tabby cat, yr old, 3 kittens, \$5 ea, to gd home only. Call, 593-0832.

Affec 3 mos cats, 1 tabby f, 1 wht m, nd gd home, both hsebrkn. Susan, x3-2940.

Free beaut blk Persian altered m cat, papers, gd disposition, have new baby, cat nds gd home. Jim x3-4519.

Kittens, free to gd home. Jan, x3-5230.

Free to gd home, blk & gray m tiger cat, 5 mos, loving personality, landlord hassles, can't keep. Jeff, x3-6788.

## Lost and Found

Found: Timex watch nr Bldg 7. Mikhail, x3-4175.

Found: 6" slide rule in case, front Stu Ctr, describe it & it's yours. x3-7787.

## Wanted

Books by R.G. Brown: Decision Rules for Inventory Mgt; Smoothing, Forecasting & Prediction. x3-5891.

F rmmate, mod Camb 2 BR, own BR, lg LR & DR, ac, disp, lg closets, storage space, parking nr T. Call, 354-2638, evgs.

Stu to drive 2 cars from Bos-LA, Calif. after finals week, exp paid. x3-1787.

Rmmate, m or f, share lg Northgate apt w/2 grad stus, own furn BR, lg K, porch, 5 min walk MIT, avail 4/15. Call, 354-3836.

F rmmate, 24+, share fl Bri hse w/2f, lg porch, bd yard, nr T, free off st parking, \$83 + util. Ronda, x3-7271.

Working mother nds exp person to care for 4 mos old child 3 days/wk (23 hrs), Wtrtwn nr Belmont line & bus. Mrs. Jacobs, 923-2360.

M rmmate, share lg panel, furn apt, N Camb, nr Porter Sq, w/2, \$125 incl util, parking. Jeff, x3-5958.

Rmmate, own BR in 2 BR apt, Somerville area, beaut, K w/pantry, avail now, \$82.50 + h. Marian, x3-6197.

Cheap dbl box spr & matt. Richard, x3-1368.

F rmmates, 2: 1 sgl w/B, \$151; 1 share lg BR w/2 f, 73-33 Charles River Park. Call, 227-1873.

Bike access incl lite, generator, rear rack. Don Davidoff, x3-5095.

Cpl seek 4-5 rm apt, 5/1 Wtrtwn, Newton or Bel, walking distance T, have no car, no chldrn, no pets, possibly 3rd adult wl share, ref. Vicki Heidorn, x3-3795.

Rmmate, 1 or 2, own rm in mod 3 BR Arl, nr Camb & T, equip K, LR, DR, parking, wash & dry, 1st fl 2 fam hse, backyd, bsmnt avail 6/1, \$80/person, \$120/2, +util. x3-7457.

BR in 2 BR apt w/working f, 25+, Camb/Wtrtwn area, or interested f to hunt with in same area. x3-6756.

Someone to fix radio cheaply. John, 494-8445.

Silver coins, '64 & earlier, w/ pay approx 3x face value. Bill, x3-1769.

## Miscellaneous

Typing, anything readable, fast, accurate, cheap, electronic, all under one roof (typist). Stan, x3-6765, or drop line Rm NE-43-915.

Typing of theses, papers, reports, done accurately, quickly, cheaply. Call, 494-0096, bef 12 or aft 5.

Wl board & exercise horse, May-Sept. Betsy Freedman, 235-7919.

Fast, expert bike repairs by qualified mechanic on campus, low prices. Call, 494-9142.

Person w/systems lvl exp w/DEC minicomputer (9,11) wants sum programming job, Camb-Bos area, June-Aug. Oliver Selfridge, x3-2054.

Do you need child care during Apr vacation? Debbie Crocker, x3-3953, MIT Family Day Care Program.

Hrdwd floors prof sanded & refinished. Christine, x3-2742.

Grad Stu Council mtg Thurs, Apr 4, 6-8pm, Bldg 50 bl rm, incl open hearing on committee nominations for: stu environment, grad sch policy, edu policy, library sys, foreign scholarship.

## Positions Available

This list includes all non-academic jobs currently available on the MIT campus. Duplicate lists are posted each Tuesday preceding Tech Talk publication date on the Women's kiosk in Building 7, outside the Office of Minority Affairs, 4-144, and in the Personnel Office E19-239, on the day of Tech Talk publication. Personnel interviewers will refer any qualified applicants on all biweekly jobs Grades I-IV as soon as possible after their receipt in Personnel. Employees at the Institute should continue to contact their Personnel Officers to apply for positions for which they feel they qualify.

Virginia Bishop 3-1591  
Mike Parr 3-4266  
Phillip Knight 3-4267  
(secretary - Joy Dukowitz)

Sally Hansen 3-4275  
Jack Newcomb 3-4269  
Evelyn Perez 3-2928  
(secretary - Mary Ann Foti)

Dick Higham 3-4278  
Pat Williams 3-1594  
Claudie Liebsny 3-1595  
(secretary - Dixie Chin)

New applicants should call the Personnel Office on extension 3-4251.

Technical Assistant - Academic Staff in Biology will conduct biochemical experiments on cell-free protein synthesis. Techniques used include: radioisotope counting, radioautography, gel electrophoresis, paper electrophoresis and chromatography, ultracentrifugation, column chromatography. AB, BS, or MS in Biology or Chemistry required; previous lab experience in bio-chemistry helpful. 74-249-R (3/27).

DSR Staff in the Laboratory for Nuclear Science will participate in fundamental particle research at major accelerators and in data analysis. Candidate must have a Ph.D. with a minimum of two years experience in high energy physics. Detailed knowledge of bubble chamber techniques is essential. 74-222-A (3/13); 74-233-A (3/13).

DSR Staff in the Laboratory for Nuclear Science will participate in fundamental particle research at major accelerators and in data analysis. Candidate must have Ph.D. in high energy physics or a related field with experience in scintillation counter and spark chamber techniques and familiarity with large computer data analysis. 74-220-A (3/13); 74-221-A (3/13).

DSR Staff Physicist in the National Magnet Laboratory will conduct original research in experimental solid state and low temperature physics with emphasis on the magnetic fields. Ph.D. in physics or related area and 3 years postdoctoral laboratory experience in magnetism and low temperature physics required. Familiarity with cryogenic and electronic instrumentation desired. Position available after 10/1/74. 74-130-A (2/13).

DSR Staff Junior Electronics Engineer for the National Magnet Laboratory will design, test and assemble electronic circuits for nuclear magnetic resonance spectrometer operating in the vhf region on line with PDP-11 computer. Assist in system design; maintenance of spectrometer system. BS degree in EE with experience in design development and testing of vhf low level, low noise, solid state circuitry required. Familiarity with electronic data processing procedures required. 74-129-A (2/13).

Assistant Dean of the Graduate School - Academic Staff will supervise the procedures; perform financial plan-Will be concerned with recruitment, financial aid as well as academic and personal counseling of all minority graduate students. Work with department and administrative representatives in developing and supervising projects designed for such students. Candidate should have a background in graduate study and/or administrative experience dealing with problems of graduate education. The position also involves travel to other academic institutions for recruiting minority

students and developing cooperative educational programs. 74-190-R (3/6).

**Administrative Staff General Manager** of the MIT Food Services will be responsible for all phases of the operations of dormitory dining rooms, cafeterias, snack bars or lounges and catering services on campus. Will reorganize the department; develop and implement operational policies and procedures; perform financial planning; oversee the administration and supervise staff. Minimum 5 years experience in the management of college or university food services; ability to relate effectively to students faculty, staff important. A degree in the food services field is preferred. Candidate must be innovative and creative in developing new food service programs. 74-75-A (1/30).

**Journals Department Manager - Administrative Staff** at the MIT Press will be responsible for budgets and fiscal control of the department; for daily management and supervision of staff. Will make decisions concerning production or journal subscription; act as liaison with promotion/advertising and production departments concerning implementation of policy. 2-3 years experience with journals and administrative skills required. 74-280-R (4/3).

**Staff Recruiter** (Admin. Staff) will report to the Employment Officer; will be responsible for coordination of search for well-qualified persons to fill non-academic staff positions. Particular emphasis will be given to assisting laboratories, centers, and departments in fulfilling Affirmative Action Plans with respect to research staff openings. Person will work closely with Personnel Officers and departments in defining description of positions and qualifications required. Frequent travel will be expected; experience in Personnel and/or recruiting required. Technical background with degree in Engineering or Science preferred. Please submit resume. 73-643-A (7/18).

**Assistant Writer/Researcher - Administrative Staff** in Resource Planning will assist two staff writers in the preparation of proposals to individuals, corporations, and foundations, and of other fund-raising statements, brochures, newsletters, and supportive materials. Involves compiling and organizing a wide variety of information often obtained through interviews and discussions with members of the faculty and administration, sometimes accompanying a staff writer. Candidate must be a college graduate and have demonstrated writing and research skills. Knowledge of MIT helpful but not essential. 74-227-A (4/3).

**Assistant Auditor - Administrative Staff** in the Audit Division will perform EDP internal auditing, reviews of the systems development effort, evaluate internal controls, and post-audits of computer systems. Will develop audit programs, questionnaires, write and present reports. Must have four years of working experience in EDP, a degree in Accounting, knowledge of COBOL or PL/1, and public accounting experience. 74-150-A (2/20).

**Assistant Auditor - Administrative Staff** will develop audit programs and questionnaires, perform audits, direct junior staff members, write and present reports. Must have experience in public accounting or internal auditing. A degree is preferred. 74-151-A (2/20).

**DSR Staff** in the Energy Lab will design, build, and operate a high performance combustion facility for fluid mechanics and materials research directed toward the development of electrodes for a high power energy conversion device. Will also handle the instrumentation of a shock tunnel driven MHD generator. Ph.D. and minimum 5 years experience in experiment and engineering hardware. Interest and ability in dealing with MIT, local and US research and engineering communities desired. 73-47-A (1/23).

**Research Engineer - DSR Staff** in the Aeronautics and Astronautics Aerophysics Laboratory will assist the Project Leader and conduct research using wind tunnel magnetic balance system in study of magnus forces. Gather and interpret data from subsonic and supersonic wind tunnel programs; train and supervise graduate students and research assistants. BS or MS in Aeronautics; experience in wind tunnel magnetic balance and suspension systems or other types of balance systems, knowledge of Fortran IV and experience in IBM programming required. Available 6/1/74. 74-245-R (3/27).

**DSR Staff** in the Cell Culture Facility will handle all aspects of tissue culture and animal virology; grow animal cells; infect cells with viruses. BA or MS degree required; minimum of one year experience in tissue culture and animal virology highly desirable. Experience in microbiology will be considered. 74-258-A (3/27).

**Scientific Programmer DSR Staff - Part-time/Temporary** in Earth and Planetary Science will handle large

amounts of data on random-access disc under FORTRAN and JCL; perform graphical output and contouring with calcomp and SC-4020 routines. Experience in working with data, scientific programming experience required. Bachelor's degree or equivalent preferred. Flexible hours until project is completed; approximately 6 months. 74-239-A (3/20).

**Systems Programmer - Administrative Staff** will provide technical expertise; develop and implement methods of improving computer performance. Minimum of two years S/360 or S/370 programming experience. Knowledge of teleprocessing, and COBOL or PL/1. 73-265-R (4/73).

**DSR Staff Systems Programmer** at Project MAC will perform system analysis and system programming on a research version of the Multics operating system. SM or EE degree required; 2-3 years programming experience in the supervision of some advanced operating system required. Ability to contribute to research and work with students important. 73-1234-R (11/14).

**Applications Programmer - Administrative Staff** in the Office of Administrative Information Services will translate detail program specifications into computer code; test codes and documents program for operational use; review specifications; develop program flow charts; test and debug programs; perform other duties as assigned. Minimum 2 years experience in Business applications programming required. 74-278-R; 74-279-R (4/3).

**DSR Staff Member** in Research Laboratory of Electronics will conduct experimental determination of sound pressure in the fluid of the inner ear. Recent Ph.D. in EE with background in physiological experimentation and acoustics. Knowledge of the auditory system, particularly the inner ear, is required. 74-120-A (2/20).

**Medical Technician - DSR Staff** in the Clinical Research Center will supervise and direct the activities of the clinical laboratory; responsible for quality control, setting up new procedures, teaching new personnel, automation and instrumentation, ordering supplies and equipment. Minimum of a BS in Medical Technology, Biology, or Chemistry including hospital laboratory training and ASCP certification or eligibility for certification required. Minimum 5 years clinical laboratory experience with interest in clinical chemistry and hematology required. Supervisory experience desirable; leadership qualities important. 74-126-R (2/13).

**DSR Staff - Curriculum Developer** at the Artificial Intelligence Lab will develop and write new mathematical curriculum material in the Logo language for elementary school use. The job will often require working outside normal office hours. Position requires academic qualification in developmental psychology and mathematics; experience in curriculum writing for elementary school, evidenced by at least one successful publication of teaching material; experience in computer programming, and teaching it to children; experience and certification in elementary school teaching and teacher training. Position available in May 1974. 74-153-R (2/20).

**Systems Analyst - Administrative Staff** in the Office of Administrative Information System will develop, under direct supervision, solutions to business problems; prepare, design, and program specifications for new programs and for modifications to existing systems. Applicants should have business and administrative experience, analytical ability and familiarity with computers. 73-1315-R (12/19); 74-196-R (3/6).

**Programming Analyst** for the MIT Information Processing Center must have experience and knowledge of large-scale time-sharing computer systems. PL/1 and FORTRAN language. Documentation and communication skills are necessary qualifications. The User Services Group requires an individual who understands and is responsive to the needs of the Center's users.

**User Assistance** - assisting users by providing programming information and debugging help and tracking down special problems.

**User Information** - Instructional documentation and conducting seminars, workshops, and short courses. 74-178 (2/27).

**Computer Operator IV** will operate IBM Model 135 and all peripheral equipment associated with it, including disk drives, tape units, card reader/punch, printers. Must have a good knowledge of DOS job control, multi-programming experience and be capable of understanding operating instructions. 4pm-12:30am shift. 74-191-R (3/6).

**Keypunch Operator II** in the Medical Department will provide support to information processing of patient contacts. One year experience of IBM 129 keypuncher and verifier preferred. Ability to work independently is important. 74-29-A (1/16).

**Night Manager - Exempt** will be responsible for overseeing the operation of the Wallace Observatory (Earth and Planetary Science) and assisting observers, primarily at night. Train new observers in the operation of the telescopes, the computer control system and the auxiliary instruments. Familiarity with optical observatory operations and astronomy is highly desirable; experience and facility in handling mechanical and optical instruments, some electronic experience preferred. Ability to make decisions and assume responsibilities important. 3-11pm, 5 day/week. 73-1357-A (1/16).

**Engineering Assistant - Exempt Staff** for the National Magnet Laboratory will arrange and perform the day-to-day experiments in medical electronics. Work with cryogenic detectors; familiarity with low-frequency electronics required. Will often work with animal and human subjects, including hospital patients. Candidate must be available for occasional night and weekend work. 74-241-A (3/20).

**DSR Staff** in the Center for Space Research will analyze and interpret plasma data from satellite borne plasma experiments. Recent Ph.D. in space plasma physics or related area required. Candidate should have had direct experience with the analysis and interpretation of experimental results related to the interplanetary plasma. 73-1184-A (11/14).

**Senior Secretary V** in the Physics Department Graduate Office will coordinate the functions of the office and handle the secretarial duties for the Graduate Committee Chairman. Ability to follow instructions and to work independently on administrative matters involving graduate students essential. Excellent shorthand, typing and organizational skills required. Ability to coordinate the work of an assisting secretary important. 74-257-R (3/27).

**Secretary IV** in Mechanical Engineering will handle general secretarial duties necessary for the smooth function of this office. Type technical reports, proposals, papers, class notes; answer routine correspondence; maintain files. Previous secretarial experience, excellent typing skills required; experience in technical typing, shorthand desirable; ability to establish priorities important. 74-229-R (11/14).

**Secretary IV** in Mechanical Engineering will handle standard secretarial duties; arrange conferences, maintain office accounts; type correspondence, reports, proposals, class notes (some technical). Will also handle some administrative tasks. Good typing (technical typing skills preferred); ability to establish priorities and to organize important. Previous office experience preferred. 74-228-R (3/13).

**Secretary IV** for a professor in Earth and Planetary Sciences will handle all secretarial functions; perform some administrative chores, some library research and editing. Excellent typing (some technical); shorthand preferred. Editorial and organizational skills important. 74-8-R (1/9).

**Secretary IV** in the Center for Advanced Engineering Study will handle all general secretarial duties for the manager of video operations. Monitor office accounts and handle billing; maintain office records; coordinate schedule of recording and editing sessions; answer questions regarding video services. Ability to work with figures, bookkeeping background helpful; accurate typing and organizational skills required. 74-270-R (4/3).

**Secretary IV** in the Harvard-MIT Program in Health Sciences and Technology will handle secretarial duties for the Executive and Business Officers. Assist in the preparation of proposals and budgets; transcribe and type correspondence; conduct occasional library research; maintain program files and student records. Excellent typing (including technical); some editorial and accounting experience and familiarity with library research techniques desirable. Maturity, organizational ability important. 40 hour work week. 74-274-A (4/3).

**Secretary IV** in the Dean for Student Affairs Office will type correspondence, maintain busy appointment schedule for a Dean. Will work with other secretaries in performing general office functions. Excellent typing skills required. Ability to establish priorities and to work in a busy office required. Maturity, tact and sensitivity to students and faculty is essential. 74-275-R (4/3).

**Secretary IV** will handle general secretarial and some administrative duties for two Professors in Mechanical Engineering. Coordinate advising activities; maintain office accounts and small laboratory library; handle arrangements for weekly seminars. Technical typing proficiency required for theses, class materials, journal articles, proposals. Ability to work independently, establish priorities and to deal effectively with administrative and procurement problems required. 74-267-R (4/3).

**Secretary III-IV** in Personnel will work for the Employment Office and two

Personnel Assistants. Good Typing skills needed for correspondence, memos, form letters, reports; maintain special files; assist in arranging schedules for recruiting; handle employee cases, reference, applicants for Personnel Assistants. May also help with special projects, reports and extra typing. Ability to work independently and to keep track of a variety of schedules and procedures important. Flexibility, experience, and interest in being a part of an active group is necessary. 74-246-R (3/20).

**Secretary III-IV** to two professors and two research associates in Ocean Engineering will type technical reports, class notes, proposals, correspondence from dictation. Monitor project accounts; organize seminar; set up appointments. Good typing and shorthand required; technical typing preferred; accounting skills and ability to organize important. 74-240-R (3/20).

**Secretary III-IV** to the Electrical Engineering Executive Officer will handle general secretarial duties dealing with administrative matters. Type faculty and staff appointments; maintain personnel file and management records in an on-line computer system. Accurate typing, dictaphone or shorthand required; ability to work independently, willingness to learn the use of a computer system for records important. 74-284-R (4/3).

**Secretary III** to the Director of Alumni Services will handle all general secretarial duties; type correspondence, budget reports, maintain office accounts, schedule meetings, conferences, seminars; transcribe and distribute minutes from meetings. Excellent typing and dictaphone skills required. Ability to work independently with poise and good judgment important. 74-271-A (3/13).

**Secretary III** to an Industrial Liaison Officer will assist with the Institute publication distribution, symposia and faculty travel, research of briefings. Handle all other general secretarial duties. Good shorthand (speedwriting) and typing skills necessary. 74-99-R (2/6); 74-100-R (2/6).

**Secretary III** in Chemical Engineering will type quizzes, reports, technical manuscripts, proposals for three associate professors. Will arrange appointments, file, act as receptionist for the office. Dictation from tapes; technical typing experience preferred. Prompt, dependable, able to accept supervision and follow through on details. 74-162-R (2/20).

**Secretary III** in the Flight Transportation Laboratory, Aeronautics and Astronautics will handle general secretarial duties for two professors. Type correspondence and reports; monitor xerox account. Ability to establish priorities important. Previous office experience and good skills required. 74-57-R (1/23).

**Secretary III - Temporary** in Cambridge Project will perform online typing of documentation of programs, program routines, manuals, reports, etc. from rough drafts. Will also do some transcribing. Good typing required; familiarity with online work (Multics) important. Job ends 6/30/74. 74-168-R (2/27).

**Secretary III** will work with a Industrial Liaison Officer in providing services to approximately 15 companies; research briefings, institute publication distribution, schedule symposia travel, handle general secretarial duties. Good typing, dictaphone, shorthand or speedwriting skills necessary. Previous experience or schooling helpful. 74-214-R (3/20).

**Secretary III** in the Sloan School of Management will handle all the general secretarial duties for three professors in a one-person office. Will also need some experience in technical typing for course material, reports, manuscripts. Previous office experience helpful. 74-238-R (3/20).

**Secretary III** in Biology Headquarters will type correspondence, memos, class material for the Undergraduate Officer. Assist with Undergraduate registration, maintain files and mailing lists, handle office reception duties and other general office functions. Accurate typing required; ability to deal efficiently with large number of students and staff in a very busy office essential. 74-281-R (4/3).

**Accounting Assistant V - Part-time** at the MIT Press will reconcile department accounts to central accounting office statements; post, balance general ledger; maintain inventory cost cards and inventory control. Research and answer letters concerning declined and refunded checks. Knowledge of accounting procedures and bookkeeping experience required. 2 1/2 hour work week. 74-250-R (3/27).

**Senior Clerk III** for the Athletic Department will act as equipment room attendant and generally control admission to men's dressing room at the swimming pool, check identification, assign lockers and issue equipment. Other duties include the sale of athletic cards, guest tickets and the keeping of accurate records and files;

accept telephone and over-the-counter reservations for squash courts. Candidate must be a male capable of working independent of full-time supervision following job training. Must be dependable, courteous and helpful in response to a variety of request from guests and regular patrons. 74-261-R (3/27).

**Senior Clerk III** to the Work Control Coordinator, Physical Plant will receive and dispatch service requests; assist with scheduling; monitor requisitions; perform other clerical assignments. Ability to learn details of procedures; good office skills required. 74-16 (1/16).

**Accounting Clerk III** will work in the Grants and Contracts Section of the Comptroller's Accounting Office; prepare various financial and fiscal reports. Recent business school coursework required; ability to communicate efficiently is important in dealing with departments regarding their monthly expenditure statements. 74-204-R (3/13).

**Senior Clerk III** in the Comptroller's Accounting Office will type correspondence and bills for Institute benefits; maintain data logs for the computer system. Good typing, knowledge of 10 key adding machine required. 74-215-A (3/13).

**Technical Statistical Typist III** in Comptroller's Accounting Office will type a variety of Institute reports including Financial and Treasurer's reports; Professorship, NIH, and Research Grant reports, etc; as well as other reports and typing that comes in from various departments. Will operate a 24 inch typewriter, work with A.B. Dick Masters; use the adding machine. Excellent typing skills and a minimum of one year statistical typing necessary. 73-1356-R (1/9).

**Microfilm Assistant II or III** in the Microreproduction Laboratory will be trained in the techniques of micrographics: planetary and rotary camera filming, microfiche production photographic enlarging, and other methods. Candidate should have an interest in technical photography, mechanical aptitude, and a willingness to learn. Some experience in microphotography desirable but not necessary. 40 hour work week. 74-264-R (3/27).

**2nd Class Engineer** must have a Mass second class Engineer's license or higher. Individual must be willing to work on any shift. 73-182-R (11/24).

**Technician B** in the Environmental Medical Service will perform general radiation protection technician duties at the MIT reactor. Repair and calibrate instruments; conduct radiation surveys and sample preparation, decontamination and lab clean-up. Package radioactive waste and assist in construction of shields. Training and experience in electronics and radiation protection required. Afternoon shift. 40 hour work week. 73-1227-A (12/15).

**Locksmith** in Physical Plant must have five years in the trade, have knowledge of current trade practices in Builder's Hardware, lock repairing, master keying, and key changes. Must be reliable; have excellent work record. 74-159-R (2/20).

**Campus Patrolwoman/Patrolman** Minimum 10 years experience required in all phases of law enforcement to include knowledge of court procedures and case preparation, investigation of criminal and other complaints and reporting on same. Rotating shift/40 hour work week. 74-94-A (2/6).

**Reactor Operator Trainee IV** in Nuclear Engineering will serve as shift operator on the MIT Reactor after passing A.E.C. Operator's Examination. Two years of technical college education or its equivalent background will be necessary for preparing for operators licensing. Knowledge of electronic circuits would be helpful. Ability to work under pressure of emergencies important. 40 hour work week. 74-227-R (3/13).

The following positions have been filled since the last issue of *Tech Talk* and are no longer available:

74-244-R	Admin. Asst. V
74-154-R	Secretary III
74-1-R	Secretary III-IV
74-232-R	Waitress/Waiter P.T.
74-259-R	Tech. Asst.-Aca. Staff
74-20-R	Secretary III
74-210-R	Waitress/Waiter
74-218-R	Sr. Secretary V
74-140-R	Admin. Asst. - Ex.
74-263-R	Sr. Clerk III
74-179-R	Tech Typist III
74-242-R	Clerk - Typist III
74-251-R	Sr. Clk. IV - cancelled
74-184-R	Secretary IV
74-262-R	Sr. Clerk III

The following positions are on HOLD pending final decision:

74-224-R	Stud. Acct. Rep.-Ex.
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# X-Ray

(Continued from page 1)

cluster of galaxies.

The scientists are completing fabrication and assembly of the new telescope now. They plan to suspend the telescope by cables from the domed ceiling of Bldg. 7 Lobby and using remote control mechanisms on the lobby floor, test and calibrate the stabilization and orientation system to be certain it steers and points correctly when lofted to near space next month.

The system was designed to point the telescope on radio command from the ground to an accuracy of about 10 arc minutes. The team members are confident that the lobby tests will demonstrate the equipment ability to perform according to this standard.

The experiment is supported by the National Aeronautics and Space Administration and the National Science Foundation and is the latest in a long series of balloon-borne x-ray telescope experiments carried out by Professor Lewin, his associates and his students.

"If all goes well in Texas, the observations will give a decisive answer to an intriguing question as to the nature and origin of the x-ray emission from these clusters of galaxies which are at a distance of about 200 million light years," Professor Lewin said.

X-ray astronomy is a relatively new field, begun only a decade ago or so. Since x-rays do not penetrate the earth's atmosphere, the fact that there are spots in the sky that emit x-rays was virtually unknown until technology enabled scientists to place detectors in space and near space.

X-ray sources originally were discovered with sounding rockets that streak to the top of the atmosphere and arc back to earth, recording x-ray events only during the few minutes at the top.

Later techniques use gigantic balloons that carry telescopes to above most of the atmosphere and remain there for hours, carefully pointing and recording x-ray events on film and by telemetry. The onboard data are recovered when the telescopes are released and parachute back to earth.

A still later technique has been satellites, data from which is telemetered back to earth.

Professor Lewin and his associates have been leaders in the new field, concentrating primarily in the use of detectors launched by balloon—both from Palestine in Texas and from central Australia. All told, Professor Lewin and his associates have discovered and studied numerous x-ray sources.

Included among Professor Lewin's students participating in the current experiment are: John P.

# Program Head Named at CRC

Dr. Charles S. Davidson, MD, has been appointed visiting professor of medicine in MIT's Department of Nutrition and Food Science, and program director of the MIT Clinical Research Center.

Dr. Davidson has been a professor of medicine at Harvard Medical School and for the last year has been a scholar-in-residence at the Fogarty International Center of the National Institute of Health, Bethesda, Md. Dr. Davidson is a recognized authority on nutritional diseases of the liver.

During his two-year, part-time appointment Dr. Davidson will be responsible for the administration of all the activities of the center, both clinical and laboratory, and also for stimulating the effective use of the center by all elements of the MIT community.

# Writing Contests Seek Entrants

April 15 is the deadline for submission of manuscripts in the Department of Humanities undergraduate writing competitions for the Ellen King Prize for Freshman Writing, the Robert A. Boit Writing Prizes and the Boit Manuscript Prize.

Prize money totaling \$775 for the three competitions will be awarded to winning writers in May. For further information on rules for the competitions, contact Sandy Kaye, x3-2643.

# Orientations Set

The Department of Electrical Engineering and the Department of Chemical Engineering have scheduled seminars to orient freshmen and undesignated sophomores to the departments.

The EE orientation will be Thursday, (April 4) at 7:30pm in room 10-250. The chemical engineering orientation will be held Wednesday, April 10, at 3pm in room 36-428.

# Fiber Optics Seminar

"Applications for Fiber Optical Communication Systems" will be the topic of a seminar by Dr. John Fulenwider of General Telephone and Electronics, Wednesday (April 10) at 3pm in Rm. 36-428. The weekly Communications Theory Seminar is sponsored by the Research Laboratory of Electronics and the Department of Electrical Engineering.

Doty of Rochester, N.Y. and Stanley G. Ryckman of Mansfield, O., both graduate students; and James E. Ballintine of Bethesda, Md., Patricia M. Downey of Mattapoisett, Mass., Jules P. Halpern of Long Beach, N.Y., Norris W. Preyer, Jr., Charlotte,

# Volunteers Needed

MIT Ecology Action has made arrangements to carry out a paper recycling program in residence halls. Volunteers are needed from each house to help implement the program. A meeting for all members of MITEA and volunteers is scheduled Thursday, April 4, at 5pm in the Ecology Action office, Rm W20-002 to map final plans.

# Five Named As Visitors

The appointments of five visiting professors, four from foreign universities, were approved recently by the MIT Executive Committee of the Corporation. They are:

Dr. William R. Hawthorne, visiting professor in the School of Engineering for six months beginning Jan. 1. Dr. Hawthorne, a member of the MIT Corporation, is Master of Churchill College of the University of Cambridge, Cambridge, England. He will assist the dean in several special projects and conduct research in the Gas Turbine Laboratory.

Dr. Gian-Carlo Setti, visiting professor in the Department of Physics for four and one-half months beginning Jan. 16. He is chief astronomer at the University of Bologna observatory in Italy.

Dr. Alvin Liberman, visiting professor in the Department of Psychology for six months beginning Jan. 1. He is a professor in the psychology department at the University of Connecticut and is associated with the Haskins Laboratories in New Haven, Conn., and with Yale University.

Dr. Hian P. Yap, visiting professor in the Department of Mathematics for five months beginning Jan. 1. He is on sabbatical leave from the University of Singapore, where he is a lecturer (professor) in mathematics.

Dr. Siegmund Fischer, visiting associate professor in the Department of Biology for six months beginning Jan. 1. He is an associate professor in the Department of Physiology at the University of Chile.

N.C., Leslie A. Feldman of Beacon, N.Y., John F. Wacker of Brookline, Mass., Daniel G. Fabricant of Ithaca, N.Y., and Jeffrey Bokor of Great Neck, N.Y., all undergraduates.

Mr. Doty, Mr. Ryckman, Mr. Ballintine and Ms. Downey will participate in the Texas field operations.

"Such a launch," Professor Lewin said, "is always new and exciting, a truly fascinating and almost spiritual experience."

# Offers of Advice

# IAP Yo-yo Project Draws Letters from All Over

By CHARLES H. BALL  
Staff Writer

"Dear Dr. Williams," the fifth grader wrote, "the problem with the yo-yo was dynamics. I am ten and in my years of using yo-yos I never forgot dynamics. You put your tongue on the left side of your mouth when the yo-yo starts. That's dynamics."

"Dear Dr. Williams," the press agent wrote, "I am the publicity man for several casinos in Las Vegas and we are always on the lookout for a gimmick. When you finish with your experiment please write or give me a call (collect) if you are interested in showing the promotion here."

And so it went. Letters...telegrams...telephone calls...dozens of them.

On the receiving end was Dr. James H. Williams Jr., Esther and Harold E. Edgerton Assistant Professor of Mechanical Engineering, who directed a group of students in building a giant yo-yo during the Independent Activities Period and demonstrating it from the roof of the 22-story Cecil H. and Ida M. Green Building.

Altogether, Dr. Williams received more than 100 letters, telegrams and news clippings (including one from a Chinese language newspaper in Hong Kong).

They came from children, from inventors wanting or offering advice and from yo-yo champions—among others—and more than a few were done with tongue in cheek.

One correspondent suggested that Dr. Williams' next project might be a giant-sized Yogi-Bird, which he described as a toy that "climbs vertical surfaces in step-by-step fashion by means of a spring-driven suction-cup wheel."

"The design of a giant one might entertain and instruct your students, and surely there are a few sheer vertical surfaces around Boston upon which to try it out," he wrote. There would be problems, he agreed, including the possibility that "its clomping progress and sudden appearance at, say, a 42d floor window would promote panic a la King Kong."

On a more serious note was a letter from Tony Flor of Levittown, Pa., who described himself as the first world's yo-yo champion.

"In the spring of 1928," he wrote, "I was one of the three Filipinos who demonstrated the yo-yo in the streets and parks of Santa Barbara, Calif. That started the yo-yo craze in America. Two years later, in 1930, Donald F. Duncan of Chicago bought himself into the

yo-yo business and hired me as a yo-yo expert and first world's champion."

Yo-yo is a Filipino word and the device likely found its way to the United States from the Philippines. But another writer, Douglas W. Gould of Havertown, Pa., offered some additional insight into the origin of the yo-yo.

"I am 78 and have an abiding interest in tops, including the yo-yo, which is a top dating historically to classical Greece," he wrote. He said he had written a book, *The Top, Universal Toy, Enduring Pastime*, and was now preparing a reference guide to outstanding specimens of the world's tops.

"Perhaps your experimental yo-yo deserves a place among the early and classical gyroscope specimens," he said.

Nor did MIT's claim to have the world's largest and longest yo-yo go unchallenged.

In a letter to Dr. Williams, the commander of the Army's Silver Eagles precision-flying helicopter team said the team used a bigger yo-yo than MIT's in aerial shows, suspending it from a helicopter.

Professor Williams, not fazed, replied that he had performed a dynamic analysis of both yo-yos, based on the total energy of each. The two would have equal "yo-yo energy," he wrote, only if the cord of the Army yo-yo was 160 feet.

"Because the Army's yo-yo cord is a mere 35 feet," he said, "it stores only 22 percent of the energy stored by the MIT yo-yo."

Perhaps the letters that pleased Dr. Williams the most came from members of a fifth grade class at Center School in Natick, Mass.

The pupils used the giant yo-yo project for a class discussion on dynamics and sent along some of their thoughts in individual letters. They also suggested some possible future projects for MIT students, including a plug-in teacher, a continuous syphon (sic), a giant windmill-driven lightbulb, zoomlens bi-focals, a motorized hoola-hoop, a giant Slinky toy, an electric pogo stick, a battery-operated battery and—unkindest cut of all—"a giant yo-yo that works." Actually, the giant yo-yo did work—but not quite as well as expected.

Dr. Williams explained why in his reply to the class.

"We successfully tested our yo-yo at sunrise one week before the Big Show," he wrote. "It was about 50 degrees when we tested. However, on February 4, during the initial drop of the yo-yo, the control mechanism that was designed to pump the yo-yo got wet and froze! I felt sad."

He ended: "If you ever visit MIT please come by and see the Giant Yo-Yo. Perhaps some of you may become students of mine some day. If so, you should come prepared to work very hard on dynamics."

# Earthquake Talk

"Earthquake, Slope Stability and Land-Use Problems in the San Francisco Bay Area" will be the subject of a colloquium by Dr. Earle Brabb of the US Geological Survey, Wednesday (April 3) at 4pm in Room 54-100. The colloquium is sponsored by the MIT Department of Earth and Planetary Science.

# Quimby Elected

Judith A. Quimby, secretary to the administrative officer in the Department of Nutrition and Food Science, was recently elected to her first term as a Town Meeting Member in Arlington. She will serve for two years.

# Hagge Appointed to New Environmental Engineer Post

(Continued from page 1)

He was a second lieutenant in the US Army Signal Corps from 1958-1959.

Hagge's first year's salary at MIT will be paid by a grant from the Union Pacific Foundation. The grant was made to the Institute's Department of Physical Plant to help MIT—and, through MIT, other universities—protect and add to their financial resources by finding ways of limiting rising expenditures for energy.

MIT put an energy conservation program into effect this school year after conducting a pilot program last summer. Institute officials believe that savings of 20 percent or more are possible with stringent conservation measures.

Thomas E. Shepherd Jr., su-

perintendent of utilities, said that Hagge, one of 35 candidates for the post, would take over responsibility for the Institute-wide conservation program.

"He will continue to survey the campus buildings to determine areas of possible economy in the use of energy, plan strategies and institute procedures to accomplish energy cost reductions and maintain the Institute's compliance with environmental requirements," Shepherd said.

Shepherd said that one of Hagge's first tasks will be to help plan for the summer air-conditioning season, which he said "may turn out to be the most critical part of our entire energy conservation effort at MIT, considering both energy conservation and cost."

Shepherd said that air-conditioned areas of the Institute would not be kept as cool this sum-

mer as in the past.

"In line with national recommendations," he said, "we're planning for a design-day temperature of 80 or 82 degrees instead of 75 degrees, which has been common practice in the past."

In areas with individual air conditioners, he said, "we'll set the thermostat for the higher temperatures or ask people to do it. We'll ask them to avoid using air conditioners as much as possible if they have operable windows."

Shepherd also said that a special effort was being made during the period of changing seasons to save fuel by turning off steam to the main group of buildings when the temperature is in the 50 degree range.

"If we keep the steam on, the buildings overheat badly, and this represents considerable waste,"

he said.

He said that work areas with northern or western exposures may be chilly at such times, and he asked persons in those areas "to dress to suit the weather and the circumstances."

Shepherd said the Institute will shift to natural gas for its boiler heat about April 1 and continue using it through much of the fall.

The switch is made each year in the spring because natural gas becomes available then and is cheaper than heating oil.

The cost this year for natural gas is expected to be equivalent to about \$10 a barrel, compared to the average \$14 a barrel the Institute has been paying for No. 6 residual heating oil.

Natural gas should account for about 25 percent of the total fuel consumption at the Institute this fiscal year, Shepherd said.