

Mazlish To Head Humanities

Dr. Bruce Mazlish, professor of history, became head of the MIT Department of Humanities Dec. 16, Dean Harold J. Hanham of the School of Humanities and Social Science has announced.

Professor Mazlish had been acting head of the department since Sept. 1. Before that, Dr. Hanham



Professor Mazlish

served as acting department head as well as dean.

Professor Mazlish's special fields of interest have included European intellectual history, the philosophy of history, psychohistory and comparative development history.

He has written and edited a
(Continued on page 12)

Supplement Inside

Current Memberships for the standing committees of the Faculty and memberships of the committees appointed by the President are listed in a supplement to this week's *Tech Talk*. Also listed are the memberships for one committee appointed by the Corporation and one committee appointed by the Chairman of the Corporation. Members of the MIT community are urged to retain the supplement for reference.

Aetna Funds Film on Women In Management

A film encouraging young women to consider careers in business and management is being produced by MIT under a grant of \$25,000 from Aetna Life & Casualty.

The project was announced jointly by Gloria J. Gery, Manager of Equal Opportunity Program Development at Aetna, and by John T. Fitch of the Center for Advanced Engineering Study at MIT.

MIT's Sloan School of Management has provided \$5,000 for the project.

The 30-minute documentary, "Women's Work: Management" is scheduled for completion early this year, and will be distributed without charge to high school guidance counselors, college placement officers, and to groups interested in the advancement of women.

The film relies on *cinema verité* technique to bring the viewer into
(Continued on page 8)

3 New Bike Shelters Planned

"Bicycle security is the main problem confronting MIT cyclists," says Alex Seid, Assistant Project Planner at MIT, and MIT plans to help remedy the problem with the construction of three new, guarded, bicycle compounds.

The proposed sites for the new

compounds are the Student Center area, Westgate and East Campus, although no plans have been finalized, according to Chief Olivieri of Campus Patrol.

Like the bicycle compound in building 13, the new shelters will
(Continued on page 12)

Employees' Open House Coming Up

Saturday, March 22, 1975—scheduled date of the first annual MIT Employees' Open House—will remind employees and their families of the second law of thermodynamics, which states that all systems radiate energy.

From noon to 5pm, activities ranging from children's swimming to juggling will "radiate" from more than 35 on-campus displays as MIT's main buildings, Kresge Auditorium, Student Center, duPont Athletic Center and the MIT Chapel act as a central energy source for general visitor information.

A special complimentary physics demonstration by Institute Professor Emeritus Victor F. Weisskopf, a visit to MIT's talking computer, an employees' drawing for a US savings bond, and a souvenir medallion from the MIT foundry are but four highlights of the day to acquaint employees with campus facilities.

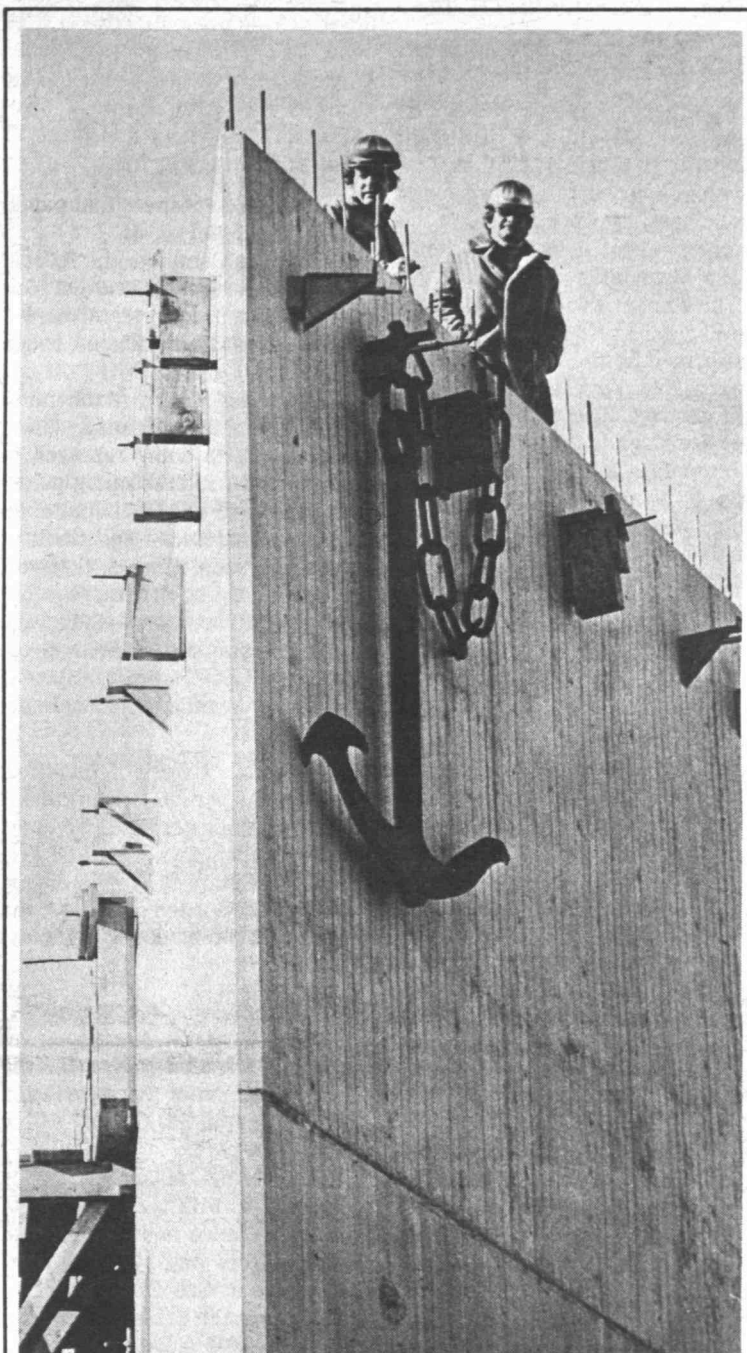
Visitors will be formally welcomed by President and Mrs. Jerome B. Wiesner and other members of the administration at a reception from 2-3:30pm in

the Sala de Puerto Rico of the Student Center.

Open House is being organized by a 20-member committee headed by Robert J. Radocchia, chairman of the board of the MIT Quarter Century Club, and John E. Newcomb, personnel officer, and by representatives from 44 academic departments and interdisciplinary laboratories and centers.

Committee member Joel Orlen, assistant to the Provost, said he hoped a "relaxed mood" would prevail as families planned their day around a rotating schedule of strobe photography displays in Dr. Harold E. Edgerton's laboratory, a film series made two years ago by the American Broadcasting Co. about MIT, a piloting simulation session of the European Concorde, and informal tours of the MIT Model Railroad, Historical Collections and the Laser Lab in the basement of Bldg. 6.

Souvenirs that children of MIT employees are expected to take home include cardinal red buttons with the words "MIT Employees' Open House—1975," computer printouts of Snoopy and lots of multicolored balloons.



Shipbuilding is not the industry it once was hereabouts, but the angular corner of the new chemical engineering building reminded Vappi construction workers of the prow of a ship so they decorated it appropriately with a large wooden anchor.

Shellfish Carcasses Hold Promise of Usefulness

NEW YORK CITY, N.Y., Jan. 30—The discovery of surprising uses for shellfish carcasses may spare Americans from having to choose between clean coastal wa-

ters and a good supply of processed shrimp, lobster and crab, an MIT researcher said Thursday.

The heaps of shellfish carcasses now polluting coastal waters near shellfish processing plants contain large amounts of chitin (pronounced kite-n), which scientists say could be used for a great variety of purposes, from healing wounds and thickening baby food to treating sewage and strengthening newsprint.

Chitin—which also forms the skeletons of most insects—"had acquired a reputation as an almost useless and bothersome by-product of a branch of the food processing industry," MIT researcher Ernst R. Pariser told the annual meeting of the American Association for the Advancement of Science here.

"Interest in this chemical ... recently increased dramatically," he said, "as a result of serious pollution problems caused by the annual dumping of thousands of tons of untreated lobster, shrimp and crab carcasses."

These carcasses, still contain-

(Continued on page 12)

MIT Team To Conduct Solar Study

A team headed by MIT has been selected to conduct a design study for an experimental solar energy project on Citicorp Center, a 56-story skyscraper under construction in New York City.

The National Science Foundation, which announced the project Monday, Feb. 3, has awarded MIT's Energy Laboratory \$186,000 for the 12-month study.

The idea of using solar energy in the Citicorp building was initially proposed by Consolidated Edison Co. of New York in response to Citicorp's desire to incorporate energy conservation features in the building complex. After considering Con Edison's proposal, Citicorp commissioned Loring-Meckler Associates, a Washington, D.C., consulting firm, to develop the idea further and at the same time change the design of the building's sloping tower so that it faced south for maximum exposure to the sun. All three companies are participating in the project.

Citicorp Center was designed by Hugh Stubbins and Associates, Inc., of Cambridge, Mass., with Emery Roth & Sons of New York City as associate architects. Mechanical and electrical engineering design was performed by Joseph R. Loring and Associates, Inc. These firms will also lend

(Continued on page 8)



Drawing shows a design for a solar energy collector on the top of Citicorp Center now under construction in New York City.

Contemporary Musicians Plan Concert in Kresge

Mezzo-soprano Jan DeGaetani and pianist Gilbert Kalish, two pre-eminent artists in the contemporary music world, will give a concert at MIT, 8pm, Wednesday, Feb. 12 in Kresge Auditorium.

The concert, sponsored by the MIT Music Section, is open to the public free of charge.

The program will include Francis Poulenc's *Poèmes de Ronsard*, songs from the *Spanisches Liederbuch* by Hugo Wolf, Debussy's *Ariettes Oubliées* and songs by Charles Ives.

Miss DeGaetani and Mr. Kalish who perform frequently together, were praised last year by Andrew Porter, *New Yorker* magazine's music critic, for their performing enthusiasm and as a "sterling example of the 'new' style of performance."

Both artists have done extensive concertizing in this country and abroad and have made numerous recordings.

Miss DeGaetani first performed at MIT in 1973 in a concert with the Contemporary Chamber Ensemble. The concert program featured the Boston premiere of composer John Harbison's work *Confinement*. During that season she also appeared five times with the New York Philharmonic Orchestra and with the American Symphony Orchestra and the Contemporary Chamber Ensemble in concerts at Carnegie Hall.

As one of the foremost singers in the contemporary field, Miss DeGaetani has had numerous works written especially for her by leading American and European composers.

Included among Miss DeGaetani's recordings is a disc by Deste records which includes *The Seasons*, a song cycle by Professor David Epstein.

Gilbert Kalish, who has studied piano under Leonard Shure, Isabella Vengerova and Julius Hereford, appears frequently with the Boston Symphony Chamber Players with whom he has made European tours. He has also made solo appearances with the Boston Symphony Orchestra and the Buffalo Philharmonic.

In addition he is a member of the Contemporary Chamber Ensemble and artist-in-residence at the State University of New York at Stony Brook.

Composer Vercoe Receives Award

Barry Vercoe, associate professor of music at MIT and director of the MIT Studio for Experimental Music, is one of eight composers in Massachusetts to receive an award from the Massachusetts Arts and Humanities Foundation.

Professor Vercoe said the award will enable him to write a work for the official opening of the studio next year. The composition will be for soprano voice and six instruments together with electronic sounds.

The Studio for Experimental Music was established recently to promote advanced work in music composition and research. It enables composers to enter musical information into a computer via an organ keyboard, then edit a resulting score in standard music notation on a cathode ray display tube. Sound is synthesized digitally by means of a PDP-11/50 computer and later converted for

audio playback.

The foundation grants, which went to 25 artists, sculptors and composers, were made under a new program, Creative Artists Services, and were financed by The Massachusetts Council on the Arts and Humanities, a state agency.

Sur Composition To be Premiered

First performance of a work by composer Donald Sur, assistant professor of music at MIT, will be given in a concert to be presented at 8:30pm Monday, Feb. 10, in Sanders Theatre by the Fromm Music Foundation at Harvard.

The composition, *Intonation Before Sotoba Komachi*, will be performed by the Speculum Musicae of New York. Donald Palmer will conduct. The concert will be free and open to the public.

Intonation Before Sotoba Komachi is scored for three violas, cello, piccolo, oboe, percussion, English concertina and cimbalom. It forms the prelude to a projected concert version of *No play*.

Another new composition by Professor Sur was recently premiered in The Netherlands at *Musicultura 1974* sponsored by the Eduard van Beinum Foundation. The work, entitled *Welcoming the Spirit*, is the first part of a work in progress, *Music for the Confucian Ceremony*.

Professor Sur has also been commissioned to write a new chamber composition for Colleges, a Boston contemporary music ensemble.

MTG to Present '1776' Musical

Boston's upcoming bicentennial celebration will have a helpful boost in April when the MIT Musical Theatre Guild will produce the award winning Broadway musical "1776."

MIT students and members of the community will be given primary consideration for roles in the production and are encouraged to attend cast and production auditions which will be held Tuesday, Wednesday and Thursday, Feb. 11, 12, and 13, 7:30pm-10:30pm; Sunday, Feb. 16, 2pm-5pm and Tuesday, Wednesday, Feb. 18 and 19, 7:30pm-10:30pm.

Performances will take place in Kresge Auditorium, Friday and Saturday, April 4 and 5, Friday and Saturday, April 11 and 12 at 8pm with a 2pm matinee on Sunday, April 6.

Actress to Give Video-Aided Acting Class

Students who want to get into the act will have the opportunity in MIT's first acting class to be taught by a professional actress.

Naomi Thornton, a veteran of Theatre Company of Boston, City Center Acting Company and Trinity Square Repertory Company will teach Experimental Video Acting Workshop (21.119).

The one-semester, pass fail class will use improvisation, theater games, exercises and scenes to help students at all levels of experience to feel at ease in front of an audience and encourage them to explore their creative potential.

The MIT class is part of a Sloan Foundation grant whose purpose is to explore the possibilities of television as a teaching aid. In the class, students will determine whether—through TV—they can gain "more of a sense of themselves as actors," according to

Conference Topic: 'New Mobility'

Do mass and rapid transit technologies constitute "The New Mobility?"

Some of the answers to that question will be provided by a battery of university transportation researchers and government officials at a national conference on urban transportation this March 13-14 at the Host Airport Hotel, Tampa International Airport.

"The New Mobility?" conference will be presented by the MIT Center for Transportation Studies under joint sponsorship of the Tampa Bay Area Rapid Transit (TBART) Authority and the MIT Club of Central Florida.

Conference speakers and panelists will include:

—Douglas Campion, the federal Urban Mass Transportation Administration's representative for the southeast United States, based in Atlanta, Georgia.

—Professor Marvin Manheim of the MIT Center for Transportation Studies who is doing research to assist UMTA in developing guidelines that will tell local communities the processes—the kinds of mode and route studies, trade-off comparisons, environmental impact estimates, etc.—they will have to complete if their proposals for local transit improvements are to receive federal support.

—Professor Charles Miller, former head of the MIT Department of Civil Engineering. Professor Miller, a Tampa native and frequent consultant to Tampa organizations, developed some of the first problem-oriented computer language programs for transportation designers.

—Harold Williams, director of the Office of Civil Rights for the US Department of Transportation in Washington, D.C., of which UMTA is a part.

—Dr. Alan A. Altshuler, who is returning to MIT as professor of political science and professor of urban studies and planning after four years as Secretary of Transportation in the cabinet of former Massachusetts Governor Francis Sargent. Under Dr. Altshuler's leadership, highway construction in the greater Boston urban area was deferred while programs were started to improve rapid public transportation.

—Dr. Nigel H.M. Wilson, MIT associate professor of civil engineering and one of the original developers of the computer-based demand-responsive bus system known as Dial-A-Ride, the kind of system that soon will be tried out in suburban Pasco County near Tampa.

—Dr. Wayne Pecknold, MIT associate professor of civil engineering and a leading researcher on the evaluation of "multimode" transportation systems that combine a variety of types of vehicles and trackways into a single integrated system.

C. Randolph Wedding, mayor of St. Petersburg, Florida, and chairman of the Tampa Bay Area Rapid Transit (TBART) Authority, will be a luncheon speaker on Thursday, March 13.

Professor Paul O. Roberts, director of MIT's Center for Transportation Studies, will open the conference discussing the impact which new energy and air quality regulations are likely to have on urban transportation nationwide.

Other conference participants will include Norman H. Thompson, Jr., TBART executive administrator and two members of the Florida state senate who have been active in transportation

legislation—Senator Henry Saylor of St. Petersburg and Senator Vernon C. Holloway of Miami. Senator Holloway was one of the legislators primarily responsible for passage of the 1971 Florida public transportation act under which Florida regional transit authorities have been established.

Speeches, a panel discussion, visual displays, demonstration vehicles and workshops will attempt to pinpoint for attendees the role of transit in a balanced and efficient transportation system.

At the Tampa conference, Professor Manheim will discuss the draft UMTA guidelines and local transportation officials will be able to offer comments on them through the conference workshops and panels. UMTA's draft guidelines will be made public for the first time in late February in Washington, D.C.

The UMTA draft guidelines will be opened to review and comment by the public, by local and regional and state transit officials, and by industry, beginning with the meeting in Washington. Eventually, the drafts will lead to the final regulations that UMTA will adopt—perhaps later this year—which local communities will be required to follow in formulating and evaluating transit plans if they want those plans to receive federal funding support.

Transportation-related research and teaching at MIT is the largest among US universities and projections are that the activities will more than double in the next five years as interests in transportation increase. Fifty-two different transportation-related subjects are taught within various MIT academic departments. All told right now, some 40 faculty and 110 candidates for advanced degrees are engaged in more than 50 sponsored research projects amounting to nearly \$2 million a year in expenditures.

TBART is a regional transportation authority made up of six city and county governments in the Tampa Bay area. The Authority's chartered objectives, set by state enabling legislation, is to plan, design, build, operate and maintain a comprehensive regional transportation system.

Persons interested in attending the Tampa conference should contact Laura Carlton, TBART conference coordinator (telephone Area Code 813, 870-0000) or Stephen Barnes, MIT (x3-4887). Advance registration fee is \$35 and at the door \$40.

Erratum

Tech Talk regrets a typographical error in its issue of Dec. 18, 1974. Professor Ronald Wai-Chun Yeung of the Department of Ocean Engineering is married and lives with his wife Grace in Watertown.

Light Reminder



lights out after class

Bright colored encon symbols have been posted in classrooms, lecture halls and conference rooms throughout the Institute to remind users to turn out the lights when the room is vacant. Energy savings can be substantial, particularly in rooms which are used irregularly or have early classes.

Chu Appointed

Flora Y.F. Chu, lecturer at the University of Wisconsin at Madison, has been appointed assistant professor in the Department of Electrical Engineering for a term of two and one-half years. A native of Shanghai, China, she received the BS, MS, and PhD degrees from the University of Wisconsin at Madison between 1971-74.

Acting Class

Ms. Thornton has played more than 100 roles professionally, including roles she originated in new plays by Israel Horovitz (*Alfred the Great*), John Hawkes (*The Wax Museum* and *The Innocent Party*) and Professor Gurney (*The Problem, The Open Meeting* and *The Love Course*). "It is a special challenge to evolve a character without following a precedent," she said.

Ms. Thornton received the A.B. degree from Bryn Mawr College in 1956, and received her theatrical training at Paul Mann Actors Workshop (1959-61) and Circle-in-the-Square Theater Workshop (1961-62).

Professor Joseph D. Everingham, Director of Drama, is delighted with the new class. "Ms. Thornton's acting workshop will be an important addition to the drama program," he said.

Albert R. Gurney, Jr., initiator of the grant research in the Drama Section.



Ms. Thornton

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Tax Shelters Available For Additional Income

Members of the MIT community with additional income from self-employment are eligible for an increased tax shelter created by the pension reform bill of 1974, according to Allan J. Urquhart, MIT benefits officer.

The increased shelter permits those who receive an additional income from consulting fees, royalties or small business profits to put aside, for retirement, as much as 15 percent of their income from self-employment—up to \$7,500 a year—tax-deferred.

For those who have a low income of at least \$750 a year from self-employment, there is a special rule which permits a minimum of \$750 to be put aside as tax-deferred money—even though this sum exceeds the usual 15 percent limit.

This so-called "Keogh plan" can be used by anyone who is required to pay the Social Security self-employment tax or anyone who has

the option to pay that tax and be covered by Social Security. This includes those who work part-time for themselves.

Although the income put away in this "retirement fund" is fully taxable in retirement, deferring tax payments could provide a substantial saving because tax rates may be lower in retirement than in working years.

The contributions to this retirement fund do not have to be made out of current income. Earned income determines the amount permitted to be placed in the tax-deferred fund, but the money can come from any source. That means one can make contributions early in 1975 by estimating one's earnings for the year and transferring pension fund contributions from a taxable account to a "Keogh account."

If a self employed person decides to take advantage of this tax shelter, he or she is also required to provide the same benefit for any of his or her full-time employees who have been employed for at least three years.

Keogh plans can be started in a variety of ways, such as through savings banks, insurance companies or mutual funds.

A more detailed description of the Keogh plan is available in "Stampede is On for Tax Free Retirement Plans," an article in the January 13, 1975 issue of *U.S. News and World Reports*, available at the Dewey and Humanities libraries at MIT, as well as in public libraries.

Dean, Ervin To Speak Here

Two key figures in the Watergate coverup and subsequent investigation—John W. Dean and former Senator Sam Ervin—are scheduled to speak at MIT this semester.

Dean, former White House counsel, will speak Feb. 24 at 8pm in Kresge Auditorium. Ervin is scheduled to speak April 8. Both lectures have been arranged by the student-run Lecture Series Committee and the Undergraduate Association.

Tickets will be available without charge to holders of MIT identification cards.

Rosenblith Visits Israel's Technion

Professor Walter A. Rosenblith, MIT Provost, returned recently from Israel where he took part in the 50th anniversary celebration of Technion (Israel Institute of Technology) and met with leaders in science and engineering, among whom several are MIT Alumni.

At the Haifa Technion, participants in a conference on "Ethics in an Age of Pervasive Technology" agreed on a *Mount Carmel Declaration of Technology and Moral Responsibility* which was presented during the final session to the Israel president, Professor Ephraim Katzir, a distinguished biochemist. Technion's president is General (Ret.) Amos Chorev, a 1952 graduate of MIT in mechanical engineering.

Also in Israel, Professor Rosenblith met with Professor Joseph Zeitlen (SB MIT '39 civil engineering), president of the MIT Alumni Club and former civil engineering dean at Technion; Dr. Uri Shamir (PhD MIT '66 civil engineering), Technion assistant provost; and Professor Michael Rabin, Rector at Hebrew University and a visiting professor in mathematics at MIT several times.

Faculty Committee Formed To Aid USSR Emigrants

About 80 MIT scientists and faculty members have formed an *ad hoc* committee to support the efforts of three distinguished Soviet scholars to leave the USSR.

The scholars who are seeking to emigrate—one has formally been offered a visiting professorship at MIT—are Professor Mark Azbel, a physicist responsible for the discovery of Azbel-Kaner cyclotron resonance; Professor Alexander Lerner, a specialist in computer engineering, and Professor Ben-

jamin Levich, author of the four-volume text, *Theoretical Physics*, and a corresponding member of the USSR Academy of Sciences.

The chief organizers of the MIT committee are Dr. H. Eugene Stanley and Dr. Ira A. Michaels, both of whom have been active for some time among groups attempting to assist Soviet citizens desiring to emigrate.

Dr. Stanley is Hermann von Helmholtz Associate Professor of Health Sciences and Technology and Associate Professor of Phys-

Forrester to Keynote National Computer Conference

Jay W. Forrester, Germeshausen Professor of Management at the Sloan School of Management, will give the keynote address at the National Computer Conference to be held in Anaheim, Calif., May 19.

Professor Forrester will discuss computer modeling of social systems with emphasis on the social and economic forces underlying current national inflationary trends.

Donal A. Meier, general chairman of the 1975 conference, said

that Professor Forrester's address "could hardly be more timely" in view of present economic conditions. "We look forward to his analysis of policies that might be utilized to deal with inflation, taxation, related monetary issues and recessions."

The conference, to be held May 19-22, will be the year's largest gathering of the worldwide computer science and data processing community, its organizers said.

Professor Forrester, a member of the National Academy of Engineering, a fellow of the Institute of



Professor Bromberger

Bromberger To Head XXIV

Professor Sylvain Bromberger has been appointed acting head of the Department of Philosophy during the absence of Professor Richard L. Cartwright, who is on sabbatical this semester.

Announcement of the Appointment was made by Dean Harold J. Hanham, of the School of Humanities and Social Science.

Professor Bromberger, a specialist in the philosophy of language and problems related to semantics, came to MIT in 1965 as a research associate in the Department of Humanities. He was appointed associate professor of philosophy in 1966 and full professor one year later.

A resident of Newtonville, he received the AB degree from Columbia in 1948 and the PhD from Harvard in 1961. He was an instructor in philosophy at Princeton from 1954-57 and a lecturer there from 1958-60. Before coming to MIT he was associate professor of philosophy at the University of Chicago, where he began teaching in 1961 as a lecturer.

Eloranta Applications

Applications for four summer research fellowships available to eligible seniors under the Eloranta Fellowship Program must be submitted by March 10 at the Financial Aid Office, Rm 5-119. For further information on the fellowships which support unique research or study projects at university, industry or governmental laboratories, call x3-4971.

ics. Dr. Michaels is a National Institute of Health Postdoctoral Fellow in the Harvard-MIT Program in Health Sciences and Technology.

About 18 months ago Dr. Stanley was among a group of western scientists who held a seminar in a Moscow apartment—in the face of official harassment—to hear papers of Azbel, Levich and other Soviet scientists banned from an international physics meeting.

Dr. Stanley said that MIT, through President Jerome B.

Electrical and Electronics Engineers, the Academy of Management, the American Academy of Arts and Sciences and a Benjamin Franklin Fellow of the Royal Society of Arts, London, is a world-renowned authority in the fields of computer simulation and the dynamics of social change.

His landmark book *World Dynamics* led The Club of Rome to sponsor its Project on the Predicament of Mankind which resulted in its widely discussed report, *The Limits to Growth*.

Smorgasbord of Activities

IAP Shows Good Vital Signs

All the vital signs are good for MIT's Independent Activities Period.

That was the opinion this week of administrators and others involved in IAP 1975, which ended last week after serving up a smorgasbord of activities in the period between semesters from Jan. 6 to Jan. 29.

"Not all the statistics are in," Joan Friebely of Institute Information Services said, "but questionnaires analyzed to date suggest that, similar to last year, about 95 percent of the activities advertised in the IAP Guide actually took place."

Ms. Friebely, who assembles the guide, said this may mean that added experience with IAP "has taught activity leaders what will work and the MIT community how to make the most of the Institute's resources during the break between terms."

The final guide this year listed more than 500 activities, which was about the same number as last year, and showed about the same ratio between activities offered through departments, centers and laboratories (85 percent) and by independent individuals or groups (15 percent).

Ms. Friebely said it is still difficult—after five years of experience with IAP—to predict how

See pictures of IAP activities on page 4.

well certain activities will go over.

Forty percent of the respondents to a questionnaire sent out to activity organizers said they had more participants than they expected, she said, while another 40 percent said they had about what they anticipated and 20 percent had fewer.

The year's biggest attractions were Gloria Steinem's lecture, which packed Kresge Auditorium; the MIT Spelling Bee, which held hundreds at the auditorium beyond midnight, and "Nutrition of the Pepsi Generation," a seminar presented by the Department of Nutrition and Food Science that drew more than 400.

Charles E. Barringer, assistant dean for the School of Engineering and chairman of the IAP Finance Committee, said the faculty-student committee had dispensed all of the \$10,000 set aside by the university for IAP projects.

Barringer also reported there

apparently had been no significant change in the number of students participating in IAP activities. Dormitory and dining service counts in previous years indicate that about three-quarters of the students are on campus during at least part of IAP.

Michael S. Feld, associate professor of physics and chairman of the IAP Policy Committee, said the committee is seeking comments on the IAP program. These should be sent, in writing, to Dr. Feld at Rm. 6-009.

Assistant to the Provost Joel Orlen, who is responsible for IAP administration, said the success of IAP this year indicates that the program is "aging well" and serving its purpose of giving both students and faculty the opportunity to use their time between semesters in different ways.

Hansen Named Course XXII Head

The appointment of Professor Kent F. Hansen as acting head of the Department of Nuclear Engineering has been announced by Dr. Alfred A.H. Keil, dean of the School of Engineering.

Professor Hansen, who has been executive officer of the department since July, 1972, will serve through this academic year, succeeding Professor Edward A. Mason, who is on leave as a member of the newly formed Nuclear Regulatory Commission in Washington, D.C.

A specialist in reactor theory and computer analysis of reactor systems, Professor Hansen has been a member of the faculty since 1961. He received his SB degree in physics in 1953, and the ScD degree in nuclear engineering in 1959, both from MIT. From 1960-61, he was a Ford Postdoctoral Fellow in engineering.

Professor Hansen and his wife have two children and reside in Bedford.

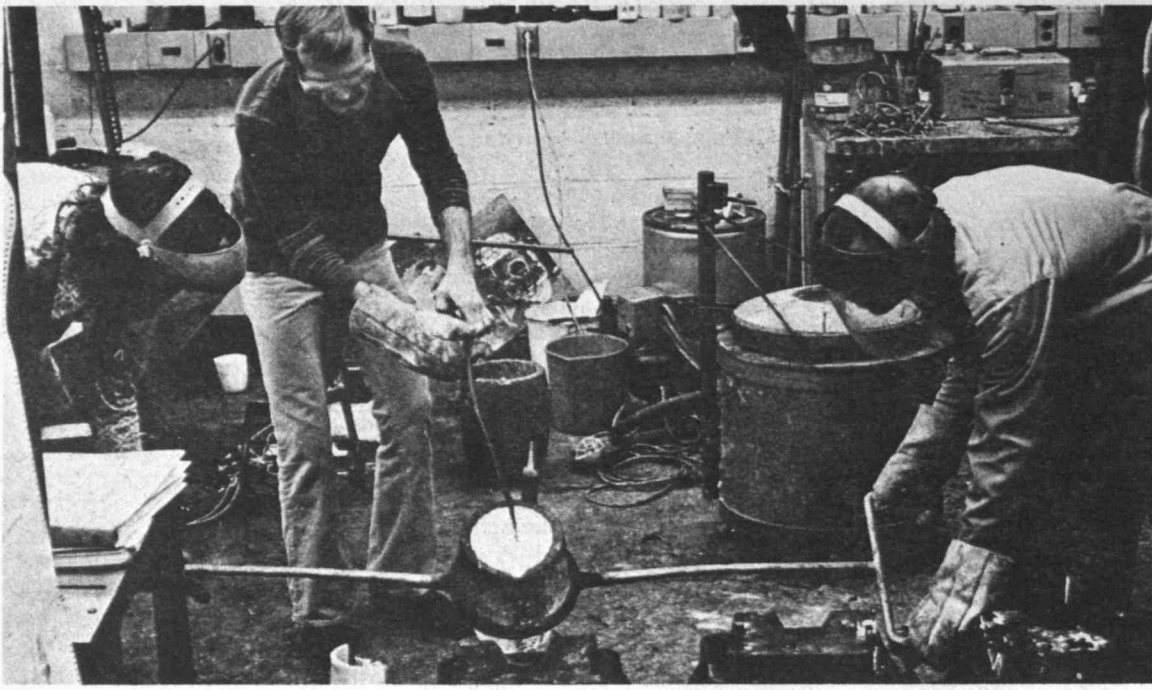


Professor Hansen

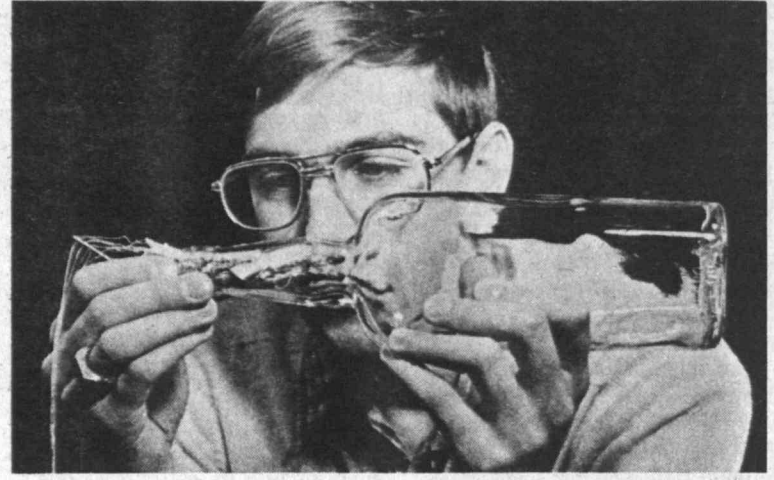
Textile Institute Honors Tesoro

Dr. Giuliana Tesoro, visiting professor of mechanical engineering at MIT, has been elected a Fellow of the Textile Institute, a research-oriented professional society based in England.

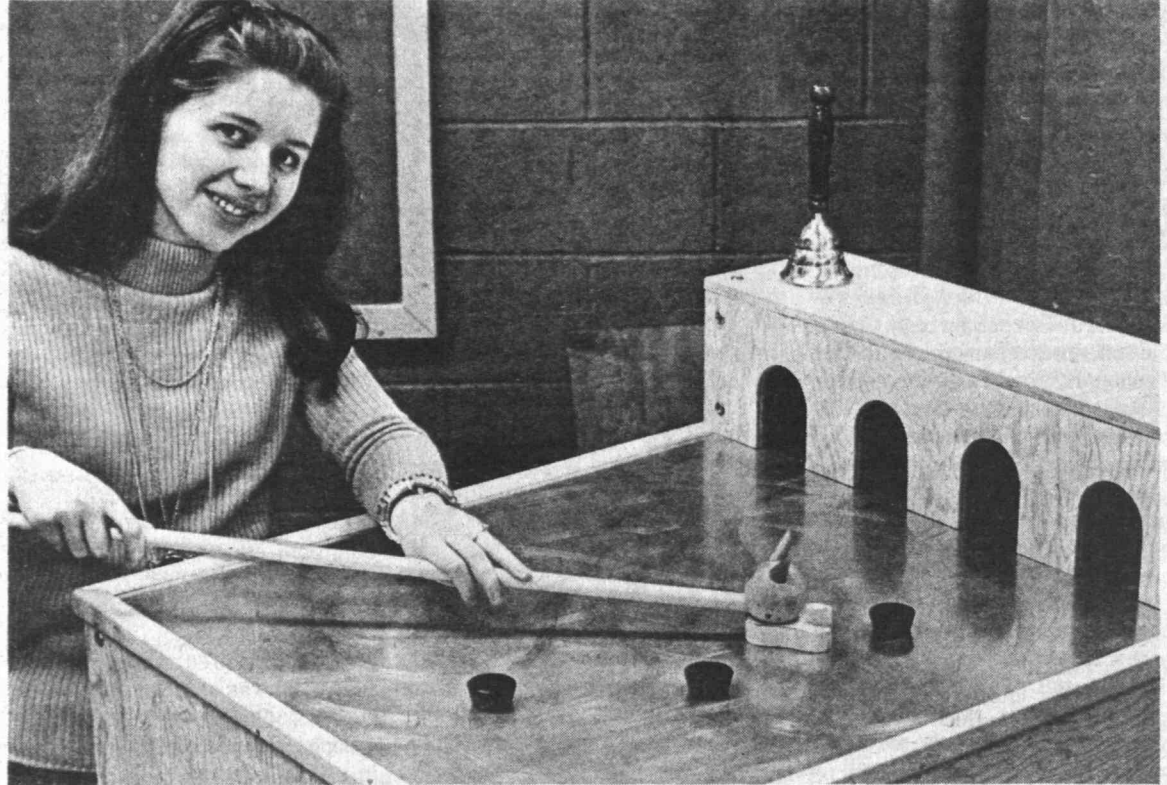
Dr. Tesoro, selected for "significant contributions to the textile sciences," holds more than 75 patents and has held major research posts in the textile industry for a number of years. She has contributed solutions to many problem areas in applied organic chemistry, including flame retardants, chemical modification of fibers and textile finishing chemicals.



At left, graduate student Bill French pours molten metal into a mold in an attempt to recreate ancient Tibetan bells which were noted for their resonance and long lasting sound. Below, John Skrobko demonstrates how to put a ship in a bottle with threads which will later be used to tug masts into an upright position.



Of Ships and Bells and Magic Tricks



Above, Diane Idec demonstrates an electro-mechanical toy she developed to be used by handicapped children with neuromuscular disabilities. At

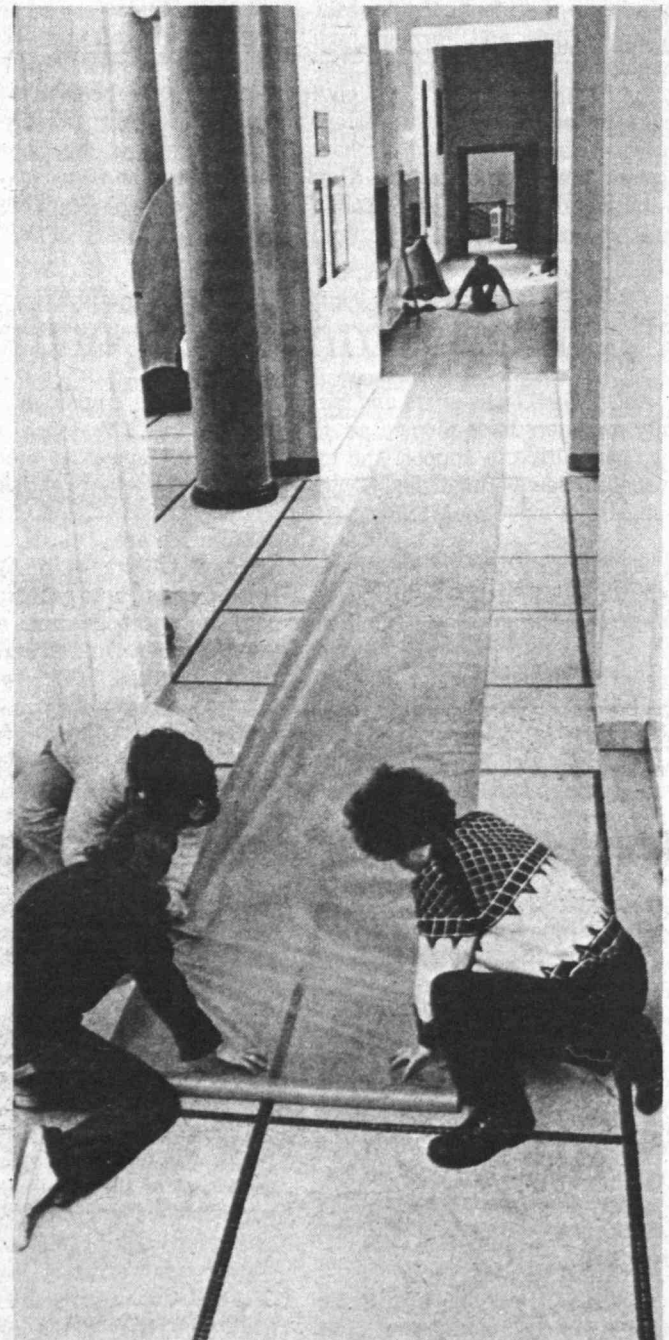
left, many hands make light work of repadding the hammers of a piano.

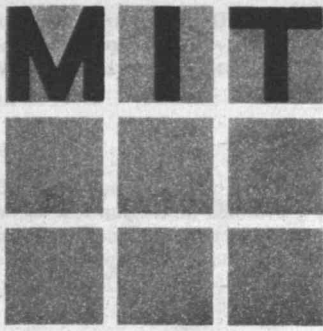
Photos by Calvin Campbell



Magic caught the attention of one IAP group, above, watching the sleight-of-hand work of Professor Roger Kaufman. The group forms a nucleus of a new magic club. At right, students measure and cut

nylon for the dome to be floated over City Hall Plaza in April as part of Boston's bicentennial celebration. The floating dome will be 200 feet in diameter and 120 feet tall.





Reprints from REPORTS ON RESEARCH

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Simulated Grid

Some college students build model airplanes, automobiles or trains. MIT graduate student Stephen Umans builds model power generators.

But the scaled-down generators in MIT's Electric Power Systems Engineering Laboratory are not toys—they are tools to help engineers understand how the United States electric power system works, and how failures like the 1966 Northeast blackout can be prevented.

Umans and a group of professors, graduate students, undergraduates and laboratory technicians spent three years building the miniature electric power system at the MIT Laboratory—three 900 watt generators (which with their motors are about three feet long and 20 inches in diameter), their controls, and 400 miles of transmission lines.

The model generators can be connected with the Cambridge power system so that engineers can study, in miniature, the network of generators and transmission lines that produces and distributes electricity throughout the United States.

This nationwide system is so sensitive that utility companies had to prepare for the sudden decrease in the demand for electricity after Tiny Tim's wedding on the Johnny Carson show, when millions of Americans turned off their television sets simultaneously.

Yet up to now engineers wishing to test this complex and sensitive system have had to rely on computer models, which do not always reflect what will actually happen.

"The need for tests under actual system conditions has been largely ignored, and such testing is effectively non-existent," said Gerald L. Wilson, Philip Sporn Associate Professor of Energy Processing, and director of the laboratory.

"Even more distressing is the fact that many engineers who are presently designing such systems conceive of devices such as generators, relays, circuit breakers, regulators, etc., as a set of mathematical operations, and ignore the physical nature

of the device and the physical function it performs."

To rectify this, the American Electric Power Service Corporation sponsored construction of the MIT scale model system as a research and training tool.

Researchers are subjecting the model generators to conditions they hope will never occur in real life in hopes of learning how to ensure reliable service at a minimum cost.

Since utility companies are now operating with smaller reserves than several years ago, good controls are needed more than ever to keep a small failure from developing into a major blackout.

The miniature system is also being used to test new equipment, to test the accuracy of the computer models of power systems, and to train students, engineers and the men and women who operate commercial generators. By "playing" with the models, they will be able to see how their actions affect the power system as a whole.

"This, of course, is a compromise to performing tests of an actual system," Umans said. "However, it is a system in which every effort has been made to keep the compromises at a minimum.... As an educational and research tool, the model system has a potential which is practically limitless."

—Barbara A. Burke

Shape of Blood

If you travel to high altitudes, the level of organic phosphate in your red blood cells will increase to help you cope with the thin air.

The phosphate makes the hemoglobin molecules that carry oxygen from your lungs to your tissues release more oxygen. (Normally, only about one-fourth of the oxygen carried by hemoglobin is released to your tissues.)

The phosphate does this by encouraging the hemoglobin—a protein found in red blood cells—to assume a shape in which oxygen is released more readily.

Researchers in the Harvard-MIT Program in Health Sciences and Technology recently used the energies of the different shapes of the hemoglobin molecule to come up with a theory explaining how the shape of hemoglobin is related to its ability to release oxygen.

Experimental research alone does not give the full picture. One can measure how many molecules have bound oxygen at different intervals after phosphates are added, but trying to understand the process by looking at the experimental data alone would be like watching a silent movie of *Hamlet*. One would see things happen without knowing why.

To understand the hemoglobin-phosphate interaction, the researchers first proposed a theory, based on the rates at which hemoglobin changes from one shape to another and on the energies of different shapes of hemoglobin. (The sole "motive" of molecules is to get into the least energetic form possible.)

They then had to express this theory—which used concepts proposed by Nobel Laureate Max Perutz of Cambridge, England—in quantitative form, so that it could be tested against the existing experimental data.

The happy result was that the theory fit the data: it correctly predicted the detailed changes, with time, of the oxygen-binding properties of hemoglobin in the presence of organic phosphates.

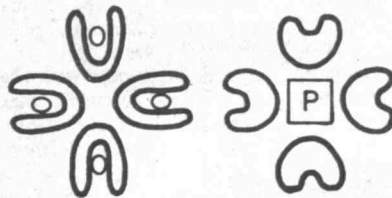
The work, which involved some highly mathematical aspects of nonequilibrium statistical mechanics, was supported by the Interdisciplinary Program in Biomaterials Science under the auspices of the Harvard-MIT Program in Health Sciences and Technology.

The results, reported in a recent issue of

Science magazine, earned Ms. Rama Bansil her PhD. She was aided by Dr. Judith Herzfeld, now at Harvard Medical School, and Dr. H. Eugene Stanley, Hermann von Helmholtz Associate Professor of Health Sciences and Technology and Associate Professor of Physics at MIT.

They hope that their approach can be applied to other bodily processes, which regulate the rate at which enzymes trigger reactions.

Some enzyme-catalyzed reactions have a built-in control that keeps them from getting out of hand: as the products of the



AT HIGH ALTITUDES, organic phosphate (P) induces more hemoglobin molecules to shift from shape on the left to shape on right, enabling them to release oxygen (O) more readily.

reaction build up, one of these interacts with the enzyme to slow down the reaction.

The control molecule, called an effector, works by inducing the enzyme to favor one shape rather than another. In one shape, the enzyme grabs less firmly the substance on which it is acting. By encouraging the enzyme to adopt that shape, the effector slows down the reaction.

Properly speaking, hemoglobin is not an enzyme, but like true enzymes, it is a large protein, and it works by changing from one shape to another. The phosphates act as "effectors" by making the hemoglobin adopt the shape in which oxygen is released most readily from its four "heme pockets."

The phosphate effect is a relatively simple example of such an effector-enzyme interaction. Drs. Stanley, Bansil, and Herzfeld hope that the approach they used on phosphates can be applied to more complex situations.

The ultimate goal is to understand the relationship between the structure of enzymes and their functions.

—BAB

Super Generator

A supercold, superconducting generator, which researchers say will lead to cheaper and more reliable production of electric power, has passed a crucial test at MIT.

When connected with the Cambridge power system, it worked.

Both conventional and superconducting generators produce electricity by moving a magnetic field past a stationary conductor.

Superconducting generators can produce a more intense magnetic field than conventional generators—and thus more electric power—because they use electromagnets wound from an alloy that offers no resistance to an electric current when chilled to about 450° F below zero. Such alloys are "superconductors" of electricity.

The successful trial run with MIT's 3 megawatt superconducting generator brought smiles of relief from the researchers who built it.

It was the first time a superconducting generator that large had been connected with a larger power system. To achieve this, the generator had to operate at the same frequency, voltage and phase angle as the other generators in the Cambridge system. If it had been too greatly out of phase, the generator would have been seriously damaged.

The MIT researchers predict that much larger superconducting generators, producing six times more power per unit size

than conventional generators, will be used commercially within 10 years. They say that such generators are cheaper than conventional generators, because they are smaller and require much less iron.

They also believe that such generators will be more stable than conventional generators. This would enable electric power companies to build generators farther from the cities and industries where the electricity is used. It would also reduce the danger of blackouts.

Among collaborators on the project, sponsored by the Electric Power Research Institute, are Professors Joseph L. Smith, Jr. and Philip Thullen, and Dr. Thomas Keim of the Cryogenic Engineering Laboratory of the MIT Department of Mechanical Engineering, and Professors Charles Kingsley, Jr., James L. Kirtley and Gerald L. Wilson of the Electric Power Systems Engineering Laboratory of the MIT Department of Electrical Engineering.

In conventional generators, an electromagnet (the rotor) spins inside stationary coils of wire (the stator).

Both rotor and stator windings are placed in an iron structure, which enhances the magnetic field and protects the conductors from large magnetic forces. But the magnetic fields which can exist in iron are limited. Also, for large conventional generators, it is difficult to remove the heat generated by the rotor current. So it is extremely difficult to build conventional generators capable of producing more than 1000 to 1500 megawatts of electric power, about half the peak power consumption of Manhattan.

In contrast, the MIT researchers believe it will be possible to build superconducting generators which can generate 2000 megawatts, and more, while still performing more reliably than conventional generators.

The MIT generator has no iron inside. Its rotor, or magnet, is made of wires of a niobium and titanium alloy, which is superconducting between 450° and 455° F below zero—only four to nine degrees above absolute zero. Liquid helium is used to get it that cold.

The stator is not a superconductor, but like the rotor, it has no iron core. This reduces the need for electrically insulating the core from the wires, which permits the generator to operate at much higher voltages than conventional generators. It is hoped that this will eliminate the need for generator transformers.

The lack of iron also makes the generator lighter and smaller, and leaves more room for conductors, which further increases its power output.

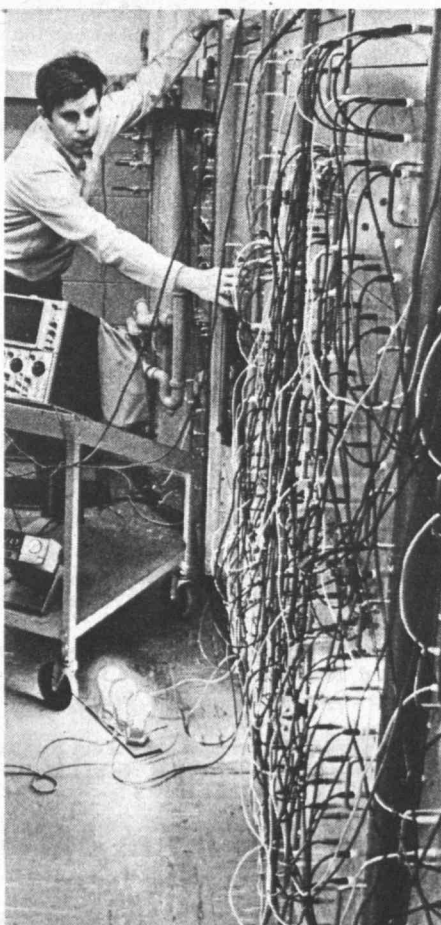
The only iron used is to encase the entire generator, to shield the outside world from its magnetic field. Otherwise, the generator would attract any stray pieces of nearby metal.

Although the advantages of such a system are great, it was not immediately obvious that it would work. The engineers first had to test a small 45,000 watt generator to determine that the alloy would maintain its superconductivity while spinning at 3600 revolutions a minute.

They also had to develop means to keep the alloy cold by bathing it in liquid helium, insulated by a vacuum and by a copper heat shield. The copper also protects the alloy from heating due to magnetic fluctuations, which would quickly make it lose its superconductivity.

Another question, answered affirmatively by the recent trial run, was whether the iron-free generator, made of glass, copper and epoxy, would withstand the magnetic and mechanical stresses which it undergoes when connected with an electric power system.

—BAB



MIT GRADUATE STUDENT Stephen D. Umans works on the miniature electric power system at MIT's Electric Power Systems Engineering Laboratory. The three model generators and the 400 miles of transmission lines are used as a research and training tool.

THE INSTITUTE CALENDAR

February 5
through
February 16

Seminars and Lectures

Wednesday, February 5

Collocation Methods for Reactor Physics Problems* - Jack Mason, G. Nuclear Engineering Doctoral Seminar. 3pm, Rm NW12-202.

Targeting of Strategic Nuclear Weapons* - Gerald E. Miller, vice admiral, US Navy, retired. Joint MIT-Harvard Arms Control Seminar. 4pm, Rm 1, Harvard CFIA, 6 Divinity Ave.

Thursday, February 6

Nonlinear Feedback Control for Process Operation Near an Unstable Steady State* - Duane D. Bruns, University of Houston. Chemical Engineering Seminar. 1pm, Rm 12-150.

Probabilistic Models of Two-Lane Traffic* - Carlos DaGanzo, University of Michigan. Transportation Systems Division Seminar. 1:30pm, Rm 1-350.

The Oil Industry* - Charles W. Smith, '35, engineering planning coordinator, Exxon Research and Engineering Co. Career Planning and Placement Seminar. 3pm, Rm 10-105.

Some Societal Implications of American Education and Meritocracy* - Herbert S. Gintis, economics, University of Massachusetts, Amherst. Technology & Culture Seminar: Merit & Equality in a Just Society. 4pm, Rm 9-150.

Speaker's Reference and Semantic Reference* - Saul Kripke, philosophy, Rockefeller University. Philosophy & Linguistics Seminar. 4pm, Rm 14E-304.

Noise of an Isolated Airfoil in a Turbulent Flow* - Robert W. Paterson & Roy K. Amiet, United Aircraft Research Labs. Interdepartmental Acoustics Seminar. 4pm, Rm 5-134. Coffee 3:30pm, Rm 1-114.

Superconducting Materials: Ultra-Low Energy Physics* - Margaret MacVicar, Class of 1922 Associate Professor of Physics. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

Boundary Conditions for Incomplete Parabolic Systems with Application to the Navier-Stokes Equations - Bertil Gustafsson, University of Uppsala, Sweden; ICASE, Nasa-Langley Research Center. Applied Mathematics Seminar. 4:15pm, Rm 2-338. Coffee 4pm, Rm 2-349.

Calcium Absorption, Intestinal Calcium Binding Protein and 1, 25-Dihydroxycholecalciferol-Like Factors in Botanical Sources - Dr. R. H. Wasserman, physical biology, New York State Veterinary College, Cornell University. MIT Nutrition & Food Science/Harvard School of Public Health Joint Seminar. 4:15pm, Rm 54-100.

Friday, February 7

Clinical Applications of Neutron Activation Analysis to Metabolic Bone Disease - Robert M. Neer, MD, endocrine unit, MGH. Nuclear Engineering Biomedical Applications of Radiation Seminar. 3:45pm, Rm NW12-222. Coffee 3:30pm.

Experimental Identification of a Trapped Particle Instability* - C.A. Primmerman, G. Magnet Lab & RLE Plasma Dynamics Seminar. 4pm, Rm 36-261. Refreshments 3:50pm.

Tracer Studies and the Stratospheric General Circulation - J.D. Mahlman, Geophysical Fluid Dynamics Laboratory, NOAA, Princeton. Meteorology Seminar. 4pm, Rm 54-100. Refreshments 3-3:30pm.

Monday, February 10

Laser Fusion and Breeding* - Moshe Lubin, University of Rochester. American Nuclear Society Student Branch ANS Seminar. 3:30pm, Rm 9-150. Coffee 3pm.

Turbulence and Stability: Current Convergences - Willem V. R. Malkus, mathematics. Applied Mathematics Colloquium. 4pm, Rm 2-338. Coffee 3:30pm, Rm 2-349.

Numerical Calculations of Storm Surges - An Evaluation of Techniques* - James Pagenkopf, G. Civil Engineering Water Resources and Hydrodynamics Seminar. 4pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

Tuesday, February 11

Ceramic Heat Engines: Cycle Thermodynamics** - R. J. Charles, GE Research & Development Center, Schenectady, NY. Materials Science & Engineering, Ceramic & Glass Seminar. 9am, Rm 16-310.

Citation Searching of Social Science & Humanities Journal Literature by Computer - Susanne Durling, Institute for Scientific Information. Demo using SOCIAL SCISEARCH data base follows. Bring references, find out who's been citing you! 10am, Rm 14S-100.

Citation Searching of Life Science Literature by Computer - Susanne Durling, Institute for Scientific Information. Demo using SCISEARCH data base follows. Bring references, find out who's citing you! 2pm, Rm 14S-100.

The Chemical Industry* - George A. Schnabel, '60, manager of facilities planning, chemicals division, Rohm & Haas Co. Career Planning & Placement Seminar. 3pm, Rm 1-114.

Course VI-A Orientation Lecture - For sophomores interested in entering Course VI's Cooperative Education Program. 3pm, Rm 10-105. Students currently in the program and faculty advisors will be available for discussion.

General Aeronautics/Astronautics Seminar* - Richard Kallemier, McDonald-Douglas Corporation. 4pm, Rm 31-161. Coffee 3:30pm, Rm 33-222.

Underwater Archaeology* - George F. Bass, president, Institute of Nautical Archaeology. Ocean Engineering Seminar. 4pm, Rm 1-134.

Colloquium on Technology and the Developing Countries - Organizational meeting. 7pm, International Students' Lge. Info, R. Shaikh, x3-3045.

Wednesday, February 12

Jewish Macrobiotics* - Meir Michel Abehsera, Jewish mystic, author of many books on health foods. Hillel Lecture. 12n, Stu Ctr Mezzanine Lge.

Time-Dependent Response Matrices* - Claudio Almeida, G. Nuclear Engineering Doctoral Seminar. 3pm, Rm NW12-222.

Thursday, February 13

A New Heavy Particle Spectroscopy - The View From Colliding Beams* - Roy Schwitters, SLAC, Stanford University. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

Friday, February 14

The Strophen as an Irreducible Molecular Unit of Deformation in Polymers* - LV. Yannas, mechanical engineering. Mechanical Engineering Seminar. 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

Cancer Treatment with High Energy X-Rays and Electrons* - John G. Trump, electrical engineering, emeritus. Nuclear Engineering Biomedical Applications of Radiation Seminar. 3:45pm, Rm NW12-222. Coffee 3:30pm.

Fiction* - David Lewis, philosophy, Princeton University. Philosophy & Linguistics Seminar. 4pm, Rm 14E-304.

X-Ray Fluctuations from MHD Instabilities in ST Tokamak* - S. E. von Goeler, Princeton Plasma Physics Laboratory. Magnet Lab & RLE Plasma Dynamics Seminar. 4pm, Rm 36-261. Refreshments 3:50pm.



STARS OF THE LITTLE THEATRE production of Thornton Wilder's "The Skin of Our Teeth" are, left to right: Eden Lee Murray of Radcliffe (Sabina), Anne Averbach, a sophomore in mathematics (Gladys Antrobus), Rosanne Wyleczuk, a freshman (Mrs. Antrobus), Robert H. Lustig, a sophomore in life sciences (Henry Antrobus), and Gary Oliver, a graduate student in nutrition (Mr. Antrobus). The Drama-shop production opens Friday, Feb. 7, for five performances. Reservations may be made by calling x3-4720.

Community Meetings

The Wives' Discussion Group** - Wed, 2:15-4pm, Stu Ctr West Lge. Babysitting, in Stu Ctr Rm 473.

Cambridge Business and Professional Women's Club - Speaker at the Wed, Feb 5 dinner meeting will be Elting E. Morison, humanities, Elizabeth and James R. Killian Professor of the Class of 1926. Social hour 5:30pm, dinner 7pm, faculty club. Reservations: Pat Moulton, x3-2494. Cost: \$7. Guests welcome.

Acting Workshop in Theatre Games and Improvisation** - Joel Polinsky, Theatre Two. Sponsored by MIT Community Players. An excellent opportunity for beginners with interest in the theatre. Wed, thru Mar 12, 7:30pm, Rm 1-132. Fee: \$30. Info, Dianne Banda, x3-4621.

Alienation* - Topic of discussion led by Richard Zorsa, Vocations for Social Change. Social Action Coordinating Committee (SACC) Studies From the Left series. Wed, Feb 5, 7:30pm, Rm 4-159.

Today's Women (Women's Discussion Group) - Workshop in Sexual Communication for Couples. Professor Meg Zarella and Dr. Stewart Shapiro will present an opportunity to experience and share other people's values and attitudes about sexuality. Sponsored by TWO. Thurs, Feb 6, 7:30pm, Stu Ctr West Lge. Refreshments, casual dress. Free. Linda Napier, 494-8121.

Sexism* - Topic of discussion led by Leslie Cagan & others from the Boston Area Socialist Feminists. SACC Studies From the Left series. Tues, Feb 11, 7:30pm, Stu Ctr West Lge.

Sexism and its Effects on Men* - Discussion and film, *Men's Lives*, led by Don De Vecchio and others experienced in men's consciousness raising. SACC Studies From the Left series. Wed, Feb 12, 7:30pm, Stu Ctr West Lge.

Wellesley Events

Chhau, the Masked Dance of West Bengal* - Ritualistic dance-drama traditionally performed at the sun festival. Mon, Feb 10, 8pm, Alumnae Hall. Sponsored by Wellesley's Mayling Soong Fdn. Tickets: free, send self-addressed, stamped envelope to Coordinator of Special Events, 346 Green Hall, Wellesley College, Wellesley, 02181. Seating without tickets at 7:50pm.

Social Events

24 Hour Coffeehouse* - Enjoy relaxing conversation, piano playing, games, inexpensive food, candy & drinks. Open 24 hours per day, 7 days per week, Stu Ctr 2nd fl lge.

Ad-Hoc Over 30's Singles Chowder and Marching Society - Luncheon meeting in Stu Ctr East Lge (small dining room off Lobdell), Fri, 12:30-1:30pm. New members always invited. Look for the table with the red balloon. Suzanne, x3-3131 or Marty x8-1206 Draper.

Movies

Ten Days that Shook the World* - Film Section. Wed, Feb 5, 7pm, Rm E21-010. Free.

American Graffiti** - LSC. Fri, Feb 7, 7 & 9:30pm, Kresge. Admission \$.50, ID required.

Master of the House (Dreyer) - Film Society. Fri, Feb 7, 7:30 & 9:30pm, Rm 6-120. Admission \$1.

Masque of Death (Corman)* - Workers' League/Young Socialist Film Series. Sat, Feb 8, 7 & 9pm, Stu Ctr Mezzanine Lge. Admission: \$.99.

Blazing Saddles** - LSC. Sat, Feb 8, 7 & 9:30pm, Kresge. Admission \$.50, ID required.

Firebills; Happy New Year; The Invincible Eight* - Chinese Students' Club films with English subtitles. Sun, Feb 9, 12:30pm, Kresge. Admission \$2 adults, \$1 children & CSC members.

On the Waterfront** - LSC. Sun, Feb 9, 6:30 & 9pm, Rm 10-250. Admission \$.50, ID required.

Baboon Behavior; Mountain Gorilla* - Humanities Film Series. Tues, Feb 11, 7pm, Rm 14N-0615.

Lady Vanishes; Foreign Correspondent* - Film Section. Tues, Feb 11, 7pm, Rm E21-010. Free.

Strangers; Psycho* - Film Section. Wed, Feb 12, 7pm, Rm E21-010. Free.

L'Avventura (Antonioni) - Film Society. Fri, Feb 14, 7 & 9:40pm, Rm 6-120. Admission \$1.

The Great Gatsby** - LSC. Fri, Feb 14, 7 & 10pm, Kresge. Admission \$.50, ID required.

Thunderbolt and Lightfoot** - LSC. Sat, Feb 15, 7 & 9:30pm, Kresge. Admission \$.50, ID required.

Arna Desh - Sangam. Sun, Feb 16, 3:30pm, Rm 26-100. Admission \$.50 with MIT ID. Info: Anil, x3-2739.

In Like Flint** - LSC. Sun, Feb 16, 7 & 9:30pm, Rm 10-250. Admission \$.50, ID required.

Lobby 7 Events

Cloud no. 1* - Large artificial "cloud" will ascent the lobby, as part of an IAP project under Professor Chathan Cooke. Wed, Feb 5, 12n.

Alexander's Feast* - Elizabethan, Medieval and early American music. Wed, Feb 12, 12n. Free.

Charles O'Hegarty* - Irish love songs, sea shanties and drinking songs. Fri, Feb 14, 12n. Free.

Music

Noon Hour Chapel Concert* - By Hopkin Smith. Thurs, Feb 6, 12n, Chapel. Free.

Jan de Gaetani* - Mezzosoprano accompanied by pianist. Program includes songs by Debussy and Ives. Wed, Feb 12, 8pm, Kresge. Free.

Exhibitions

Nan Argyros: Drawings* - Sponsored by the Committee on the Visual Arts. Fri, Jan 10-Sat, Feb 8, Hayden Corridor Gallery. Free.

Video: Art in Process* - Interaction between live video and actors, dancers, writers and musicians. Mon, Jan 13-Sat, Feb 8, daily 10am-4pm and Tues 6-9pm, Hayden Gallery. Free.

Mike & Johnny Levins* - Father and son exhibit together at the MIT Creative Photography Gallery. Tues, Feb 4-Mon, Feb 24, 10am-6pm, 3rd fl Bldg W31. Free.

Photographs by Sam Drake* - On exhibit Feb at the Faculty Club. Mon-Fri, 9am-11pm, 6th fl Bldg E52.

The Look of Music in the Middle Ages* - Facsimiles of manuscripts and transcriptions into modern notation; pictures of life in the Middle Ages. Open daily, music library, Bldg 14E.

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.

MIT Historical Collection* - Permanent exhibition, open Mon-Fri 9am-5pm, Bldg N52, 2nd floor.

Committees 1974-75



Standing Committees
Of the Faculty

Committees Appointed
By the President

1974-75 Committees of the Institute

Standing Committees of the Faculty

Committee on Academic Performance
Committee on Curricula
Committee on Discipline
Committee on Educational Policy
Committee on Graduate School Policy
Industrial Liaison Committee
Committee on the Library System
Committee on Nominations
Committee on Outside Professional Activities

Staff-Administration Committee
Committee on Student Environment
Committee on Undergraduate Admissions and Financial Aid

Special Faculty Committees

Committee on the Humanities, Arts and Social Sciences Requirement
James R. Killian Faculty Achievement Award Selection Committee

Committees Appointed by the President

Committees Reporting to the President and the Chancellor

Committee on Animal Care
Athletic Board
Committee on Commencement
Committee on Copyrights and Patents
Community Service Fund Board
Endicott House Board of Governors
Equal Opportunity Committee
Committee on Foreign Scholarships
Committee on the Hobby Shop
IAP Policy Committee
Committee on Laboratory Hazards
Medical Advisory Board
M.I.T. Press Editorial Board
M.I.T. Press Management Board
M.I.T.-Wellesley Upward Bound Steering Committee
M.I.T.-W.H.O.I. Joint Education Committee
Committee on Parking
Committee on Personnel Policy
Committee on Preprofessional Advising and Education
Prelaw Advisory Council
Premedical Advisory Council

Committee on Privacy
Committee on Radiation Exposure to Human Subjects
Committee on Radiation Protection
Committee on Reactor Safeguard
ROTC Committee
Committee on Safety
Student Activities Development Board
Committee on the Use of Humans as Experimental Subjects
Committee on the Visual Arts
Wellesley-M.I.T. Joint Committee

Committees Reporting to the Provost

Policy Committee of the Division for Study and Research in Education
Committee on Operations Research
Committee on Radio Astronomy

Committees Reporting to the Vice President for Research

Committee on the Center for Materials Science and Engineering
Committee on the Research Laboratory of Electronics

Special Committee Appointed by the Corporation

Corporation Joint Advisory Committee on Institute-wide Affairs

Committee Reporting to the Chairman of the Corporation

Committee for Historical Collections

Committee Memberships

(as of February, 1975)

Standing Committees of the Faculty¹

Given below are the memberships and brief descriptions of the Standing Committees of the Faculty. For formal descriptions of the Committee mandate see Rules and Regulations of the Faculty.

Committee on Academic Performance

The Committee is concerned with the academic performance of undergraduates and shall make recommendations to the faculty on such matters as minimum scholastic standards, examinations, and grading.

James L. Kinsey, Chairman (1975)
Dean for Student Affairs* (Carola B. Eisenberg)
Registrar* (Warren D. Wells)
Medical Director* (Albert O. Seeler)
Director of Student Financial Aid* (Jack H. Frailey)
Chairman of the Freshman Advisory Council* (Thomas B. Sheridan)
E. Jane Dickson, Staff Assistant
Louis S. Osborne (1975)
Thomas M. Hill (1976)
Robert S. Kennedy (1977)
August F. Witt (1977)
Bernhardt J. Wuensch**

Students

Chris Demain, G (nonvoting member)
Patrice Desvigne, '76
Karen A. Scott, '75
Thomas R. Vidic, '76

Committee on Curricula

This Committee's activities center on the implementation of the General Institute Requirements and course curricula. They include: 1) considering proposals for changes in the Institute Requirements, and making suitable recommendations to the faculty; 2) acting with power on proposals for Science Distribution and Laboratory subjects; 3) acting with power on requests from individual students for exceptions to the General Institute Requirements; 4) acting with power on proposals for changes in subjects of instruction; 5) acting with power on proposals for new curricula and changes in existing curricula; and 6) reviewing reports by departments on individual students' programs which include major departures from an approved curriculum, and summaries of all minor departures.

Leonard A. Gould, Chairman (1975)
Registrar* (Warren D. Wells)
Chairman of the Freshman Advisory Council* (Thomas B. Sheridan)
Associate Provost* (Hartley Rogers, Jr.)
John W. Cahn (1975)
Arthur Steinberg (1976)
Charles E. Holt, III (1977)
Christopher T. Walsh (1977)
Arthur P. Mattuck**

Students

James E. Harrison, '76
Edward G. McKay, '76
Miles R. Palmer, '76

Committee on Discipline

This Committee shall consider cases of alleged misconduct brought to its attention by the Dean for Student Affairs. An accused student shall be given the opportunity to present himself or herself in person at a meeting of the Committee. If the findings of the Committee include a recommendation that a student be required to withdraw from the Institute, the recommendation with the findings shall be reported to the President for approval or disapproval; otherwise, the Committee is empowered to effect its recommendations.

Adel F. Sarofim, Chairman (fall, 1974 term)
Judith J. Thomson, Chairwoman (spring, 1975 term)
Dean for Student Affairs* (Carola B. Eisenberg)
Michael J. Piore (1975)
Earle L. Lomon (1976)
Edgar H. Schein (1977)
Ian T. Young (1977)
Ernest G. Cravalho**

Students

Innocent Y. Akoto, G
Janice Larkin-Johnson, '75
Douglas A. Nutter, '76
Gary R. Wilkes, G

Committee on Educational Policy

The Faculty Committee on Educational Policy (which includes student members) formulates and articulates overall educational policy, sponsors educational experiments, and coordinates much of the faculty's business. CEP representatives are appointed to the other standing committees of the faculty. The chairman of the faculty is ex officio chairman of the CEP.

Chairman of the Faculty* (Elias P. Gyftopoulos), Chairman (1975)
Associate Chairman of the Faculty* (Robert G. Gallager), Deputy Chairman (1975)
Provost* (Walter A. Rosenblith)
Vice President* (Constantine B. Simonides)
Associate Provost* (Hartley Rogers, Jr.)
Kathryn W. Lombardi, Staff Assistant
Ernest G. Cravalho (1975)
Richard S. Eckaus (1975)
Allan F. Henry (1975)
Frank S. Jones (1975)
Margaret L.A. MacVicar (1975)
Frank E. Perkins (1975)
Arthur P. Mattuck (1976)
Lisa A. Steiner (1976)
David G. Wilson (1976)
Bernhardt J. Wuensch (1976)

Students

John A. Foss, G
Kevin B. Miller, '77
Alan J. Schimmel, '75
John P. Tiemstra, G
Stephanie J. Yamashita, '75

Committee on Graduate School Policy

Each member of this Committee who represents a department shall be a member of the Committee on Graduate Students of that department. The Committee establishes admissions requirements, scholastic standards, and requirements for advanced degrees in the M.I.T. Graduate School. It also grants approval of new courses of instruction at the graduate level. It shall report to the faculty recommendations on policy matters requiring faculty action and recommendations for the award of advanced degrees.

Dean of the Graduate School* (Irwin W. Sizer), Chairman
Associate Dean of the Graduate School* (Sanborn C. Brown), Secretary
Assistant Deans of the Graduate School* (Jeanne E. Richard, John B. Turner, Robert K. Weatherall)
Executive Officer of the Graduate School*
Director of Admissions* (Peter H. Richardson)
Associate Chairman of the Faculty* (Robert G. Gallager)
Morris A. Adelman (1975)
Wayne V. Andersen (1975)
Suzanne Berger (1975)
Sylvain Bromberger (1975)
Robert L. Coble (1975)
David J. Epstein (1975)
J. Harvey Evans (1975)
Maurice S. Fox (1975)
Allan F. Henry (1975)
Thomas M. Hill (1975)
George F. Koster (1975)
Robert D. Logcher (1975)
Thomas Nutt (1975)
Gordon H. Pettengill (1975)
Whitman A. Richards (1975)
Warren M. Rohsenow (1975)
John R. Ross (1975)
Richard D. Schafer (1975)
Dietmar Seyferth (1975)
Peter H. Stone (1975)
Wallace E. Vander Velde (1975)
Glenn C. Williams (1975)
Gerald N. Wogan (1975)

Students

Shahriar Ahy, G
Okon M. Amana, G

Industrial Liaison Committee

The Committee is concerned with the relationship of the activities of the Industrial Liaison Office to the activities of members of the faculty.

Richard H. Lyon, Chairman (1975)
George H. Buchi (1975)
Ernst G. Frankel (1976)
Daniel I.C. Wang (1976)
Thomas J. Allen (1977)
Clifford G. Shull (1977)

Committee on the Library System

This Committee shall formulate policy for the administration of the Library System consistent with the objectives of the Institute. It shall review budget allocations as prepared by the Director of Libraries. It shall foster the effective operation of Library Advisory Committees, which shall be appointed for each of the libraries and reading rooms, and shall seek the advice of the Advisory Committees on matters of policy where appropriate.

Stanley Backer, Chairman (1976)
Provost* (Walter A. Rosenblith)
Director of Information Processing Services* (Robert H. Scott)
Director of Libraries* (Natalie N. Nicholson)
Renwick E. Curry (1975)
Keith H. Johnson (1975)
Krystyna Pomorska (1976)
Evsey D. Domar (1977)
Dietmar Seyferth (1977)

¹ The dates to the right, in parenthesis, indicate the years in which the terms of appointment expire.

* Ex officio

** Appointed from the Committee on Educational Policy

*** Non-M.I.T. member

‡ Appointed by the President

Committee on Nominations‡

This Committee shall consist of six members appointed by the President, each member to serve for a three-year term. Two new members shall be appointed each year. The President shall designate the chairman from among the membership. The Committee shall nominate the following officers of the faculty: a chairman, an associate chairman, and a secretary; it also shall nominate candidates for the elected membership of the Standing Committees. It shall circulate the list of nominees to all members of the faculty not later than the April meeting of the faculty. The Committee shall have power to fill any vacancies that may occur during the year in the offices of chairman, associate chairman, and secretary, and in the elected membership of the Standing Committees.

John M. Deutch, Chairman (1975)
E. Neal Hartley (1975)
Richard B. Adler (1976)
Leon B. Groisser (1976)
Daniel M. Holland (1977)
Vera Kistiakowsky (1977)

Committee on Outside Professional Activities

This Committee will inform itself of and report periodically to the faculty on new problems of potential conflicts of interest. It will recommend appropriate modifications of policies and procedures to the faculty.

Charles P. Kindleberger, Chairman (1975)
Irwin Oppenheim (1975)
Erik L. Mollo-Christensen (1976)
Kenneth A. Johnson (1977)
Louis D. Smullin (1977)

Staff-Administration Committee

Established in 1938 the Committee considers problems involving relationships between the administration and members of the academic staff.

This Committee deals with a variety of matters that fall outside the normal purview of the regular faculty committees. In the past it has been most active in the area of personnel policies, for example, in the formulation of the current tenure rules and the sabbatical leave program.

Staff
William W. Seifert, Chairman (1975)
Maria C. Linder (1975)
Robert M. Fogelson (1976)
Travis R. Merritt (1976)
Paul L. Joskow (1977)
Anne M. Leggett (1977)
George W. Pratt, Jr. (1977)

Administration‡
Robert A. Alberty
Alfred A.H. Keil
Albert G. Hill
William F. Pounds
John M. Wynne

Committee on Student Environment

This Committee is concerned with student life, especially with nonacademic features which have a direct bearing on the education of the student as a citizen and a member of the Institute community.

David C. Major, Chairman (1976)
Dean for Student Affairs* (Carola B. Eisenberg)
Associate Dean for Student Affairs* (Robert J. Holden)
Frederick A. Frey (1975)
Joel A. Huberman (1975)
Regis M.N. Pelloux (1977)
Theodore Wood, Jr. (1977)
Margaret L.A. MacVicar**

Students
Ronald J. Bick, '75
Thomas M.D. Cotner, G
Mark W. Crane, '76
Eve J. Higginbotham, G
Russell S. Phillips, '75

Committee on Undergraduate Admissions and Financial Aid

The Committee is responsible for formulating and reviewing policies on admission of all undergraduate students (including college transfers but not students applying for readmission), and on financial aid to students, including undergraduate scholarships, loans, and student employment. The Committee also shall exercise prior review of M.I.T. publications and formal releases directed toward the prospective undergraduate student.

Stephen H. Crandall, Chairman (1977)
Director of Admissions* (Peter H. Richardson)
Director of Student Financial Aid* (Jack H. Frailey)
Chairman of the Freshman Advisory Council* (Thomas B. Sheridan)
J. David Litster (1975)
Robert Pindyck (1975)
Wesley L. Harris, Sr. (1976)
Alar Toomre (1976)
Barbara Liskov (1977)
David G. Wilson**

Students
Alan P. Glombicki, '77
Neil S. Lieblich, '76
Herman W. Pettiford, '76

Special Faculty Committees

Committee on the Humanities, Arts and Social Sciences Requirement

Established by vote of the faculty in the spring of 1974. The Committee is in general responsible for reviewing all issues of educational policy concerning the Humanities, Arts and Social Sciences Requirement. In particular it has three major responsibilities: 1) to oversee the selection of Distribution subjects; 2) to review proposals for creating new Fields of Concentration; and 3) to decide which undergraduate subjects shall be eligible for elective credit under the terms of the Requirement. The Committee is composed of 11 faculty members and two students.

Robert E. Jones, Chairman
Lotte Bailyn
Murray J.K. Biggs
George S. Boolos
Anthony P. French
Robert G. Gallagher
Gary T. Marx
Louis Menand, III
Frank E. Perkins
Donald A. Preziosi
Dan S. White

Students
Stephen R. Blatt, '77
Steven D. Lubar, '76

James R. Killian Faculty Achievement Award Selection Committee

Each year, the Selection Committee chooses one member of the M.I.T. faculty to be the Killian Award Lecturer for the following academic year. The Award was established in the spring of 1971 as a permanent tribute to Dr. James R. Killian, Jr., President of the Institute from 1948 to 1959 and Chairman of the M.I.T. Corporation from 1959 to 1971.

The purpose of the Award is "to recognize extraordinary professional accomplishments" by M.I.T. faculty members and to communicate these accomplishments to members of the M.I.T. community. The recipient of the Killian Award holds the title of Killian Award Lecturer for one academic year and during the course of this year presents one or more lectures to the M.I.T. community on his or her own professional activities.

The Selection Committee consists of faculty members elected by vote of the faculty from a slate prepared by the Nominations Committee.

David J. Rose, Chairman
Bernard J. Frieden
David H. Frisch
Richard C. Lord
Stephen D. Senturia

Committees Appointed by the President

Committees Reporting to the President and the Chancellor

Committee on Animal Care

The Committee's purpose is to monitor the provision of proper care and humane treatment to animals used as experimental subjects, and to ensure the protection of human health as it might be affected by animal experimentation.

Franklin D. Aldrich, Chairman (1977)
James G. Fox*
O. Robert Simha (1975)
Walle J.H. Nauta (1976)
Paul M. Newberne (1976)
Melvin H. Rodman (1976)
Herman N. Eisen (1977)
Carol Van Aken (1977)
Martin Weitzman (1977)

Athletic Board

The Athletic Board, composed of faculty members, alumni, students, and ex officio members of the administration, is appointed by the President to advise on matters of policy and procedure related to the Institute's athletic program.

Faculty
Peter S. Eagleson, Chairman (1977)
Richard J. Lagow (1975)
William F. Brace (1976)

Alumni
William P. Reynolds, '49 (1975)
Daniel J. Holland, '58 (1976)
Thomas P. Gerrity, '63 (1977)

Ex Officio
John G. Barry
Carola B. Eisenberg
Mary-Lou Sayles
Albert O. Seeler
O. Robert Simha
Ross H. Smith

Adjunct Member
Kenneth S. Brock

Students
Michael S. Cucchissi, '75
Alan G. Epstein, '75
Beverly L. Herbert, '75
B. Anthony Isaac, '75
Diane M. McKnight, '75
Peter A. Schulz, '75
Donald E. Shobrys, '75
Gary R. Wilkes, G
Sandra G. Yulke, G

Committee on Commencement

This Committee, composed of members of the faculty, administration, and student body, has charge of the arrangement and conduct of commencement exercises.

Ernest G. Cravalho, Chairman (1976)
Carolyn B. Cox*, Executive Secretary
Miles P. Cowen*
Carola B. Eisenberg*
Richard A. Knight*
Walter L. Milne*
Constantine B. Simonides*
Ross H. Smith*
Warren D. Wells*
David C. Major (1975)
Albert R. Gurney, Jr. (1976)
Frank E. Perkins (1976)
A. Douglas Carmichael (1977)

Students
Leonard J. De Roma, '75
John S. Hendricks, G

Committee on Copyrights and Patents

This Committee recommends to the administration policy guidelines for the processing of patents and copyrights. It also recommends policy for the licensing of such patents and copyrights. It takes the initial step in the determination of ownership of patents and copyrights when applications are submitted by the faculty and staff.

Albert G. Hill, Chairman (1975)

George H. Dummer*, Executive Secretary

Stuart H. Cowen*

Paul V. Cusick*

Arthur A. Smith, Jr.*

Melvin R. Jenney***

George C. Newton, Jr. (1975)

Daniel E. Dustin (1976)

Samuel A. Goldblith (1976)

Walter Wrigley (1976)

John Dugundji (1977)

George E. Valley (1977)

Eric A. Von Hippel (1977)

John S. Waugh (1977)

Community Service Fund Board

Established in 1968 by vote of the faculty, the Community Service Fund provides financial assistance to M.I.T. people who are engaged in volunteer community service and action projects. The Fund is managed by a Board of Trustees representing faculty, administration, students, Technology Matrons, Technology Wives, Lincoln Laboratory employees, trustees, and alumni. The Board performs two key functions: 1) solicits contributions from all members of the Institute community, and additional donations and grants from outside sources; and 2) reviews proposals by Institute groups for the use of funds on M.I.T. related community service projects.

Peter P. Gil, Cochairman (Faculty)

Gregory Smith, Cochairman (Corporation)

Joseph S. Collins, Secretary (Administration)

Carole Bertozzi (Alumna)

Benjamin Brettler (Alumnus)

John Elliott (Faculty)

Anthony P. French (Faculty)

Yvonne Gittens (Employee)

Artemis Gyftopoulos (Faculty Spouse)

Thomas Lynch (Employee)

John Mack (Administration)

Joanne Miller (Administration)

Rita Moore (Graduate Student Spouse)

John E. Newcomb, Jr. (Administration)

Jack I. Raffel (Lincoln Lab)

George B. Thomas, Jr. (Faculty)

Students

Jose Cisneros, '78

John Hendricks, G

Richard Knopf, G

Peter Kwon, '77

Virgil McCaleb, G

Farrell Peternal, '77

Endicott House Board of Governors

The Board of Governors of Endicott House was established in 1955. The duties of the Board include: to set policies that will maximize the use of this conference center, within prescribed bounds; to review and approve the operating budget; and to select and support the management of this facility. The Board also approves capital improvements to the property.

Philip A. Stoddard, Chairman (1977)

Wilbur B. Davenport, Jr. (1975)

Christina H. Jansen (1975)

T. William Lambe (1975)

Constantine B. Simonides (1975)

Mildred S. Dresselhaus (1976)

Ira Dyer (1976)

Vincent A. Fulmer (1976)

Richard M. Held (1976)

Paul M. Newberne (1976)

Edgar H. Schein (1976)

Paul V. Cusick (1977)

Henry W. Fitzpatrick (1977)

Associate Members

Bradford M. Endicott

Charles Howell

Russell Stearns

Equal Opportunity Committee

This Committee was established in 1970 to give support, coordination, and direction to the Institute's programs for equal employment and educational opportunity. The Committee advises the President and senior academic and administrative officers on matters pertaining to equal opportunity, reviewing existing programs and recommending new ones.

Albert G. Hill, Chairman

Patricia A. Garrison*

Mary P. Rowe*

Clarence G. Williams*

John M. Wynne*

Lawrence E. Beckley

Philippa Bovet

Lisa Broderick

Kenneth Donaghey

John J. Dunn

Willard R. Johnson

Jane H. Katayama

Evelyn Murray-Lenthall

Isadore M. Singer

Students

Michael J. Frankston, G

Philip G. Hampton, '76

Inez D. Hope, G

Lissa A. Martinez, '76

Jill Wittels, G

Committee on Foreign Scholarships

This Committee was established in 1964; its members conduct interviews with applicants for various international scholarships in October and November. The Committee then meets to evaluate and rate the applicants for the Fulbright-Hays Grants; to select two nominees for the Churchill Scholarship; and to nominate one principal candidate and an alternate for the DAAD Scholarship.

Sanborn C. Brown, Chairman

Robert L. Halfman*

Paula T. Kelly, Staff Assistant

Stanford Anderson (1975)

G.E. Nelson (1975)

John B. Southard (1975)

Ole S. Madsen (1976)

James W. Mark (1976)

Mary Lou Pardue (1976)

Student

Manoug M. Ansourian, G (1977)

Committee on the Hobby Shop

The Committee encourages and promotes the use of the Hobby Shop by students.

Benjamin L. Averbach, Chairman

Martin Diskin

Robert J. Holden

Donald A. Hurter, '46***

Maurice K. Smith

Students

Dennis W. Burke, '75

Irving Fischman, G

John Lee, '75

IAP Policy Committee

This Committee was established by faculty vote in 1971 to deal with policy matters and the continued evaluation of the Independent Activities Period, and to work closely with the Committee on Educational Policy in reviewing IAP within the context of the total academic program. It reports fully to the faculty at intervals of not more than four years.

Michael S. Feld, Chairman (1975)

Joel Orlen*

Roy E. Feldman (1975)

Michael W. Golay (1975)

Jean E. Jackson (1975)

Ian T. Young (1975)

Merton J. Kahne (1976)

Thomas Nutt (1976)

Margaret S. Richardson (1976)

Theodore Wood, Jr. (1976)

Students

Michael G. Kozinetz, '75

Cheryl Marceau, '76

John O. Roads, G

Committee on Laboratory Hazards

The Laboratory Hazards Committee was instituted to develop M.I.T. policy necessary to control the risks of potentially hazardous laboratory operations and exposures to harmful materials. Specific laboratory activities involving toxic chemical substances, hazardous biological materials, or exposures to physical agents are the Committee's chief concern.

Bernard S. Gould, Chairman

Richard I. Chamberlin, Secretary

Franklin D. Aldrich

John M. Fresina

John W. Irvine, Jr.

Harvey F. Lodish

Thomas Reed

Melvin H. Rodman

Charles N. Satterfield

William M. Siebert

Ain A. Sonin

Student

Philip Youderian, G

Medical Advisory Board

This Board serves as a communications link between the Medical Department and its users. Its objectives are to keep the M.I.T. community informed of the services available through the Medical Department, and to receive criticisms and suggestions for the modification or addition of services to meet the changing needs of the community.

Louis D. Smullin, Chairman (1976)

Laurence H. Bishoff*

Edward S. Rendall*

Albert O. Seeler*

Jane Green (1975)

Marguerite Heywood (1975)

Jan Jefferson (1975)

Thomas Lynch (1975)

Julia C. McLellan (1976)

Students

Janis Bestul, '76

Catherine A. Cornwell, G

Richard Goldhor, G

Peter Mancuso, '75

M.I.T. Press Editorial Board

The members and chairman of the Editorial Board are members of the Institute faculty. The director of the Press is an ex officio member; the Board holds monthly meetings. The Editorial Board is responsible for the imprint of the Press, and all projects for publication must have its approval. In addition to review of publishing proposals, the Editorial Board reviews and participates in the formulation of Press editorial policy, and provides guidance and support to the Press Acquisitions Department.

Hartley Rogers, Jr., Chairman (1977)
(Director, M.I.T. Press)*
Donald L.M. Blackmer (1975)
Peter Elias (1975)
Stanford O. Anderson (1976)
Morris Halle (1976)
Elting E. Morison (1976)
Daniel M. Holland (1977)
Walter S. Owen (1977)
John Ross (1977)

M.I.T. Press Management Board

The Management Board was initially established in 1972, to supply guidance on management and fiscal matters. Its role has evolved to that of a Board of Directors of the Press, within the Institute framework. The chairman of the Editorial Board and the director of the Press are ex officio members, and the Management Board is chaired by the Vice President, to whom the Press reports. The other Board members are M.I.T. faculty and staff and outside publishers. The Board ordinarily meets approximately four times a year, to review Press operations, to receive reports, and to consider strategy and policies for the Press's future.

Constantine B. Simonides* Chairman
(Director, M.I.T. Press)*
Hartley Rogers, Jr.* (1977)
Paul V. Cusick (1975)
John F. Rockart (1975)
W. Bradford Wiley*** (1975)
Michael L. Dertouzos (1976)
John M. Deutch (1977)
Richard B. Gladstone*** (1977)
Jack Schulman*** (1977)

M.I.T.-Wellesley Upward Bound Joint Steering Committee

This Committee, created in 1969 as a joint M.I.T. and Wellesley College faculty committee, is charged with overseeing the implementation of the Upward Bound Program, a coeducational, multi-racial, multi-ethnic educational program for Cambridge youth of high-school age. In this role, the Committee meets regularly to review program performance, and to insure that the Program's administration meets Federal Office of Education guidelines and delivers services in a manner consonant with the standards of excellence of both institutions.

M.I.T.

Frank S. Jones, Chairman
Suzanne Berger
Margaret L.A. MacVicar
Robert W. Mann
Louis Menand, III

Wellesley

Paul R. Barstow
Kathleen N. Conzen
Thomas J. Dimieri
Allen H. Schector
William R. Scott

M.I.T.-W.H.O.I. Joint Education Committee

The Committee is responsible for the academic program leading to the joint M.I.T.-Woods Hole Oceanographic Institution (W.H.O.I.) doctoral degree in oceanography. There are three faculty operating committees: one in biology, one in engineering, and one in physical, chemical, and geological oceanography.

Frank Press, M.I.T., Cochairman
Robert W. Morse, W.H.O.I., Cochairman

M.I.T.

Glenn A. Berchtold
Jule G. Charney
Wilbur B. Davenport, Jr.
Ira Dyer
Peter S. Eagleson
Harvey P. Greenspan
Boris Magasanik
Walter S. Owen
Herbert H. Richardson
Nevin S. Scrimshaw

W.H.O.I.

George Grive
Earl Hays
James Heirtzler
Derek Spencer
Valentine Worthington

Committee on Parking

Frederick J. McGarry, Chairman
James J. Fandel
Robert J. Holden
James Olivieri
O. Robert Simha
Philip A. Stoddard

Committee on Personnel Policy

This is an advisory committee on policy matters primarily involving nonacademic employment at M.I.T. The Committee functions through four subcommittees concerned with 1) protection of the rights of the individual employee, 2) the structure of work, 3) compensation and benefits, and 4) the organizational climate.

John M. Wynne* Chairman
James J. Fandel* Secretary
James J. Culliton*
Robert J. Davis*
Henry W. Fitzpatrick*
Joseph F. O'Connor*
Mary P. Rowe*
Clarence G. Williams*
Adam Yagodka*
Maureen Yagodka*
Robert A. Alberty (1975)
Douglass V. Brown (1975)
George H. Dummer (1975)
Natalie N. Nicholson (1975)
James D. Bruce (1976)
Paul V. Cusick (1976)
William R. Dickson (1976)
Merton J. Kahne (1976)
Philip A. Stoddard (1976)

Committee on Preprofessional Advising and Education

Established in 1971, this Committee is composed of members of the faculty, administration, and students. The Committee has three main objectives: to coordinate and extend preprofessional counseling for students; to keep the faculty informed of trends in student interest; and to promote closer ties with the professional schools to which M.I.T. students apply. It is assisted in these pursuits by two subcommittees, the Prelaw Advisory Council and the Premedical Advisory Council.

Alan Hein, Chairman
Carola B. Eisenberg
Bernard S. Gould
Susan Haigh Houpt
Stanley M. Jacks
Louis Menand, III
J. Daniel Nyhart
Walter A. Rosenblith
Stephen D. Senturia
Robert K. Weatherall
Student
Loren Dessonville, '75

Prelaw Advisory Council

This is a group of advisors specially selected on the basis of professional background and interest in legal education.

J. Daniel Nyhart, Chairman
Nicholas A. Ashford
Michael S. Baram
Leonard G. Buckle
Suzann Thomas Buckle
W. Dean Burnham (Sabbatical '74-'75)
William A. Davis, Jr.
Susan Haigh Houpt
Stanley M. Jacks
Paul L. Joskow
Jeffrey A. Meldman
Louis Menand, III
Jeffrey L. Pressman
Joseph F. Vittek, Jr.

Students

Anne L. Averbach, '77
Loren Dessonville, '75
David S. Lintz, '78

Premedical Advisory Council

This is a group of advisors specially selected on the basis of professional background and interests in medicine or medically related areas.

Bernard S. Gould, Chairman
Franklin D. Aldrich
George B. Benedek
Joseph H. Brenner
Melvin H. Chalfen
Murray Eden
Carola B. Eisenberg
Rochelle R. Friedman
Susan Haigh Houpt
John Homans
Frank S. Jones
H. Walter Jones, Jr.
Charles E. Kimble
Alfred J.R. Koumans
Robert S. Lees
Padmakar P. Lele
Robert W. Mann
Sanford A. Miller
Walle J.H. Nauta
Paul M. Newberne
Barbara L. O'Pray
Warren Point
Willard S. Putnam
Sanford M. Reder
Edward S. Rendall
Alexander Rich
Adrienne Rogers
Irwin W. Sizer
John B. Stanbury
H. Eugene Stanley
Jeffrey I. Steinfeld
Lisa A. Steiner
John G. Trump
Robert K. Weatherall
Michael S. Wiedman
Ian T. Young

Committee on Privacy

This Committee was established in 1971 by vote of the faculty. It examines the policies and procedures of the Institute concerning the collection, security, disclosure, and use of information, including that obtained for administrative purposes or in the course of behavioral research.

Arthur C. Smith, Chairman
Stuart D. McIntosh
Judith J. Thomson

Students

Richard McCarthy, '75
Alan W. Sparer, G

Committee on Radiation Exposure to Human Subjects

The responsibilities of this Committee, established in 1974, are to: 1) review for authorization applications involving ionizing radiation exposure to human subjects for research purposes, insofar as the proposed study applies to radiation exposure; 2) review for approval the procedures that will assure radiopharmaceutical quality of materials for human administration; 3) advise the Committee on the Use of Humans as Experimental Subjects relative to the radiation risk to research subjects; 4) conduct general surveillance of medical use of radiation, for adherence to regulations and license restrictions; and 5) insure compliance with AEC broad medical license conditions, including periodic reporting to the AEC.

Willard S. Putnam, Chairman (1978)
Francis X. Masse, Executive Secretary (1978)
Samuel Levin*
Gail A. Magenis*
Gordon L. Brownell (1976)
Maurice S. Fox (1976)
John B. Stanbury (1976)
Charles E. Holt, III (1978)

Committee on Radiation Protection

This Committee is responsible for the establishment and continuing review of an adequate radiation protection program at the Institute and at its off-campus sites. The Committee is also responsible for the Institute's compliance with radiation protection regulations promulgated by state, Federal, and local agencies.

Anthony J. Sinskey, Chairman (1976)
Samuel Levin, Secretary
Francis X. Masse
Frederick A. Frey (1975)
David N. Hume (1975)
Melvin H. Chalfen (1976)
Joel A. Huberman (1977)
John J. Hynes (1977)

Committee on Reactor Safeguard

The primary concern of this Committee is with matters of nuclear safety related to the M.I.T. Research Reactor, including the safety of personnel on and off site. The Committee reviews and approves prior to implementation all new operating plans and policies, all significant modifications thereto, and all new experiments involving significant changes in procedure. The Committee verifies that nuclear reactor operation is consistent with M.I.T. policy, rules, approved operating procedures, and license provisions.

Norman C. Rasmussen, Chairman
Melvin H. Chalfen*
Lincoln Clark, Jr.*
John M. Fresina*
Albert G. Hill*
Samuel Levin*
Harvey Brooks***
Constantine J. Maletskos***
John J. O'Connor***
Charles H. Dowding (1977)
Michael J. Driscoll (1977)
James W. Gosnell (1977)

Student

George Allen, G, Secretary

ROTC Committee

The function of the Committee, which was established in 1970, is to monitor the policy and operations of the office of ROTC Programs and to deal with all matters pertaining to ROTC.

Frederick J. McGarry, Chairman
Walter A. Rosenblith*
Jerome B. Wiesner*
James M. Austin
Sanborn C. Brown
Peter Büttner
John S. Kark
Louis Menand, III
Kevin J. O'Toole
Igor Paul
Harvey M. Sapolsky
Larry Schwartzman
Kenneth R. Wadleigh

Committee on Safety

The Safety Committee was established in 1962. This Committee is responsible for reviewing current practices with regard to general safety, and for formulating and implementing broad safety policies for the Institute. The Committee works closely with the Safety Office.

Philip A. Stoddard, Chairman (1975)
Richard I. Chamberlin*
John M. Fresina*
Stuart H. Cowen (1975)
Susan A. Lester (1975)
Lawrence Rosenson (1975)
Henry W. Fitzpatrick (1976)
Albert O. Seeler (1976)
J. Edward Vivian (1976)
Kenneth C. Browning (1977)
William R. Dickson (1977)
Jeffrey I. Steinfeld (1977)

Student

Stephen D. Umans, G

Student Activities Development Board

The Student Activities Development Board in its present form was established in 1970 to allocate funds to student and community activities for items of capital equipment and the expense involved in minor space changes. Applications for funds are solicited four times each year, usually in September, November, January, and March.

Murray Eden, Chairman
Robert J. Holden, Executive Secretary
Jon E. Hartshorne*
Kenneth Russell
Kimball Valentine, Jr.

Students

Michael Kozinetz, '75
Bruce McFadden, G
Robert E. Sacks, G
Steven Wallman, '75
Jack Van Woerkom, '75

Committee on the Use of Humans as Experimental Subjects

The Committee is responsible for reviewing every research project utilizing humans as research subjects, and for devising effective procedures to assure the adequate review of all protocols. Its principal role is advisory and educational, with the expectation that investigators will find it advantageous to make use of its advice and help.

Warren Point, Chairman
Emilio Bizzi
Richard E. Cutler
Roy E. Feldman
Howard Green
Robert J. Holden
H. Walter Jones
Francis X. Masse
Mary C. Potter
Willard S. Putnam
Paul H. Quinn
Vernon R. Young

Students

Carl Atkins, '75
Charlotte Fishman, G
Leslie Flatow, '75
Robert G. Reynolds, G

Committee on the Visual Arts

The Committee acts as an advisory body for all aspects of the visual environment and arts at M.I.T. Its work includes review of and advising on plans for exhibitions at Hayden Gallery, for public lectures, and for major visual arts events; and advising on acquisition policy for M.I.T. and on major acquisitions for the M.I.T. art collection.

Wayne V. Andersen, Chairman
Bruce K. MacDonald*
Walter A. Rosenblith*
Peter Spackman*
John Buttrick
Whitney Chadwick
Richard S. Eckaus
Albert R. Gurney, Jr.
David P. Hoult
Boris Magasanik
Bruce Mazlish
Jerome Rothenberg
Judith Wechsler

Wellesley-M.I.T. Joint Committee

The Committee monitors and coordinates the Wellesley-M.I.T. Exchange Program to ensure that it constitutes a meaningful diversification in the learning experience of the undergraduates of both schools.

Kenneth M. Hoffman, M.I.T., Cochairperson (1977)

Alice S. Ilchman, Wellesley, Cochairperson

M.I.T.

Walter A. Rosenblith*

Jerome B. Wiesner*

Mildred S. Dresselhaus (1975)

Anne Ellison (1975)

Jonathan W. Green (1975)

Joel Orlen (1975)

Jane Sauer (1975)

Alvin C. Kibel (1976)

Annamaria Torriani (1976)

Louis Menand, III (1977)

Students

Daniel H. Fylstra, '76

Mark E.J. Keough, '76

Mindy Tai, '75

Wellesley

Alona E. Evans

Miranda C. Marvin

Barbara W. Newell

Norton M. Rubenstein

Students

Anne N. Fougeron, '76

Gail D. Patrick, '76

Gwendolyn Zahner, '76

Adjunct Members

Elizabeth S. Blake

Nancy H. Kolodny

Dorothy B. Moeller

Marilyn J. Chohaney, '75

Committees Reporting to the Provost

Policy Committee of the Division for Study and Research in Education

The Policy Committee is the main governing body of the Division for Study and Research in Education. A major responsibility of the Policy Committee is faculty appointments and promotions. Recommendations from the Policy Committee are made by the director of the Division to the Provost for his consideration and recommendation to the Academic Council.

William T. Martin, Chairman

Walter A. Rosenblith*

Jerome B. Wiesner*

Lotte Bailyn

Susan Carey-Block

Wilbur B. Davenport, Jr.

Richard M. Held

Roy Kaplow

Seymour A. Papert

Hartley Rogers, Jr.

Donald A. Schon

Judah L. Schwartz

Benson R. Snyder

Committee on Operations Research

The Committee was established in 1953, and is made up of individuals from various academic departments who are either active in operations research or are users of its methodologies. The Committee provides interdepartmental coordination and liaison on matters related to the field, and furnishes guidance for the Operations Research Center.

John D.C. Little, Chairman

Alvin W. Drake

Aaron Fleisher

Ernst G. Frankel

Arnoldo C. Hax

Gordon M. Kaufman

Richard C. Larson

Philip M. Morse

Jeremy F. Shapiro

Thomas B. Sheridan

Robert W. Simpson

Students

John R. Hauser, G

John D. Schmitz, G

Committee on Radio Astronomy

The Committee acts as a vehicle for interdisciplinary discussion on planning for large radio telescopes.

Bernard F. Burke, Chairman

Alan H. Barrett

John V. Evans

M. Littleton Meeks

Gordon H. Pettengill

Irwin I. Shapiro

David H. Staelin

Henry J. Zimmermann

Committees Reporting to the Vice President for Research

Committee on the Center for Materials Science and Engineering

This Committee advises the director of the Center on matters of policy, and reviews past performance.

Nicholas J. Grant, Chairman

Albert G. Hill*

Robert A. Alberty

Raymond F. Baddour

Glenn A. Berchtold

Peter S. Eagleson

Herman Feshbach

Alfred A.H. Keil

Edward A. Mason

Rene H. Miller

Walter S. Owen

Paul L. Penfield, Jr.

Herbert H. Richardson

Committee on the Research Laboratory of Electronics

The Committee is available for consultation by the Laboratory directors on general questions of policy affecting RLE. Members include representatives of the administration and the heads of departments with major student and faculty participation in the research program.

Henry J. Zimmermann, Chairman

Robert A. Alberty

Wilbur B. Davenport, Jr.

Herman Feshbach

Harold J. Hanham

Albert G. Hill

Alfred A.H. Keil

John G. King

Edward A. Mason

Irwin W. Sizer

Special Committee Appointed by the Corporation

Corporation Joint Advisory Committee on Institute-wide Affairs

Established in March, 1969, by vote of the Corporation as a new special committee of the Corporation, its membership includes students, faculty members, and Corporation Members. Its purpose is to associate with the Corporation a broadly representative group at the Institute to which the Corporation can turn for consideration and advice on special Institute-wide matters requiring Corporation attention, such as the long-range planning of M.I.T.'s campus, the improvement of the institutional environment, and M.I.T.'s relations with Cambridge and metropolitan Boston. The Corporation Joint Advisory Committee provides an additional means for bringing representatives of the student body, both graduate and undergraduate, and of the faculty into regular communication with the Corporation on matters, not normally handled by either of these groups, which are of long-range importance to the entire Institute community. CJAC also serves to acquaint the M.I.T. community more fully with the role and work of the Corporation. CJAC does not in any way modify the role of the existing Corporation Visiting Committees.

Gregory Smith, Chairman

Robert D. Blake, Secretary

Spyridon Armenis*

Luis A. Ferré*

Elias P. Gyftopoulos*

Steven M. Wallman*

Bonnie J. Burratti (1975)

William A. Coolidge (1975)

John J. Hanzel (1975)

John Ross (1975)

Marya V. Sieminski (1975)

Robert A. Wasson (1975)

D. Reid Weedon, Jr. (1975)

Pamela T. Whitman (1975)

Clark K. Colton (1976)

Paul W. MacAvoy (1976)

Laurence Storch (1976)

Barbara Herman (1977)

Ascher H. Shapiro (1977)

Committee Reporting to the Chairman of the Corporation

Committee for Historical Collections

This Committee was established in 1971 to assemble photographic and other visual material illustrating the Institute's history. The occasion for the exhibit was the inauguration of President Jerome B. Wiesner. The Committee continues to expand its extensive collection of portraits, photographs, architectural theses, drawings, plans, models, instruments, inventions, patent models, and memorabilia bearing on M.I.T.'s history.

Richard M. Douglas, Chairman

Warren A. Seamans*

Miles P. Cowen

E. Neal Hartley

Howard W. Johnson

Philip A. Stoddard

Julius A. Stratton

Theatre and Shows

The Skin of Our Teeth* - A comedy by Thornton Wilder presented by the MIT Dramashop and directed by Joseph Everingham, Humanities. Fri & Sat, Feb 7 & 8, and Thurs-Sat, Feb 13-15, 8:30pm, Kresge. Tickets: \$2.50, reservations, x3-4720.

Auditions for 1776* - MIT Musical Theatre Guild's production of America's prize winning musical. Auditions for cast, orchestra and crew in Kresge rehearsal rooms. Feb 11-13, 7:30-10:30pm; Feb 16, 7:30-10:30pm, Feb 18 & 19, 7:30-10:30pm. Preference given to MIT community.

Dance

Balkan dancing - International: Sun, 7:30-11pm, Sala. **Balkan,** Tues, 8:30-11pm, Stu Ctr Rm 491. **Israeli:** Thurs, 7:30-11pm, Sala. **Noon dancing:** Fri, 12n-1:30pm, Kresge Oval in good weather otherwise Edg 7 Lobby. Learn & practice more difficult dances Fri, 1:30-3 or 7pm, Stu Ctr 491.

Beginner's Yoga** - Tues, 5:45pm, Rm 10-340. More advanced classes also available. Info: Ei Turchinetz, 862-2613.

Athletics

Home Schedule - Wednesday, February 5 - JV/F Hockey. Buckingham, Browne & Nichols, 3pm, ice rink. **JV/F, V Basketball.** Amherst, 6:15 & 8:15pm, Rockwell Cage. **V Hockey,** Tufts (host), 7pm ice rink. **V Swimming.** Amherst, 7pm, Alumni pool. **Thursday, February 6 - W Basketball.** Regis, 7:30pm, Rockwell Cage. **Saturday, February 8 - V&F Pistol.** Army, 9am, duPont pistol range. **V Fencing.** Baruch, Holy Cross, 1pm, duPont fencing rm. **V Squash.** Fordham, 2pm, duPont courts. **V Gymnastics.** Coast Guard, 1:30pm, duPont gym. **V Swimming.** Trinity, 2pm, Alumni pool. **JV Squash.** Colby, 2pm, duPont courts. **V Wrestling.** Williams, Bowdoin, 4:30pm, duPont wrestling rm. **W Fencing.** Rhode Island, 6pm, duPont fencing rm. **JV/F, V Basketball.** Clark, 6:15 & 8:15pm, Rockwell Cage. **V Hockey.** Trinity, 7pm, ice rink. **Monday, February 10 - F Squash.** Middlesex School, 3:30pm, Alumni pool courts. **Tuesday, February 11 - JV/F&V Fencing.** Harvard, 7pm, duPont fencing rm. **V Squash.** Bowdoin, 7pm, duPont squash courts. **Wednesday, February 12 - JV/F Hockey.** Thayer Academy (JV), 3pm, ice rink. **F "B" Basketball.** New Prep, 5:30pm, Rockwell Cage. **V Gymnastics.** Boston State, 7pm, duPont Gym. **V&F Squash.** Trinity, 7pm, duPont & Alumni pool courts. **Thursday, February 13 - Fencing.** Northeastern, 7pm, duPont fencing rm. **Friday, February 14 - V&F Squash.** Williams, 4pm, duPont & Alumni pool

courts. **W Basketball.** BU, 5:30pm, Rockwell Cage. **V Basketball.** Middlebury, 7:30pm, Rockwell Cage. **Rifle.** Northeastern, 7pm, duPont rifle range. **Saturday, February 15 - Pistol.** John Jay, Boston State, 9am, duPont pistol range. **W & V Fencing.** Trinity, 2pm, duPont fencing rm. **JV/F Fencing.** Concord High, 5pm, duPont fencing rm. **JV/F, V Basketball.** Gordon College, 6:15 & 8:15pm, Rockwell Cage. **V Hockey.** Assumption, 7pm, ice rink.

Women's Athletic Council* - Meetings 1st & 3rd Tues of each month, 7:30pm, duPont conference rm. Info: Mary Lou Sayles, director of women's athletics x3-4910.

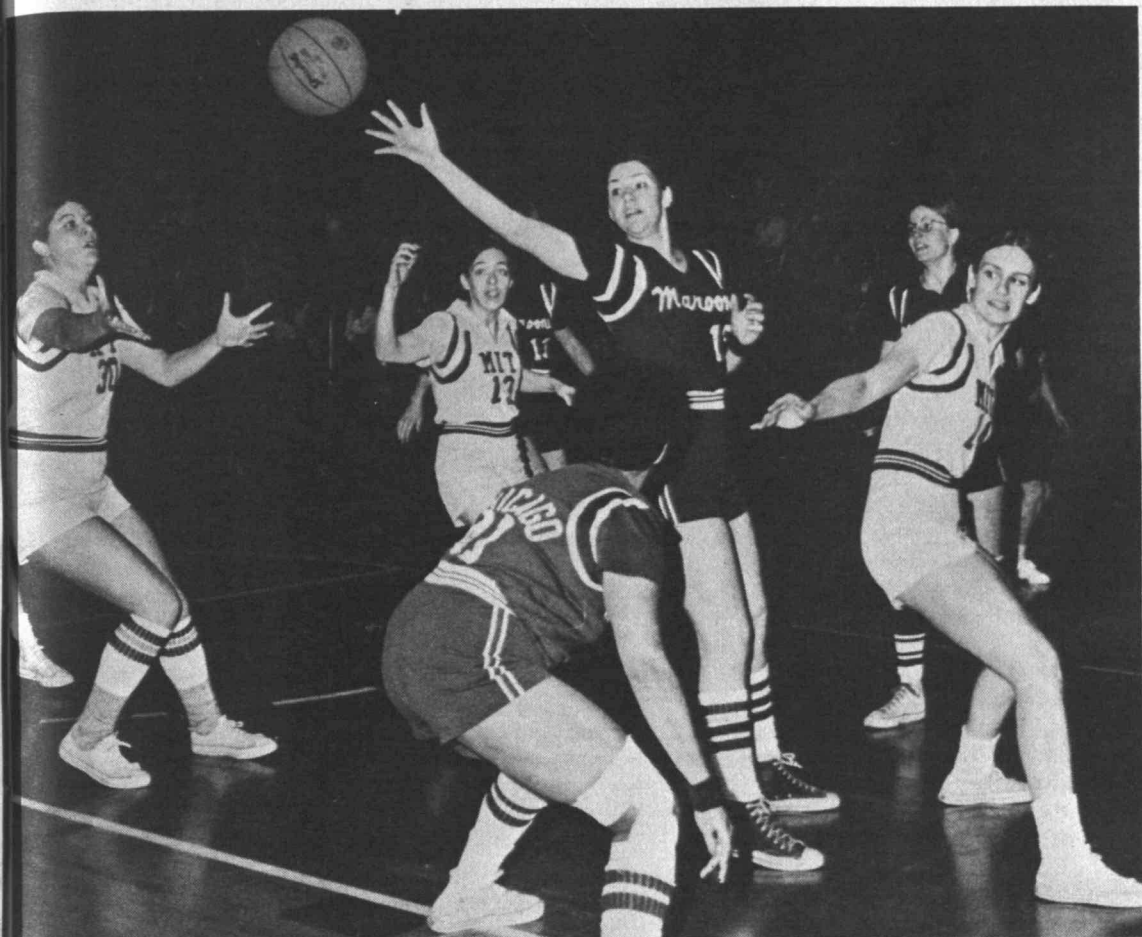
Freshmen are encouraged to attend departmental lectures and seminars. Even when these are highly technical they provide students one means to learn more about professional work in a department and field.

*Open to the public

**Open to the MIT community only

***Open to members only

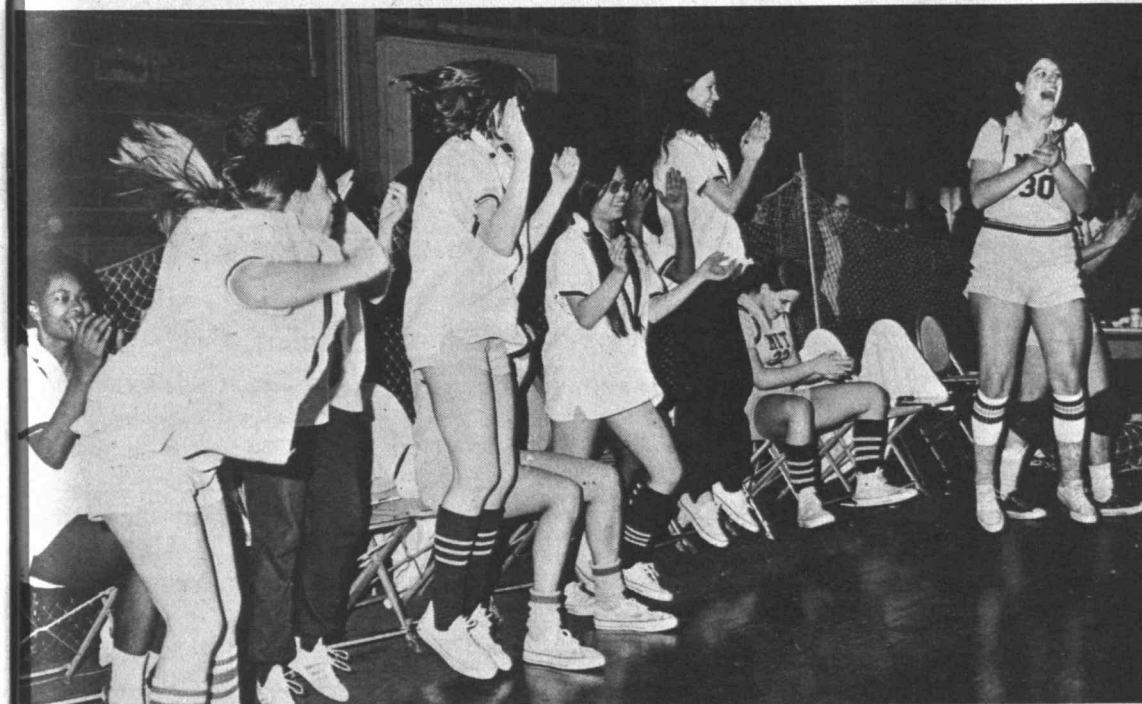
Send notices for February 12 through February 23 to the Calendar Editor, Room 5-111, Ext. 3-3279, before noon Friday, February 7.



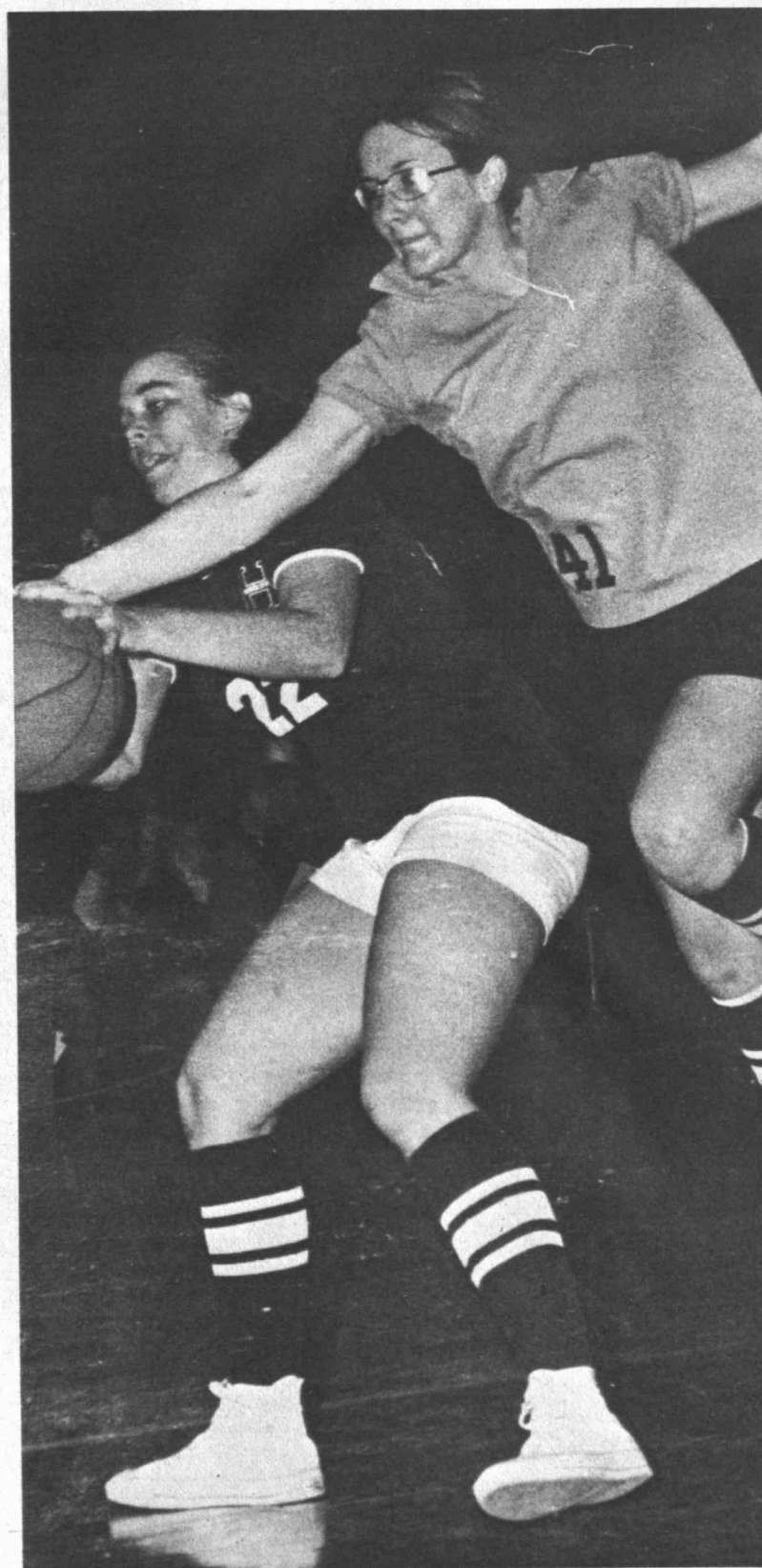
MIT's team emerged with a victory in the weekend Invitational Women's Basketball Tournament at Rockwell Cage in a hard-fought consolation game with University of Chicago. Top, Christine R. Tracey (No. 30) of Seattle, Wash., a junior, holds out hands for bounding ball in action against the Maroons of Chicago. Other MIT players are Maura Sullivan of Boston, a junior, at the center of picture, and Linda

R. Yester of Mt. Prospect, Ill., also a junior. Bottom, the MIT bench erupts with joy as the game ends in a 43-35 victory. In its opening game, MIT nearly upset favored Radcliffe before losing 41-38. In the finals, right, Brown University defeated Radcliffe, 67-37, to win the tournament. Brown's Karen Joyce (41) is shown battling for ball with Radcliffe's Jennie Guyton.

Photos by Calvin Campbell



Enthusiasm Pervades Women's Basketball



Griffith Urges Israel to Return Arab Territories for Security

The only way for Israel to safeguard itself from another Arab war is to give back territories taken in the 1967 war in exchange for security agreements, according to an MIT professor of political science writing in the February issue of *Reader's Digest* magazine.

Dr. William E. Griffith, Ford Professor of Political Science, senior research associate in the MIT Center for International Studies, professor of diplomatic history at the Fletcher School of Law and Diplomacy at Tufts University and a Roving Editor of

Reader's Digest, recently returned from a trip to the Middle East where Arab leaders, he said, warned they will use oil and money against the US if nothing is done to return the conquered areas.

Western nations, he said, ignored similar Arab warnings prior to the 1973 war and there is danger that will happen again.

"Influential elements in Congress and in the public at large favor all-out support for Israel, come what may," Dr. Griffith writes in his article. "They argue

that Israel must retain a substantial portion of the Arab lands as buffer zones to protect Israel from Arab attack. They could not be more wrong. If this is done, Israel will almost surely become embroiled in a fifth war with the Arabs. The only way for Israel to be safeguarded is for it to give up the territories in return for security guarantees.

"I am not proposing that the United States abandon Israel. On the contrary, America should be prepared to defend its brave ally with military force if need be. But

defending Israel's 1967 conquests is another matter. These include the Sinai Peninsula and Gaza Strip, which had been ruled by Egypt; the Golan Heights of Syria; and the West Bank of the River Jordan and East Jerusalem, which had been part of Jordan. For seven years one million Arabs in these territories have been living under Israeli military rule, denied self-determination. The Arab governments have every right to recover these lands, and Israel will never be secure until they do."

Edgerton Picture

A well-known photograph by Professor Harold E. Edgerton—a picture of a bullet emerging from an apple it has been fired through—is one of 400 prints in a photography exhibition, *Photography USA*, which is being circulated in Eastern European countries by the US Information Agency. A reproduction of Professor Edgerton's photo appears in a report on the show in the March, 1975, issue of *Popular Photography* magazine.



PREVIEW—John T. Fitch of MIT's Center for Advanced Engineering Study and Leslie Clift Hruby, center, director of placement at the Sloan School, watch as Gloria Gery of Aetna life & Casualty operates film editing machine at the Center. An Aetna grant of \$25,000 will fund a film, *Women's Work: Management*, which will be made at the Center. The proposal for the film was based on research done by Ms. Hruby.

Aetna to Subsidize Film On Women in Management

(Continued from page 1)

the world of the principal characters as they go about their daily lives. The film explores the field of management and shows women as they contribute to the success of their organizations, and as they relate effectively to the people around them.

The film also discusses the feasibility of having both career and family, examines myths, stereotypes and women's self-image, and illustrates the exciting and challenging opportunities that await women in management.

The original proposal for "Women's Work: Management" was based on the research of Ms. Leslie Clift Hruby, director of placement and assistant to the dean at the school.

Filmmakers for the production are Christine Dall and Niti Sallo-way of the MIT Center for Advanced Engineering Studies.

The film is the second in a series of motivational guidance films developed for women by MIT. The first film, now near completion, is entitled "Women's Work: Engineering."

The film will be distributed as a

Gintis to Speak

Dr. Herbert Gintis, assistant professor of economics at Harvard, will speak at MIT Thursday, Feb. 6, in Rm. 9-150.

Dr. Gintis will deliver the sixth lecture in a series sponsored by the Technology and Culture Seminar on *Merit and Equality in a Just Society*. His subject will be *Some Societal Implications of American Education and Meritocracy*. The lecture will begin at 4pm.

AAPT Elects

Janet Guernsey

Professor Janet Guernsey, professor of physics and chairman of the physics department at Wellesley College, was installed Feb. 1 as president of the American Association of Physics Teachers. Professor Guernsey received the PhD degree in physics from MIT in 1955.

public service by both Aetna and MIT. Aetna, which makes dozens of public service films a year available to schools and interested parties, will use its established network. MIT's distribution will be channeled through its Educational Council.

Obituaries

Julia E. Bradley

Julia E. Bradley, 91, of Belmont, who formerly worked in Food Services in Walker Memorial dining room, died Friday, Jan. 17. Mrs. Bradley, who had worked at the Institute from 1928-1948, is survived by two daughters; Mrs. Grace K. Sullivan of Belmont and Rita J. Barrett of Brighton, six grandchildren and two great-grandchildren.

Harold D. Cain

Harold D. Cain, 54, of Somerville, who was on long term disability as a custodian in Physical Plant, died on Thursday, Jan. 23. Mr. Cain had worked at the Institute from 1967-1972. He leaves his wife, Mary; a daughter, Mary L. Casserly and son, Harold T., both of Somerville; his mother Lucy H. Cain of Stoneham, two brothers and a sister.

Louis Monticelli

Louis Monticelli, 70, of Revere, who retired in 1960 as a carpenter in Physical Plant in 1960, died on Wednesday, Jan. 15. Mr. Monticelli had worked at the Institute for 24 years.

With no known relatives in this country, funeral arrangements for Mr. Monticelli are still incomplete.

Lawrence E. Shelvey

Lawrence A. Shelvey, 71, of Littleton, who retired as a mail clerk in 1971, died Tuesday, Jan. 21. Mr. Shelvey had worked at the Institute for 27 years. He leaves his wife, Alice; two daughters, Mrs. Thomas E. Hurley and Virginia Shelvey, both of Littleton; two sons, Lawrence of Lowell and Thomas E. of Westwood and nine grandchildren.

MIT to Conduct Design Study On Citycorp Solar Energy Project

(Continued from page 1)

their support to the study.

The study, to determine if solar energy can economically operate a dehumidifier in an air-conditioning unit and save conventional fuels, will be carried out on the privately owned Citicorp Center being constructed at Lexington Avenue and 53rd Street in mid-Mahattan.

Specifically, the MIT researchers will seek to provide a technical and economic evaluation of solar energy dehumidification systems when used on a large scale in an urban environment.

They will also estimate the impact of such systems, if widely used, on utility operations. This aspect of the project is of particular significance to Con Edison. The utility participated financially and technically in an earlier preliminary feasibility study on the concept. Con Edison's future involvement will include providing utility system input data for the study.

The researchers also will try to provide the operational data and analysis necessary for applying the system to existing and proposed structures.

After completion of the design study, a proposal will be made for a full scale experiment at Citicorp Center.

The MIT study will be headed by Dr. Leon R. Glicksman of the Energy Laboratory and Department of Mechanical Engineering as principal investigator and Dr. James W. Meyer of the Laboratory as project manager.

The MIT Energy Laboratory was established in 1972 as a focal point for energy-related research at the Institute. The Energy

Laboratory staff will work closely with faculty and students in the Departments of Mechanical Engineering and Electrical Engineering.

The grant to MIT made under NSF's RANN (Research Applied to National Needs) program, will help researchers get data to compare the performance of a conventional air-conditioning unit with that of a conventional unit augmented by a chemical dehumidifier that is regenerated by heat from a solar collector and energy storage system.

Both types of units will be installed in the building.

A conventional air conditioning system dehumidifies incoming air by chilling it, often to temperatures below that desired in the occupied space. The chilled air then has to be reheated. Energy thus is needed not only to chill the air for removal of moisture, but also for re-heating.

The project at Citicorp Center is based on a technique of removing moisture from the incoming air at or near the outside temperature by passing the air through a spray of concentrated liquid which strongly absorbs water. The dilute liquid can then be dried and reconcentrated by heating it to temperatures readily available from solar energy collectors. Components already developed and available will be used.

By using this system for dehumidification, significant chilling and reheat energies are saved. In addition, the regeneration energy that is required is obtained from the sun.

Preliminary studies of the system envision a full-scale experiment on Citicorp Center with regeneration accomplished using

heat from a solar collector mounted on the south-facing 45-degree sloping roof of the building.

Flat plate collectors with a total area up to 20,000 square feet—almost one-half acre—will be mounted on the roof. A large water storage system will be provided in a mechanical space near the roof.

The solar system—providing side-by-side comparison with the conventional system—will take care of much of the dehumidification energy requirements for the upper 25 floors.

Preliminary studies indicate that the solar dehumidification system will achieve a five percent air conditioning energy savings for the building with a solar collector area which is small in relation to the total building surface area.

Surplus solar heat can be used to supplement the heating of hot water for the building.

The research team's work in the next six months will be concentrated on an analysis of solar dehumidification, selection of a final design for the system and on obtaining cost estimates from potential contractors for construction of the system. The following six months will be used to develop the operating plan for the experiment.

The MIT researchers, in their proposal, said the project "offers a timely and unique opportunity to perform a critical experiment on the economic utilization of solar energy."

Because actual savings will be determined, and capital costs will be known, the anticipated benefits for other similar installations can be readily ascertained, the researchers said.

CLASSIFIED ADS

Lo mileage E78x14, 2, tubeless VW stud snows, \$30 or best. Call, 272-7186, aft 5pm.

HP 35 scientific pckt calc, carrying case & recharger, used, make offer, also wl rent \$1/dy, \$5/wk, \$20/mo. Jake, x3-6996, lve msg.

Hcky skates, sz 9 & 10, \$8/ea. Call, 926-1685, evgs.

Wstghse elec frypan, works fine, \$8; bird cage, \$4. Ed, x8-4373 Draper.

"Plastic peanuts", free; twm bed sheets, used, \$2.50/pr. Helen, x3-7690.

Texas Instr SR-50, b nw w/wrnty & access, \$110. Paul, 266-4796.

Zenith 23" b&w TV, \$90. Ken, x3-4426.

Pr m ski boots, sz 9, slightly used, \$7; trunk ski rack for full sz Amer car, conv type, holds skis across car, \$15. Genevieve, x3-4703.

Stereo equip & calculators at lowest prices in Bos. Paul, 284-6456, aft 6pm.

ADC XLM stereo crtrdg w/nw stylus, exc cond, \$25. Bob, x252 Linc.

Aria stl string guitar, almost nw, \$65 nego; m sz 11 downhill ski boots, \$5. Elaine, x3-1344, 11am-3pm.

Texas Inst SR-50, 3 mos, 8-9 mos left on wrnty, \$135. x9341 Dorm, kp try.

Celtics vs. Knicks tckt, 1, \$6.50 midcourt seat, Sun, Mar 23, 3pm. John, x0625 Dorm, aft 7pm.

Extended range spkr, University Ldspkr, Inc, mdl 6200, pine cab, 23x13x32", \$25 or best. Call, 862-0178.

Sofa, old, worn but comfy, 76", \$10; lg tbl lamp, gold & wht, \$5; dark wint finish buffet & china cab, \$20/ea; stu couch, \$5; handcrafted wht pine winerack, \$8. Jim, x3-4840.

Radio compass, SCR-269-F, compl \$95; MN-26 rcvr only; CW-3 rcvr w/coils; misc WWII radio gear. Call, 484-7798, evgs.

Do you see any energy being wasted???? Do something about it yourself, or dial E N C O N.

CCM hcky skates, sz 8, exc cond, \$20. Jan, 266-2968.

AR XA trntbl, gd cond. x3-2270.

Snorkel parks, v gd cond, \$25; m figure skates, sz 9, nw, \$15. Margie, x8-1811 Draper.

Sears fully adj exercycle, sturdy mdl, \$35. Call, 731-8948.

Compl Volvo 122S svrc manual, \$15 edition, best. x8-1193 Draper.

Almost nw Melita 6 cup coffee maker; backyard ice rink, 15x30', nvr used. Bill, x8-4048 Draper.

Garrard 40B trntbl w/crtrdg, \$20 or best. Call, 661-1482, evgs.

Mtl skis, bndgs & boots, gd cond, best over \$25. Jose, x9284 Dorm.

Victor adding mach w/paper tape printout, adds 7 columns & totals 8, \$15. x140 Linc.

Unused k sz matt, \$50; red k sz sprd, \$20; 6 V VW radio, spkr, antenna, \$12; '63 VW rear bmpr, free. Steve, x3-2554.

Nw GE Superblow hrdrly w/r attach, sep tbl mdl motor, nw on market; curling iron w/3 sz heads to attach; GE clock radio w/lited dial, snooze alarm, wake music or alarm; all best. Ann, x3-2168.

Honeywell Pentax H-1A w/55mm f2, \$80; 60mm f2.8 macro lens, \$80; Pentax bellows & 35mm bellows lens, \$40; 200mm f4.5, \$30; elec flash, ltmtr, fltrs, etc. Steve, x0607 Dorm, aft 6.

Penthouse & Playboy mags, gd cond. Paul, x8-1357 Draper.

Port SCM elec typwrtr, prac nw, \$75. x497 Linc.

Cloth coat w/mink collar; Canadian natural beaver long jckt; both exc cond, sz 12. Betty, x3-5513.

Pr mint cond Bose 501 spkr sys, \$175 or best over. Ron, 232-3258. lve msg.

Miranda Sensomat, 50 mm f1.8, 28mm f2.8, 2x converter, lens hoods & cases, flash bracket, fltrs fit either lens, 2 skylite, 85, 85B, +3 & +10 closeup, polarizer, \$250. Bill Moberg, x3-1860.

Lambda pwr supplies: 8.5-14 VDC/GA, \$30; 14-24 VDC/7A, \$40; 48 VDC/SA, \$40; all 3 for \$90; Tektronix 567, best over \$90. x8488 Dorm.

Sears vaporizer; Sears stud 8.25x14 snows; auto tow bar. x3-7756.

Old Leitz microscope, \$75. Dick, 924-4378, evgs.

Pr Marantz 4G spkrs; Dynaco AF-6 tuner; SCA 80Q amp; almost nw Dacor scuba tank w/backpack; Heath 1G-18A signal gen & VTVM. Doug White, x0382 Dorm.

Soabar tbl mdl labeling machine, selfstick labels, \$300; AB Dick 525 stencil machine, flr mdl, \$500. Sandy, x3-6610.

Qn matt & box spr, \$10; tel chr, \$5; sm armchr, \$15; Swedish sofa & chr, \$50; hideabed sofa, \$50. Nichols, x314 Linc.

Sierra Design glacier tent, used once, \$140; Amana 6000 BTU AC, exc cond, \$60. Richard Feinstein, x3-1791.

Hart 190 cm skis, \$75; Look-Nevada bndgs. Dennis, x9877 Dorm, aft 5pm.

Japanese 12 string guitar, x3-3273.

Rondetti concert accordion, nw reeds, exc cond, \$300. Jeff, 354-5420.

Hoover broiler oven, 1k nw, \$15; Judson magneto, \$10. Neil, 965-0967.

Phone-mate mdl T400, nvr used, reas. Don, x7478 Linc.

Asst girls toys; Regina fl polisher & rug shampooer, \$20; Strollee baby carriage/stroller, exc cond, orig \$65, ask \$45. x8-4095 Draper.

Sony TC-350 tape deck, 3 hds, s-ons, \$100+; seas old AC, rm sz, \$40; BSR changer trntbl, under \$50; Lambda power supplies, 5 V, etc, wire-wrap panels; nego. x0553 Dorm, evgs.

Bell cycle helmet, sz 7 3/8, \$6; astronomical telescope, \$35; Bear hunting bow, \$35; pellet gun, \$18; .44 cal brass, \$.04. R. Hopper, x3-6909.

Recent Kiev immigrant has nw Russian stereo rcrds to sell, \$3.50/ea. Yefim, 782-2159, spk slowly!

Tbl w/6 chrs, \$75. Lloyd, x3-2215.

Rival can opener, \$4; Lady Sunbeam hrdry, upright, \$10; Lady Schick mist elec curlers, \$10; 2 stud snows, 6.95x14. Carol, x3-7462.

Exc dining tbl & chrs, \$50; 7.35x14 tire, \$10; VW 4 hole whl, \$3. Call, 547-4560.

Mahog sidebrd, beaut, \$60; full sz desk, \$20. Capers, x3-5334.

Sears radials, 4, LR78x14, 36K wrnty, used 2 mos, less 1.5K on tires, \$175/all, firm. Jim, x8-4373 Draper.

Have Lee's Stat Theory of Communication, w/ trade for Box & Jenkin's Time Series Analysis. Brad, x3-1639.

Slide rule calculator, Rockwell 28 fctn, \$70. Steve, x8-4133 Draper.

Sears Kenmore deluxe port washer & dryer, exc cond, 2 yrs, gold, cost \$400, \$250/pr. Dr. O'Pray, x3-5485.

Port space htr w/thermostat control; pr boy sz 7 skates. Vyas, 494-0380, evgs.

Snows, 2, 5.60x14. Ivan, x3-7324.

Qn sz matt & box sp, \$40; dresser, \$10 & \$20. Henry, x3-6220.

Ski rack, fit sm & lg cars, \$10; chaise lge, \$15; Ampex bkshlf spkrs, \$15; Harmony guitar w/nw strings, \$15; yr old xtra firm matt, \$25; 8' L bksc, \$30. Joan, x3-6229.

TV, 19" b&w; Air King humidifier; carpet; chests drwrs; armchrs. Guido, x3-3356.

Hoover apt sz washer; Proctor Silex port dryer; Bell & Howell super 8 movie camera; best. Bill, x366 Linc.

Chiorda 10 spd racer, Kryptonite lock, carriers, 4 mos, best. Bill, 868-8895.

Snows for sm cars, mtd, w/hubcaps, almost nw, \$35. x0316 Dorm.

Vehicles

'31 Mdl A Ford coupe, eng compl rebld, chassis & all running gear restored, nds some body work, runs, \$950. George Whittinghill, 262-5090, lve msg.

'65 Ghia VW gd mech cond plus gas htr, \$300 firm; '67 Porsche eng, 0 miles rebld, mdl 912, 4 cyl, \$600. x5780 Linc.

'66 Chevelle Malibu, 4 dr, auto, p st, radio, 6 cyl eng, 70 K, v gd cond, lvg cntry, \$450 or best. Mario, x3-6853.

'67 Ford Cntry Sq wgn, many miles but many new parts, gd tires incl snows, \$250. Dave, x7806 Linc.

'67 Ford wgn, many nw parts, some minor body damage, runs well, \$175 or best. x3-3221.

'68 Buick Skylark, 71 K, gd cond, 6 cyl, p st, nw muff, snows, \$600. Pinhas Fuchs, x3-3045.

'68 Olds Cutlass, 350 V8, 77K, auto, p st, snows, hvy duty trlr hitch, v gd cond, \$900 or best. x8-1347 Draper.

'68 Ply Satellite, 318, 4 dr, 75 K, p st, auto, recently tuned & winterized, exc run cond, \$575 or best. Call, 494-9219.

'69 Fiat 850 cpe, std, only 36 K, gd gas mileage, exc eng, radials, radio, sky blu, exc cond, except restored damaged body, best. Patrick, 864-9518.

'71 Pontiac Ventura, 6 cyl, 2 dr, auto, nw snows, \$1,200. Janice, x8-4184 Draper.

'72 Maverick, 2 dr, 6 cyl, auto, vinyl roof, p st, radio, nw brakes, shocks & tires, 19 mpg, \$1,500. x7616 Linc.

'72 Merc Cougar, fully equip, ac, p st & br, amfm stereo, radials, nw snows. Saed, 787-4752.

'72 Mustang, fac ac, wide oval tires, vinyl top, exc cond, best. Call, 469-9290.

'72 Fiat 124 wgn, 33 K, just tuned, gd cond, must sell, \$900 or best. Call, 492-2960.

'73 Honda Civic, 4 spd, 10 K, immaculate cond, amfm, radials, htd rear wndw, rustproofing, over 30 mpg/town, \$2,295. Call, 335-3260.

'74 Toyota Celica GT, 5 spd, amfm radio, many xtras, 24 K, \$3,300. Gary, x7180 Linc.

Housing

Bos, sub 3 rm apt nr Kenmore Sq, avail immed. Call, 734-0648.

Bkline 11 rm Victorian hse, totally restored incl nw K, beaut decorated, nr shops & T, \$62,900. Call, 734-7345.

Camb, mod B & K, ac, dishwash & disp, ww, free pkg, sub or lse, \$250. Barb, x3-7792.

Camb, 3 rm apt, eat-in K, lg LR, BR, B, dishwash, Camb St, approx mi to MIT, sub immed, \$200 incl util & elec. Dana, x3-6822.

Lex, lg furn rm, priv B, htd, pkg, qt area. Call, 862-5213, aft 5pm.

Rm in priv residence avail immed, nr Cent Sq, walking distance MIT, share B, linen provided, foreign stu especially welcome, \$90. Call, 864-3929, aft 5pm.

Animals

Bay thoroughbred 5 yr old gelding 15'3" hands, even disposition but not for beginner, nds gd home, best. Lillie Ferris, x3-5610.

AKC reg Grmn shep pups. Joyce, x3-7163.

Have afghan m, 2 yrs, AKC, for stud. x8-3844 Draper.

Blk & wht kittens, 2 m, f, 10 wks, free. Kate, x3-3364.

Nd foster home for 2 cats until Sept. 1 gldn, "Raisinbread", other pearl gray, generous ownr wl provide upkeep expenses. Sharon, x196-342 EDC.

Lost and Found

Lost: Approx 1/29, sm brn plaid scarf. Conrad, x3-5965.

Lost: Brass medallion, 2" diam. Alan, x3-5648.

Lost: prbly Bldg 16, 56 or 18, red notebook, "Radiation Protection Office, Records of Radiation Surveys", \$10 reward for rtn. S. Levin, Rm 20B-238, x3-2180.

Found: 1/27, 5pm, front Bldg 54, film strip, about 12 frames, appear to be pics of graphs. Karen, x0586 Dorm, evgs.

Found: '75 appt book, claim in Rm 39-430. x3-4105.

Wanted

Brazilian f, 20, Eng lit major in Brazil looking for Amer fam to stay w/approx 3 mos to practice spoken Eng, wl pay expenses & do lite hsework. Ricardo, x3-4163.

Girl fig skates, sz 5 1/2-6. x8-1185 Draper.

Tckts to any Bruins game, 2 or 3, unobstructed view, pls, wl pay well. Marilyn, x3-6302.

Used fm stereo tuner, cheap. Paul, x9365 Dorm, lve msg.

Nd blu denim scraps, worn jeans, etc. Greg, 492-6983.

Used Lionel trains & access. Jerry, x8-1271 Draper.

Hesitators, cpl w/or w/at child to hse-sit in spac suburb home nr T, 20 min MIT, 2/14-3/1. Dr. Koumans, x3-2916.

File cab w/locks, 4 drwr. Phil, 491-4243.

Fonts of type for stu activity letterpress, donations pref. Len or ZOK, x3-3788.

Sm port vac clnr. Charles, x3-5069, lve msg.

Refrig, cheap, working, not SO₂. Sue, x8405 Dorm.

Used knitting machines. Call, 648-6309.

Baby strap-on ice skates; Fisher Price farm & music box-rerd player; Creative Playthings indoor gym. Paul, x3-6405.

Australian prof, wife, 2 chldrn, visiting EDC-SSP for 3 mos, nd furn 2 BR lodging nr 2/28. Karen Cohen or Toby Schenider, x196-0 EDC.

LR draperies for Westgate BR apt. x3-6893.

Roommates

Camb, f rmmate to share w/2, own rm, 10 min walk MIT, LR, K, DR, B, v cln & nice, \$40 + util. Betsy, x3-6603.

Rmmate for 4 rm Tang apt, avail 3/1, own rm, \$126. Andy, x3-3248.

Rm in 3 BR apt nr Clvnd Crcl, 2 min from T, drive to MIT daily, \$91.33 incl ht. Paul or Stan, x3-5900.

Bel, semi-furn duplex, share w/2 m grads, own BR, 1 1/2 B, K w/d&d, DR, frpl LR, bsmt w/Indry, driveway pkg, fenced yard, Fresh Pond, blk T, avail nr 3/1, \$123 + util. Call, 484-2510, evgs.

Carpools

Someone to join our carpool from Pawtucket-Attleboro area, 7:30am-5pm, share driving. Carolyn, x3-6796.

Ride nded Cent Sq Mon aft 6:30pm, Thurs aft 5:30pm, to Concord or vcty, share exp. x356 Linc.

Nd ride btwn Union Sq area (Allston) & MIT, hrs 9-5, M-F, wl share exp. Lisa, x3-4400.

Miscellaneous

Exper typing, theses, manu, reports. Jeanne, 492-0522, evgs.

Scientific illustrations, graphs, etc, reas rates, competent. Barry, 876-7756, kp try.

Certified, skilled tchr of Eng wl help foreign stu & visitors to speak & write better Eng. Call, 489-0570.

French lessons, any level. Call, 494-8423, 5-7pm.

Tech typist wl type theses, reports, manuals, reas. Ruth, x8-4101 Draper.

Stu architects seeking part-time design &/or construction work. x3-7830.

Wl type papers, theses, reports, also edit for grammar, spelling, vocab, \$.75/pg. Cynthia, x3-7126.

Xtra typing, \$1/pg. Nancy, x3-6651.

Drafting, mech design, detailing, pc layout & taping, reas. Alex or Randy, x3-7273.

Hardwd floors sanded & finished prof. Christine, x3-2742.

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, 10-211, 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.

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

Employees at the Institute should continue to contact their Personnel

Officers to apply for positions for which they feel they qualify.

Dick Higham 3-4278
Pat Williams 3-1594
Claudia Liebesny 3-1595
(secretary - Dixie Chin)

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)

Admin. Staff, Asst. Accounting Officer for Student Loans, in Comptroller's Acctg. Office will assist in collection of student loans through personal interviews, correspondence with borrowers; maintain control of data for computerized loan system; act as liaison with computer operations; assist in preparation of management and government accounting reports, BS in accounting or business management, ability to exercise tact, judgment, accounting experience necessary. Previous account collection experience helpful. A75-8 (2/5).

Admin. Staff, Asst. Programming Coordinator, Office of Administrative Information Systems will review program specifications, assist in control of program schedules, develop program standards, assist in staff education relating to new concepts, act as technical liaison for new systems development; design and write programs; perform other related functions as required. Experience with PL/1, COBOL and BAL required. A75-7 (2/5).

DSR Staff, Programmer, in Project MAC Automatic Programming Group to work on the construction of a system to convert English descriptions of management information systems into PL/1 programs; refine syntax for expressing intermediate levels of system description; implement software for translation; determine and implement criteria for optimizing PL/1 program output. Knowledge of LISP 1.5 language, mgt. inf. systems implementation techniques and mathematics related to optimizing configurations in a stochastic environment required. Position begins 6/1/75. D75-20 (2/5).

DSR Staff, Programmer, in Clinical Decision Making Group, Project MAC, will supervise construction and clinical testing of computer system to advise physicians regarding the administration of digitalis. Familiarity with pharmacokinetics of digitalis and its clinical administration, general medical knowledge including cardiovascular physiology, thorough knowledge of LISP 1.5 and ITS operating system required. D75-19 (2/5).

DSR Staff, Programmer, in Project MAC will design and implement multi-variate Laurent and Pousieux series expansion system and combinatorial simplification routines. Several years of experience in programming of symbolic manipulation algorithms, LISP and ITS experience, BS and/or MS, Math. required. D75-18 (2/5).

Technical Assistant, Acad. Staff, in Nutrition and Food Science will perform specialized and routine chemical analyses on body fluids; operate and maintain mass spectrometer, Beckman automated amino acid analyzer; assist in new methodology development; occasionally supervise other lab personnel. BS, chemistry, biology or medical technology and minimum 2 years experience in clinical chemistry required. C75-4 (2/5).

DSR Staff, Senior Research Engineer, Energy Lab, will perform research functions in Magnetohydrodynamics Test Facility including the design of high temperature electrode insular test modules; fabrication of ceramic compositions by sintering, melting, flame spraying; design diagnostic equipment for measurements in MHD test channel. Will assist graduate students with experiments; write technical progress reports. Ph.D. in Ceramics, 5 yrs. experience in high temperature materials technology and testing, familiarity with materials test and characterization equipment (SEM, Micro-probe, Instron, etc.) required. D75-15 (1/29).

DSR Staff in Sloan School System Dynamics Group will assemble, organize and maintain computer files and develop command procedures for the execution of the national economic model. Bachelor's degree (Math., Eng., or Science), strong interest in both economic and system dynamics, minimum 1 year programming experience required. D75-17 (1/29).

Tech. Asst., Acad. Staff, in Biology will carry out experiments in immunology and protein chemistry; operate automated amino acid analyzer; other techniques include gel electrophoresis, column chromatography, peptide fractionation, radioactive labeling. BS in Biology or Biochemistry, experience in some of the above techniques, prior laboratory experience required. C75-3 (1/29).

Tech. Asst., Acad. Staff, in Biology will culture animal cells, maintain small culture facility, prepare culture medi-

um, assist with biochemical, autoradiographic and electron microscopic experiments; may do some independent experimentation on DNA replication and chromosome structure. Chemistry or Biology undergraduate major, facility with quantitative thinking and skill in lab techniques required. Some related graduate work helpful. Position begins mid March, 1975. C75-2 (1/29).

DSR Staff, Tech. Asst., in Center for Cancer Research will carry out experiments in area of animal cell tissue culture. Biology or Chemistry background, Bachelor's degree required. Experience in cell culture and/or biochemistry desirable. D75-11 (1/29).

DSR Staff in Arteriosclerosis Center will have responsibility for maintaining fiscal records for grants shared between Institute and Mass. Gen'l Hosp.; process payroll, personnel and purchasing actions; assist in Federal and other grant proposal preparation; act as liaison with MGH. Strong accounting background, experience in grant administration, familiarity with MIT and/or MGH accounting, personnel functions required. D75-14 (1/29).

DSR Staff-Temporary for the Joint Center for Urban Studies will supervise the work of graduate research assistants working on topics related to public sector relations in Boston; Ph.D. or work toward advanced degrees required. Experience with research on municipal employee labor relations, and as a supervisor important. Job duration, approximately 6 months. 74-1126-A (9/11).

DSR Staff, Electrical Engineer, in National Magnet Lab, will perform daily operation of Low Field Lab; maintain sensitive magnetic detectors and display equipment, design and construct new equipment, perform human body measurements. Laboratory-oriented person with knowledge of low-frequency electronics, and experience with magnetics and cryogenics is desirable. Candidates should be able to work with hospital patients and to do occasional evening and weekend work. 40hr/wk. D75-7 (1/22).

DSR Staff, Biophysicist, in National Magnet Lab will supervise day-to-day operation of Low Field Lab where magnetic fields produced by the human body are measured, perform specific lab measurements, design lab equipment. Experience with low-frequency electronics, magnetics, heart and lung physiology required. Must be available for occasional evening and weekend work. 40 hr/wk. D75-8 (1/22).

Tech. Asst., Acad. Staff, in Nutrition and Food Science will carry out growth molds suspected of producing toxic chemicals; extract broth, concentrate extracts for chemists and toxicologists. BS in Biology, familiarity and/or experience in above areas required. 40 hr/wk. C75-1 (1/22).

Administrative Staff, Assistant Auditor will develop audit programs and questionnaires, perform audits, supervise staff, write and present reports. Two years of diversified experience in public accounting or internal auditing required. Degree preferred. 74-1365-R (1/6).

Admin. Staff, Systems Programmer, in Programming Development Office will work on IBM 370/145, with DOS, providing support to the application programming group and some user interface. Applicants should be familiar with IBM operating systems and assembler language. Experience with PL/1 and CICS desirable. A75-3 (1/22).

Admin. Staff in Sloan School System Dynamics Group will have responsibility for organizing and coordinating liaison with outside professional and financial sponsors for major multisponsored project dealing with socio-economic change in US. 5-10 yrs. senior-level public policy background in long-term national and/or global issues (i.e., resources, energy, food, economic growth). Extensive writing, public speaking required. Knowledge of and/or willingness to learn system dynamics methodology and application to national and world issues essential. Grant/contract management experience desirable. A75-4 (1/22).

Admin. Staff, part-time, Employee Instructor in the Office of Personnel Development, will be responsible for teaching MIT employees typing and Gregg shorthand. Ability to teach in other areas desirable (GED, technical typing, English as a second language). Must provide own transportation between MIT campus and Lincoln Lab, Lexington, MA 2 days per week. Will teach minimum of 11 classroom hours per week, participate in 3-hr weekly departmental staff meeting. Skills teaching experience, preferably with adults, required. Familiarity with evaluation procedures, BA or M Ed. desirable. 20 hrs/wk. A75-2 (1/15).

(Continued on page 10)

Positions Available

(Continued from page 9)

DSR Staff or Exempt, Programmer in the Artificial Intelligence Lab will design, maintain and document new computational environments for children for computer-oriented education research project. Such environments include computer simulation of physical and biological phenomena, computer graphics, music, art. Familiarity with LISP, LOGO, PDP-10, PDP-11 assembly language, experience in designing similar environments and in teaching desirable. 74-1495-A (1/8).

Administrative Staff Sr. Consultant Trainer, in Office of Personnel Development will have responsibility for planning, design and follow-up services related to training workshops, organization development; perform professional, management and support tasks as a participating team member. Must be knowledgeable and experienced in organization development, career development, adult education, process-oriented group work with adults, and applied social science survey research. Applicants will present 1-2 hour training activity, including written proposal and report, for staff evaluation. Report, proposal and process documentation writing skill, Master's degree in behavioral science plus minimum of 50 hours small group facilitation experience required. Knowledge of MIT/academic institutions helpful. A75-1 (1/8).

DSR Staff in Joint Center for Urban Studies will be principal researcher on development of computer-based manpower information system for construction industry, labor unions, MBA, 2 years experience in industrial labor relations, working knowledge of construction industry, and ability to supervise program development and operational system required. 74-1484-R (1/8).

DSR Staff in Energy Lab will be involved in developmental work with coal gasification projects. Prior experience in development and related technological processes of coal gasification: computer simulation, construction of pilot equipment with minimal technical assistance and financial resources, data gathering, work with students inexperienced in research activities, and ability to meet project deadlines required. Advanced degree in Chem. Eng. is also necessary. 74-1428-A (12/11).

Subcontract Administrator, Assistant Director in Office of Sponsored Programs will work with project personnel in negotiating complex subcontracts; prepare Requests for Bids; review quotations; arrange for preaudit of proposed costs and negotiation of terms and conditions; will also monitor active awards. Bachelor's degree in Business Administration or equivalent combination of education and experience, subcontracting experience in government agency or university environment, knowledge of procurement regulations of government agencies required. 74-1403-R (11/27).

Administrative Staff-Director of the MIT Press: Full responsibility for publishing program and operations of large university press. Direction of Acquisitions, editorial, design, production, marketing and business activities. Program includes over a hundred books and several journals. Annual sales, about \$2.5 million. Substantial and varied experience in the overall management of a publishing house required, preference for experience in scientific and technological publications. 74-1397-R (11/20).

Administrative Staff, EDP Internal Auditor, will perform EDP auditing, reviews of system, post audit of computer system; develop audit programs, questionnaires; write and present reports. Bachelor's degree in business administration, accounting major, or equivalent combination of education and experience, graduate work in computer science and experience in computer systems analysis and programming required. 74-1366-R (11/6).

DSR Staff in Artificial Intelligence Lab will be responsible for maintenance and repair of PDP-11/45 computer and its peripheral equipment, debug software problems, recognize and correct hardware faults. Some PDP 11/45 programming and equipment experience required and the ability to work effectively with students. 74-1306-A (10/23).

DSR Optical Physicist will conceive, design and execute experiments in nonlinear optics. Candidates should have several years' experience in innovative, experimental research including work in high-power, solid state lasers from near ultraviolet to near infrared, and knowledge of nonlinear, optical materials. Ph.D. required. 74-1318-R (10/23).

DSR Staff Experimental Optical Physicist, in Research Laboratory of Elec-

tronics will identify, formulate and implement key experiments on communications in low visibility atmospheres, develop general experimental capability in and formulate new directions for optical communications research. Ph.D. in Engineering or physics required. 74-1301-A (10/23).

DSR Staff, Programmer in the Laboratory for Nuclear Science will maintain and develop computer-based acquisition system comprised of large mini-computer (PDP-11/45). Comac instrumentation and in-house electronics. EE or Physics degree, or equivalent required. Experience in systems development on mini-computer preferred. Work sites include MIT, BNL, Fermi Nat'l Lab. 74-1183-R (9/25).

DSR Staff at the National Magnet Laboratory will work on the Alcator thermonuclear experiment. Conceive, design, and carry out plasma diagnostic experiments using neutron, X-ray, optical, electrical, magnetic and microanalysis and assessment of data. Ph.D. in plasma physics or related area required; familiarity with tokamak devices desirable. 74-1136-A (9/11). 74-1512-A (1/8).

DSR Staff-Physical Chemist in the Research Laboratory of Electronics must be experienced in molecular beam techniques and surface science to conduct experiments on semiconductors and related materials. Ph.D. in Physical Chemistry required. 74-1110-A (9/4).

DSR Staff in Energy Laboratory will design, build, and operate large scale heat transfer apparatus. Graduate degree in heat transfer; extensive experience in designing, instrumenting, and conducting laboratory tests in heat transfer experiments with a minimum of supervision required. 74-858-A (7/31).

DSR Staff in the Energy Lab must have minimum of 5 yrs experience in defining, securing, organizing and supervising research in heat transfer related to energy production and utilization. Familiarity with MIT; experience in supervising student theses research and staff; Ph.D. in Mechanical Engineering required. 74-359-A (5/1).

Administrative Assistant, Exempt, in Civil Engineering Student Information Office will have responsibility for operation of office, including implementation of academic policy decisions, maintenance of student records and statistics, coordination and editing of catalog copy, counseling of students regarding academic policy, acting as recording secretary for departmental committees. Knowledge of MIT policies and procedures, ability to operate independently, organization and office management skills required. Bachelor's degree preferred. E75-1 (1/22).

Engineering Assistant, Exempt, in Center for Space Research, will design and construct advanced electromechanical apparatus for sensory stimulation and response recording; operate mini-computers for data analysis and display, use standard and special amplifiers, oscilloscopes, tape recorders and other electrical test equipment. Thorough knowledge of theory and application of electrical instrumentation relevant to Lab's biomedical research required. 40 hr/wk. E75-2 (1/22).

Engineering Assistant, Exempt, in the National Magnet Laboratory will set up experiments and take measurements of magnetic fields produced by humans and animals. Will work with hospital medical groups. Experience in biomedical research; strong experience in low frequency electronics; knowledge of magnetics and cryogenics required. Flexible schedule necessary for occasional evening or weekend work. 74-1033-R (8/28).

Area Food Supervisor, Exempt, in Food Service will be responsible for the unit serving areas; flow of food and utensils during meal periods; portion controls, sanitation. Will train and supervise pantry employees. Technical knowledge of food production; ability to work under pressure, irregular hours and weekends required. 74-835-A, 74-836-A (7/24).

Tech. Asst. V, temporary, in Psychology will assist in the design and implementation of psycholinguistics experiments on perception and production of speech sounds; analyze experimental data, schedule subjects; may provide some related clerical assistance. Background in psycholinguistics research, including lab work with tape recording equipment, experience in experiments with human subjects and statistical analysis of data required. 40 hr/wk. Position runs 2/1/75-6/30/75. B75-55 (2/5).

Secretary IV To Director of Purchasing and furniture buyer: type correspondence, meeting notes from handwritten draft and machine dictation; coordinate travel and schedules; maintain files; handle heavy telephone contact, supervise clerk-typist. Typing and machine dictation skills, poise under pressure, ability to establish priorities required. B76-56 (2/5).

Secretary IV in Resource Development will handle varied secretarial duties:

type error-free correspondence, arrange meetings, maintain schedules. Organization, typing skills, pleasant telephone manner. College and/or secretarial school training plus 2 years secretarial experience required. B75-37 (1/25).

Secretary IV-V to the Assistant to the Provost will perform general secretarial duties: type reports, maintain special project files, handle special funding requests, set up meetings, appointments, reconcile special accounts. Typing skill (IBM Executive) required. 40 hr/wk. B75-44 (1/29).

Secretary IV to faculty and staff in International Management area of Sloan School will assist in preparing materials for course work: type, order books, films; arrange for guest speakers, travel, meetings, conferences; maintain course and student records. Excellent typing, shorthand or speedwriting, command of English and organization skill required. Two years experience desirable. B75-40 (1/29).

Secretary IV to Director, Development Office, will handle general office duties including large volume of error-free typing, plan and lay-out typed materials, arrange appointments and schedule, operated IBM Magnetic Card II typewriter (will be trained). Excellent typing, editing, proofreading, organization skills required. Shorthand helpful. B75-26 (1/22).

Secretary IV to two seismology professors and staff in Earth and Planetary Science will perform various secretarial and administrative duties: type and edit manuscripts, compose correspondence, arrange travel and meetings, handle purchasing and accounting. Position offers opportunity to develop administrative skills. Excellent typing, editing skills, command of English language, technical typing ability (or willingness to learn), ability to work independently, and with frequent interruptions required. B75-31 (1/22).

Secretary IV to new research group in Center for Policy Alternatives working with programs related to industrial and social applications of technology in foreign countries: compose short memos and letters, type formal proposals, arrange travel and meetings. Excellent typing and shorthand required; 3 years business or international experience, facility with Spanish and/or Portuguese, Bachelor's degree desirable. B75-5 (1/15).

Secretary IV in Physical Plant, Superintendent's Office will provide secretarial services for Support Services Group; type correspondence and reports, answer phones, handle general inquiries. Ability to work with minimum supervision and excellent typing required. Shorthand or speedwriting desirable. 74-1363-R (11/6).

Secretary IV in Mechanical Engineering will perform secretarial duties for several faculty members; handle correspondence, appointments, travel and coffee seminars, some accounting. High school graduate or equivalent, secretarial school training or relevant experience required. Shorthand or ability to use dictation equipment is necessary. 74-1485-R (1/8).

Secretary III, part-time, in Libraries will perform standard secretarial duties: type correspondence, reports and manuals; assist in compilation of statistics and flow charts. Good typing skill required. Temporary position through 6/30/75; 20 hrs/wk, flexible schedule. 74-1510 (1/8).

Secretary IV in Aeronautics and Astronautics will perform general secretarial duties: type technical reports, proposals and correspondence. Excellent typing skill required. Technical typing ability preferred. 74-1507-R (1/8).

Secretary IV in Earth and Planetary Sciences will perform secretarial and administrative duties for several oceanography faculty under supervision of administrative assistant: prepare payroll, compose correspondence, arrange travel and appointments. Strong secretarial skills, ability to work independently, and technical typing required. MIT experience helpful. 74-1491-R (1/8).

Secretary IV in Energy Lab research staff members and administrative assistant. Will type reports and manuscripts, including technical material, check and verify monthly statements, occasionally assist other secretary. Technical typing ability, ease with figures and ability to establish priorities required. Familiarity with MIT procedures preferred. 74-1384-A (11/20).

Secretary IV will handle standard secretarial duties for a group of Mechanical Engineering professors. Schedule travel, appointments, seminars; type correspondence, monitor accounts; secretarial training or experience, shorthand/dictaphone, technical typing skills required. Ability to communicate and to deal with students and staff important. This position is available for "job-sharing." 74-951-R (8/14).

Secretary III-IV in Artificial Intelligence Lab will handle secretarial duties for faculty member and assistant:

compose memos and letters, type proposals and manuscripts; assist group secretary in publication typing and maintenance of group library; perform other standard office duties. Accurate typing, editing skills, willingness to learn computer editing and to work with frequent interruptions required. B75-53 (2/5).

Secretary III-IV in Housing and Food Services will evaluate and answer telephone and visitor inquiries regarding student housing, type varied materials from tapes and drafts; maintain files, arrange appointments; perform related duties as required. High school training and one year secretarial experience or secretarial school, good typing skill required. Must be able to relate well to public. Shorthand helpful. B75-32 (1/22).

Secretary III, part-time, temp., to Director and other faculty members in Technology Studies Program, School of Humanities. Soc. Sc. will type, arrange meetings, xerox, assist other secretaries as required. Typing skill, ability to determine priorities independently required. Temp. through 5/30/75. 1-5pm, M-F. B75-42 (1/29).

Secretary III in Department of Materials Science and Engineering will assist senior secretary in secretarial duties for two faculty members and graduate students. Type technical and statistical reports and correspondence from drafts and dictation equipment, do library research, schedule travel, fill reprint requests. Excellent typing ability and willingness to work irregular schedule required. Familiarity with MIT procedures helpful. B75-21 (1/22).

Secretary III in Civil Engineering will provide secretarial services for faculty and research group: type reports, proposals, correspondence, answer phones, handle inquiries. Excellent typing skill, accuracy and proofreading ability required. Familiarity with dictation equipment helpful. B75-13 (1/15).

Secretary III in Medical Department will transcribe case histories, routine correspondence, prepare mailings, file, assist with other secretarial duties in a variety of areas; provide support of other secretaries during vacation, illness and heavy work load. Typing skill, flexibility to work in several areas, ability to transcribe medical terminology (or willingness to learn), previous work experience required. 74-1509-R (1/8).

Library Gen. Asst. III, temporary, part-time, in Rotch Library will type and process materials for course reserves; provide occasional assistance at circulation desk; other related duties as required. May do some evening work. Fast, accurate typing, ability for detail required. 11 week position; 15 hrs/wk. B75-51 (2/5).

Library Gen. Asst. III in Libraries Catalogue Dept. will type master catalogue entry on OCLC 100 terminal; perform clerical aspects of reclassification, cataloguing, and other library functions. High school graduate, or equivalent, with some college or business school training, typing skill, capacity for detail required. Library experience helpful. B75-54 (2/5).

Library Gen. Asst. III in Barker Engineering Library will assist in acquisition of materials, check reference sources for bibliographic information, process and augment cataloguing MIT reports and monographic serials; will also type biweekly library bulletin in publication form; perform related duties as required. Bibliographic knowledge or training, library experience desirable. Good typing, organization skills required. B75-45 (1/29).

Sr. Keypunch Operator III in Alumni Assn. will keypunch and key verify alumni address and gift data. Two years keypunch experience, familiarity with 029 or 129 IBM keypunch required. B75-48 (2/5).

Senior Clerk IV in Comptrollers Acctg. Office will tabulate expenditures and cash flow for sponsored research projects; assist in financial data collection and report preparation; maintain daily cash balance, type statistical and other reports and correspondence as required. Accounting/bookkeeping background, interest in and aptitude for figures, typing skill required. Business school, or equivalent, plus one year's experience necessary. B75-34 (1/29).

Technical Typist III in Chemical Engineering will type reports, manuscripts, proposals from rough drafts and with use of word-processing equipment. Excellent typing, organization and grammatical skill, technical typing (or willingness to learn) necessary. Work will be coordinated by secretarial supervisor. Possible job-sharing opportunity. B75-38 (1/29).

Sr. Clerk IV in Medical Department will coordinate all input and output data for departmental information system, acquire all source material, distribute final reports; monitor and edit all phases of data processing; may handle light secretarial duties, as needed. Experience with data processing systems, accuracy with detail, and

some college training required. Key-punch experience desirable. B75-3 (1/15).

Sr. Clerk IV Order Processing at MIT Press will handle all phases of order process through use of Flexowriter (for computer input), including cash receipts, information updates, mailing list changes, deletions, cancellations, price quotations; assist customers with telephone inquiries and orders; make arrangements for special orders. Good typing skill required. Must be willing to learn all phases of coding and be able to work under pressure. B75-1 (1/15).

Acctg. Clerk III-IV in Center for Space Research will process payrolls, travel vouchers; reconcile accounts; perform related clerical duties. Familiarity with MIT accounting, payroll procedures desirable. Typing skill required. B75-49 (2/5).

Sr. Clerk III in National Magnet Lab will type various correspondence and forms; process invoices for payment; prepare monthly budget reports; operate adding machine; answer phones; perform related duties as required. High school graduate, or equivalent, typing skill, office experience necessary. B75-50 (2/5).

Messenger-Clerk II in Arteriosclerosis Center will perform varied duties including xeroxing, filing, maintaining office and lab supplies, delivery of materials between Center and off-campus locations. B75-36 (1/29).

Dishwasher, Part-Time, Voucher, will wash laboratory glassware and put away when dried; clean laboratory counters and shelves. 6-10 hrs/wk. F75-1 (2/5).

Tea Host(ess) II, part-time, temporary, in Earth and Planetary Science will make and serve refreshments at daily social hour for faculty, staff and students; keep kitchen clean, supplies on hand. A courteous, reliable individual is required. Academic year only (5/31/75), 1pm-5pm, 20 hr/wk. B75-39 (1/29).

Emergency Medical Service Asst., hrly, in Campus Patrol will accompany ambulance on emergencies, drive, have responsibility for ambulance equipment and supplies, perform other related duties. Emergency Medical certification, 3 yrs. directly related experience, Mass. drivers license, and ability to work flexible hours required. 40 hr/wk. H75-8 (1/15).

Reactor Operator IV in Nuclear Engineering will serve as shift operator on the MIT Reactor after passing AEC Operator's Examination. Monitor operation of a 5MW reactor; assist with various technical tasks; maintain logs and check sheets. 3-4 years experience in the nuclear field will be necessary for preparing for operator's licensing. Knowledge of electronic circuits helpful. Ability to work under pressure of emergencies important. 40 hour work week. B75-43 (1/29).

Tech A (E-M) for the Radioactivity Center will assist in laboratory, research or analytical work; operate technical experimental apparatus. Maintain electronic equipment associated with controlled low-background facility, breath radon, thoron equipment. Troubleshoot nuclear pulse instrumentation, construct, wire, perform routine tasks, associated with measurement of subjects and administration of laboratory. Strong background in pulse and digital circuits; experience in use of oscilloscopes and test instruments required. 74-922-R (12/18).

2nd Class Engineer must have a Mass. second class engineer's license or higher. Individual must be willing to work on any shift. 74-182-R (11/24).

3rd Class Engineer at the Power Plant may work any and all shifts and do all kinds of work, consistent with self-sufficiency of the Plant. Mass. Third Class Stationary Engineer's license or a license of a higher grade required. Experience on high pressure boilers, oil and gas fired with automatic combustion controls, turbine driven auxiliaries; AC and DC generation, switchboard, and fed water control required. Some experience on turbine-drive equipment is desirable. 74-422-A (5/29).

The following positions have been FILLED since the last issue of *Tech Talk*:

B75-9	Secretary III-IV
74-1454-R	Secretary III
B75-12	Sr. Clerk III
B75-22	Secretary IV
74-1174-R	Secretary III
B75-10	Secretary IV
H75-7	Lab Asst.
B75-35	Secretary III
B75-27	Nurses Aide
B75-2	Sr. Clerk IV
74-1504-R	Lib. Asst./Sec. III
B75-7	Secretary IV
B75-33	Secretary IV
B75-29	Clerk III
B75-30	Clerk III
74-1488	Messenger II
B75-20	Accts. Pyble Clk II-III

The following positions are on HOLD pending final decision:
B75-35 Secretary III
B75-11 Comp. Op. IV

INSTITUTE NOTICES

Announcements

Official Notice—Grade reports for January IAP will be mailed to the term addresses on Fri, Feb 7.

March 1975 Examination Period—Petitions for postponed final and advanced standing examinations must be returned by Fri, Feb 14, to Schedules Office, Rm E19-338.

Preprofessional Meetings—Important meeting for medical school applicants Mon, Feb 10, 4pm, Rm 3-370. Group meeting with Dr. David Scotch, assistant dean, New York University Medical School, on Fri, Feb 14, 12n, Rm 3-133. Preprofessional Advising & Education office, Rm 10-186, x3-4158.

Tickets Available—Tickets for Boston Ballet, Feb 6-16 performances at the National Theater (\$7-\$1) and the Cantata Singers Wed, Feb 12 performance at the Sanders Theatre (\$5-\$2) available now at TCA office, 11am-3pm, Stu Ctr Rm 450, x3-4885.

Discount Tickets—For BSO Wed, Feb 26 open rehearsal are available at TCA office, 11am-3pm, Stu Ctr Rm 450, x3-4885.

Teach With Us—MIT Educational Studies Program is looking for people to teach classes to high school students on Sat at MIT. For an application or info, please call x3-4882.

English For Foreign Students & Employees—Sponsored by Foreign Languages and Literature. Three levels of spoken English (beginning Wed, Feb 5, 7pm, Rm 24-114) and in writing and vocabulary (beginning Thurs, Feb 6, 7pm, Rm 24-114). No pre-registration necessary. Info, x3-3925.

Matrons' English Conversation Classes—Designed for wives of foreign students and visiting faculty. Classes for beginners, intermediate and advanced groups. Tues & Thurs, 9-11am. Fee: \$20, child care available for \$5. Registration: Thurs, Feb 6, 10am-12n, Rm 10-340.

MIT Family Day Care Program—Provides licensed in-home child care for children of MIT affiliates. This is the only Institute program which offers supervised care for infants and toddlers. Care is available on a part or full-time basis. If interested in quality care or in becoming a day care provider, call Child Care Office, x3-3953.

Technology Childrens' Center, Inc.—The Day Care Center has an immediate opening for child 3-5, preferably girl. Openings also anticipated June, 1975. Financial assistance available for those who qualify. Interested parents should contact the Child Care Office, Rm 4-144, x3-1592.

Basic Pistol Marksmanship Course—First class Thurs, Feb 13, 6:30pm, duPont Pistol Range, continuing for 5 weeks. Fee: \$5 for materials. Enrollment: first 20 adults. Register: Tom McLennan, x3-3296 or Andy Platais, x8-1417 Draper. Contact Andy Platais if interested in any small bore rifle activity.

New Subject Listings

6.792 Special Topics in the Solid State and Its Applications: Optical and Infrared Detection

Prereq: none
Year: G (2)
3-0-9

Theory and applications of detectors in the infrared and visible wavelength regions. Ideal photon detectors, photon noise and photon statistics. Incoherent detection and limitations of background and amplifier noise. Coherent or heterodyne detection and the antenna and mixing theorems. Definition and calculation of detector sensitivities. Spectral response, sensitivity and bandwidth of vacuum photodiodes, photomultipliers, semiconductor photodiodes and photoconductors. Excess noise mechanisms. Limitations due to atmospheric effects. Applications to communications, radar, passive thermal detection, astronomical spectroscopy and interferometry, and pollution monitoring. General info: Prof. D.J. Epstein, Rm 13-3012, x3-4676. Details on subject content: R.H. Kingston, x672 Linc. M-W, 2-3:30pm, Rm 13-5101.

16.354 Design and Evaluation of Human/Engineering Systems (A)

Prereq: 16.30 or equivalent
Year: G (2)
3-0-9

An introduction to the design and evaluation of engineering systems in which the human plays an important role. Capabilities and limitations of the human in the systems context: sensory and motor processes, information processing, and environmental effects. Design methodology including the task allocation between man and machine. Design evaluation with an emphasis on experimentation using human subjects: basics of experimental design; objective, system-related performance measures; subjective evaluation by semantic differential, successive category, and other psychological scaling techniques. An understanding of elementary probability theory is assumed. Subject matter presented so that students from all departments will find the material both interesting and useful. First meeting Wed, Feb 5, 2pm, Rm 33-319.

16.381 Lasers and Optics For Applications II (A)

Prereq: 16.381
Year: G (2)
3-0-9
Propagation of light in a vacuum, dielectrics conductors, plasmas and anisotropic crystals. Polarization. Reflection and transmission at boundaries. Interference diffraction, temporal and spatial coherence. Fourier transform properties of lenses. Holography and holographic interferometry. Resonant and non-resonant interaction of radiation with atoms and molecules. Spontaneous and stimulated emission. Conditions for laser oscillation. Rate equations. Homogeneous and inhomogeneous gain media. Laser resonators. Single frequency selection. Frequency stabilization and tuning. Optics of laser beams. Survey of gas, liquid, solid and semi-conductor lasers. Design of tunable single frequency dye lasers. Q-switching, mode locking harmonic generation and mixing. Brief discussion of important laser applications. Tues & Thurs, 11am-12:30pm, Rm 36-372. S. Ezekiel.

16.383 Topics in Laser Instrumentation (A)

Prereq: 8.03
Year: G (2)
3-0-9
Review of basic principles of laser operation. Coherence and optical properties of laser radiation. Detailed examination of laser application in displacement, velocity and vibration sensing. Holographic methods for non-destructive testing of materials and structures. Holographic and Moire surface contouring schemes. Introduction to coherent optical data processing. Laser spectroscopic methods utilizing resonant and non-resonant interactions. Raman and Brillouin scattering. Doppler-free spectroscopy employing molecular beams, saturation and two-photon methods. Application to ultra-high resolution spectroscopy, environmental sensing and isotope separation. Tues & Thurs, 9:30-11am, Rm 36-372. S. Ezekiel.

21.902 Special Topics in Interdisciplinary Studies: Writing and Television, Words and Images I

Prereq: none
Year: U, G
3-3-3

Deals with the presentation and illumination of written material, both documentary and imaginative, through combinations of visual images. The possibilities and limitations of the video production as a complement to the written word will be delineated by visiting instructors from the Visible Language Workshop (Cooper, Cumming, Green, Kaye and MacNeil). The students will investigate these issues experimentally by translating both published authors' writings and their own into video productions, utilizing a variety of image sources (stationary and animated artwork, static and dynamic images recorded directly in and out of the studio, for example), and their production, presentation, and discussion will be the major business of the course. Students will develop documentary television techniques by recording the activities of the class itself, and will be encouraged to take their skills into the field to record such writing-related events as readings by professional authors. Mon 2pm, Rm 9-350. Enrollment limited.

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 unless otherwise specified in the listing. Undergraduates are also urged to check with the UROP bulletin board in the main corridor of the Institute.

Call for Proposals

Undergraduates seeking funding support for research they are undertaking this semester are now welcome to prepare proposals and to submit them to UROP

through the department of their faculty supervisor. Materials and supplies requests are welcome at any time during the semester. Wages-related requests should be submitted immediately. There are three types.

In the first type, a faculty member is willing to underwrite the full wages of a UROP student. UROP approval of this proposal will mean that the usual Institute indirect cost levy of approximately 66% will not be applied to wages paid to the student. This will be a savings to the faculty member. UROP will not limit the rate, or amount, of pay a student receives.

The second type of wages request is where a faculty member indicates he will underwrite a part of a student's wages, and the request is that UROP supply the rest. Such awards are limited to \$2.50/hour, up to a maximum semester amount of \$375. UROP approval of this proposal will mean that the 66% indirect cost levy will not be applied to the faculty member's share of the wages. It is our hope that this savings will be given to the student, thus reducing the amount UROP must supply. By this means, UROP funds can be extended to more students and to expanding the summer program.

The third form of wages request is when the full amount is asked from UROP. These proposals are treated as special cases and will be negotiated on an individual basis.

Responses will be made to both materials and supplies and wages requests on a first-come, first-served basis.

Evaluations are Due!

UROP participants are hereby reminded that their letters of evaluation for fall term are anxiously awaited. It is our informal policy to hold up on requests for financial awards if the proposers' evaluations are not in. (And we are known for our long memory.)

Department of Electrical Engineering and Computer Science

The seminar on data-flow computer architecture will introduce the concepts of data-flow programming languages and examine the structure of computer architectures to take advantage of the parallelism achievable in the data-flow representation. Other architectures will then be examined and contrasted with architectures based on the data-flow model. The emphasis will be on involving the participants in projects related to data-flow languages, architectures, and experimental microprocessor implementations of the architectures. There are no formal prerequisites but some familiarity with computer hardware and software is assumed, and the completion of 6.032 is recommended. Credit. The seminar will be held Tues. and Thurs., 4-5pm, beginning Feb. 6th in Rm NE43-512A. Professor Jack B. Dennis.

Undergraduate Research Conference

The 29th Annual Eastern Colleges Science Conference will be held at Widener College during the period April 3-5, 1975. The ECSC has provided a forum for the presentation of undergraduate research papers since 1947, and many institutions have served as host since that time. Undergraduates from all colleges in the eastern US are eligible to participate, and faculty members are encouraged to accompany students to the Conference, as well as to participate in all Conference activities. It should be noted that presentation of a paper is not a prerequisite for attendance.

Jack Powers, Box 1184, Widener College, Chester, Penn. Telephone: (215) 876-5551, x387.

Undergraduate Chemistry Research at Columbia

There is an eight week chemistry summer program at Columbia University open to freshmen, sophomores, and juniors who wish to apply. The stipend will be \$800. To apply, send a list of your science courses already completed with the grades in each; a brief description of your research interests; and a tentative choice of a Columbia chemistry faculty with whom you wish to work. (Participating faculty and descriptions of their research are posted on the UROP bulletin board in the main corridor.) Applications should include a strong letter of recommendation from an MIT faculty member who is personally familiar with your coursework or research activities to date. Send your application to: Dr. William Reinmuth, Box 305 Havemeyer, Columbia University, New York, N.Y. 10027. Deadline: April 1, 1975.

The Children's Museum Boston, Ma

The Children's Museum Computer Center has projects available for undergraduates interested in the application of computers to education. The Museum's computer is a PDP-11/40. Students will participate directly in the development and presentation of educational programs about computers for groups of elementary school children. This work also includes opportunities for ultra-low-cost hardware development via a general purpose switching box driven by the computer

facility which is capable of controlling any number of motors, horns, lights, and relays. Credit only.

Biology Department

Opportunity for an undergraduate to help carry out experiments in mammalian cell culture. Muscle cells are grown in cell culture where they go through various stages of differentiation. Nerve cells are introduced into the culture and their influence on the differentiation process is being determined. An undergraduate interested in understanding the biological and biochemical aspects of this system should contact Professor A. Rich, x3-4715, Rm 16-735.

Eunice Kennedy Shriver Centre Waltham, Ma

An opportunity exists for an undergraduate to participate in a study of trace metal metabolism in genetically determined neurological disease. The conditions under study will include a genetically determined form of copper deficiency (kinky hair disease), presenile dementia (Alzheimer's disease), and a rare form of lipid storage disease (Batten's disease). Interested students should have some background in biochemistry and a developing interest in clinical-biochemical correlations of human disease.

Massachusetts General Hospital

A laboratory at MGH involved in brain tumor research has an opening for a student interested in radiation biology. Specifically, the project would entail the quantification of the radiation effects of protons on human brain tumor cells cultured in vitro. The research would take place in the MGH laboratory with frequent use of the Cambridge Cyclotron. Biology students with some physics background or physics students with an interest in radio-biology or radiation physics would probably be best suited for this project.

Placement

The following companies will be interviewing during the time period covered by the current Institute Calendar. Those interested may sign up in the Career Planning and Placement Office, Mon-Fri, 9am-3pm, Rm 10-140, x3-4733.

Wednesday, February 5—National CSS; Philco-Ford Corp, Communications System Div.

Thursday, February 6—ACTION/VISTA/Peace Corps; Aerospace Corp; Caltex Petroleum Corp; Comshare, Inc.; Deere & Co; Intermetrics, Inc; Department of the Navy; Phillips Petroleum Co; US Army Materiel Command; Westinghouse Electric Corp.

Friday, February 7—ACTION/VISTA/Peace Corps; Aerospace Corp; Phillips Petroleum Co; Westinghouse Electric Corp; Burroughs Corp; First National City Bank (Citicorp); Schlumberger Well Services.

Action/Vista/Peace Corps—Volunteer positions in the US (Vista) and in 60 countries overseas (Peace Corps). Orientation programs, including language training. Volunteers receive transportation, health care, a living allowance and a stipend at the end of service. Positions are available in many fields at all degree levels. Applicants must be 20 years of age, US citizens for Peace Corps, have permanent resident visa for Vista. Career Planning & Placement Office, Thurs & Fri, Feb 6 & 7.

Monday, February 10—Dept. of the Navy; Energy Research & Development Admin; W.R. Grace & Co; Insurance Services Office; McDonnell Douglas Corp, St. Louis, Mo; Douglas Aircraft Co, Long Beach, Calif; McDonnell Douglas Astronautics Co, West, Huntington Beach, Calif.; The MITRE Corp; Pratt & Whitney Aircraft; Singer Company, Kearfort Div; Standard Oil of Calif & Chevron Research Co; United Nuclear Corp, Naval Products Div.

Tuesday, February 11—McDonnell Douglas Corp, St. Louis, Mo; Douglas Aircraft Co, Long Beach, Calif; McDonnell Douglas Astronautics Co, West, Huntington Beach, Calif; The MITRE Corp; Pratt & Whitney Aircraft; Standard Oil Co of Calif & Chevron Research Co; Equitable Life Assurance Society; Intel Corp; Jet Propulsion Lab.

Wednesday, February 12—The MITRE Corp; Jet Propulsion Lab; Corning Glass Works; Exxon Corp & USA Affiliates; Naval Coastal Systems Lab; Univ of S. Calif. Grad School of Engineering; Teradyne, Inc.

Thursday, February 13—Corning Glass Works; Exxon Corp & USA Affiliates; Hewlett-Packard Co; Mead Corp; Olin Corp; Philco-Ford Corp, Aeronutronic Div; Souza and True, Inc.

Friday, February 14—Hewlett-Packard Co; GTE Sylvania Inc; Institute for Defense Analyses; MIT Lincoln Lab; Northeast Electronics.

MIT Club Notes

ASA—Association of Student Activities meeting Sun, Feb 9, 2pm, Stu Ctr West Lge.

Bridge Club—ACBL Duplicate Bridge. Open pairs Tues, 6-9pm & Thurs, 7-10:30pm. Nonexpert pairs (separate) Tues, 6-8pm & Thurs, 7-9pm. Multiweek team of 4 events Fri evg & Sat aft (separate events), call for details. Beginning Lessons: Tues & Thurs, 5-6pm, no previous knowledge assumed. All events Stu Ctr Rm 473. Jeff, 864-5571.

MIT/DL Bridge Club—ACBL Duplicate Bridge. Tues, 6pm, Stu Ctr Mezzanine Lge.

Chinese Students Club—Two events Sat, Feb 8. Chinese New Year Banquet 6pm, Happy Palace Restaurant, 10 dish dinner. Cost: \$5 members, \$8 others. Party 9pm, Burton dining hall. Free to those who went to banquet, \$1 CSC members, \$1.50 others. CSC office, x9156 Dorm.

MIT Club of Boston—Paul W. MacAvoy, Henry R. Luce Professor of Environment and Public Policy, will speak on finance at the monthly luncheon meeting. Thurs, Feb 13, 12:15pm, Aquarium Restaurant, 100 Atlantic Ave, Boston. Cost: \$4, payable at door. Reservations: Ms. Kiarats, x3-3878.

MIT Gospel Choir—Members and musicians needed. Rehearsals are Sun, 4-6pm, Stu Ctr Rm 407. Those interested are encouraged to attend.

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

LSC—General meeting for all spring term members Wed, Feb 5, 7pm, Stu Ctr West Lge.

MIT Mathematics Club—Business and election meeting Wed, Feb 5, 5:15pm, Rm 4-182.

MIT Outing Club—Mon & Thurs, 5-6pm, Stu Ctr Rm 461.

MIT Science Fiction Society—Meetings Fri, 5pm, Rm 1-236. Info: library, Stu Ctr Rm 421, x9144 Dorm.

Strategic Games Society—Offers opponents and discounts on merchandise to members plus gaming and periodical library. Sat during IAP, 1pm-1am, Walker Rm 318. Info: Steve Simmons, x8265 Dorm or Gary Brennan, x0280 Dorm.

MIT Tae Kwon Do Club—Beginner and advanced classes. Tues, Thurs, 5-7pm, Stu Ctr 491.

TCA Open Meeting—For all people interested, new & old members. Agenda includes discussion of upcoming projects. Tues, Feb 11, 7:30pm, TCA office, 4th fl Stu Ctr. Refreshments.

Tech Model Aircrafters—Flying in duPont Gym Sat, Feb 8, 6-10pm.

Tech Squares—Special dance Sat, Feb 8, admission \$1.25. Dance Tues, Feb 11, free to beginners. Crash course for beginners begins Tues, Feb 18, (for 9 weeks), \$7/entire course. All activities 8-11pm, Sala.

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

White Water Club—Pool sessions. Tues, Feb 11, 8-10pm, Alumni Pool.

MIT Women's Chorale—Wives and working members are encouraged to join. Thurs, 8pm, Rm 10-340.

Religious Activities

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

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

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

Hillel Services—Fri: Traditional 4:30pm, Rm 16-139; Non-Traditional 8:30pm, Chapel. Sat: Traditional 9am, Chapel. Mon-Fri, Minyan 7:30am, Rm 7-102.

Interdenominational Holy Communion Service—All members of the Institute welcome. Wed, 5:05pm, Chapel. Revs Parvey and Crocker.

Roman Catholic Mass—Sun, 9:15am, 12:15pm & 5:15pm; Tues & Thurs, 5:05pm; Fri, 12:05pm; Chapel. Ash Wednesday, Feb 12: 8am, 12:05pm & 5:05pm; Chapel.

United Christian Worship Service—Sun, 10:45am, Chapel.

United Christian Fellowship—Sunday school and nursery for infants and children during United Christian Worship Service. Sun, 10:45-12n, Stu Ctr Mezzanine Lge.

Graduate Students Enjoy House Life

"Graduate residents at MIT are many things: they are students like others on the floor and yet they are a little older. They are liaisons between students and the faculty and administration, as well as other students. They are providers of food, concern, and academic counselling. They are catalysts of activity. But most importantly, they are there when you need them."

"It's funny ... in the eyes of the unmarried, being married and a graduate resident makes you someone to talk to."

"If the initial desire to help isn't there, or a commitment to students, then the day-to-day frustrations of the job will drive you right out of the realm of effectiveness. Call it motivation—or faith almost—but it ends in channelling energy otherwise reserved for one's own life to helping others make new friends."

"My wife and I have a VW van this year, which means many more photography trips to the country, hiking expeditions, and cross-country ski weekends on a floor-wide basis."

So say four of MIT's 87 graduate residents and their spouses, who recognize undergraduates as persons and have chosen to share the experience of their living groups.

Newly married graduate resident Patricia Callahan was on her way to becoming the first woman in the history of MIT to win the Scott Paper Foundation Leadership Award when John Wall, a graduate student in mechanical engineering from Bessemer, Ala., suggested marriage and later on, a graduate residency in Burton House.

They applied for the job together last fall, and John moved in while Pat completed post-exam wedding preparations from her room in McCormick Hall.

"We find we have enough privacy to suit ourselves, but we also enjoy interacting with different people," said Pat, who has retained her Callahan surname "for many reasons."

A recipient of the William L. Stewart Jr. Award for "outstanding contributions to extracurricular life," she added, "We happen to be two people who simple enjoy community living. We leave our door open as much as we can and we feel good when people knock when it's closed."

Don Levingstone, an electrical engineering graduate resident in East Campus concurs that "a



"IT'S GOOD, LIVING THE WAY WE DO," say Gary and Becky Siebert of MacGregor House. They were married last August and have found their privacy as graduate residents "more than adequate."

dormitory can be a very charged atmosphere with a variety of academic, personal and social problems that tutors must be in touch with in order to resolve."

"Liking people," "living informally among many different social backgrounds" and "getting to know MIT" are phrases that linger distinctively in the conversations of most all MIT graduate residents when asked why they didn't choose apartment living instead.

Reeta Karmarker, a graduate of the Academy of Fine Arts in Rome, who is married to Uday

person's perspective and now from a married man's point of view.

His wife Judy, who attended Fresno State College in California and now studies textile design at Framingham State, is the only woman among a floor of undergraduate men—a role she believes encourages open discussions.

For whatever reasons they apply, practically all MIT graduate residents emerge from the program with the feeling it has challenged and benefited them, according to Miss Alice Seelinger, administrative officer in the Office of the Dean for Student Affairs.

"After submitting letters of intent, prospective tutors are invited to the Dean's Office for an initial interview, and copies of their resumes are then sent to each of the housemasters on campus, who in turn confer with in-house student committees," she explained.

Succeeding interviews are initiated by student representatives from the various houses, and frequently applicants are asked to "interview" several houses. Ultimately, the Dean's Office acts upon the final recommendations of the faculty residents and the students.

Goodwin Medal Deadline Mar. 10

Monday, March 10, is the deadline for filing nominations for the 1975 Goodwin Medal for conspicuously effective teaching by a graduate student.

Nominations may be made by faculty members or organized student groups and should include biographical information on the nominee as well as evidence of superlative teaching ability. Supporting letters from students and colleagues also are required. Nominations should be submitted to the Dean of the Graduate School, Rm 3-136.

The Goodwin Medal was established in memory of Harry Manley Goodwin, first dean of the Graduate School, by his widow and son. Presentation of the award is made at the annual Awards Convocation in May.

Students? both single and married? who wish to be considered for positions as Graduate Residents in MIT houses and fraternities are requested to send resumes and letters outlining interests, hobbies, and background to the Office of the Dean for Student Affairs, Room 7-133, no later than Feb. 28.

Applicants must be enrolled as graduate students at MIT with either an MIT undergraduate degree or completion of one year's graduate work at MIT.

Remuneration includes room for 12 months and board for the academic year. Duties are varied among academic, personal and social interests.

Further information will be available at an informal orientation meeting Thursday, Feb. 13, at 8pm in Rm. 37-252. All who are interested are urged to attend.

Karmarker, enrolled at the Sloan School, said "the fabulous courtyard, spontaneous study break revelries and warm people" of Senior House had inspired her with a "live and let live" attitude towards her own life. Accomplished artist, fencer, and exercise instructor for many of Maggie Lettvin's classes, Mrs. Karmarker is organizing a student art fair in the House courtyard for next fall.

Russell Brown of Baker House, like John Wall, has experienced the day-to-day challenges of the tutor's job first from an unmarried

Shellfish Carcasses Hold Promise of Usefulness

(Continued from page 1) ing bits of muscle, are highly resistant to biodegradation when dumped in such quantities.

Forbidding the dumping would endanger an important segment of the food industry, and would deprive consumers of popular delicacies.

The alternative was to find ways to turn the waste product into a useful raw material.

Scientists working on this problem—with funds from the Office of Sea Grant, administered by the US Department of Commerce's National Oceanic and Atmospheric Administration—have discovered and developed "a whole catalogue of exciting and important uses for this common, natural, raw material," Pariser said.

He is both a senior research scientist in the MIT Department of Nutrition and Food Science and manager of the MIT Sea Grant Program's Marine Advisory Services.

Chitin (from the Greek *Chiton*, or tunic) is itself a relatively inert chemical. But its derivative, chitosan, can be used as an additive to improve the wet and dry strength of newsprint, grocery bags and disposable paper diapers; as a coagulant in the treatment of sewage and industrial waste water, and as a thickener for baby food and puddings.

It can also be used, Pariser said, to treat wounds, to make glass fibers accept and hold dyes and to make transparent films for food packaging and for photography.

Chitosan can do all this because it is versatile: it is edible (although not nutritious), biodegradable and cationic—that is, it carries positive electrical

charges. These electrical charges enable chitosan to form strong ionic bonds, which make it a good binder.

The commercial development of the many uses for chitosan depends on how cheaply it can be obtained from the very plentiful supply of chitin. (The seafood processing plants in Kodiak, Alaska, alone discard 3,800 tons of chitin a year.)

If the commercial use of chitin is feasible, Pariser said, it may "save the very existence of the crustacean processing industry" and may even lead to cheaper and more plentiful supplies of shellfish.

Other waste products, Pariser said, can be used to increase the supply of marine food directly: sanitized sewage can feed fish, and hot water from power plants can warm ocean waters to permit year-round farming of oysters.

"Just as anything that is given can be blessing or curse," he concluded, "much of what we consider to be pollutants can be turned into useful goods."

"Much even can be converted directly or indirectly into increasing the world's food supplies."

Compton Lecture Series Planned

The 1975 series of Compton lectures at MIT will be delivered by three Institute Professors, Provost Walter A. Rosenblith has announced.

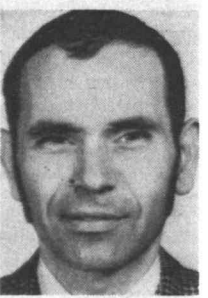
The Institute Professors are physicist Philip Morrison, economist Robert M. Solow and metallurgist and historian of science Cyril S. Smith.

The lecture series, established in 1955 to honor the late Dr. Karl Taylor Compton, former MIT president, will begin Feb. 27 with Professor Morrison's lecture, "Newton Among the Quasars." Professor Solow's lecture, "Facts and Theories About Natural Resources," will be delivered March 20. Professor Smith, emeritus professor of metallurgy and of the history of science and technology, will lecture on "Art, Technology and History" April 10.

The first lecture by Professor Morrison will be in Kresge Auditorium at 4pm on Feb. 27.

Lincoln Staffer Named by IEEE

Dr. Jack Capon, staff member at Lincoln Laboratory, has been elected a Fellow of the Institute of Electrical and Electronics Engineers, Inc., for his contribution in statistical techniques to electronics and geophysics in high-resolution spectral analysis and nonparametric detection.



Dr. Capon

Currently researching problems in air traffic control at Lincoln, Dr. Capon served as a research assistant at the Research Laboratory of Electronics at MIT from 1953-55 and as an instructor in the Electrical Engineering Department at Columbia University from 1955-59. He also has been a lecturer in electrical engineering at MIT and has taught graduate courses at Northeastern University.

He received his undergraduate degree from the College of the City of New York, his SM from MIT and his PhD from Columbia University. Dr. Capon resides in Lexington, Mass.

Summer job resume forms are now available for students in the Student Employment Office, Rm 5-122.

Mazlish Named Humanities Head

(Continued from page 1) number of books in these fields and has authored many articles and papers.

His latest book, to appear this month, is a psychohistorical study, *James and John Stuart Mill: Father and Son in the 19th Century*.

Other books he has authored and edited include *In Search of Nixon, a Psychohistorical Inquiry*, which gained wide attention following its publication in 1972; *The Riddle of History: The Great Speculators from Vico to Freud* (1966); *The Railroad and the Space Program: An Exploration in Historical Analysis* (1965), and *The Western Intellectual Tradition: From Leonardo to Hegel*, in collaboration with J. Bronowski (1960).

Professor Mazlish, 51, received his AB in 1944, AM in 1947 and PhD in 1955, all from Columbia University.

He was an instructor in history at MIT from 1950 to 1953 and after two years as director of the American School in Madrid, Spain, he returned to MIT in 1955. He was appointed professor of history in 1965 and he was chairman of the Department of Humanities History Section from 1965 to 1970.

He is a Fellow of the American Academy of Arts and Sciences, was a visiting member of the Institute for Advanced Study in 1972-73 and is editor, among other journals, of the *Journal of Interdisciplinary History*.

He and his wife, Anne, and children, live at 3 Channing Circle, Cambridge.

Bike Shelters

(Continued from page 1) be guarded from 8am to 5pm—the hours when the highest rate of bike thefts occur at MIT.

In addition to providing bicycle parking protected from theft and weather, the new compounds will help reduce the number of bicycles kept inside MIT buildings.

As Ray Diffley, Associate Director of the Safety Office, points out, "MIT is making an effort to hire more blind and handicapped personnel, and bicycles chained to railings in Institute halls cause a safety hazard for these people."

"Bicycles are also left blocking elevators and stairways in many buildings causing additional hazards," Mr. Diffley said.

Cyclists at MIT are also reminded to obey traffic regulations—especially on Massachusetts Avenue—where the largest number of accidents occur, to obey the 15 mph speed limit on campus, and—please—not to ride bicycles in the halls.