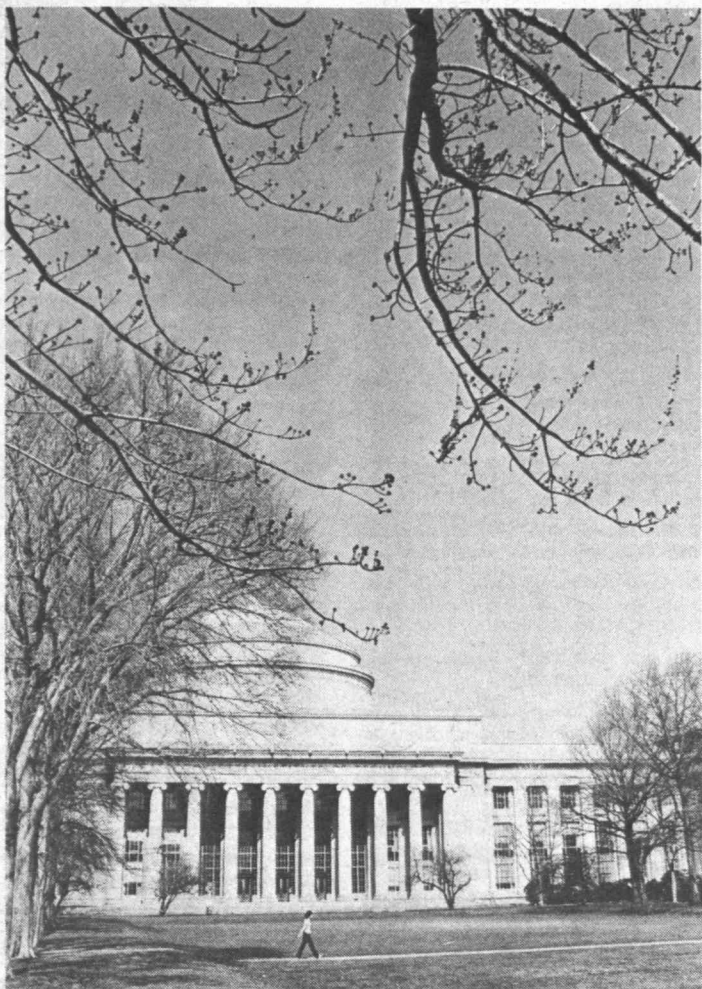


## Spring comes...



Last week...

## ...and Goes



...this week.

—Photos by Calvin Campbell

## USSR's Arbatov at MIT Monday 'World Change' Lecturer is Soviet U.S. Expert

By CHARLES H. BALL  
Staff Writer

Georgi A. Arbatov, one of the Soviet Union's leading specialists on arms control and on Soviet-American relations in general, will speak at MIT Monday evening, April 11, on the topic, "Challenge of the Next Two Decades: Dangers and Opportunities."

Mr. Arbatov, the seventh speaker in MIT's "World Change and World Security" lecture series, will deliver his talk at 8pm in Kresge Auditorium.

He will be followed, on Thursday evening, April 14, by Canon Burgess Carr, general secretary of the All Africa Conference of Churches, who will speak on the subject, "The Impact of Contemporary Political Economic and Social Revolutions on African Spiritual and Moral Values." He will give his talk at 8pm in the Compton Lecture Hall, 26-100.

The lectures in the series are open to the public without charge. All are broadcast by Radio Station WTBS.

The two most recent lecturers were Dr. Sigvard Eklund, director general of the International Atomic Energy Agency, on Thursday, March 24, and Roberto de Oliveira Campos, former Brazilian ambassador to the United States and presently ambassador to Great Britain, on Monday, April 4.

Ambassador Campos said that the interests of the rich and poor nations of the world, while often seemingly

in conflict, were not irreconcilable. What is needed to reduce confrontation, he said, "is a genuine acceptance of interdependence."

Ambassador Campos said the industrialized nations often were guilty of "institutionalized hypocrisy" by paying "lip service to the interests of the underdeveloped nations in such areas as trade policies and nuclear energy. The underdeveloped nations, for their part, place too much of the blame for their problems on external forces while ignoring internal difficulties, he said.

The ambassador, who has had a long career as an economist and diplomat, said the situation also

could be eased by greater acceptance on the part of developed nations "of diverse political systems."

While noting that many of the poorer nations have authoritarian governments, he said it was necessary to make a distinction between what he termed "authoritarian-liberal" and "authoritarian-totalist" governments.

He said the "totalist" regimes were found in Communist countries and in the "primitive dictatorships" of some African and Latin American countries. The "authoritarian-liberal" governments, he asserted, keep democracy as an objective by main-

(Continued on page 12)

## Cabot Chair Established; Dr. Ting Is First Occupant

Members of the family of Thomas Dudley Cabot, Boston corporation executive, together with the trustees of the Cabot Charitable Trust have made a combined grant of \$1 million to MIT to endow a Thomas Dudley Cabot Institute Chair.

First occupant of the Cabot Chair will be Dr. Samuel C. C. Ting, noted MIT experimental physicist who was a co-recipient of the 1976 Nobel Prize for his discovery of the subnuclear "J" particle.

Announcement of the grant to establish a chair honoring his father was made by Louis W. Cabot of Boston on behalf of the Cabot Charitable Trust and the Cabot family. Both Louis W. Cabot, chairman of the board of the Cabot Corporation, and his father, Thomas Dudley Cabot, honorary chairman of the firm, are members of the MIT Corporation, the Institute's governing body.

Thomas D. Cabot's father, the late Godfrey L. Cabot, founder of the firm that bears the family name, was a member of the class of 1881 at MIT. His grandfather, Dr. Samuel Cabot, was one of a group of Boston citizens whose efforts led to the founding of MIT in 1865.

Announcement of the selection of Dr. Ting to be MIT's first Cabot Professor was made by MIT President Jerome B. Wiesner Tuesday at MIT before a group of distinguished physicists gathered for a day-long Symposium on High Energy and Elementary Particle Physics held in honor of Dr. Ting.

"The Cabot Institute Chair," Dr. Wiesner said, "is intended to honor and support an exceptionally distinguished professor in any of the Institute's schools or departments.

"Dr. Ting is such a professor,  
(Continued on page 12)

## Frats Plan Back Bay Clean Up

MIT's 32 fraternities will take up rakes and brooms Sunday (April 10) to clean a two-mile section along the Charles River Esplanade.

An estimated 200 students are expected to participate in the 11am to 4pm MIT Interfraternity Conference project.

The target area is from just west of Massachusetts Ave., to a point two miles down stream. The Beacon Street homes of many MIT fraternities are parallel to that section of the riverfront.

James Bidigare, a junior student in architecture from Grosse Pointe Woods, Mich., community relations chairman for the MIT Interfraternity Conference, said the purpose of the cleanup is "to show Boston that MIT fraternities do care about the city."

The MIT Physical Plant Department will supply tools and the Metropolitan District Commission will provide garbage bags and trucks to haul away the trash, Bidigare said.

## Huntington Hall, Alumni Center work Gets Underway

Major renovations are underway on the first and second floors of MIT's Maclaurin Bldg. (Bldg. 10) under a \$1.3 million reconstruction project being paid for with contributions from hundreds of MIT alumni throughout the world.

On the second floor, Huntington Hall (Rm. 10-250), long one of MIT's major lecture halls and scene of vivid classroom remembrances for generations of MIT students over the past half century, is being completely renovated, refurbished and air conditioned.

Included among Huntington Hall improvements will be a new acoustical treatment, new lighting adequate for televising lectures from the hall, modern audio and projection facilities, and some 450 new, more comfortable chairs.

Meantime, on the first floor, offices and laboratories formerly used

by the Department of Electrical Engineering and Computer Science before the Department moved into the new Fairchild Bldg. (Bldg. 37) are being removed to be replaced by a formal alumni reception center that will include an exhibition hall for MIT-related memorabilia, a conference room, and headquarters offices for the principal officers of the MIT Alumni Association.

Also on the first floor, an entrance will be made from the new alumni center area into the Vannevar Bush Room (Rm. 10-105) so that the Bush Room can be used for alumni functions, meetings, etc. Moreover, an exit—plus an exterior staircase—from the Bush Room and leading into the small courtyard immediately to the west will be built so that the outdoor formal garden can also form a part of the alumni center

10-to-5, Saturday, May 7

## Employees' Open House 'Bigger and Better Than Ever'

By JOANNE MILLER  
Staff Writer

"Bigger and better than ever" are the words being used to describe Employees Open House to be held this year, Saturday, May 7, from 10am to 5pm, all over campus.

"Interest in this opportunity for

all employees to share their own separate views of the Institute with others is spreading contagiously," said Bob Radocchia, chairman of the Quarter Century Club, sponsor of the event.

"Two years ago for the first Employees Open House, we asked for participation from some events and exhibits that had traditionally

been popular at student Open Houses," he said. "This year many more groups are volunteering to participate. It's very gratifying to see such enthusiasm."

As an example, he cited the Cancer Center. Although on-going 24-hour experiments prevent tours of some laboratories, employees at the Center hope to open one or

more labs to guests and to offer a talk on progress in cancer research at the Center.

Employees, their families and guests will also have a chance to see MIT's major experimental fusion device, the Alcator project in the Francis Bitter National Magnet Laboratory. Alcator recently achieved a two-fold im-

provement in the ability to contain the extremely hot plasma.

Another new addition this year will be an employees' arts and crafts exhibit. So far more than three dozen artists ranging from quilters to sculptors have expressed interest in showing works in the Bush Bldg. Lobby (Bldg. 13).

(Continued on page 12)

# Harvard Lectures On MIT Cable TV

As part of the first major effort to broadcast lectures being given at another university to the MIT community via MIT's cable television system, the Center for Advanced Engineering Study has made arrangements to cablecast lectures from the Harvard University School of Medicine, including the Edward K. Dunham Lectures for the Promotion of the Medical Sciences.

Harvard's Dunham Lecturer this year is N. Avrion Mitchison, FRS University College, London, England. Dr. Mitchison's three lectures on regulation of the immune response will be cablecast at 5pm, Monday, April 11 ("The Control Network"), Thursday, April 14 (Some Examples: Allo-antigens and Autoantigens") and Friday, April 15 ("Applications in Immunopathology").

A complete listing of lectures being cablecast from Harvard Medical School will be carried in the weekly Cable TV Schedule. Anyone with questions should call Niti Salloway, x3-3625 or x3-7431.

## No Paper April 20

Tech Talk will not be published April 20.

The Institute Calendar in the April 13 issue will cover the period of April 13 through April 27. Deadline for calendar listings, classified ads and institute notices for the April 13 issue will be noon Friday, April 8.

# CABLE TV SCHEDULE X3-3625

April 6-12

Wednesday, April 6	Channel 8: 5-6pm	NOTES ON THE VISION By Mike Moser LIVE
Thursday, April 7	Channel 8: 12noon-1:30pm	A DEBATE ON THE TOPIC OF SINGLE-SEX VERSUS CO-EDUCATION FOR PROSPECTIVE SCIENTISTS With Vera Kistiakowsky, Physics Dept. and Molly Potter, Psychology and City Planning. (R)
	7:30-8:30pm	POLITICS AND TELEVISION #6 With Ed Diamond. LIVE
	Channel 10: 11-1pm	MIT CONCERT JAZZ BAND (R)
Friday, April 8	Channel 8: 9:30-10:30am	RHETORIC AND JOURNALISM #7 With Ed Diamond LIVE
	4-5pm	BASEMENT VIDEO PRESENTS (R)
	Channel 10: 12noon-8pm	LOOKAROUND (R)
Monday, April 11	Channel 8: 12:15-12:45pm	MITV NEWS LIVE
	5-7pm	THE CONTROL NETWORK by N. Avrion-Mitchison, F.R.S., Tumour Immunology Unit, Dept. of Zoology, University College, London, England. Lecture #1 in the Edward K. Dunham Lecture Series for the Promotion of the Medical Sciences. LIVE from Harvard University.
	8-10pm	GEORGI A. ARBATOV, Director of the Institute of U.S. and Canadian Studies of the Academy of Sciences of the USSR. Sponsored by the "World Change and World Security" lecture series. LIVE from 26-100.
	Channel 10: 1-6pm	MITV NEWS (R)
	Channel 12: 6-6:30pm 6:30-7pm 7-8pm 8-9pm	MITV NEWS (R) SPORTSWEEK (R) LOOKAROUND (R) BASEMENT VIDEO PRESENTS LIVE from 9-355.
Tuesday, April 12	11am-12noon	POLITICS & TELEVISION #6 With Ed Diamond (R)
	12noon-1pm	BASEMENT VIDEO PRESENTS (R)
	1-2pm	RHETORIC & JOURNALISM #7 With Ed Diamond (R)
	3-4pm	BASEMENT VIDEO PRESENTS (R)
	4-6pm	GEORGI A. ARBATOV, Director of the Institute of U.S. and Canadian Studies of the Academy of Sciences of the USSR. Recorded April 11 for the World Change and World Security" lecture series. (R)
	Channel 10: 12noon-8pm	SPORTSWEEK (R)

# INSTITUTE NOTICES

## Announcements

**Humanities Writing Prizes**—Offered annually to undergraduates in 3 categories: works by freshmen; works of any length; works of substantial length. Rules available Rm 14N-409. Entries due by Apr 16.

**GSC Meetings**—Executive Committee meeting Wed, Apr 6, 5pm, Intl Stu Lng, to discuss Council agenda. Council meeting Wed, Apr 13, dinner 5pm (Walker), meeting 6pm, Walker Blue Rm. RSVP if attending dinner.

**Preprofessional Meetings**—Discussion of application process for medical school applicants Mon, Apr 11, 4pm, Rm 54-163. Discussion of application process for law school applicants Tues, Apr 12, 4pm, Rm 4-163. Info: Preprofessional Advising & Education Office, Rm 10-186, x3-4158.

**MIT Furniture Exchange**—Open Tues & Thurs, 10am-2pm, 25 Windsor St, to buy or sell used furniture.

**Associate Advisors**—During April the FAC is recruiting upperclass students to be associate advisors for next year. If interested, stop by FAC office, Rm 7-103, and let us know. It's best if you already have an advisor lined up to work with, but some advisors ask us to find them associate advisors. Be sure to come in and fill out a card if you're interested.

**Faculty Members**—Faculty members interested in teaching an Undergraduate Seminar should contact the Undergraduate

## Lewin Meets Press

Dr. Walter H. G. Lewin, MIT professor of physics, was scheduled to participate in a science news conference Tuesday, April 5, in Washington, DC, at the National Aeronautics and Space Administration (NASA) in connection with the planned mid-April launch of the first High Energy Astronomy Observatory (HEAO-A). Dr. Lewin is co-principal investigator of the Hard X-ray and Low Energy Gamma Ray Experiment aboard HEAO-A.

## Comeau to Berklee

Phillip L. Comeau of Brookline, who received from MIT in 1976 the SB degree in art and design in the Department of Architecture, has been appointed to the faculty of Berklee College of Music, Boston. While at MIT, Mr. Comeau was a member of the MIT Festival Jazz Ensemble directed by Herb Pomeroy, also of the Berklee faculty.

# Administrative Officer Is Playwright

By KATHARINE C. JONES  
Staff Writer

David Mauriello, when he's not working at MIT as administrative officer of the Center for Materials Science and Engineering, is involved with the theatre.

At various times, he's been an actor, director, producer and playwright. He is now working as producer of one of his own plays, *But Mostly Because It's Raining*.

The play, a serious drama, will open a three-week run on Tuesday, April 12. It will be staged by Off Boston Theatre, a new company committed to production of plays by new, primarily local playwrights. The company is converting into a theatre a ballroom of the Bradford Hotel at 275 Tremont St., in the heart of Boston's theatre district.

Mr. Mauriello describes *But Mostly Because It's Raining* as a modern love story set in New York City in the 1970s. Quite ordinary situations in the play, he said, reveal the three characters' more noble traits—trust and love. What happens illustrates

## Brass Ensemble

The MIT Brass Ensemble, Robert Pettipaw, director, will give a free concert at Quincy Market, Boston, Thursday, April 7, 5-7pm. The 20-member Ensemble will perform works by Henry Purcell, Melchior Franck, Frescobaldi, Gordon Jacob, Karl Kroeger, and Vaclav Nelhybel.

Seminar Office, Rm 7-106, x3-3621, as soon as possible.

**Discount Tickets**—Discount tickets for BSO open rehearsal on Wed, Apr 6, are now on sale at TCA, Stu Ctr Rm 450, 11am-3pm, x3-4885.

**'77 Summer Session**—Catalogue now available in Information Center, Rm 7-111.

## New UROP Listing

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.

### Summer UROP: Second Call

UROP will have a summer program again this year. Eligibility will be limited to undergraduates who are continuing ongoing UROP projects. Support for research, personal expenses or for overhead waiver will be awarded according to the usual UROP proposal procedures and negotiations. Such proposals are now welcome, and should be submitted through the UROP Coordinator of your faculty supervisor's department. Award decisions will be announced beginning April 25th, continuing until we run out of money. Proposals will receive priority according to the date of receipt in the UROP office and according to tangible evidence of faculty enthusiasm for the proposed activity. If you apply for UROP's own funds for all or part of your summer wages, remember that payment will be limited to a maximum amount of \$1500 total for your UROP summer, at \$3/hr. Probably you should reread the How to Participate section of the UROP Directory.

### Lab for Computer Science

This project involves writing programs to implement a system for recognizing words sent in Morse code. These programs will be developed and run under the UNIX timesharing system used by the Domain Specific Systems Research (DSSR) group. The project must be completed by the end of the summer. Interested students should be at least conversant, if not fluent in LISP.

Louis Tsien, Rm NE43-421, x3-6031.

### Cataract Formation in Human and Animal Lenses

The goals of this research are: 1) the development of cataract models in animal lenses; 2) characterization of the opacification process by laser light scattering and electron microscopy; 3) bio-chemical identification of the cellular factors involved in cataractogenesis; 4) reversal of the cataract by physiological and pharmacological methods. This is an excellent opportunity to combine quantitative, physical methods with the study of an important biomedical problem. Specific research opportunities will depend on the interests, experience and enthusiasm of the student.

Dr. John Clark, x3-6804.

### Typesetting Keyboards for Different Languages

The Graphic Arts Research Foundation (GARF) is interested in involving a student to help develop fundamental concepts that will aid in optimizing keyboards for different kinds of writing forms. Present equipment is inadequate for keyboard typesetting of music and of the aksara (syllabic) writing forms of India and Pakistan. An interested student should have at least one of the following: Skill in touch typewriting, knowledge of an Asian language, familiarity with commercial type-

setting, cryptographic experience, skill with a keyboard musical instrument, or data processing experience.

## Graduate Studies

### American Foundation for the Blind Incentive Awards

The American Foundation for the Blind is offering competitive incentive awards of up to \$5,000 each to encourage graduate students to write doctoral dissertations on topics dealing with visual impairment or blindness. An award is a stipend which may be renewed in succeeding years depending upon progress and availability of funds. A range of topics in the social sciences is acceptable. The emphasis of the proposals should be on applied research involving visually impaired persons. Application deadline: May 1, 1977. Information: Graduate School Office, Rm 3-136.

## 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.

**Friday, April 8**—World Bank—summer internship program.

**Thursday, April 14**—Alpha Industries, Inc.; Consolidated Aluminum Corp; Dana Corp, Industrial Power Transmission Div. (formerly Formprag Co.); ITT Surprenant Division (International Telephone and Telegraph Corp); Ferrofluidics Co; Naval Sea Systems Command and Naval Ship Engineering Center.

**Wednesday, April 20**—E.I. DuPont de Nemours & Co., Inc. (Mexican nationals only.)

## Club Notes

**MIT Archery Club**—Shooting practice Sun, 10am, Rockwell Cage.

**MIT Ballroom Dance Club**—All invited to join in the fun. You too can tango. Info or lessons by phone: Fern Crandall, DL5-8534. Volunteers needed.

**MIT Bridge Club**—ACBL Open pairs duplicate bridge. Thurs, 7pm, Stu Ctr Rm 407.

**MIT/DL Bridge Club**—ACBL Duplicate Bridge. Tues, 6pm, Stu Ctr Rm 473.

**MIT Chess Club**—Informal speed chess, analysis, etc., every Sat, 1pm, Stu Ctr Rm 407. Info: Brad, Burton Rm 141G.

**MIT Comic Book Club**—Weekly meetings, Wed, 7:30-9pm, Rm 7-102.

**Gays at MIT**—(formerly SHL) Coffeehouse/meeting, first Sunday each month, 5pm, Gay Lng (Walker Rm 50-306). Everyone welcome. Info or just an ear listen: x3-5440, or join us for lunch.

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

**MIT Madrigal Society**—Group singing, primarily English madrigals. All voices (soprano, alto, tenor, bass) welcome, come add yours. Tues, 7:30-9:30pm, Rm 4-160. Brian Wibecan, Nw Hse 4-312, x5-7570 Dorm.

**MIT Shotokan Karate Club**—Rigorous training for intercollegiate competition & self-defense. Given by 6th degree black belt. Thurs, 8pm; Fri, 6pm; Sun, 10am, duPont T Club Lng. Info: x3-7220.

**MIT Space Habitat Study Group**—Interdisciplinary studies on space colonization. Thurs, 7pm, Rm 37-252.

**Tae Kwon Do Club**—Workouts on Tues, T-Club Lng (W31-125), & Thurs, W31-225, 6-7pm. Info: Jim Cole, x3-3283.

**Tech Model Railroad Club**—Meetings, Sat, 4pm; Operating Sessions, Fri nights; Rm 20E-214, x3-3269.

**MIT Tiddlywinks Association**—Meetings Thurs, 8pm, Stu Ctr Rm 473.

**White Water Club**—Pool sessions alternate Tues, 8-10pm, Alumni Pool. Next session April 12.

## Religious Activities

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

**Hillel Services**—Orthodox: Fri, sundown, Rm 50-005; Sat, 8:30am, Rm 10-105. Traditional/Egalitarian: Sat, 10am, 312 Memorial Dr (Religious Counselors Bldg). Reform: Fri, 7:30pm, Chapel.

You are invited to the weekly Interdenominational worship and holy communion, Wed, 5:05pm, Chapel. Get-acquainted supper following.

**Prayer Time**—Lunch hour Bible classes led by Miriam R. Eccles. Fri, 1-2pm. Rm 20E-207, prayer, music, guest speakers and refreshments. All welcome.

**Protestant Worship Service**—Worship, prayer, praise & teaching. Sun, 10:45am, Chapel. Coffee, donuts & fellowship following.

**MIT Seekers**—Group of students will meet at 9:55am & 4:55pm each Sun in front of McCormick to attend services at Park St Congregational Church.

**Tech Catholic Community**—Mass Tues & Thurs, 5:05pm; Fri, 12:05pm; Sun, 9:15am, 12:15pm & 5:15pm; all in Chapel. Lenten Meetings: Special interfaith prayer service: Mon, 5-5:30pm, Chapel. Study of the Gospel of St. John: Wed, 7:30pm, Rm 10-105. Interfaith participation encouraged. Contemporary Catholic Church Teaching: Wed, 8pm, 312 Memorial Dr. Wed, Apr 6: Celebration of the Sacrament of Penance 8pm, Chapel. Holy Thurs (Apr 7): Celebration of the Last Supper, 4:30-6pm, Chapel. Good Friday (Apr 8): Liturgy of the Veneration of the Cross, 3-4:30pm, Chapel. Holy Sat (Apr 9): Vigil service & Easter Resurrection Liturgy, 11:30pm-1am, Chapel. Easter Sun (Apr 10): Services, 12:15 & 5:15pm, Chapel.

**United Christian Fellowship**—Fellowship meeting Tues, 6:30pm, Rm 1-236, a time of praise, prayer, testimony and teaching. Everyone welcome. Contact: David Hoicka, 5-9649 Dorm.

**MIT Vedanta Society**—Meditation and discourses on the Gita by Swami Sarvagatanda, of the Ramakrishna Vedanta Society of Boston. Fri, 5:15pm, Chapel.

# Echoes

## 50 Years Ago

The Institute Committee expressed formal disapproval of the Technology Circus and voted in favor of discontinuing the annual event because of the increasing occurrence of rowdiness and property damage. However, the option of holding the Circus next year will be left to the decision of the succeeding Institute Committee.

## 40 Years Ago

A new two-piece phonograph which includes a mechanism for high fidelity reproduction was installed in Walker last week, a gift to Technology from the Carnegie Corporation. The gift includes 945 records which range from Benny Goodman swing to Bach fugues.

## 25 Years Ago

President James R. Killian, Jr., was awarded an honor medal by the Freedom Foundation for a public address. The address, "Our Shared Convictions," was made at Lehigh University, PA and discussed some of the basic concepts of the US and the beliefs of its peoples.

Prepared by Marcia Conroy, MIT Historical Collections, x4444.



David Mauriello

## TECH TALK Volume 21, Number 31 April 6, 1977

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# Fifteen Are Promoted To Full Professor

Fifteen members of the MIT Faculty have been promoted to the rank of full professor effective July 1. Announcement of the promotions was made by President Jerome B. Wiesner. Those promoted represent ten different academic departments at MIT. The 15 individuals are:

**Dr. Eric R. Cosman** of the Department of Physics. A resident of Belmont, Mass., Dr. Cosman was raised in Arlington, Mass., and graduated from Arlington High School in 1959. He received the SB degree in mathematics from MIT in 1963 and the PhD degree in physics from MIT in 1966. He was instructor in physics at MIT 1966-67 and assistant professor of physics 1967-72. He was appointed associate professor in 1972.

A specialist in nuclear physics, Dr. Cosman was a visiting scientist at the Max Planck Institute for Physics in Heidelberg, Germany, in 1970. He has held an Alfred P. Sloan Foundation Research Fellowship at MIT since 1970. While a graduate student, he held a National Science Foundation Graduate Student Fellowship. He presently holds appointments as Visiting Scientist at Brookhaven National Laboratory, Upton, N.Y., and Los Alamos Scientific Laboratory, Los Alamos, N.M., and Researcher Collaborator at the Max Planck Institute.

**Dr. Stanley Fischer** of the Department of Economics. Now a resident of Newton, Mass., Dr. Fischer is a native of Lusaka, Zambia. He studied at the London School of Economics, University of London, receiving the BSc degree in 1965 and the MSc degree in 1966. He came to this country to study at MIT, receiving the PhD degree from the Institute in economics in 1969. Following a year as a postdoctoral fellow in economics at the University of Chicago, Dr. Fischer served from 1970 to 1973 as an assistant professor there, then returned to MIT in 1973 as associate professor.

A specialist in monetary theory and economic growth, Dr. Fischer was visiting senior lecturer in economics at Hebrew University, Jerusalem, Israel, in 1972. He is presently associate editor of two economic journals, *Econometrica* and *Journal of Monetary Economics*, and is a former associate editor of two others—*Journal of Economic Theory* and *Journal of Money, Credit and Banking*.

**Dr. Thomas J. Greytak** of the Department of Physics. A native of Annapolis, Md., and now a resident of Chestnut Hill, Mass., Dr. Greytak entered MIT in 1958, participating in both the honors program and the industrial cooperative program in the Department of Electrical Engineering. Under the latter program, he did master's thesis research at Bell Telephone Laboratories, Murray Hill, N.J., receiving both the SB degree and the SM degree in electrical engineering from MIT in February, 1963. His academic honors included election to Eta Kappa Nu, Tau Beta Pi and Sigma Xi.

Dr. Greytak pursued doctoral level studies in the MIT Department of Physics under MIT Professor George Benedek, receiving the PhD degree in 1967. He was instructor in physics at MIT in 1967, served as an assistant professor 1967-70 and was appointed associate professor in 1970. He held an Alfred P. Sloan Foundation research fellowship at MIT 1971-73. During 1972-73, he was on leave at the University of California at San Diego working with Professor John Wheatley on superfluid phases of liquid helium.

**Dr. Roman W. Jackiw** of the Department of Physics. A resident of Norton, Mass., and a native of Lublinec, Poland, Dr. Jackiw was graduated from Swarthmore College, Swarthmore, Pa., in 1961, and received the PhD degree in physics from Cornell University, Ithaca, N.Y., in 1966. He was a junior fellow in the Society of Fellows at Harvard University from 1966 to 1969 when he came to MIT as an assistant professor of physics. He was appointed associate professor in 1972. He held an Alfred P. Sloan Foundation research fellowship at MIT from 1969 to 1971.

Dr. Jackiw is presently associate editor of the professional journal,



Dr. Cosman



Dr. Fischer



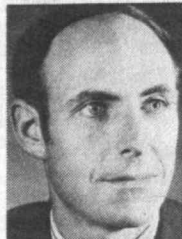
Dr. Greytak



Dr. Jackiw



Dr. Jones



Dr. Milgram



Dr. Moses



Dr. Sapolsky



Dr. Silbey



Dr. Sinskey



Dr. Sussman



Dr. Urban



Dr. Wormley



Dr. Wrighton



Dr. Young

*Annals of Physics*. He has been awarded a Guggenheim Fellowship by the Guggenheim Foundation for the academic year 1977-78. He is a member of the American Physical Society and in 1972 was cited by Outstanding Young Men of America.

**Dr. Norman Jones** of the Department of Ocean Engineering. A native of Farnham, Surrey, England, and now a resident of West Newton, Mass., Dr. Jones received the BSc degree in 1961, the MSc degree in 1962, and the PhD degree in 1965, all in mechanical engineering and all from the University of Manchester, England. He was assistant professor of mechanical engineering at Georgia Institute of Technology 1965-66, assistant professor of engineering at Brown University, Providence, R.I., 1966-68, and came to MIT in 1968 as assistant professor in what was then the Department of Naval Architecture and Marine Engineering. He was promoted to associate professor in 1970, by which time the Department had been renamed the Department of Ocean Engineering.

Dr. Jones research interests center in the areas of static and dynamic behavior of structures—plates, shells, beams, etc. He is a member of the American Society of Mechanical Engineers, the Society of Naval Architects and Marine Engineers, the Institution of Mechanical Engineers (London), the American Academy of Mechanics and the Society of Sigma Xi. He is a member of the editorial boards of the *International Journal of Mechanical Sciences* and the *Journal of Ship Research*. He was secretary of the International Ship Structures Congress from 1973 to 1976.

**Dr. Jerome H. Milgram** of the Department of Ocean Engineering. A native of Melrose Park, Pa., and now a resident of Cambridge, Dr. Milgram received all of his degrees from MIT. He received two SB degrees—one in electrical engineering and the other in naval architecture and marine engineering—in 1961, the SM in naval architecture and marine engineering in 1962 and the PhD degree in naval architecture and marine engineering in 1965 with research in the area of hydrodynamics. From 1965 to 1967 he was president of Milgram & Hopkins, Inc., of Somerville, a sailmaking firm that pioneered in computer-aided design of sails. From 1961 to 1967 he also was associated with Block Associates, Inc., Cambridge, as a project engineer working on problems in hydrodynamics, ocean engineering, electronics and optics.

Dr. Milgram joined the MIT faculty as assistant professor in the Department of Naval Architecture and Marine Engineering (now Department of Ocean Engineering) in 1967 and was promoted to associate professor in 1970. From 1974 to 1976 he also was research associate in biophysics at the Harvard Medical School. Dr. Milgram's research interests center on hydrodynamics, wave phenomena and mass transport with special emphasis on the behavior of oil slicks in the ocean and their control. He is a member of the Society of Naval Architects and Marine Engineers, Sigma Xi and Tau Beta Pi. He is registered professional engineer in Massachusetts and has served on National Academy of Engineering and National Academy of Science panels dealing with marine matters.

**Dr. Joel Moses** of the Department of Electrical Engineering and Computer Science. Dr. Moses, a resident of Norwood, Mass., is a native of Petach Tikvah, Israel. He received the A.B. and A.M. degrees in 1962 and 1963 from Columbia University, New York City, and the PhD degree in mathematics from MIT in 1967. He was appointed assistant professor at MIT in 1967 and associate professor in 1971.

Dr. Moses is presently associate director of MIT's Laboratory for Computer Science, formerly Project MAC, a large-scale laboratory devoted to computer research. He joined the laboratory in 1965 as a research assistant in its Artificial Intelligence Group. As a member and later leader of the laboratory's Mathlab Group, he had a key role in development of a large symbolic manipulation system called MACSYMA, now widely used by scientists and engineers. He is a member of the Association for Computing Machinery, has headed several ACM programs, is a past ACM national lecturer and presently is editor of ACM's *Transactions on Mathematical Software*.

**Dr. Harvey M. Sapolsky** of the Department of Political Science. Dr. Sapolsky is a native of Haverhill, Mass., and presently resides in Belmont, Mass. He received the BA degree in government from Boston University in 1961, the master's degree in public administration from Harvard in 1963, and the PhD degree in political economy and government from Harvard in 1967. Dr. Sapolsky came to MIT in 1966 as an assistant professor of political science and was promoted to associate professor in 1970.

Dr. Sapolsky's special interests are bureaucratic politics, science and public policy and health policy. He has worked at the University of Michigan at Ann Arbor while on leave of absence from MIT and has participated in large-scale interdis-

ciplinary planning and studies at MIT having to do with health care policy. He is the author of a book, *The Polaris System Development: Bureaucratic and Programmatic Success in Government* (Harvard University Press). He has also recently completed a study of resource allocations in the Veteran's Administration's health care system for former servicemen.

**Dr. Robert J. Silbey** of the Department of Chemistry. Now a resident of Auburndale, Mass., Dr. Silbey is a native of Brooklyn, N.Y., where he received the BS degree in chemistry in 1961 from Brooklyn College and the PhD degree in chemistry in 1965 from the University of Chicago. Following a year as a postdoctoral fellow at the University of Wisconsin, Madison, Wis., he joined the faculty at MIT as an assistant professor of chemistry. He became an associate professor in the department in 1969. During 1973, while on leave from MIT, he was a visiting professor at the Institute for Theoretical Physics at the University of Utrecht, The Netherlands.

Dr. Silbey's special fields of interest include theoretical chemistry, excitations in solids, vibronic interactions in molecules and solids and molecule-surface interactions. He held an Alfred P. Sloan Foundation research fellowship at MIT 1968-70 and was a Camille Dreyfus Foundation Teacher-Scholar 1971-76. He held a Guggenheim Foundation Fellowship in 1972-73. He is a member of the American Physical Society.

**Dr. Anthony J. Sinskey** of the Department of Nutrition and Food Science. A native of Collinsville, Ill., and now a resident of Boston, Mass., Dr. Sinskey received the BS degree in food science from the University of Illinois, Urbana, Ill., in 1962, and the ScD degree from MIT in 1966. He spent 1967-68 as a postdoctoral fellow at the Harvard School of Public Health. He returned to MIT in 1968 as assistant professor of applied microbiology in the Department of Nutrition and Food Science. He was promoted to associate professor in 1971.

Dr. Sinskey's major research interests include effects of processing on injury to microorganisms, mechanical radiation resistance, single cell protein research and detection of mutagenic agents. His doctoral thesis dealt with characterization of damage to microorganisms caused by food processing. He is a member of the American Society of Microbiology, the Institute of Food Technologists, the Society for Industrial Microbiology, the Society for Applied Bacteriology, Canadian Society for Microbiology and the Society of Sigma Xi. In 1975 he was awarded the Samuel Cate Prescott Award for a young research scientist by the Institute of Food Technologists. He is author or co-author of 70 technical papers, a book and three patents, and has participated in several international symposia, has travelled to Thailand for AID and to Nigeria for the U.N., and is on the editorial boards of *Applied & Environmental Microbiology* and *The International Journal of Radiation Biology*.

**Dr. Joseph M. Sussman** of the Department of Civil Engineering. A resident of Lincoln, Mass., Dr. Sussman is a native of New York City and a 1961 graduate of the City College of New York in civil engineering. He received the MS degree in civil engineering from the University of New Hampshire in 1963 and the PhD degree from MIT in 1968.

A specialist in transportation simulation analysis and railroad operations and planning, Dr. Sussman heads the Transportation Systems Division of the MIT Department of Civil Engineering. He was an instructor in the department from 1964 to 1967 when he was appointed assistant professor. He was promoted to associate professor in 1971. He has been principal investigator for a series of research projects dealing with rail freight service and railroad network rationalization. His current research deals with methods for improving the utilization of freight cars on the U.S. rail network. He was a participant in a recent U.S.-U.S.S.R. Transportation Forum in Moscow. He is a member of the American Society of Civil Engineers, the Transportation Re-

search Forum, the Transportation Research Board, the American Railway Engineering Association, the Society of Sigma Xi and Chi Epsilon.

**Dr. Glen L. Urban** of the Alfred P. Sloan School of Management. A native of Wausaw, Wis., and now a resident of Carlisle, Mass., Dr. Urban received the SB degree in mechanical engineering from the University of Wisconsin, Madison, Wis., in 1963, and the master's degree in business administration there in 1964. He took his doctoral studies at Northwestern University, Evanston, Ill., receiving the PhD degree there in 1966. He joined the faculty of the Sloan School that year as an assistant professor of management and was promoted to associate professor in 1970.

Dr. Urban's major interest is in design and marketing of new products and services. This work has been done in both the public and private sectors. He was principal investigator in a large-scale research program at the Sloan School in 1971-73 studying management aspects of family planning projects at the national and international levels. He is a member of the Institute of Management Science, the Operations Research Society of America, the American Management Association, the American Association for the Advancement of Science, and is reviewer for the professional journals, *Management Science* and *Journal of Marketing Research*.

**Dr. David N. Wormley** of the Department of Mechanical Engineering. A native of Moline, Ill., and now a resident of Needham, Mass., Dr. Wormley received the SB degree in mechanical engineering from MIT in 1962. He received the PhD degree from the Institute in mechanical engineering in 1967. He was appointed assistant professor of mechanical engineering at MIT in 1967 and was promoted to associate professor in 1970.

Dr. Wormley's special fields of interest in teaching and research are dynamic analysis, control and design of fluid power systems, transportation systems, and fossil fuel power plant systems. His current research is focused on urban and intercity transportation systems and deals with interactions between automated guideway vehicles and elevated guideways, with performance improvement of passenger and freight rail vehicles, and with handling and safety of semi-tractor trailer trucks. He is also conducting research on air cushion and magnetic suspension vehicles. In 1976, he received the NASA Certificate of Recognition for research on air cushion landing gear for aircraft. In 1975, he received the MIT Graduate Student Council award for outstanding teaching. He is a member of the American Society of Mechanical Engineers and the Society of Sigma Xi.

**Dr. Mark S. Wrighton** of the Department of Chemistry. A native of Jacksonville, Fla., and now a resident of Medford, Mass., Dr. Wrighton attended Florida State University from 1966 to 1969, receiving the BS degree there in chemistry with honors. He took his doctoral studies at the California Institute of Technology under Professors Harry B. Gray and George S. Hammond, receiving the PhD degree from Caltech in 1972. At Caltech, he was named the first recipient of the Herbert Newby McCoy Award.

Dr. Wrighton joined the MIT faculty in 1972 as assistant professor of chemistry and was promoted to associate professor in 1976. He received an Alfred P. Sloan Foundation Research Fellowship in 1974 and in 1975 he was named a Camille Dreyfus Foundation Teacher-Scholar. His teaching and research interests are in the areas of transition metal catalysis, photochemistry, the electronic structure of heavy metal complexes, and in photoprocesses at electrodes. He has given lectures and seminars throughout the U.S. and Europe. He is a member of the American Chemical Society and The Electrochemical Society.

**Dr. Vernon R. Young** of the Department of Nutrition and Food Science. A native of Rhyll, North Wales, United Kingdom, and now a resident of Wellesley, Mass., Dr. Young received the BS degree in animal production from the University of

(Continued on page 12)

# 205 Are Inducted into MIT's Quarter Century Club

Five thousand one hundred and twenty-five years of service to MIT were recognized at a banquet in Walker Memorial on Tuesday, March 29, honoring 205 MIT employees who were admitted this year to membership in the Quarter Century Club.

The 205 new members, the largest group ever to join the Club at one time, bring total membership to 1,063 persons. Some 450 attended the banquet.

The Quarter Century Club is composed of persons who have worked at MIT for 25 years and includes members from campus, Lincoln Laboratory, and Draper Laboratory.

Included in the new group as an honorary member was Joanne Miller, assistant director of the MIT News Office who began working at MIT in 1957. Ms. Miller has played an active role in the MIT community and has attended Club functions to report on them in *Tech Talk*. On vacation in California, she sent a telegram saying, "It's great to be legit at last."

John Newcomb of the Center for Advanced Engineering Studies, executive director and assistant to the chairman of the Club, was master of ceremonies. He introduced the original first lady of the club, Mrs. Thomas Chambers. The late Mr. Chambers was the Club's first president, serving from 1940 until his retirement in 1965.

Robert Radocchia, manager of Walker Memorial and chairman of the Club's board of directors, reported on Club activities. He announced that a \$1,000 scholarship had been awarded to Matthew L. Sherman, an MIT senior in chemistry from Lynn, Mass.

Jeri Whitman of Draper Laboratory, Club president, read the roll of new members and each came to the lectern to receive from Mr. Radocchia a certificate and gold MIT pin. Each also received an MIT chair.

New members are:

Adler, Karl E., Lin. Lab Group 12, Bedford; Aker, Charles D., Lin. Lab Group 16, Lexington; Alkins, Charles A., Bedford Flight (DL), Dorchester; Antinarelli, Henry B., Physical Plant, Readville; Atkinson, Arthur W., Lin. Lab Group 72, Littleton; Axelbank, Martin, Lin. Lab Group 36, West Newton; Backer, Stanley, Mechanical Engineering, Waban; Baghdoyan, Leon A., Lin. Lab Group 71, Greenland, N.H.; Bateman, Margaret M., Lin. Lab Director's Office, Concord; Bauer, John R., Lin. Lab Group 95, New Ipswich, N.H.

Berberian, Mary A., Lin. Lab Group 13, Arlington; Bettencourt, Ralph A., Bedford Flight (DL), Nabnasset; Blaisdell, Edgar W., Lin. Lab Group 71, Framingham; Blake, Charles W., Jr., Lab for Nuclear Science, Sudbury; Blanchard, Paul M., Physical Plant, Whitman; Bleiler, Joseph J., Lin. Lab Group 72, Watertown; Bletzer, Paul W., Chemical Engineering, Brighton; Bohunicky, Philip W., Lin. Lab Group 36, Maynard; Boucher, Donald E., Lin. Lab Group 42, Lancaster; Boulos, Emile G., DSS Programs (DL), Waulpole.

Bowler, Donald J., Dig Dev Div (DL), Watertown; Bradley, Wilfred E., Lin. Lab Group 55, Dracut; Brawn, Malcolm W., Lin. Lab Group 71, Nashua, N.H.; Brown, George M., Campus Housing, Allston; Buchi, George H., Chemistry, Cambridge; Burke, Robert L., Lin. Lab Group 23, Lexington; Butman, Robert C., Lin. Lab Group 27, Concord; Cady, Robert J., Haystack, Groton; Calileo, Daniel W., Center for Space Research, Chelmsford; Calileo, Robert W., Lab for Nuclear Science, Burlington.

Carley, John A., Personnel Relations, Lincoln Center; Castro, Joseph, Jr., Lin. Lab Group 72, Hyde Park; Chisholm, James H., Lin. Lab Group 37, Lexington; Ciampi, John S., Lin. Lab Group 12, Cambridge; Clark, Joseph A., Physical Plant, Arlington; Connor, Edmund J., R&QA Div. (DL), Brockton; Conrad, Peter J., Jr., Lin. Lab Group 68, Littleton; Cores, Louis, Lin. Lab Group 13, Wellesley Hills; Corkum, Ralph, Campus Housing, Winthrop; Cronin, John J., Physical Plant Office (DL), Arlington.

Crowder, Wayne H., Lin. Lab Group 46, Billerica; Davis, Robert N., Lin. Lab Director's Office, Arlington; Decker, Evelyn C., Graphic Arts, West Roxbury; DiBartolo, Joseph, Jr., Lin. Lab Group 46, Lexington; DiFrancesco, Eugene, Lab for Nuclear Science, Burlington; Dodd, Robert V., Lin. Fiscal Office, Lexington; Donovan, Frederick J., Lin. Lab Group 13, Waltham; Dotoli, Arthur F., Jr., Lin. Lab Group 72, Melrose; Dunnell, James W., Revere, Biology; Eagleston, Peter S., Civil Engineering, Brookline.

Eckl, Donald J., Lin. Lab Group 23, Waltham; Elias, Peter, Electrical Engineering, Cambridge; Enticknap, Ronald G., Lin. Lab Group 64, Concord; Fahey, Margaret E., Lincoln Fiscal Office, Lexington; Fairweather, Eugene N., Engineering Secretary (DL), Woburn; Fandel, James J., Personnel Services,

Reading; Faulkner, Howard D., Lin. Lab Group 72, Belmont; Favreau, Harold R., Lin. Lab Group 82, North Billerica; Feldman, Bernard, Lin. Lab Group 83, Malden; Felton, Francis J., Lin. Lab Group 96, Billerica.

Fleck, Philip L., Jr., Lin. Lab Group 46, Winchester; Fleming, Francis O., Lin. Lab Group 72, Methuen; Frishkopf, Lawrence S., Electrical Engineering, Lexington; Puglietta, Wallace C., Mechanical Design Div. (DL), Malden; Gabriel, Paul J., Chemistry, West Roxbury; Geotis, Spiros G., Meteorology, Saugus; Gianoukos, William A., Adept. Test Sec. (DL), Belmont; Gibson, Margaret A., Student Affairs, Belmont; Goldberg, Irving, Lin. Lab Group 14, Lexington; Grando, John J., Lin. Lab Group 72, Cambridge.

Granese, Mary A., Lin. Lab Group 17, Wakefield; Grant, Frederick D., System Eng. Div. (DL), Wellesley Hills; Grant, Lyle, L. Lin. Lab Group 87, Carlisle; Greaves, Allan W., Lin. Lab Group 71, Lincoln; Griffin, James F., Office of Laboratory Supplies, Medford; Grimaldi, Michael J., Lin. Lab Group 72, Lowell; Guditz, Elis A., Lin. Lab Group 23, Lexington; Guernsey, Gordon L., Lin. Lab Group 91, Lexington; Halle, Morris, Dept. of Linguistics and Philosophy, Newton; Hanlon, Janet, Admissions, Chelsea.

Harney, Janice G., Lin. Lab Group 71, Randolph; Harris, Robert A., Lin. Lab Group 12, Wakefield; Harris, Alfred A., Jr., Phy. Plant, Malden; Heavern, Richard J., Lin. Lab Group 13, Arlington; Herald, Gertrude C., Compt. Acct., Watertown; Heron, Francis K., Lin. Lab Group 16, Nutting Lake; Herrett, Gilbert M., Business Off. (DL), Medford; Hildebrandt, Robert W., Hybrid Comp. Div. (DL), Woburn; Hitchcock, John, Jr., Pkng. Design Div. (DL), Boxford; Hodgkins, Paul S., Jr., Lin. Lab Group 13, Westwood.

Huntington, Jonathan T., Lin. Lab Group 3KM, San Francisco, Cal.; Hutzenlaub, John G., Lin. Lab Group 7, Winchester; Janiak, Martin J., Lin. Lab Group 76, Danvers; Johnson, John Q., Lin. Lab Group 52, Sharon; Jones, Clarence W., Lin. Lab Group 36, Hudson, N.H.; Jordan, Lawrence S., Safety & Security (DL), Lexington; Karel, Marcus, Nutrition, Newtonville; Kelley, Charles A., Lin. Lab Group 11, Dorchester; Kibrick, Eileen R., Library, Cambridge; Kirk, Charles T., Jr., Lin. Lab Group 23, Acton.

Lake, William R., Lin. Lab Group 15, North Reading; Lax, Benjamin, Physics, Chestnut Hill; Leavy, Milford H., Haystack, Chelmsford; Lerner, Robert M., Lin. Lab Group 6, Harvard; Lettvin, Jerome Y., Biology, Cambridge; Lewis, Paul D., Lin. Lab Group 11, Bedford; Lindonen, Edwin A., Material Science and Engineering, West Medford; Little, John D. C., Management, Lincoln, Lomon, Earle L., Physics, Lexington; Lorden, Gerald J., Research Lab of Electrics, Somerville.

Lorizio, Joseph J., Faculty Club, Canton; Love, Rowena A., Lin. Lab Directors Office, Arlington; Lowe, Archie N., Lin. Lab Group 15, Dorchester; MacDonald, Douglas A., Lin. Lab Group 12, Melrose; MacLean, Ralph L., Lin. Lab Group 83, Waltham; Mangan, Edward J., Center for Space Research, Quincy; Manganaro, Angelo A., Lin. Lab Group 72, Arlington; Mann, Robert W., Mechanical Engineering, Lexington; Manning, Mary J., Educational Council, Everett; Martelli, Albert A., Faculty Club, Framingham.

Martin, Fay D., Physics, Belmont; Mason, Erving, Inst. & Syst. Int. (DL), Chelsea; Mathiasen, Arthur A., Lin. Lab Group 94, Merrimack, N.H.; Maydoney, Bohdan M., CSDL B CTR. Sec. (DL), Mattapan; McCabe, Harry P., Lin. Lab Group 43, Arlington; McDonald, William, Physical Plant, Dedham; McGowan, Coleman H., Inst. & Syst. Int. (DL), Woburn; McMahon, Philip M., Lincoln Fiscal Office, Lowell; McNamara, Frank L., Lin. Lab Group 94, Concord; Melanson, Roger S., Lin. Lab Group 13, Woburn.

Merrill, Elton R., Lin. Lab Group 53, Concord; Milne, Walter L., assistant to the chairman of the Corporation and special assistant to the president for urban relations, Arlington; Milne, John, Jr., Lin. Lab Group 72, Braintree; Morandi, Mary A., Lin. Lab Group 15, Marlboro; Morgan, Frank P., Lin. Lab Group 11, Melrose; Morris, James P., Radiation Center, East Falmouth; Morrow, Walter E., Jr., Lin. Lab Director, Weston; Moscillo, Joseph V., Lin. Lab Group 15, York Beach, Me.; Mulholland, Frank A., Lin. Lab Group 12, Wilmington; Mulkern, John E., Lin. Lab Group 15, Hudson.

Nelson, Stuart A., Athletics, Squantum; Nevins, James L., Auto and Man/Mach. (DL), Burlington; Norman, Chesley A., Lin. Lab Group 91, Plymouth; Oberbeck, George A., Mechanical Design Division (DL), Belmont; O'Donnell, William J., Haystack, Dracut; Olbert, Stanislaw, Physics, Melrose; Palm, John G., Lin. Lab Group 13, Georgetown; Panzini, Patrick J., Lin. Lab Group 15, East Boston; Peake, William T., Electrical Engineering, Waban; Pesanelli, Felix A., Lin. Lab Group 13, Malden.

Peterson, Homer C., Lin. Lab Group 36, Lexington; Pinckney, Robert P., DCD User Service (DL), Arlington; Piro, Joseph D., Lin. Lab Group 42, Bedford; Pirroni, Joseph S., Lin. Lab Group 55, Somerville; Pishenin, George, Student Affairs, Arlington; Pitts, Robert F., Lin. Lab Group 55, Arlington; Prugnarola, Lawrence J., Lin. Lab Group 54, Bedford; Puleo, Anthony W., Lin. Lab Group 72, Burlington; Pupi, Dominic L., Lin. Lab Group 72, Hyde Park; Raffel, Jack I., Lin. Lab Group 23, Lexington.

Rainville, Louis, Haystack, Salem; Rasmussen, Norman C., Nuclear Engineering, Sudbury; Richardson, Robert E., Lin. Lab Group 52, Weston; Rigby, Aubrey R., Mechanical Engineering, Burlington; Roberts, James B., CAES, Concord; Rosenblith, Walter A., Provost, Brookline; Rubin, Anne L., Project MAC, Cambridge; Ruina, Jack Philip, Electrical Engineering, Cambridge; Saliga, Robert J., Lin. Lab Group 27, Marlboro; Salterio, James A., Jr., Tech. Comm. Off. (DL), Randolph.

Sarno, Michael A., Lin. Lab Group 11,



REMINISCING are Charles Wilkins, Albert Martelli, Donald Stevenson, and F. Ken Heron.



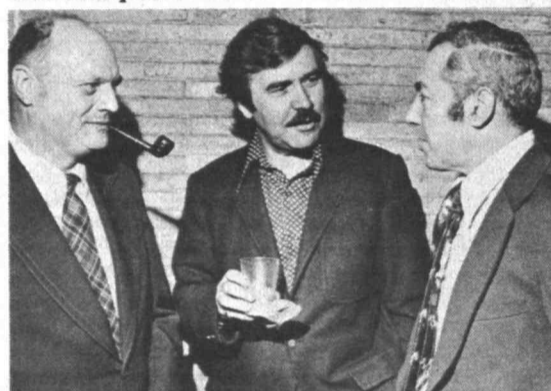
ALL SMILES are Margaret Gibson, John Carley, Janet Hanlon, and James Nevins.



LINCOLN QUARTERS Joseph DiBartolo, Jr., Margaret Fahey, Rowena Love, and Vincent Sferriano socialize before banquet.



GOOD TIME is shared by George Brown, Gilbert Herrett, Robert Blackberg, and Henry Antinarelli.



NEW QUARTERS Norman Rasmussen, George Pishenin, and Edward Sudenfield get together before banquet.



OLD TIMES are remembered by brothers Robert and Alfred Harris, William McDonald, Edwin Londenon, Robert Pinckney, and Paul Blanchard.

Acton; Saunders, William F., Lin. Lab Group 16, Marlboro; Saviano, Andrew B., Haystack, Winchester; Scharn, Harold V., Lin. Lab Group 91, Billerica; Sebring, Paul B., Haystack, Concord; Sferriano, Vincent J., Lin. Lab Group 24, Burlington; Shanahan, Mary M., Radiation Center, Phoenix, Ariz.; Shea, James F., Physical Plant, South Boston; Shea, Warren, Mechanical Engineering, Cambridge; Sherman, John R., Electronic Systems Lab, Holbrook.

Slade, Chaloner B., Lin. Lab Group 91, Bolton; Sliski, Daniel J., National Magnet Lab, Lexington; Smith, Arnold J., Inst. and Syst. Int. (DL), Arlington; Sperdelozzi, John, CAES, Brockton; Stevens, Robert R., Lin. Lab Group 95, Acton; Stevenson, Donald T., National Magnet Lab, Concord; Stone, Stanley C., Cen. Mach. Section (DL), Derry, N.H.; Sudenfield, Edward, National Magnet

Lab, Hyde Park; Sullivan, John E., Lin. Lab Director's Office, Wellesley Hills; Tardivo, Salvatore A., Lab for Nuclear Science, Belmont.

Terenzoni, Edward B., Lin. Lab Group 12, Burlington; Theriault, Joseph R., Lin. Lab Group 13, Burlington; Thornton, Richard D., Electrical Engineering, Concord; Trilling, Leon, Aero and Astro, Boston; Vaccaro, James A., Adept. Test Sec. (DL), East Boston; Vecchia, Walter R., Lin. Lab Group 3, Revere; Waldron, Philip, Lin. Lab Group 7, Magnolia; Walker, William C., Lincoln Fiscal Office, Lexington; Wells, Walter I., Lin. Lab Group 42, Lexington; Weymouth, Ira C., Fab. & Support Sec. (DL), Weston.

Wilkins, Charles E., Physical Plant, Jamaica Plain; Wright, Joseph J., Lin. Lab Group 71, Auburndale; Zimmerman, Marvin

D., Lin. Lab Group 54, Lexington.  
Honorary Member: Joanne Miller, News Office, North Reading.

The following five joined the Quarter Century Club in 1976 but their names were inadvertently omitted from the list published then. They are:

Michael Del Prete, East Boston, Dining Service; Gertrude Herald, Watertown, Comptroller's Accounting Office; Frederick R. Johnson, Everett, Department of Mechanical Engineering; Melvin L. Stone, Stoneham, Lincoln Laboratory, Group 43; Robert F. Tilley, Jamaica Plain, Medical Department.

## Hollywood Movie Features Designs By CAVS Fellow

Ron Hays, a fellow at MIT's Center for Advanced Visual Studies, conceived and designed the voyage of Proteus for *Demon Seed*, an MGM movie that opened in theaters across the US on April 1.

Scenes he designed give visual representation to the consciousness of Proteus IV, the master computer

that plays a major role in the movie.

Hays developed and designed the special visual sequence using electronic and film animations, live-action film, and optical camera work. The major sequence represents the first chemical-optical merge of these image types for presentation in panavision film format.

*Demon Seed* stars Julie Christie and Fritz Weaver, was produced by Herb Jaffe, and directed by Donald Cammell.

Hays is noted for film and television visualizations of music and moods. His film, *The Prelude and Liebestod*, is a visualization of Richard Wagner's *Prelude and Liebestod* from his opera *Tristan and Isolde*. Music for the film was performed by the Boston Symphony Orchestra under the direction of Leonard Bernstein who commissioned the film.

*The Prelude* won awards at the Hollywood Festival of World Television and the Atlanta Virgin Islands Film Festival and is nominated for the Japan Prize and the national Emmy. It will be shown at DOCUMENTA in Germany. *The Prelude* was shown at MIT during Arttransition, a five-day international conference on art and technology held in October, 1975.



CASTING A SHADOW from an earlier age, a bicycle parked in Maclaurin Lobby creates an image of a high-wheeler on the floor while its owner and a friend converse on the window ledge.

Photo by Calvin Campbell

## Endicott Dates Open

Endicott House, MIT's conference center in Dedham, Mass., has dates available for resident conference use this spring and summer.

Space is available April 17-25, June 5-July 9, July 15-23, August 5-20 and August 27-Sept. 6.

Persons interested in reserving dates should contact Mimi Pierson, director, or Ruth Norton at 326-5151.

# U.S. Energy Priorities Will Highlight Ojai Seminar

Setting priorities for wise use of diminishing energy resources and establishing policies that acknowledge and meet those priorities are subjects to be addressed at a day-long Energy Seminar sponsored by MIT Friday, April 15, in Ojai, Calif.

Some 40 senior executives from Southern California are expected to attend the seminar to hear specialists in energy and energy policy from the MIT Energy Laboratory and the Sloan School of Management.

In addition, participants at the seminar will hear luncheon and dinner talks by Professor Jay W. Forrester, a pioneer in system dynamics, and MIT President Jerome B. Wiesner.

Over the past several years, MIT faculty members at the Energy Laboratory and the Sloan School have collaborated extensively in developing alternative plans and strategies to meet questions posed by the energy crisis. Those participating in the Ojai seminar will be:

Dr. David C. White, Ford Professor of Engineering and director of the Energy Laboratory, who will discuss likely advances in Technology in light of diminishing resources and their consequences on business opportunities and life styles, beginning in the year 2025 and beyond.

Dr. Henry D. Jacoby, professor of management in the Sloan School and a specialist in energy and public policy, who will explore conflicting interests of various energy consumers and prospects for developing balanced and comprehensive policies over the next 50 years.

Dr. William F. Pounds, dean of the Sloan School of Management and a leader in the energy policy research studies, who will lead a discussion on the consequences of past policy judgments and how to develop future policies that will be more responsive to both industry and the consumer.

In his luncheon address, Dr. Forrester, who is Germeshausen Professor at MIT, will discuss the interrelationships of energy with the wide range of public and private policies found in the national economy. Professor Forrester's system dynamics group is presently developing a national economic model along lines parallel to previous models of urban dynamics and world dynamics.

During the afternoon, seminar participants will have the option of attending a roundtable discussion entitled "Financing New Natural Gas Supplies" sponsored by the California Energy Commission. Speakers will include: Professor Karel Fisher, Institute of Business and Economic Research, University of California at Berkeley; Professor Arlon R. Tussing, consultant to the California Energy Commission, John K. Freeman, deputy assistant administrator for energy projects, Federal Energy Agency, and Richard Maullin, chairman of the California Energy Commission.

The seminar will conclude with dinner and a talk by Dr. Wiesner on "Technology and a Developing Society." Dr. Wiesner, who was science advisor to Presidents Kennedy and Johnson, has played a prominent role in shaping national policies and programs relating to science and technology.

Helping to arrange the Ojai seminar are Frank S. Wyle, chairman and chief executive officer of Wyle Laboratories, El Segundo, Calif.; John Stephens, president, Excel Mineral Corp., Santa Barbara, Calif., and Robert A. Muh, president, Financial Services International, Inc., of Los Angeles.

The seminar is part of an ongoing MIT effort to analyze the emerging problem of energy policy and to acquaint the public with the issues.

# Huntington Hall Work Starts



WORKMEN USED SLEDGEHAMMERS to reduce the old chairs in Huntington Hall (Rm. 10-250) to manageable rubble before removing them preparatory to beginning reconstruction and refurbishing of the lecture hall. The work is part of a \$1.3 million project involving

(Continued from page 1) area.

The entire project is expected to be completed by fall.

Breene M. Kerr of Oklahoma City, Okla., Class of 1951, is chairman of the committee seeking the \$1.3 million within the MIT Alumni Fund. In a recent report to alumni officers, Mr. Kerr reported encouraging early success with the campaign, so much so that the Institute, anticipating success, permitted the project to begin, pending full contributions and pledges, so the lecture hall can be available this fall.

In another announcement to alumni, Mr. Kerr described a unique fund-raising technique being used for the campaign. Alumni and groups of alumni are being urged to endow individual chairs in the 450-seat hall at \$2,000 per chair. Individuals and groups making such endowments will have their names placed on the chairs, probably with brass plaques.

"We envision several dozen such sponsoring groups which, suitably commemorated in Huntington Hall, will make the alumni presence at MIT even more deeply felt by every-

one who uses the room," he said.

The Huntington Hall renovation and construction of the alumni center area are among goals of MIT's \$225 million Leadership Campaign. Edward O. Vetter of Dallas, Tex., Class of 1942, president of the MIT Alumni Association, in announcing the plan last fall to the annual Alumni Officers Conference, said the hope was that all the funds for the project could be raised within three years.

There has always been a Huntington Hall at MIT. It is named for Ralph Huntington, 19th century Boston business and civic leader who provided leadership and financial support to MIT's founder, William Barton Rogers, in launching in the early 1860s an institute of technology based on "the dignity of useful work."

MIT, originally located in Boston's Back Bay area, recorded its gratitude to Mr. Huntington by naming its lecture hall for him. When MIT moved to its present site in Cambridge in 1916, the name for the main lecture hall was transferred also.

Huntington Hall on the second floor of the Maclaurin Bldg. and an alumni reception area/exhibition space/office complex being installed on the first floor. The project is being paid for by alumni contributions.

—MIT photo by Calvin Campbell

## Rotberg is Elected

Robert I. Rotberg, professor of history and political science in the MIT Department of Political Science, has been elected chairman of the nominating committee of the American Historical Association. The association, with 16,000 members, is the world's largest academic professional organization in the humanities and social sciences.

Professor Rotberg is the author of a number of books on the politics and history of Africa and the Caribbean. He edits *The Journal of Interdisciplinary History*, published by the MIT Press.

Applications for the MIT Summer Day Camp are being accepted. The camp—for children aged 6-14—runs Monday through Friday from 9am-4pm. The summer is divided into four two-week quarters that start June 27 and end August 19. Tuition cost per quarter is \$80.00 or \$290.00 for the entire season. For further information, call the Day Camp Office at ext. 3-2913.

# Employees' Open House Set For May 7

(Continued from page 1)

Also included will be a number of activities that have proved popular in the past:

Two ever-popular science demonstrations will play repeat engagements. Professor Michael Feld of physics will present "Invisible Forces of Nature" showing some phenomena of the physical world and how they relate to

everyday life. Professor Mark Wrighton of chemistry will offer "The Ultimate Magic Show," demonstrating fundamental principles of chemistry at their exciting best.

For the sports minded, the MIT varsity lacrosse team will play Williams on the outdoor track oval, and the varsity crew will row

on the Charles against Wisconsin and Dartmouth for the Compton Cup.

To accommodate those who would rather participate, Alumni Pool will be open for the day for free family swimming. And Maggie Lettvinn—of television's "Maggie and the Beautiful Machine"—will demonstrate self-designed fitness programs.

As always, there will be free buttons and balloons—as long as they hold out. There will also be walk-through exhibits and demonstrations all day long, including a cockpit simulator, strobe alley, the computer facilities—complete with Snoopy calendars—and laser holography, among others.

To provide a break in the day-long festivities, Lobdell Dining Hall in the Student Center will be open for lunch from 11am until 2pm. Refreshments also will be served at a reception in the Sala de Puerto Rico from 2-3:30pm, hosted by MIT President and Mrs. Jerome B. Wiesner and other members of the administration.

"All in all, Employees Open House gives everyone a chance for a wider look at what goes on at MIT," Mr. Radocchia said. "And most of all, it gives everyone a chance to share the working environment of their MIT-employed family member. We hope everyone will come."



SNOOPY 1977 CALENDAR PRINTOUT is generated by high-speed computer printer with Richard Moore, a computer operator in Information Processing Services, looking on. Snoopy calendars will be souvenirs for people visiting the second floor of Bldg. 39 on May 7 during Employees Open House.

photo by Reg Fortier

# 1,260 Changes All-MIT Bell Band Rings Quarter Peal

The first quarter peal by an all MIT band was rung by three student members of the MIT Guild of Bell Ringers on Thursday, March 31, in Bldg. 1 classroom.

The quarter peal required 40 minutes of continuous handbell ringing. The students rang 1,260 "Bob Minor," or 1,260 changes in Plain Bob method, on six handbells, each student ringing two bells.

Methods of change ringing, an old English art, are based on changes in the bell's sequence. In a change each bell is rung once. The order of bells for the first change is usually 1-2-3-4-5-6; for the second, perhaps 2-1-4-3-6-5. Hundreds of methods are possible.

Ringers were conductor Steven Spura of Cambridge, a graduate student in materials science and engineering, and ring master of the MIT Guild; David LeDoux of Paduca, Ky., a graduate student in electrical engineering and computer science, and David Westmoreland of Gastonia, NC, a freshman in chemistry.

"Once you've rung a quarter peal, you're considered an experienced ringer," Mr. Westmoreland said. "It's one of the major goals a ringer works toward."

"What we're aiming for now is a full peal," he said. "It's four times as long and much more difficult than a quarter peal."

The minimum length of a peal is, by definition, the number of changes possible on seven bells or 5,040 changes. Since there are only 720 possible changes on six bells, the students rang those 720 and then repeated 540 in a new arrangement. This gave them the 1,260 changes required for a quarter peal.

The MIT Guild of Bell Ringers meets each Wednesday and Thursday, 5:30-7:30pm, in some part of Lobby 7 for handbell practice. Each Saturday and Sunday it practices on the bells at Boston's Old North Church, the oldest bells in North America hung for change ringing.

Guild members ring the eight bells at Old North Church on the second Sunday of each month, on special occasions, and on feast days. They will ring the bells on Easter Sunday, April 10, from 10:15-10:45am.

Guild members hope to visit ringers in Philadelphia, Washington, DC, and New Castle, Del., during a trip they are planning for the Patriot's Day holiday, April 16-19.

The MIT Guild of Bell Ringers formed in 1975 and now has 30 members.

## Goldstone Named To Royal Society

Dr. Jeffrey Goldstone, professor of physics at MIT, has been elected a Fellow of the Royal Society of London.

Professor Goldstone is a theoretical physicist who has made important contributions to the many body problem and problems of elementary particle physics.

Dr. Goldstone joined MIT as a Visiting Professor in the Department of Physics in 1974. He was appointed Professor of Physics in 1976. Before coming to MIT, Dr. Goldstone taught at Cambridge University, England, as a Fellow of Trinity College and a Senior Lecturer in the Department of Applied Mathematics and Theoretical Physics. He received his PhD from Cambridge University in 1958.

The Royal Society of London numbers approximately 800 Fellows, and is one of the oldest and most prestigious societies in the world. It was founded by a group of scholars in London in the mid-17th century, and was given its first charter by King Charles II in 1660.

# THE INSTITUTE CALENDAR X3-3270

April 6  
through  
April 17

Notice: There will be no Tech Talk April 20. Deadline for submission of listings for the Institute Calendar and Institute Notices for the issue covering April 13-April 27 will be 12 noon Fri, April 8.

## Events of Special Interest

**TWO Spring Crafts & Bake Sale\*** — Thur Apr 14 8:45am-5pm, Bldg 10 Lobby.

**Humanities Department Open House** — Thurs, Apr 7, Hayden Courtyard (Bldg 14), 3-6pm. All freshmen & sophomores interested in concentrating in or learning about sections within the department are invited. Faculty & students will answer questions. Refreshments, displays, readings, musical performances.

**Materials Science and Engineering Open House\*\*** — Fri Apr 8, displays & demonstrations 2-3:30pm, Bldg 13 Lobby. Course III students will discuss experiences, informal conversations with faculty, 3:30pm, Rm 8-314. Freshmen and undesignated sophomores invited. Refreshments.

**Physics Dept Open House\*\*** — Mon Apr 11, 4-6pm, Rm 4-339. For freshmen & sophomores interested in learning more about the department. Labs will be open, faculty & students will be on hand for questions. Refreshments.

**World Change and World Security Seminar Series\*** — All 8pm, Rm 26-100. Mon, Apr 11: **Georgi A. Arbatov**, director, US & Canadian Studies of Academy of Sciences of USSR. Thurs Apr 14: **Canon Burgess Carr**, general secretary, All Africa Conference of Churches. 8pm, Rm 26-100.

**David Frye at MIT\*\*** — LSC presents an evening with impressionist David Frye Tues, Apr 12, 8pm, Kresge Aud. Tickets: \$2, or \$1 w/MIT or Wellesley ID, available all LSC movies, LSC office (Stu Ctr Rm 457, x3-3791), in Bldg 10 lobby wk of Apr 4, or the door.

## Seminars and Lectures

### Wednesday, April 6

**Inhibition as a Factor in Some Interaction of Microbial Populations\*** — A.G. Frederickson, chemical engineering, University of Minnesota. Chemical Engineering Seminar. 11am, Rm 66-110. Coffee.

**Design of Multi-Country Migration Studies — A Report on Migrant Surveys in Eight Areas\*** — Aprodicio Laquian, International Development Research Center. CIS Migration and Development Seminar. 12n, Rm E53-482.

**Evidence for the Occurrence of Wave Groups\*** — Erik Mollo-Christensen, oceanography. Oceanography Sack Lunch Seminar. 12n, Rm 54-915. Coffee.

**Scientists in the United States Nuclear Debate: The Structure and Social Implications of a Sociotechnological Controversy\*** — Richard Sclove, G. Energy Assessment Group Seminar. 12n, Rm 12-142.

**Spectral Diversity in Solid State Lasers; New Wavelengths from Old Hosts\*** — C.S. Naiman, Sanders Associates. EECS Optics Seminar. 1pm, Rm 36-428.

**Early Days in Aviation\*** — C. Fayette Taylor, automotive engineering, emeritus. Aero/Astro General Seminar. 3pm Rm 37-212. Coffee preceding, Rm 33-222.

**Turbine Water Cooling\*** — Maher El-Masri, G; Kinetics of Oxidation of Calcium Sulfide\* — John F. Elliott, metallurgy. Energy Laboratory, Energy Technology Seminar — Combined Cycle. 3-5pm, Rm 66-360.

**Physics UROP Symposium\*** — Undergraduate speakers & their topics: Plasma Scattering of Electromagnetic Radiation, Jonathan Green, 3:30; Simulation Program for a Multiwire Proportional Counter: A Gas Scintillator Fission Fragment Detector, Yutaka Nakajima, 3:45; Preliminary Results from the APS Study of Departing Faculty from 1961 to 1975, Ted Senator, 4:05; Laser Saturation Spectroscopy in Barium, David Hinshelwood, 4:25; Infrared Astronomy, Steven Goldhaber, 4:40. Rm 4-339.

**Evolution of Clinical Ultrasound\*** — Jason Birnholtz, MD, Department of Radiology, Peter Bent Brigham Hospital. Biomedical Engineering Center for Clinical Instrumentation Seminar. 4pm, Rm 36-428. Refreshments 3:45pm.

**The Shaping of the American Hospital\*** — Charles Rosenberg, history & social science, University of PA. Technology Studies Program Seminar. 4pm, Rm 20D-205. Coffee 3:30pm.

**Nuclear Power Plant Productivity\*** — D. Bley, G. Nuclear Engineering Seminar. 4pm, Rm NW12-222.

**Photographic Process as a Perceptual Model\*** — Peter Schlessinger, photographer. Creative Photo Lab Seminar. 4pm, Rm W31-310.

### Thursday, April 7

**Integrated Optics and Optical Communications\*** — H. Kogelnik, Bell Laboratories. Research Laboratory of Electronics & Spectroscopy Laboratory Seminar. 11am-12n, Rm 66-110. Coffee 10:30am.

**Numerical Simulation of Transport in Alcator\*** — Michael Hughes, Culham & Princeton Plasma Physics Lab. RLE Plasma Theory Seminar. 2-3pm, Rm 36-261.

**A Perspective on Machine Tool Utilization and its Effect on Plant Productivity\*** — Charles Carter, Cincinnati Milacrom. Lab for Manufacturing & Productivity, Special Seminar Series. 3pm, Rm 37-187.

**Volcanic Front in Island Arcs\*** — Arata Sugimura, Kobe University, Japan. Earth & Planetary Sciences colloquium. 4pm, Rm 54-425. Tea 3:30pm, Rm 54-923.

**Determination of Dissolved Oxygen in Seawater Using Micro Platinum Electrodes\*** — Thomas E. McNeel, G. Analytical Chemistry Seminar. 4pm, Rm 8-105.

**The Evolution of Human Communities: Darwinism & the Study of Culture\*\*** — George W. Stocking, Jr, anthropology, Morris Fishbein Center for the Study of the History of Science & Medicine, University of Chicago. Darwinism & Culture Seminar Sponsored by Technology & Culture Seminar and Cambridge Humanities Seminar. 4-5:30pm, Rm 9-150.

**Hunting the W Meson\*** — S. Fubini, CERN, Switzerland. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

**US Imperialism in the Middle East\*** — Noam Chomsky, Institute Professor, Linguistics. MIT Arab Club Seminar 7:30pm, Rm 1-390.

### Friday, April 8

**Will the 4R Act Work\*** — Paul H. Banner, executive vice president, The Rock Island Railroad, Chicago. Center for Transportation Studies Luncheon Seminar. Buffet (\$1) 12n, seminar (free) 12:45pm, Stu Ctr Mezzanine Lng.

**The Last Days of Indira Gandhi: A Report on the Indian Elections\*** — Myron Weiner, dept head, political science. CIS Seminar. 12n-1:30pm, Rm E53-482.

**The Economics of Desalination\*** — M.D. Oliker, G. Chemical Engineering Seminar. 2pm, Rm 66-110.

**Study of Polyurethanes for Bio-materials\*** — V. Sa Da Costa, G. Chemical Engineering Seminar. 3pm, Rm 66-110.

**Pesticide Sector within the Agribusiness System\*\*** — Donald Senechal, Agribusiness Unit, Arthur D. Little Co, Cambridge. Nutrition & Food Science Seminar. 3:30pm, Rm 16-134.

**Wavebreaking: The Laser Heating Mechanism in Plasmas\*** — Eli Yablonovitch, Harvard University. MIT Fusion Center-Plasma Dynamics Seminar. 3:30pm, Rm 36-261. Refreshments 3pm.

**Believing and Necessity\*** — Leonard Linsky, University of Chicago. Philosophy and Linguistics Seminar. 4pm, Rm 37-212.

**Electrons on the Surface of Liquid Helium — A Two-Dimensional Electron Liquid\*** — P.M. Platzman, Bell Laboratories. Center for Materials Science & Engineering Colloquium. 4pm, Rm 9-150. Refreshments 3:30pm.

**The Formation of Auditory Descriptions\*** — Albert Bregman, psychology, McGill University, Montreal. Psychology Colloquium. 4:30pm, E10-013. Coffee 4:15pm.

### Monday, April 11

**Management Problems in the Implementation of Social Sector Programs\*** — David Kortzen, Center for Population Studies, Harvard School of Public Health. International Nutrition Policy & Planning Program Seminar. 3pm, Rm 26-414.

**System Optimization and the Bootstrap Process\*** — Gerard K. O'Neill, Jerome Clarke Hunsaker Professor of Aeronautics and Astronautics, visiting. Aeronautics & Astronautics Seminar. 3pm, Rm 37-252.

**Market Signalling: An Example of a Two-Person Decision Problem with Imperfect Information\*** — Marcia P. Kastner, engineering and applied physics, Harvard. Electronic Systems Laboratory Seminar. 4-5pm, Rm 39-500.

**Decision Making in Groundwater Development\*** — Dr. Robert Thomas, Food & Agricultural Organization, United Nations. Ralph M. Parsons Laboratory, Water Resources & Environmental Engineering Seminar. 4-5pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

**How Basic Research Really Works: A Short History of the Discovery of Lithium Cation Reactivity in the Gas Phase\*** — Ralph Staley, chemistry. Undergraduate Chemistry Seminar. 4pm, Rm 4-231. Refreshments preceding Rm 6-321.

**Mechanical Behavior of Human Skeletal Muscle In Vivo\*** — George I. Zahalek, mechanical engineering, Washington University. Harvard-MIT Rehabilitation Engineering Center Seminar. 4pm, Rm 37-212. Coffee 3:30pm.

**Water Resources Engineering in Developing Countries\*** — Paul Kirshen, Environmental Research & Technology, Inc, Concord, MA; Kenneth Strzepek, civil engineering. Ralph M. Parsons Laboratory Water Resources & Environmental Engineering Seminar. 4pm, Rm 48-316.

### Tuesday, April 12

**Design of a Thermal Operational Amplifier: Thermics Applied to Heat-Signal Control\*** — Roger L. McCarthy, G. Mechanical Engineering Doctoral Presentation. 12n, Rm 3-446.

**Self-Damped Pneumatic Isolator for Road Vehicles\*** — E. Esmail Zadeh, mechanical engineering. Applied Mechanics Seminar. 3pm, Rm 3-133.

**Estimating Future Technology — Intelligence's Most Difficult Task\*** — Herbert Scoville, former assistant director, US Arms Control and Disarmament Agency. CIS Seminar on Technology and International Security. 4pm, Rm E53-482.

**Combustion in Rotating Flow Fields\*** — Janos M. Beer, chemical engineering. Seminar in Physical Chemistry. 4pm Rm 4-370. Coffee 3:45pm, Rm 6-321.

**Nuts to Nernst or Major Element Distribution Between Olivine and Liquid\*** — John Longhi, earth & planetary sciences. Earth & Planetary Sciences Seminar. 4pm, Rm 54-915. Tea 3:30, Rm 54-923.

**What Have Solar Coronal Holes Done to our Understanding of Stellar Wind Theory?\*** — John Belcher, physics. Astrophysics Seminar. 4:15pm, Rm 37-252. Coffee 3:45pm.

**The 5'-Terminal Modification of Viral and Eukaryotic MRNA\*** — Dr. Bernard Moss, National Institutes of Health, Bethesda, MD. Biology Colloquium. 4:30pm, Rm 6-120. Coffee 4pm, 5th floor vestibule, Bldg 56.

**Electromagnetic Rocketry and the Humanization of Space\*** — Gerard K. O'Neill, Jerome Clarke Hunsaker Professor of Aeronautics and Astronautics, visiting. 1977 Minta Martin Lecture. 5pm, Rm 26-100.

**The Controversy on Sound Laws\*** — Morris Halle, Ferrari P. Ward Professor of Modern Languages & Linguistics. Linguistics & Philosophy, Perspectives on Language Seminar. 7-9pm, Rm 26-414.

### Wednesday, April 13

**Facts and Folklore in Optimization\*** — D.M. Himmelblau, chemical engineering, University of Texas. Chemical Engineering Seminar. 11am, Rm 66-110.

**Observations of Interaction Between the Internal Wave Field and Low-Frequency Flows in the North Atlantic\*** — Barry R. Ruddick, oceanography, MIT/WHOI. Oceanography Sack Lunch Seminar. 12n, Rm 54-915. Coffee.

**Technology and Political Opportunity: Evolution of the Boston Energy**

**Office\*** — M. Tyson, G. Energy Assessment Group Seminar. 12n, Rm 12-142.

**Migration and Labor Underemployment in LDC's\*** — Dipak Mazumdar, World Bank. CIS Migration and Development Seminar. 12:30pm, Rm E53-482.

**Southern Africa: Do the Whites Have the Right for Self-Determination?\*** — Dov Ronon, Harvard Center for International Affairs, on leave from Hebrew University. MIT Harvard Joint African Luncheon Series. 12:30-2pm, HCFA, 6 Divinity Ave, Rm 1.

**Strobes and Sonar\*** — H.E. Edgerton. Institute Professor & professor of electrical measurement, emeritus. EECS Optics Seminar. 1pm, Rm 4-402.

**Diffusion of Neon as a Tracer Impurity in Versator\*** — George Lasche, G, nuclear engineering. Nuclear Engineering Seminar. 2pm, Rm 38-166.

**Nuts to Nernst OR Major Element Distribution between Plagioclase and Liquid\*** — John Longhi, earth & planetary sciences. Earth & Planetary Sciences Colloquium. 4pm, Rm 54-915. Tea 3:30pm, Rm 54-923.

**Simulating the Operation of an Electric Power System\*** — J. Guerra, G. Nuclear Engineering Seminar. 4pm, Rm NW12-222.

**Quantum Gravity\*** — Stanly Desser, Brandeis University. Undergraduate Physics Colloquium. 4:15pm, Rm 4-339. Social hour following.

**VLBI with the 100-m Antenna and Nuclei of Galaxies and Quasars\*** — Eugen Preuss, Max-Planck-Institut fur Radio-astronomie, Bonn & N.R.A.O. Astrophysics Seminar. 4:15pm, Rm 37-252. Coffee 3:45pm.

### Thursday, April 14

**The Free Electron Laser\*** — M.O. Scully, University of Arizona. Research Laboratory of Electronics & Spectroscopy Laboratory Seminar. 11am-12n, Rm 66-110. Coffee 10:30am.

**Convective Cells in Inhomogeneous Plasma\*** — Prediman Kaw, Princeton Plasma Physics Lab. RLE Plasma Theory Seminar. 2-3pm, Rm 36-261.

**Process Control Applications in the Pulp and Paper Industry\*** — Mac Rivkin, Laboratory for Manufacturing and Productivity Seminar. 3pm, Rm 37-187.

**Trace Metal Analysis by Anodic Stripping Voltammetry: Effect of Sorption by Organic Compounds in Sea Water\*** — Rebecca Siebert, G. Analytical Chemistry Seminar. 4pm, Rm 8-105.

**The Search for Extraterrestrial Intelligent Life\*** — Frank Drake, Cornell University. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

### Friday, April 15

**Magnetically-Induced Desulfurization of Liquid Coal\*** — I.Y. Akoto, G. Chemical Engineering Seminar. 2pm, Rm 66-110.

**Preparation of Nb-Sn Superconductors by Powder Metallurgy Techniques (Infiltration)\*** — K. Hemachalam, Magnetic Corp of America. Superconducting Materials Development Seminar. 2:30pm, Rm NW14-2209. Refreshments 2:15pm.

**A Study of Supported Group VIII Metal Catalysts\*** — B.P. Sung, G. Chemical Engineering Seminar. 3pm, Rm 66-110.

**Inclusions, Steelmaking & Machinability\*** — S. Ramalingam, mechanical engineering, State University of New York, Buffalo. Mechanical Engineering Seminar. 3pm, Rm 3-133. Coffee 4pm, Rm 1-114.

## Community

**Technology Wives Exercise Class\*\*** — Marilyn deKleer, instructor. Sponsored by TWO. An hour of serious exercising. Newcomers welcome. Mon, 8pm, Exercise Room, Dupont Gym. Admission, 50¢.

**Women's Forum\*\*** — Mon, Apr 11: Myths or Realities: Dramatizations of Black-White Situations by members of Minority Interest Group. 12n, Rm 10-340.

**Women at MIT — 1871-1941\*\*** — 'AMITA dinner meeting with speakers Marilyn Bever, '76 & Elizabeth Drake, '58, Tues, Apr 12; Soc hour, 6pm; buffet, 7pm; speakers, 8pm; Historical Collections, Bldg N52-260. Approx \$7 for dinner, at door. RSVP Sandy Yulke, x3-6330, or 536-9052.

**Poetry Reading\*** — Sponsored by Dept. of Humanities. Susan Weiner, poet (published in *Grist, Aspect, Response*). Some poems presented with masks and mime. Wed, Apr 13, 8pm, Rm 14E-304.

**Wive's Group\*\*** — Group leaders: Charlotte Schwartz, sociologist & Myra Rodrigues, social worker, both from Medical Dept; Carol Hulsizer, faculty spouse in residence, Ashdown Hse. Wed, 3-5 pm, Stu Ctr West Lng. Babysitting Stu Ctr Rm 473. Cheryl, x3-4911.

**Low Back Problem Exercise Class\*** — Thurs, 1-2:30pm, Stu Ctr West Lng. Bring 3 pillows and an OK from your doctor. \$15/ea class. Info: x3-4138, Mon, 9am-5pm.

**TOPS\*** — Tech Organization of Professional Secretaries. Meetings Thurs. 12n, Walker Blue Rm.

## Social Events

**Strat's Rat** — Sponsored by Student Center Committee. Fri, Apr 8, 8:30pm-1am, Sala. Light & dark beer only 35¢/16oz. We play requests all night. Free with college ID.

**Latin-Salsa Band\*** — Music for all you tango, cha cha and Latin lovers. Fri Apr 8, 9pm, Wellesley Student Center, Schneider. Sponsor: MIT-Wellesley Ballroom Dancing Club. Info, Sandra Youla, 237-4051.

## Movies

**Far from the Madding Crowd\*\*** — Humanities Department. Thurs Apr 7, 7pm, Rm 14N-0615. Free.

**Robin and Marian\*\*** — LSC Fri, Apr 8, 7 & 9:30pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

**La Strada (Fellini)\*** — MIT Film Society. Fri Apr 8, 7:30 & 9:30pm, Rm 6-120. Admission, \$1.25.

**The Tall Blond Man With One Black Shoe\*\*** — LSC Sat, Apr 9, 7 & 9:30pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

**Adventures of Sherlock Holmes\*\*** — LSC Sun, Apr 10, 6:30 & 9pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

**Ansel Adams — Photographer; This is Edward Steichen\*\*** — Films about photographers, MIT Student Art Association. Mon Apr 11, 5:15 & 7:30pm, Stu Ctr Rm 429. Free.

paraiso, Mi Amor (Francia)\* — Mastering the City: Work and Survival in the Third World, films and discussion. Tues, Apr 12, 5pm, Rm 3-

rebrique (Louquier); Paisan (Rossellini)\* — MIT Film Section. Tues, Apr 12, 7:30pm, Rm E21-010. Free.

emkin\*\* — Humanities Department. Wed Apr 13, 7pm, Rm 66-110.

American Realists, Part 2: 20th Century; Calder's Circus; Twentieth Century Art: A Break with Tradition; The Americans: Three East Coast Artists at Work\*\* — Films About Artists. MIT Student Art Association. Thurs, Apr 14, 5:15pm, Stu Ctr. Wine & cheese. Free. Info x3-7019.

Midnight Cowboy\*\* — LSC Fri, Apr 15, 7 & 9:30pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

Manuelle\*\* — SCC MidNite Movie. Fri Apr 15, 12m, Lobdell. Free.

Capo\*\* — LSC Sat, Apr 16, 7 & 10pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

Paz\*\* — LSC. Sun, Apr 17, 6:30 & 9:30pm, Rm 26-100. Admission 75¢, MIT or Wellesley ID required.

## Lobby 7 Events

Shakespeare Ensemble\* — Scenes from *Comedy of Errors*, *Henry VI, Part 2*, *Pericles*, *The Winter's Tale*, *Don Juan* (Moliere), *Death Knocks* (Woody Allen). Thurs Apr 14, & Fri Apr 15, 12n, Lobby 7. Free.

Dance Club\* — Will be dancing Fri afternoons in Lobby 7 throughout winter months. Come and join in! Fri, 12n-2pm, Bldg 7 Lobby. Free.

## Music

Brass Ensemble\* — Directed by Robert Pettipaw. Performance Thurs, Apr 7, 5-7pm, under the Quincy Market rotunda, Boston. Works by Percell, Frescobaldi, Kroege, Nelhybel & others. Free.

Thursday Noon Hour Concert Series\* — Concerts in Chapel, 12n-1pm. Apr 7: Ruth Harcovitz, soprano. April 14: Sandra Stewart, soprano; James Johnson, harpsichord.

Music Library Concert\* — Christopher O'Riley, pianist. Thur Apr 7, 5:15, Music Library. Free.

Renaissance Vocal Music\* — Sponsored by Chamber Music Society. Performances & rehearsal Sun. 7:30pm, Rm 4-160. Yves, x3-5810.

Chamber Music Society Concert\* — Wed, 5:15pm, Music Library. Info: x3-3210. Free.

## Theatre

Godspell\* — MIT Musical Theatre Guild. Apr 8, 9, 14-16, 8pm; Sun, Apr 10, 4pm, Kresge. Tickets: \$3.50, \$2 children under 12, \$2.50 w/MIT ID; sold in Lobby 10, Apr 4-15, 9am-5pm. Reservations, x3-6294.

## Dance

Spring Gay Dance\* — Sponsored by Gays at MIT. Disco dance with live DJ to celebrate the coming of spring. Sat Apr 9, 9pm-1am, Sala. \$1.50, or free with MIT or Wellesley ID. Refreshments. Info x3-5440.

Hatha Yoga Classes\* — Beginner Mon, 7:15pm, intermed Tues, 5:45pm; Rm 10-340. Classes started week of Mon, Mar 28. Ei Turchinets, 862-2613.

MIT Folk Dance Club — International: Sun, 7:30-11pm, Sala. Balkan: Tues, 7:30-11pm, Stu Ctr Rm 491. Informal: Fri, 12n-2pm, Kresge Oval (Bldg 7 Lobby in bad weather). Israeli: Thurs, 7:30-11pm, Sala.

Renaissance Dance\* — Sponsored by MIT SCA. Beginners welcome. Wed, 8pm, Burton dining hall. Info: Beth Parkhurst, 964-1840.

Couple Dance Workshops with Mandala\* — Folk Dance Club. Sat Apr 9, 2-5pm, Sala. Hambo will be taught.

MIT Dance Workshop — Sponsoring a number of different projects for second term. Please check Workshop bulletin board, duPont Armory, Bldg W31.

## Exhibits

Department of Psychology Art Show\* — Exhibition of works by department faculty, staff and their family members, representing many media — paintings, watercolors, prints, photographs, some crafts. Exhibit thru Fri, Apr 8, Rm E10-013. Hours: whenever classroom not in use.

The Dyer's Art: Indigo Cloth from West Africa\* — Hayden Corridor Gallery exhibit Sat, Mar 12-Fri, Apr 8.

Michelle Stuart\* — Works on paper and handmade paper objects. Hayden Gallery exhibit Sat, Mar 12-Fri, Apr 8, Mon-Fri, 10am-4pm.

A Future for Our Past\* — Exhibit of European architectural restorations, brought to US by Ronald Lee Fleming, Vision, Inc. Rotch Visual Collections exhibit, Rm 7-304, thru Mon, Apr 11. Hours: Mon-Fri, 9am-5pm. Info: x3-7087.

Selections from the MIT Collection\* — Includes paintings, sculpture, prints, drawings, & works in site. Hayden Gallery, Fri, Apr 15-Sat, Apr 30. Hours: Mon-Sat, 10am-4pm. Free.

Nancy Begin: Watercolors & Oils\* — Faculty Club exhibit thru Sat, Apr 30. Hours: Mon-Fri, 9am-11pm. Free.

Photography by Dan Ranalli & Lauren Shaw\* — Creative Photography Gallery exhibit. Wed, Apr 6 thru Sat, Apr 30. Hours: Mon-Sat 10am-6pm; Sun 12n-8pm. Public opening Wed, Apr 6, 6-8pm. Free.

Spring Rounds\* — Exhibit of musical scores. Music Library, thru May. Free.

MIT Historical Collections\* — Permanent exhibition Mon-Fri, 9am-5pm, Bldg N52, 2nd floor. Bicentennial Exhibits: Katharine Dexter McCormick, '04; Vannevar Bush, '16; Karl Taylor Compton; Norbert Wiener, and 1876 Exhibit, Bldg 4 corridor. The New Technology Exhibit 2nd floor balcony of Lobby 7. Energy Exhibit Bldg E40, 1st floor. Radiation Laboratory Exhibit main corridor, Bldg 8.

Strobe Alley\* — High speed photographs by Harold E. Edgerton, Institute Professor and Professor of Electrical Measurement, Emeritus. Bldg 4, 4th fl.

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.

Music for Winter\* — Compositions on the theme of winter. Music Library, Rm 14E.

Graphics by MIT Design Services\* — On exhibit in Bldg 7 corridor.

## Athletics

Maggie's Self-Designed Fitness Class — Classes 12n-1pm, du Pont fencing & wrestling rms; 5-6pm, du Pont T Club Lng. PE credit course, but all are welcome.

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 Apr 13 through Apr 27 to the Calendar Editor, Room 5-111, Ext. 3-3270, before noon Friday, April 8.

# Congress Urged to Guarantee NY Reactor Waste Disposal

By ROBERT C. DIORIO  
Staff Writer

A report to be published at MIT urges Congress to guarantee immediately the funds to solve a massive radioactive waste problem in New York State rather than wait until a final determination of financial responsibility is made.

The waste—600,000 gallons of liquid and some sludge—has been stored at West Valley, N.Y., site of the nation's first nuclear fuel reprocessing plant, since 1972.

Nearly all of the 600,000 gallons is in a double-walled, carbon steel tank, 70 feet in diameter and 27 feet high. The waste can't be left in the tank indefinitely because the liquid and sludge in the bottom will eventually corrode it.

The company that owns the plant—which is not in operation—wants New York State to assume custodial responsibility for the waste. New York State, in turn, has asked the federal government to take custody.

The report urges a "two-tiered solution" which separates the "issue of who is to manage the waste . . . from the question of who should pay for the management."

The authors of the report are Dr. David J. Rose, professor of nuclear engineering at MIT, and Richard K. Lester, a visiting research fellow at the Rockefeller Foundation in New York City. Mr. Lester was a graduate student at MIT when the research for the report was done.

Their recommendation comes, they said, "both in anticipation of a potentially damaging evacuation of the sphere of responsibility at West Valley and the future course of the nuclear power industry in the U.S. . . ."

### In Technology Review

Both the West Valley problem and the immediate congressional action they propose bear on the broader issue of the role the federal government ought to play in the nuclear fuel cycle as a whole, the authors said.

" . . . The cost of further delay—measured in terms of both a potential degradation in the integrity of the existing liquid waste confinement and a heightening of public unease about the waste issue generally—must be carefully assessed if the current problems of West Valley are not to be compounded," the report said.

Nearly 100 times the amount of nuclear waste at West Valley is

stored at two federal installations in South Carolina and Washington State. The waste at the federal sites is a by-product of the nation's weapons production, and, like the West Valley waste, is "chemically intractable and the product of an old technology," Dr. Rose said. Current technology does not lead to the kind of waste causing the West Valley problem.

not lead to the kind of waste causing the West Valley problem.

The report is scheduled to be published in the May issue of MIT's *Technology Review*.

### Issue of Responsibility

The history of West Valley contains the major ingredients of the broader debate on nuclear fuel, Dr. Rose and Mr. Lester said.

The West Valley plant was opened in 1966 by Nuclear Fuel Services, Inc. Six years later, in 1972, the plant was closed for modifications and enlargement. The company has since announced it does not intend to reopen the plant and is seeking to shift its custodial responsibility for the waste to the New York State Energy Research and Development Authority.

Under the terms of a 1963 agreement with Nuclear Fuel Services, the Authority must assume responsibility for the waste, provided that the waste and the tank are in good condition, and that a number of other legal requirements are satisfied. The Authority is currently studying the question of whether those requirements have been met.

However, before a transfer of responsibility can be made the U.S. Nuclear Regulatory Commission must determine whether the Authority is capable of assuming custodial responsibility for the waste.

"The agreement does not directly address the issue of responsibility for converting the waste to a different form or transporting it to a different location," Dr. Rose and Mr. Lester said in their report.

### Additional Analysis

They suggest that the wastes be sent to one of the two federal reservations where similar wastes are produced in the nation's plutonium weapons programs. Those sites are at Savannah River in South Carolina and at Hanford in the State of Washington.

Meanwhile, New York State's Energy Research and Development Administration has asked the federal Energy Research and Development Administration to assume

custodial responsibility on the grounds that the federal government had a major role in the events that led to the present situation.

"The federal ERDA has responded to this request only by repeating its earlier offer to provide technical assistance in developing an acceptable method of waste management," Dr. Rose and Mr. Lester said.

"ERDA officials say that this should not be interpreted as a refusal of responsibility, since the next step in the affair necessarily involves the additional technical analysis that ERDA is willing to provide. But, they argue, allocation of the responsibilities that are being urged upon ERDA cannot be determined so casually."

### Rule-Making Procedure

Dr. Rose and Mr. Lester said their study has led them to the conclusion that no amount of advance rule making by the government will help solve the problem.

"Cleaning up West Valley is an experiment, for which there are no good precedents. Our conclusion is reinforced that the operation must be conducted as such; the principal experimental guidelines will be prudence, intelligence, resolve and a charitable view on risk-sharing."

"The nature of the problem prevents these guidelines from being forged into a comprehensive strategy before the task begins."

Their proposal for immediate government action calls for the Congress to authorize the federal ERDA to manage the West Valley waste.

"ERDA would then proceed to develop an expanded set of waste management options as the first phase of NRC's rule-making procedure. This assessment would be unhindered by any legal or political complexities concerning the question of agency responsibility . . ."

### Costly Mistake

"Congress would then appropriate funds enabling ERDA to fulfill its role as the waste manager in accordance with the guidelines set by NRC."

"These guidelines would probably require modification as the work proceeded."

"Meanwhile, efforts would be made to settle the question of how the financial responsibility for the waste treatment and disposition is to be allocated amongst the federal and state governments and Nuclear Fuel Services. If that question ultimately requires judicial settlement, then so be it. But it need not be resolved before beginning the

work."

The MIT researchers said it was the choice of carbon steel for the main West Valley tank that led to most of the difficulty.

" . . . It was known that the carbon steel tanks would not last forever, and long-term storage of neutralized liquid waste would require periodic transfer of the waste from old to new tanks. But it was not known how the sludge could be removed. Moreover, there were doubts as to the acceptability of

## CAES Issues New Film Catalog

MIT's Center for Advanced Engineering Study has just published its second annual catalog of instructional videotapes, 16mm films and study guides for the teaching of engineering, science, mathematics and management.

The 120-page catalog lists more

## Students Offered Summer Grants

The Department of Urban Studies and Planning has announced the establishment of a summer grants program for student fieldwork and research and invites MIT freshmen, sophomores and juniors to submit proposals for the summer of 1977. Projects include summer internships and urban research projects.

Kent W. Colton, associate professor of Urban Studies and Planning, is the fieldwork and research coordinator. "The purpose of this program is to encourage students to become involved in areas of urban research, planning and public policy," he said. "We hope that it will encourage students to use the summer to gain practical experience. Proposals should reflect creative thinking and be specific with respect to the subject matter or areas to be explored."

Approximately seven to 10 grants will be awarded in the range of \$250 to \$1,000. Proposals should not exceed \$1000.

Interested students should submit a proposal accompanied by two letters of recommendation (at least one from an MIT faculty member) and a resume. Proposals should be submitted to Professor Colton, Rm. 7-335, by April 22. Applicants will be notified as to funding decisions by May 1.

Questions concerning the program should be directed to Ron Lester or Ruth Kolodney, x3-4409, or Professor Colton, x3-7736.

liquid storage as a long-term management method . . .

"In a nutshell, the high-level waste management philosophy at West Valley was a temporizing one: the system was adequate for the time being, and something would turn up before long.

"Whatever the rationalization, the choice of neutralized waste storage in carbon steel tanks was a costly mistake."

than 500 lectures, demonstrations and study guides which are available for rental or purchase. Both "refresher" courses and "state-of-the-art" courses are included.

Among newly listed subjects are "Building an Innovative Organization," "Cooling of Electronic Equipment," and "Quality Control."

The film, videotape and print materials are now being used by industrial firms, business organizations, government agencies, professional and trade associations and colleges and universities. The "faculty" are from MIT and other institutions. The "students" include practicing engineers, industrial scientists and technical managers as well as college students—both graduate and undergraduate.

A number of foreign industrial firms and universities have begun to participate in the program within the last year. In general, overseas clients purchase rather than rent materials because of transportation costs, said John T. Fitch, director of technology based educational development and marketing for the Center.

A number of firms, however, have rented first and then exercised an option which allows them to apply the rental fee toward the purchase price, Mr. Fitch said.

The most popular subjects during the last year, Mr. Fitch said, have been "Digital Signal Processing," "Colloid and Surface Chemistry," and "Management of Technological Innovation."

Other popular subjects have been "Mechanics of Polymer Processing," "Engineering Economy," "Modern Control Theory" and a refresher course called "Calculus 'Revisited.'"

# Sea Grant Research Finds Uses for Shellfish Shells

By CHERYL SIMON  
Sea Grant Program

When you order shrimp or crab in a restaurant, often all you see is the appetizing dish prepared by the chef. However, the meat you eat is only a fraction of the creature. The shell, and any flesh remaining inside, is considered waste that poses a disposal problem for shellfish processors.

But chitin (pronounced kite-in), a cellulose-like material contained in the shells of shellfish, can be used to produce materials that can be used as food wraps, that speed healing of wounds, improve the strength of paper and cloth and as an adhesive to bond paper, wood and leather. The material can also be used to remove radioactive heavy elements from nuclear power plant wastes and metal contaminants from drinking water.

Interest in chitin and chitosan, one of its derivatives, is growing as shellfish processors respond to regulations that prohibit dumping of untreated shellfish waste in the sea.

"It's an instance where enforcement of pollution requirements may spawn a whole new industry," says Professor Benjamin L. Averbach of MIT's Department of Materials Science and Engineering.

Professor Averbach is one of several engineers and scientists who will deliver papers at the First International Conference on Chitin and Chitosan in Boston April 11 to 13. The conference is sponsored by the Massachusetts Science and Technology Foundation and the MIT Sea Grant Program.

## Twice As Strong

Professor Averbach says chitosan can be developed into products that help remedy other forms of pollution. Through the MIT Sea Grant Program, he is investigating ways to produce and use chitosan.

Because it readily absorbs heavy metals from both fresh and salt water, chitosan can be used to treat industrial waste streams which often contain heavy metals.

"Take shellfish," Professor Averbach said. "If you put them in polluted waters, they absorb and store pollutants, mostly in the shells." This is because of chitosan, which Professor Averbach says can absorb metals in concentrations as low as several parts per million.

Professor Averbach is also investigating properties of chitosan films that can be used as food wraps. He believes these clear films are biodegradable and are twice as strong as most plastic wraps. Best of all, they do not depend on petroleum products for their manufacture.

## More Appealing

Scientists are also investigating medical and pharmaceutical applications for chitin and chitosan. Professor Averbach says chitosan may be used in dialysis machines for the treatment of kidney ailments. Because of its absorptive properties, chitosan membranes may be used to remove certain waste materials from blood when kidneys are not functioning efficiently.

"To get it applied commercially you need a good reliable source of chitin," Professor Averbach said. "You can't regard it as waste anymore. You have to consider it a raw material resource."

Chitin sources include shellfish such as crab, shrimp, lobster and crayfish. Depending on the species, only 15 to 25 percent of the live weight of these animals is the edible meat portion. Shellfish processors dispose of the rest by dumping in the sea or taking it to landfills. But dumping is outlawed and landfill operators dislike the waste material because in its raw form it decomposes slowly.

Since the initial interest in chitin in 1876, and the first preparation of chitosan in 1895, interest has fluctuated. But with rising costs of other materials and increased shellfish disposal costs, chitin production and processing have become more appealing.

## Shrimp Harvest

Sponsored by the MIT Sea Grant

Program, the Center for Policy Alternatives at MIT investigated chitin potentials. The center's report, "Industrial Prospects for Chitin and Protein from Seafood Wastes," suggests a two-step production mode.

In the first step, shellfish processors would separate the loosely bound tissue that remains in the shell and process the material into a dried protein product that can be used as a supplement for livestock feed. The second step is the actual chitin and chitosan production by regional processing plants.

In Japan, where chitin is already widely used, shellfish processors conduct both parts of the operation. However, Dale Hattis, a researcher at the center, said shellfish processors in the United States "think of themselves as food people, not chemical industry people."

The study also suggests that several small chitin and chitosan plants should be built, each processing shells brought in from a 50-mile radius, because it is not practical to ship shells over longer distances for processing. The lack of widely dispersed plants is one reason why only a small portion of the 110,000-ton annual U.S. shrimp harvest lends itself to such processing.

## Medical Advisory Board Will Hold Open Meeting

The proposed student health insurance program for the 1977-78 academic year will be discussed in an open meeting of the MIT Medical Advisory Board at 12 noon Monday, April 25, in the MIT Infirmary's third floor conference room.

Members of the board and the areas of the Institute they represent are: Louis D. Smullin, Dugald Caleb Jackson Professor of Electrical Engineering, chairman; Glenn L. Urban, associate professor of management science, faculty representative; Margaret Sand, staff; Lee Johnson, bi-weekly; John Goddard, hourly; Beverly Colby, Tech Wives; Nancy Solomon, Health Plan; Carolyn Clay and Jay Kunin, graduate students; David Karp and Jan Kronish, undergraduate students; Nancy Holoway, Lincoln Lab staff; Linda Simon, Lincoln Lab exempt; Constance Bean, coordinator of health information and patient advocate of the Medical Department, and Elizabeth Hormann, assistant coordinator of health information.

Laurence Bishoff, associate director for administration of the Medical Department, Dr. Edward S. Rendall, assistant medical director, and Dr. Melvin Rodman, medical director, are ex officio members. Board secretary is Maria DeMarco.

## Crafts Sale Next Week

The Technology Wives Organization (TWO) spring crafts sale and bake sale will be held Thursday, April 14, in the Bldg 10 Lobby from 8:45am-5pm.

Anyone may contribute goods for the bake sale. All proceeds will be kept by TWO to finance its activities.

Priority will be given to TWO members in distributing display space for the crafts sale, but any member of the MIT community may request space by calling Wendy Glasser, crafts chairperson, x3-5869 days, 924-0133 evenings.

All crafts must be handmade by the displayer. "This may sound unfair to some people," Ms. Glasser said, "but its the only way TWO can protect itself from outside professional organizations."

The seller sets the price on all handcrafted items. TWO keeps 10 percent of the profits for an interest free scholarship loan for which all MIT community wives are eligible. The seller keeps the rest of the profits.

TWO holds two crafts and bake sales each year. They are extremely popular events, so drop by early for the best selection of handcrafted items.

## BPW Sale April 15

The MIT Branch of the Cambridge Business and Professional Women's Club will hold its annual White Elephant Sale Friday, April 15, 9am-2pm, in Rm. 7-102. Money raised is given as scholarship to a young Cambridge woman.

## Fencers Top Sports Week

### MEN'S FENCING

The MIT men's fencing team placed sixth overall in the NCAA Championships at Notre Dame March 24-26. The team brought home All-American honors for the second time in the history of MIT men's fencing (the first time was in 1974).

Fifty-three teams participated in the Championship tournament, with forty-four schools sending full three-man teams. Of these 44 teams, only 12 placed all three of their men in the finals and MIT was one of them. Host Notre Dame took top honors, with NYU runner-up, Wayne State (Mich.) in third place, Penn in fourth and Harvard taking fifth place.

Senior Captain Arlie Sterling (Norfolk, Mass.) took 16th place in the epee. Junior Mark Smith (New York, N.Y.), this year's winner of the foil competition at the Intercollegiate Fencing Championships, switched to sabre in the Notre Dame competition and captured 10th place. Senior Rich Reimer (New York, N.Y.) placed eighth in the foil. Although none of the MIT competitors were able to qualify for individual All-American honors, the Tech three-man team did qualify, and that is quite an accomplishment.

### WOMEN'S FENCING

The senior co-captain of the women's fencing team, Judith Austin (Austin, Tex.), travelled to Madison College, Harrisonburg, Va. to compete in the NCAA Women's Fencing Championships April 1-2. About 120 girls participated in the tournament, with the top 24 competitors moving into the final rounds. Unfortunately for both Judy and MIT, Judy missed moving into the finals by one bout, a bout that she lost by just one touch. She finished 25th in a field of 120, which is quite a performance for a girl who has only been fencing since her sophomore year.

## Sloan Research Grants

Two assistant professors at MIT—Dr. Dorian Goldfeld of the Department of Mathematics and Dr. Sean C. Solomon of the Department of Earth and Planetary Sciences—are among 95 young scientists at 53 institutions in the US and Canada named recently to receive two-year Sloan Fellowships for Basic Research from the Alfred P. Sloan Foundation.

The Fellows were selected from some 500 applicants by an eight-man panel. The Fellowships, established in 1955, are intended to stimulate fundamental research by young faculty at a time in their careers when other support is difficult to obtain.

## Multimedia Show Is Stuff That Dreams Are Made Of

Composer and media artist Paul Earls, a Fellow at MIT's Center for Advanced Visual Studies, is principal contributor to and artistic director of an exhibition, "Dreamstage—A Multimedia Portrait of the Sleeping Brain," to be held at Harvard's Carpenter Center for the Visual Arts (19 Prescott St.) April 23 through May 22.

Open to the public free of charge Tuesday through Sunday, 6-11pm, the exhibition will demonstrate the structure and function of the brain during sleep and dreams.

Paul Earls's work of the past six years on electronic music and electronically generated laser patterns will be represented. He will create

## MIT Musical Theater Guild Brings "Godspell" to Kresge



ENACTING A PARABLE in *Godspell* are Lanier Leonard (left), an MIT freshman, and Rosalie Gerut, a secretary in the Department of Electrical Engineering and Computer Science.

*Godspell*, a musical based on the Gospel according to St. Matthew, will be presented by the MIT Musical Theatre Guild in Kresge Auditorium at 8pm on April 8, 9, 14, 15, and 16, with a 4pm matinee on Easter Sunday, April 10.

*Godspell* uses mime, dance, and rock music to interpret parables of the Gospel. The musical, one of the most popular shows of the early 1970s, opened off Broadway in 1971 and soon moved to Broadway where it was a hit.

Director of the MIT production is Paul Gonyea, and choreographer, Sharon Glazer, both graduates of State University of New York.

Music director is Eric Ziering, an MIT junior in civil engineering from Newton, Mass. Robert Norton, a senior in civil engineering from Encino, Calif., is assistant director, and Brian Rehrig, MIT '75, is producer. Set designer is Michael R. Connor, a sophomore in electrical engineering and computer science from Woodbridge, Va., and lighting designer is Jack Peers, MIT '73.

Cast members from MIT include

## Talbot Available

Talbot House, MIT's farmhouse in South Pomfret, Vt., has openings during May for groups from the MIT community who want to enjoy the countryside, study for exams or unwind after exams are over.

There are openings both during the week and Memorial Day weekend. For more information and to reserve space contact the Preprofessional Office, Rm 10-186, x3-4158.

Constance Herron, a freshman from Spring Lake, NC, who will sing "Day by Day," the show's most famous song; Mitchell Weitz, a junior in chemistry from Rego Park, NY, who will narrate most of the parables as they are enacted; Lanier Leonard, a freshman from Brooklyn, NY, who played a lead role in the fall production, *Two Gentlemen of Verona*, and Rosalie Gerut, a secretary in the Department of Electrical Engineering and Computer Science.

Tickets—\$3.50, \$2.50 with MIT ID, and \$2 for children under 12—will be sold in Lobby 10 from 9am to 5pm weekdays April 4 to 15, and at the door. For reservations, call Ext. 3-6294.

## Farren Music Set for Europe

A musical composition by Martin Farren, assistant professor of music at MIT, will be played at a number of European concerts this spring.

The Blackearth Percussion Group has included *Musica Tridentina* in the repertoire for its six-week tour. Professor Farren composed the work for three percussionists and tape in 1974. It was played at MIT in March, 1976, by the Blackearth Percussion Group, a quartet of musicians devoted to contemporary percussion music. More recent performances have been given in Illinois, Wisconsin, and at Dartmouth College.

The eight-nation tour is sponsored in part by the Cultural Affairs Division of the US State Department.

## Kelly Fund Sponsors Poetry Reading Here

Susan Weiner, a poet well known to Cambridge literary circles, will read her poetry at 8pm on Wednesday, April 13, in Rm 14E-304 at MIT.

The poetry reading, open to the public free of charge, is sponsored by the I. Austin Kelly III Fund of the MIT Department of Humanities. Some poems will be presented with masks and mime.

Ms. Weiner's poetry has appeared in such magazines as *Grist*, *Aspect*, and *Response*. She has read her poems at the Blacksmith House and 100 Flowers in Cambridge.



# Report of Committee on Admissions and Financial Aid

(The following report of the Committee on Undergraduate Admissions and Financial Aid was prepared by the chairman, Professor Richard M. Douglas of the Department of Humanities and is based on remarks by Professor Douglas before the meeting of the Faculty March 16.)

## I

The Rules and Regulations of the faculty state that this committee "shall be responsible for formulating and reviewing policies on admission for all undergraduate students . . . and on financial aid to students, including undergraduate scholarships, loans, and student employment." This is a clear mandate, but it is no less obvious that the committee will require an increasing amount of help and counsel from the faculty over the next decade in view of the increasing complexity which surrounds the admission process. There are so many new conditions, so many new boundaries, and so many changing circumstances — affecting so many aspects of the life of this institution — that no committee of twelve by itself can function adequately without help.

In the first part of this report, I will try to suggest why it is that college admissions during the next decade are likely to bear a rapidly diminishing resemblance to the process as it has been known during the past fifteen years. After reviewing trends in the national picture, the report will then turn to the reflection of such trends at MIT.

A significant though disturbing sign of the times is the appearance of marketing language and advertising usage in current studies of college admissions. The College Entrance Examination Board, for example, has recently sponsored a publication called "A Role for Marketing in College Admissions." Separate analyses have been made on the "high-ability market," and the "student market and private institutions." Some colleges have turned over their entire admissions offices to advertising agencies. The marketing idiom is not an accident. It merely signifies increasing competition for a declining number of students, a declining number of consumers for an increasingly expensive product.

Demographic projections vary somewhat with regard to the size and character of the college-attending population in the near future. The Bureau of the Census has produced figures to the effect that the national population of eighteen-year-olds will peak at 4.2 million in 1977, sloping off steadily and uniformly to the 1964 level of 3.5 million in 1986. On the other hand, our own studies of schools in the Greater Boston area show very clearly that peaks in some cities and towns of constant size were passed as early as 1967 or the early '70s. The combined class sizes of Belmont, Brookline, Lexington, Newton North and Newton South High Schools in 1966 was 3,173 students; in 1976 it was 3,167. The smallest of these schools has declined by over 300 since 1972.

Projections made by the National Center for Education Statistics (HEW, Washington, 1976) show a profile for high school graduates which departs from the curve prepared by the Bureau of the Census on the total population of eighteen-year-olds, indicating that the number of those who complete high school will remain relatively stable from 1974-79, to be followed by a precipitous drop in 1981-82. Enrollment in private four-year colleges is expected to decline by 35% between 1975-83. The CEEB darkens the future in another way by reporting that the number of students with SAT's in the range 600-800 declined by 32% between 1972-75. (The corresponding figure at the institutions with which MIT competes over the same period dropped by 12%.)

## II

The maximum potential pool of applicants who currently qualify for admission at MIT is probably between 30,000-35,000. The size of this pool is determined not only by SAT scores, but also by entrance requirements at MIT which specify

four years of mathematics, a year of chemistry and a year of physics in high school; and College Board Achievement Tests in mathematics (Level 1 or Level 2) plus an Achievement Test in either chemistry or physics and English composition or history. The principal distinction between entrance requirements at MIT and those in the Ivy League lies not so much in the list of required high school courses as it does in the use of the Achievement Tests. While MIT requires an AT in either chemistry or physics, the Ivy League settles for any set of three AT's. In other words, a student can be admitted to Harvard on the basis of CEEB tests in English, history, and French. An incomplete eligibility study being conducted by our committee seems to indicate that only 15-16% of the high school graduates in the class of 1976 from the Greater Boston area could satisfy the entrance requirements here. The pool eligible for admission to the Ivy League at the same schools is often three times larger.

High school requirements prescribed for admission to MIT are effectively the same at other engineering schools. Caltech, for example, also requires a full year of chemistry or physics. But while they prescribe an AT in Level 2 mathematics, Cal Tech will accept any two AT's from the following list: chemistry, physics, biology, and English. While these options would appear to be more liberal, they also have the effect of requiring three years of laboratory science for students who offer biology for admission instead of two.

In recent years the Institute has received roughly 8,000 preliminary applications, which are reduced to 5,000 completed final applications. Out of these, roughly 2,000 are selected for admission; and the yield from this body is an acceptance level of 1,000. Where do those students go who receive admission and cancel it? Currently, 45% take admission in the Ivy League. Ten years ago this number was over 50%. Another twelve percent go to Caltech or Stanford. (It is interesting, however, that Stanford loses as many applicants to MIT as MIT loses to Stanford, just as Stanford loses more in an average year to Harvard than MIT.) Another 18% go to other private colleges. And 8% go to state universities, with the balance distributed between the smaller engineering schools and military academies.

The Admissions Office runs an extensive study of these cancellations every year. The reasons given most frequently have to do first with expense (30%) and with the perceiv-

ed lack of "breadth" or "diversity" in the MIT curriculum (24%). MIT also loses strong applicants who have high scores in science and mathematics but do not feel they are ready to make a professional or career commitment to engineering or science. It should be pointed out, however, that every one of the principal private institutions in the country, with the exception of Harvard, goes through the annual anguish of losing as many as half of its most promising applicants to other campuses.

During the past few years a number of selective institutions have experienced a decline in "yield" (the percentage of those admitted who enroll) during a period when the volume of applications increased. Between 1970-75 the rate of yield at MIT was stable at roughly 54%; in 1976 it dropped to 46%. There is no simple or obvious explanation for the general decline in yield at MIT and among its competitors. The average number of applications at MIT has grown during the past decade by 20% and the bundle of applications made by individual applicants has tended to become much more varied. The drop below 50% last year may have been the result in the change in a single parameter — namely, the postponement from March 24 to April 15 of the mailing date of letters of acceptance to comply with the admissions calendar of the Ivy League. The effect was to shorten the time for decisions and visits by students, and for contact by Educational Counselors and undergraduates. The Admissions Office returned to the earlier date this year.

Competition for first-rate students will inevitably grow keener. The committee feels that the uniqueness of MIT, however, will continue to work to its advantage, especially in the case of engineering students. Competition for science students is already acute, particularly from Harvard, Princeton, Yale and Cal Tech; competition for students with a talent for science who do not yet have career plans or professional intentions in science and engineering has always been very severe.

The committee has recently reviewed Financial Aid policy at MIT. Since 1970 that policy simple states that no qualified student will be denied admission for reasons of financial need. Applications for financial aid are mailed in separately and are separately processed, so that the financial circumstances of the 2,000 finalists who are offered admission are unknown in the selection process. MIT took a major initiative in sponsoring this policy. No special inducements are offered

to National Merit Scholarship finalists, athletes, etc. Financial aid is a differential package which includes two components (1) self-help (loans, jobs, family contribution) up to an "equity level" of \$2,500 for 1977-78; and (2) scholarship or direct aid for those who qualify for it on the basis of need as defined by the guidelines of the College Scholarship Service.

At present roughly half of MIT undergraduates are receiving financial aid, the percentage rising to 62% in the class of 1980 and to 80% for the class of 1981. This last increase is cause for concern, particularly if it represents a new plateau or a rising trend. Five major competitors (Cornell, Dartmouth, Harvard, Pennsylvania, and Stanford) have recently begun to provide a higher proportion of direct aid or scholarship money to the highest five or ten percent of its applicant group — a minor, though significant departure from the principle of equity to the test of "merit." Case Institute is now awarding merit scholarships to ten percent of each entering class, Caltech to five percent. There is no disposition in our committee to advocate "no-need" scholarships as a recruiting device, despite a trend to such awards elsewhere. But there is serious concern within the committee about the steady increase in the equity level and the high cost of stabilizing it in the future. Endowment income available for financial aid at MIT is significantly less than among our neighbors in most of the Ivy League, and the price of parity in the form of additional endowment funds would be close to \$30,000,000. Whether or not one dislikes marketing metaphors, the conjunction of rising costs and declining numbers has already produced new or refurbished forms of competition.

Although it has been difficult until recently to assess the effects of rising costs on yield, there seems now to be evidence of a migration to less expensive colleges on the part of those who qualify for aid at the lowest level of support. This group is showing the lowest yield in the twenty-three campus consortium with which MIT shares admission data. Conversely, the highest yield reported by this group appears among those with greatest need. MIT may be unique in the fact that it appears not to be losing students who accepted admission from families with moderate incomes and low need; the yield in 1976 was the same for those who applied for aid as it was for those who did not. Nevertheless, we must point to the drop in the percentage of students in the Cancellation Study who chose the Ivy League in recent years and a matching rise in the percentage of those who went to less expensive private colleges. Although tuition at MIT is not the highest among its major rivals, it would be difficult to argue that the total cost of an undergraduate year at MIT is not affecting the rate of acceptance.

The committee expects to make recommendations at the end of the semester with regard to recruitment, a new form of guidance conference, a review of the Scholastic Index, and proposals for increasing faculty participation in the selection process. Professor A.P. French, with collaboration from Professor A.P. Mattuck, conducted a detailed and comprehensive study of high school preparation in physics and mathematics among the freshmen during orientation week last September, a survey which produced a response close to 100%, as though to anticipate what would have been a recommendation from this committee of biennial articulation studies based on current data about high school curricula in these disciplines.

The committee shares a high regard for the performance of the Admissions Office—for the skill with which it manages the complexities of the application process and the perplexities of the selection process. The exercise of choosing and composing a class of a thousand students every year substantially shapes and constructs the character of the Institute. At the same time, and to a very large degree, the class which is annually admitted to MIT selects itself through the acts of application and acceptance. Personal

decisions by members of the class are the result of many factors. Not the least of these factors is the subjective perception of the Institute which the undergraduates who are already here project back to the high schools from which they came. Still another factor is the image of MIT that our undergraduates, our alumni and our faculty project to the rest of the world. In the end, though, all these images turn out to be fashioned by those of us who teach here and who establish the quality of learning available here.

## Freshman Advisors Are Sought

The Freshman Advisory Council is seeking faculty volunteers to serve as freshman advisors for the 1977-78 academic year.

Objective of the program is threefold—to provide academic advice and other counsel to freshmen, to serve as a personal contact between the Institute and freshmen, and, most important, to enable freshmen to develop a continuing personal relationship with a senior member of the MIT community.

A detailed knowledge of the Institute, especially the freshman year experience, is helpful. Advisors do not simply answer questions and solve problems, but help freshmen determine what questions to ask and where to find their own answers.

Current advisors estimate their total time commitment averages about 10 hours per advisee for the entire academic year. Often faculty members who also teach undergraduate seminars select their advisees from their seminar.

The Freshman Advisory Council, Rm 7-103, x3-6771, can answer questions on the freshman advisory program. Anyone also interested in teaching an Undergraduate Seminar should contact the Undergraduate Seminar office, x3-3621, or the program's faculty chairman, Professor Cravalho, x3-3282.

## Urban Studies Plans Open House

Course XI (Urban Studies and Planning) invites undergraduates to a departmental open house today (Wednesday, April 6), from 2 to 6pm, in Rms. 7-331 and 7-335. Urban Studies students and faculty will be on hand to answer questions of students considering Course XI as a major, a humanities concentration or for elective coursework. Refreshments will be served.

The open house is arranged around an exhibit of student and faculty work. Student projects will be displayed on videotape, slides and in poster form. The exhibits will remain on display in 7-331 and 7-335 through Friday, April 8.

The exhibits range from a slide-tape case study of Boston's Park Plaza development, to reports on a municipal finance project for the city of New Haven; from research done by students and faculty for the Environmental Research and Development Administration, to an evaluation of alternative treatment programs for female offenders.

## David Frye Coming

Comedian David Frye will entertain in Kresge Auditorium Tuesday, April 12, at 8pm under sponsorship of MIT's Lecture Series Committee.

Mr. Frye, known for his impersonation of former President Nixon, will satirize current American political figures, including Henry Kissinger, President Carter and former President Ford. Tickets—\$2, or \$1 with an MIT or Wellesley ID—will be sold at all LSC movies, in the LSC office (W20-457, x3,3791), in the lobby of Bldg. 10 this week of April 4, and at the door.

## ENTRANCE REQUIREMENTS

### M.I.T.

ENGLISH (4)  
ALGEBRA (1)  
PLANE GEOMETRY (2)  
PHYSICS (1)

CHEMISTRY (1)  
TRIGONOMETRY (1/2)

ENGLISH (3)  
MATHEMATICS (4)  
CHEMISTRY (1)

PHYSICS (1)

ENGLISH (4)  
FOREIGN LANGUAGE (4)  
MATHEMATICS (4)  
LABORATORY SCIENCE (1)

ENGLISH (4)  
FOREIGN LANGUAGE (4)  
MATHEMATICS (4)  
LABORATORY SCIENCE (2)  
HISTORY (2)

### CAL. TECH.

S.A.T.  
Level II MATH  
Two of the following A.T.'s:  
PHYSICS—CHEMISTRY—  
BIOLOGY—ENGLISH COM-  
POSITION

### HARVARD

S.A.T.  
Any three A.T.'s

### PRINCETON

"...does not require fixed secondary school course requirements for admission...is primarily interested in the quality of the student's record." But the following program is "desirable":

ENGLISH (4)  
FOREIGN LANGUAGE (4)  
MATHEMATICS (4)  
LABORATORY SCIENCE (2)  
HISTORY (2)

### YALE

"No prescribed high school program is necessary in order to apply to Yale, but do recommend that you undertake the richest possible mix of academic offerings available to you."

S.A.T. plus three A.T.'s



and other files; handle conference, special program and student function arrangements; type general correspondence, class material, technical reports. Excellent typing skill, willingness to accept responsibility required. Some college training, familiarity with MIT procedures preferred. B77-121 (4/6).

**Secretary IV** to Research Associate and professional staff in the Center for Policy Alternatives, a multi-disciplinary center which analyzes current issues: type correspondence, reports from written draft and machine dictation; arrange travel and meetings; answer routine correspondence independently. Will be trained to use word processing equipment. Excellent typing, organization and machine transcription skills required. College training; knowledge of French, Hebrew, shorthand/speedwriting desirable. B77-126 (4/6).

**Secretary IV** in Humanities to perform all secretarial duties for music section: typing; filing; xeroxing; taking notes of faculty meetings; answering phones. Will also be responsible for scheduling of practice facilities and piano labs. May also perform secretarial duties for other sections of department. Excellent typing and organizational skills, shorthand or speedwriting, previous secretarial experience required. B77-106 (3/23).

**Secretary IV** to provide general secretarial support for senior fund-raising officers in Resource Development: arrange appointment and travel schedules; transcribe shorthand and machine dictation; handle other secretarial duties as necessary. Excellent shorthand and machine transcription skills, ability to set priorities and to work independently required. MIT experience preferred. B77-108 (3/23).

**Secretary IV** in Medical Department Psychiatric Service will perform general secretarial duties for the Service and for the Clinical Sociologist; develop resource materials for the Service; coordinate Institute activities for international students and their families. Good general secretarial skills, the ability to work under pressure and a liking for detailed work required. Familiarity with MIT and knowledge of a foreign language helpful. Non-smoking office. 37 1/2 hrs./wk. B77-114 (3/23).

**Secretary IV** in the Medical Department Psychiatric Service will perform general secretarial duties and share receptionist duties with other secretary. Will do occasional library research. Applicants must be able to handle details with accuracy and possess good organizational and interpersonal skills. Position involves extensive telephone and personal contact. Non-smoking office. 37 1/2 hrs./wk. B77-113 (3/23).

**Secretary III/IV** in the Audit Division to handle receptionist duties; file; type; transcribe machine dictation. Type statistical and financial reports. Excellent typing and English grammar skills required. B77-125 (4/6).

**Secretary III** to subcontract administrator in the National Magnet Laboratory: type correspondence, proposals, other materials; maintain files; answer phones; arrange appointments and travel. Secretarial school training or a minimum of 1 year secretarial experience required. B77-123 (4/6).

**Secretary III**, part-time, in the Alumni Assn. will handle general secretarial duties; type letters, manuscripts; answer phones; fill publication orders; perform other clerical assignments as necessary. Good typing and English grammar skills required. 20 hrs./wk. B77-122 (4/6).

**Secretary III** part-time, in the Research Laboratory of Electronics to assist other secretary in providing secretarial services to faculty and research staff; type; file; xerox; answer phones. Will be trained in technical typing. Good typing skills and at least 1 year secretarial experience required. 20-25 hrs per week, preferably Mon., Wed. and Fri. B77-117 (4/16).

**Secretary III** in Mechanical Engineering to provide secretarial support to faculty member and other secretary: type reports, proposals, technical papers and correspondence; handle additional office duties as necessary. High school graduate, or equivalent, and good typing skill required. B77-119 (4/6).

**Sr. Library Asst. IV** in Barker Engineering Library to assist literature selection librarian in acquisition of new materials for electrical engineering, ocean engineering, applied mathematics and reference collections. Check catalogues to determine current holdings; search various references for bibliographic information; order materials; maintain file of outstanding orders; act as liaison with Collections Department. Will also coordinate microfiche activity with Microreproduction Laboratory; assist in training other library assistants. College training, accurate typing, organizational skills required. Library experience or graduate course work in library science plus bibliographic knowledge also necessary. B77-120 (4/6).

**St. Library Asst. IV** in the Libraries Catalogue Dept. will process OCLC subject card shipments; establish subject headings; implement heading changes and resolve conflicts among different catalogues as necessary. Handle other catalogue related processes. Will also catalogue monographs using LC data or limited subject analysis. A college degree, ability to plan and perform detailed work, typing skill required. Related library experience desirable. B77-112 (3/23).

**Library Assistant III** in the Libraries Collection Development Dept. will act as out-of-print assistant, securing materials unavailable from publisher. Will also process incoming materials; check received material for accuracy; approve invoices; answer telephone inquiries. College degree, capacity for detail, typing skill required. Library experience preferred. B77-109 (3/23).

**Clerk IV** in the Medical Dept. Division of Laboratory Animal Medicine to monitor accounts; verify monthly statements; assist in preparing fiscal reports and annual budget proposals; prepare monthly billing; act as liaison with accounting office; handle general typing and filing. Graduation from 2 year Business School or substantial related experience necessary. Typing skill required; familiarity with medical terminology preferred. B77-11 (3/23).

**Accounting Clerk/Secretary III** in the Student Accounts Office to assist in the preparation of degree list candidates; assist in the review of students financial status, perform typing of letters, filing, maintain office supplies, petty cash; answer general questions. Ability to deal with students in a very busy atmosphere required. B77-18.

**Sr. Clerk III** Publications Office Assistant, in Information Processing Services to distribute technical publications; maintain and update reference manuals; prepare new user packets; handle related clerical duties as necessary. Ability to handle detailed work including cash transactions with accuracy, typing skill, flexibility for changing assignments required. Non-smoking office. B77-116 (4/6).

**Clerk Typist III**, temporary, in the Summer Session's Office to type various material related to admissions process: letters, cards, rosters; contact faculty and applicants; file; assist in weekly registration process and in large mailings. The ability to work under pressure with poise and to handle complex processes accurately required. Typing skill also necessary. Temporary through 8/30/77. B77-124 (4/6).

**Laboratory Aid** in the Center for Cancer Research to collect, wash, sterilize various types of laboratory glassware, using related machines and equipment; keep laboratory areas clean and orderly; do related laboratory tasks as required. Work occasionally involves use of chromic acid cleaning solutions. A high school graduate, or equivalent, required. Some experience in washing scientific glassware desirable. H77-57 (4/6).

**Hourly, Electrician**, in Physical Plant to install and maintain all types of electrical equipment and systems, working from blueprints, verbal instructions or sketches as necessary. A Mass. State

license and a minimum of 5 years applicable experience required. Applicants must be able to work all shifts as required and may be required to work an irregular schedule as determined by the needs of the electrical shop. Some electronic experience desirable. H77-52, H77-53 (4/6).

The following positions were still available at *Tech Talk* deadline. The date following each position is the date of the most recent *Tech Talk* issue in which the position was described.

**ADMINISTRATIVE STAFF:**  
A76-52, Applications Programmer, Off. of Admin. Info. Syst. (12/1)  
A77-3, Systems Prog., Info. Processing Serv. (2/16)  
A77-8, Asst. Dir./Prog. Admin., Off. of Spons. Prog. (3/2)  
A77-11, Asst. Dir., Admissions Off. (3/16)  
A77-13, Stud. Financial Aid Officer, Stud. Fin. Aid (3/23)

**BIWEEKLY:**  
B76-613, Sec. IV, Ctr. for Policy Alternatives (12/1)  
B77-11, Clerk III, Div. of Lab. Animal Medicine (1/26)  
B77-25, Asst. Computer Oper. III, Off. of Admin. Computer Serv. (2/2)  
B77-26, Sec. IV, Civil Eng. (2/2)  
B77-50, Clerk III-IV, Admin. Comp. Serv. (3/23)  
B77-58, Sec. IV, Urban Studies Planning (3/2)  
B77-59, Sec. IV, Civil Eng. (3/2)  
B77-70, Sec. III-IV, Chemical Engineering (3/2)  
B77-80, Sr. Lib. Asst. IV, Rptch Lib. (3/16)  
B77-89, Clerk Typist III, Physical Plant (3/16)  
B77-95, Sr. Clerk IV, Lab. for Comp. Sci. (3/16)  
B77-99, Sec. III-IV, Psychology (3/23)  
B77-102, Sec. IV, MIT Sea Grant Prog. (3/23)

**ACADEMIC STAFF:**  
C77-2, Tech. Asst., Chemistry (3/16)  
C77-3, Asst. Sci. Librarian, Libraries (3/16)

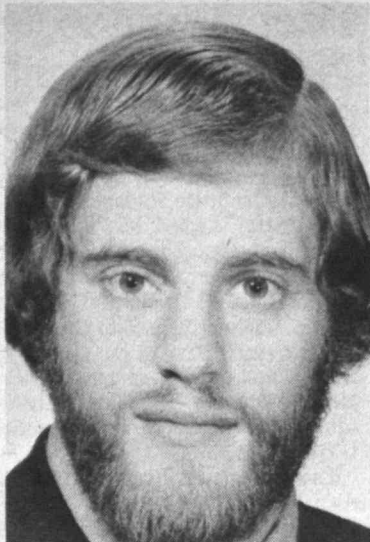
**SPONS. RES. STAFF:**  
D76-17, Biochemist, Res. Lab. of Elec. (2/25)  
D76-121, Res. Engineer, Energy Lab. (7/28)  
D76-123, Staff Biophysicist or Biochemist, National Magnet Lab. (7/28)  
D76-126, Immunologist, Clinical Res. Ctr. (8/11)  
D76-180, postdoc. res., Physics, Lab. for Nuclear Sci. (10/13)  
D76-182, Staff Engineer, Elec. Eng. & Comp. Sci. (10/13)  
D76-187, Postdoctoral Scientist, Ctr. for Space Res. (10/13)  
D76-188, Postdoctoral Scientist, Ctr. for Space Res. (10/13)  
D76-220, Research Analyst, Ctr. for Policy Alternatives (11/24)  
D76-225, Sci. Applications Prog., Lab. for Nuclear Sci. (1/5)  
D76-232, High Energy Physics Res., Bates Linear Accelerator (1/5)  
D76-233, High Energy Physics Res., Bates Linear Accelerator (1/5)  
D76-243, Metallurgist, National Magnet Lab. (1/12)  
D76-244, Manager, Combustion Facility, Energy Lab. (1/12)  
D76-246, High Magnetic Field Res., National Magnet Lab. (2/9)  
R77-6, Staff Scientist, Arteriosclerosis Ctr. (1/19)  
R77-9, Systems Analyst, Elec. Eng. (1/26)  
R77-14, Staff Petrographer, Earth & Planetary Sci. (2/2)  
R77-16, Prog. Mng., Energy Lab. (2/9)  
R77-17, Systems Theory Res., Elec. Syst. Lab. (2/9)  
R77-21, Energy Analyst, Energy Lab. (2/16)  
R77-22, Astro Physics Res., Ctr. for Space Res. (2/16)  
R77-26, Planetary Radar Data Analysis, Earth & Planetary Sci. (3/2)  
R77-33, postdoc. res., Physics, Ctr. for Theoretical Physics (3/9)  
R77-34, postdoc. res., Physics, Ctr. for Theoretical Physics (3/9)  
R77-35, postdoc. res., Physics, Ctr. for Theoretical Physics (3/9)  
R77-36, postdoc. res., Physics, Ctr. for Theoretical Physics (3/9)  
R77-37, High Energy Physics Res., Bates Linear Accelerator (3/9)  
R77-39, Chemical Eng., Energy Lab. (3/9)  
R77-43, Sr. Elec. Eng., Plasma Fusion Ctr. (3/16)  
R77-44, Tech. Asst., Psychology (3/23)  
R77-47, Syst. Prog., Energy Lab. (3/23)  
R77-49, Res. Eng., Energy Lab. (3/23)  
R77-50, Economist/Econometrician, Energy Lab. (3/23)  
R77-51, Sr. Res. Eng., Energy Lab. (3/23)

**EXEMPPT:**  
E76-41, Principal Oper., Physical Plant (12/1)  
E77-3, Mech. Shop Super., Physical Plant (1/26)  
E77-5, Real Time Diagnostic Syst. Prog., Haystack Observatory (2/2)  
E77-7, House Manger, Housing Dept. (2/16)  
E77-10, Metal Shop Super., Physical Plant (3/16)

**HOURLY:**  
H77-28, 2nd. Class Firer, Physical Plant (3/9)  
H77-29, 2nd. Class Engineer, Physical Plant (3/9)

The following positions have been FILLED since the last issue of *TECH TALK*:  
B77-85 Sr. Clk. III  
B77-75 Admin. V  
B77-82 Sec. IV  
B77-91 Clk. II  
R77-12 Spons. Res.  
A77-4 Admin. Staff  
B77-86 Sec. IV  
B77-97 Sec. IV  
B77-98 Clk. II  
R77-52 Staff Physicist  
H77-34 Amb. Attendant  
B77-84 Sec. IV  
B77-78 Admin. Asst.  
B77-86 Sec. IV  
B77-87 Sec. III  
B77-94 Sec. IV  
B77-104 Edit. Sec. III  
B77-14 Sec. IV  
B77-105 Book Checker II  
R77-27 Spons. Res.  
R77-5 Spons. Res.  
D76-239 Spons. Res.  
R77-13 Spons. Res.  
B77-74 Sec. III  
B77-79 Sec. V

The following positions are on HOLD pending final decision:  
R77-25 Spons. Res.  
B77-100 Sec. IV  
B77-80 Sec. III  
H77-39 Custodian  
G77-41 Custodian  
G77-42 Custodian  
B77-111 Sec. V  
R77-42 Spons. Res.



**MICHAEL R. PORTNOFF** of West Orange, N.J., a PhD candidate in the Department of Electrical Engineering and Computer Science, has won the IEEE's Browder J. Thompson Memorial Prize for the best paper by an author under 30 years old published in an IEEE publication last year. His paper, *Implementation of the Digital Phase Vocoder Using the Fast Fourier Transform*, appeared in the June, 1976, *IEEE Transactions on Acoustics, Speech and Signal Processing*. The prize includes \$1,000. Mr. Portnoff, 27, is doing his doctoral dissertation on high-quality time compression and expansion of speech signals.

## MIT Press Books Given Wide Reviews

Five books from the MIT Press have received national reviews over the past several weeks.

*Newsday* called *Bicycling Science* by Frank Rowland Whitt and MIT professor David Gordon Wilson, "the first full blown study of two-wheel engineering since 1896," and "full of fascinating information." *New Age Review* calls the book "the definitive work on bikes."

*The Car Culture*, by James J. Flink, was also reviewed by *Newsday*, as a social history of the automobile that includes "fascinating studies of the inventors and builders of the automobile industry."

The British medical journal, *The Lancet* says of *Crisis in the Workplace* by Nicholas A. Ashford, a senior research associate at the Center for Policy Alternatives: "This book should be read by all those who have an interest in occupational health and safety..."

*The History of the German Resistance 1933-1945*, by Peter Hoffman, translated by Richard Barry, is the first English edition of this work. A History Book Club Selection, it is a study of German resistance to the Nazi regime. A reviewer in *Publishers Weekly* says: "For scholars, this may be the definitive work."

Finally, *Images of an Era*, the catalog of an exhibit of American posters (1945-1975) from the Smithsonian Institution distributed by the MIT Press, was reviewed by Carol Felsenthal in her syndicated *American Library Association* book column as "a stunning guide to the twists and turns of the last three decades of American life."

## Health Educator Author of New Book

Constance A. Bean, coordinator of health information and education in the MIT Medical Department, is the author of a new book, *Labor and Delivery, An Observer's Diary* (Doubleday & Co., Inc.) that relates the author's two-year experience observing childbirth in 12 Boston-area hospitals as well as several at-home deliveries.

Mrs. Bean, former president of Boston Association for Childbirth Education, Inc., and a childbirth educator and labor coach, wrote the book because she believes people should know as much as possible about childbirth and become involved in making decisions about the births of their children. The books cover Cesarean birth, the pros and cons of fetal monitoring, nursing, induced labor, and parent-child contact in the delivery room.

# Dr. Press Sees Great Value In Exchanges With Chinese

Dr. Frank Press, the MIT scientist nominated by President Carter as director of the Office of Science and Technology Policy in the Executive Office of the President, believes there is "tremendous potential" in the ongoing exchange of ideas and information between American and Chinese scientists.

Although the exchange program—underway since 1972—is still not much more than "scientific tourism," Dr. Press says there has already been significant progress.

His views on this aspect of U.S. science policy are contained in a report by Marjorie Lyon, published in the February issue of *Technology Review*, MIT's journal of science and technology.

Dr. Press, a leader in national and international science planning and administration, is chairman of the National Academy of Science's Committee on Scholarly Communications with the People's Republic of China. His review of the committee's work, presented at a Technology Studies Seminar at MIT is summarized in the *Technology Review* report.

The committee, which is funded by private foundations, the National Science Foundation and the U.S. State Department, arranges trips by Chinese and American delegations to the others' country. About 250 Americans and 300 Chinese have participated in the first five years of the program, which is a symbol of the political rapprochement between China and the U.S.

But the two nations are far apart geographically, and culturally, socially, economically and philosophically as well, says Dr. Press. Communication, through interpreters, is excruciatingly slow, both nationalities are confronted with culture shock, and American scientists find that they are regarded as elitists, working for themselves. The Chinese practice is to minimize individual credit for work and often

## Eckaus Named to Ford Chair

Dr. Richard S. Eckaus, professor of economics and world authority in the economics of developing countries, has been appointed Ford International Professor of Economics.

The announcement was made by Dean Harold J. Hanham of the School of Humanities and Social Science.

"The previous holder of this chair, Professor Charles Kindleberger, was noted for his knowledge of international finance," Dean Hanham said. "Professor Evsey Domar, the holder of the companion Ford Chair, has a mastery of the Russian economy and similar economic systems. By appointing a distinguished development economist, we are clearly broadening our emphasis in the international area and continuing the tradition of excellence in this field."

Professor Eckaus was born in Kansas City, Mo. He received a bachelor's degree in electrical engineering from Iowa State University in 1944, a master's degree in economics from Washington University in 1946 and a PhD in economics from MIT in 1953.

He first taught at Brandeis University, where he was promoted to the rank of associate professor. He came to MIT as an associate professor in 1962, and became professor in 1965. Since 1952 he has been a research associate at the MIT Center for International Studies.

Most of Professor Eckaus' academic life has been devoted to the study of the problems of economic development and the policies for developing countries.

He has made major contributions in examining the effects of various technologies on developing countries—their choice, their transfer, and their change—in many published papers, and as a member of the National Academies of Science and Engineering Committee on Appropriate Technologies for Developing Countries. He has examined the important question of the relationship between investment in education and economic growth both in several published papers and a monograph, *Estimating the Returns to Education*, that he prepared for the

the only author listed on a specific paper is the name of the research group.

In the Chinese view, the government, peasants, and scientists all contribute to discovery and the social attitude toward science is predominant, Dr. Press says.

The committee's program ranges over all the sciences and the Chinese visitors are interested in many and varying fields—computers, physics, lasers, petrochemicals, industrial automation, basic biomedical research, tumor immunology, and agriculture, among others.

And they come prepared, says Dr. Press. They want to see what they read about and they forward detailed itineraries, with names of people and laboratories.

But, "since we don't have much information, we can't be as specific," says Dr. Press, according to the *Technology Review* report. "So the American delegations must wait until they arrive in China, when the itinerary is announced."

Some American scientists find their trips fruitful. "My delegation learned an enormous amount in completely free, detailed communication," Dr. Press says.

Others have been disappointed because they could not visit specific Chinese laboratories, but such problems have not diminished enthusiasm for the program, says Dr. Press. In fact, thousands of Americans have requested to go to China in an expression of interest that Dr. Press calls "Chinamania."

"We now have some idea of their accomplishments in a number of different fields, and our experience is disseminated through the whole scientific community by detailed published reports," says Dr. Press.

"We may not yet be involved in serious communication or joint research efforts," he says, "but we have enough of a glimpse to whet the appetite for the future."

Carnegie Commission on Education. He has developed planning models for several countries, including one for India, published as *Planning for Growth*.

More recently the major part of his research has gone into the financial side of economic development—the external aspect, for example, in the volume edited with Professor Jagdish Bhagwati, *Foreign Aid*, and the internal side in many papers on the financial and banking structure of Mexico and other Latin American countries.

Professor Eckaus also has had extensive experience as an advisor and consultant on the problems of developing countries to the International Bank for Reconstruction and Development, AID, OECD, and the Organization of American States, among others. He has been on major missions to India, Italy, Chile, Mexico, Portugal, and is now serving on the Executive Committee of the MIT Technology Adaption Program in Egypt. He has also held Guggenheim and Ford Foundation Faculty Fellowships used to study Italian economic development.

Professor Eckaus served on the Board of Economics Advisers to the governor of Massachusetts from 1963-66.

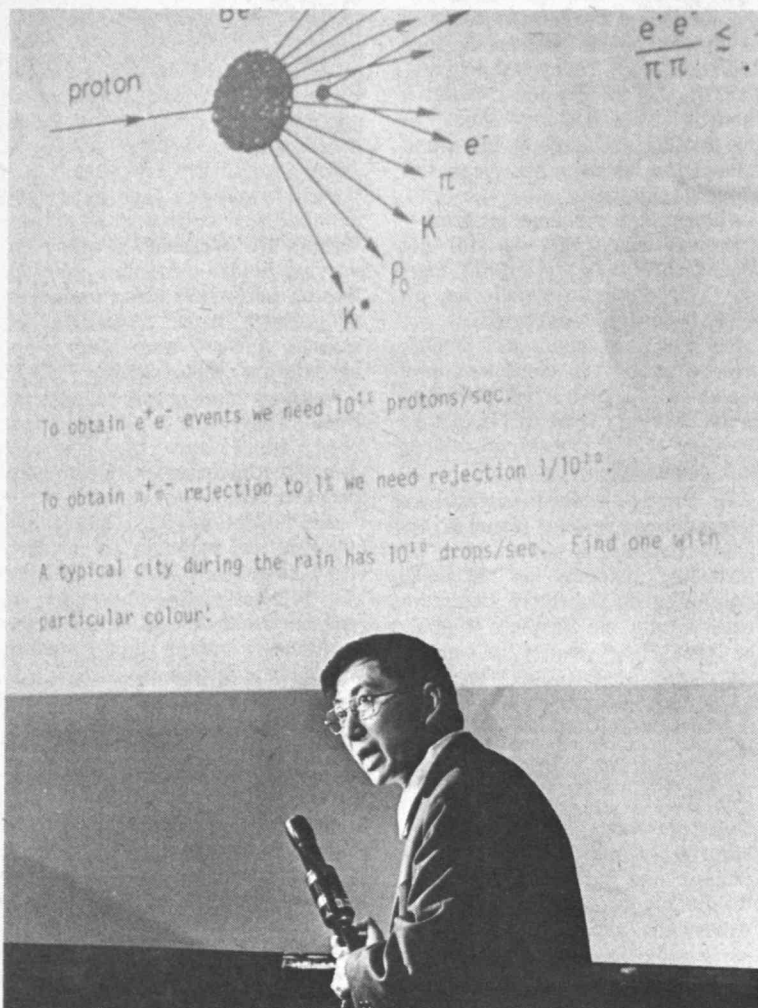
Despite his activity in economic development, Professor Eckaus has found time to produce an introductory text, *Basic Economics*.

## Eckaus, Langdon In Cambridge Forum

MIT professors Richard S. Eckaus and Langdon Winner will participate in the Cambridge Forum Lecture Series on Ethical Issues in America on Wednesday, April 13 at 8pm at 3 Church St., Harvard Square. The subject will be "Should We Switch to Small Technology?"

Dr. Eckaus is professor of economics at MIT. Dr. Winner, assistant professor of technology studies and political science at MIT, has recently published a book, *Autonomous Technologies*. The Forum is open to the public without charge.

# Cabot Chair Established; Dr. Ting Is First Occupant



**NOBEL PRIZE WINNER.** Professor Samuel C. C. Ting of MIT describes work that led to discovery of the subnuclear "J" particle for which he was named a co-recipient of the 1976 Nobel Prize in Physics. Speaking at a day-long symposium in his honor at MIT Tuesday (April 5), Dr. Ting said that finding the "J" particle was like finding one particular rain drop out of all those that fall on a typical city during its rainy season. MIT President Jerome B. Wiesner announced at the symposium that Dr. Ting would be the first occupant of the Thomas Dudley Cabot Institute Chair. Announcement of the grant to establish the chair honoring his father was made by Louis W. Cabot of Boston on behalf of the Cabot Charitable Trust and the Cabot family.

Photo by Calvin Campbell

(Continued from page 1)

"Dr. Wiesner said. "His work exploring the atomic nucleus and the stunning discovery together with his colleagues of the first of a whole new class of subnuclear particles is an important advance in the efforts of physicists throughout the world to understand the fundamental structure of the nucleus. He has brought renown to MIT and to the Boston area, and it is especially fitting that he be the first occupant of the Cabot Institute Chair expressly established to give recognition to exceptional scholarship."

Thomas D. Cabot was chief executive officer of the Cabot Corporation, a leading manufacturer of chemicals and chemical products, during the years of its growth from a sole proprietorship to a multinational corporation. He has been a member of the MIT Corporation since 1946, serving as a Term Member 1946 to 1951, a Life Member 1951 to 1972 and a Life Member Emeritus since 1972. He was a member of the Corporation's Executive Committee from 1948 to 1957, a member of the Finance Committee from 1953 to 1961 and a member of the Development Committee 1961-63. He also has served MIT as a member of visiting committees in biology, chemistry, chemical engineering, economics, meteorology, business and engineering administration, architecture and planning, mechanical engineering and materials science.

Louis W. Cabot, who succeeded his father as president and chief executive officer of the Cabot Corporation in 1960, is also chairman of the Committee for the Corporate Support of Private Universities. In his announcement Mr. Cabot stated, "This gift exemplifies our long-standing philosophy of cooperation between private enterprise and private education. It affirms our conviction that American business leaders have a very real stake in the welfare of our major private research universities. Such institutions make a unique contribution to our society, and we are confident that they will continue to have the wisdom to use the support they receive in highly constructive ways."

Cabot Corporation has been a member of MIT's Industrial Liaison

Program for many years. Under this program leading industrial companies exchange scientific and technical information with the Institute and provide it with annual unrestricted financial support.

Dr. Wiesner noted that the Cabot gift applies toward MIT's current five-year \$225 million Leadership Campaign aimed at marshalling major new support for the long-term strength and development of MIT.

"The Cabot Institute Chair," he said, "is the 18th endowed professorship to be established at MIT under the Leadership Campaign. The Campaign goal includes the establishment of 50 such endowed chairs."

The Campaign, announced in April, 1975, has reached more than half way toward its goal in less than half the time period planned for it.

Dr. Wiesner told the physicists gathered for the symposium honoring Dr. Ting that the Institute is gratified by success of the Campaign.

"Alumni and friends of the Institute worldwide," he said, "have demonstrated and are continuing to demonstrate their commitment to strengthen the financial resources of the Institute so that MIT will be able to continue to provide to industry, to the nation and to the world the leadership in teaching and research that has been a hallmark of the Institute for more than a century.

"It is through the support of the work of such scholars as Dr. Ting that we at the Institute meet our commitments to leadership."

## Plasma Physicist Visiting Professor

Dr. Miklos Porkolab, a specialist in plasma physics from Princeton University, has been appointed visiting professor of physics at MIT for four months, effective Feb. 1, 1977.

Dr. Porkolab, who has been at Princeton since 1967, is senior research physicist in the Plasma Physics Laboratory at Princeton and lecturer with the rank of professor in the Department of Astrophysical Sciences. In recent years Dr. Porkolab has been involved in experimental and theoretical work on radio frequency heating of fusion plasmas.

# Sizer Award Nominees Sought

Nominees for the Irwin Sizer Award and the Graduate School Council Award are being sought by the MIT Graduate Student Council.

The Sizer Award for "the most significant improvement to MIT education", carries a cash gift and was established by the GSC in 1975 as a permanent tribute to Dr. Irwin Sizer, former Dean of the Graduate School and now president of the Health Sciences Fund and consultant to the Resource Development Office.

The Graduate Student Council Award is for "effective and dedicated teaching of a graduate level course." Through the award, the Council hopes to focus attention on faculty who devote increasing amounts of time and resources to improved teaching.

Letters of nomination for both awards—including references and supporting material—should be submitted to the Graduate Student Council Office, Rm 50-220, no later than Wednesday, April 13.

## History of Hospitals Is TSS Topic Today

Charles Rosenberg, professor in the Department of History and Sociology of Science, University of Pennsylvania, will speak on the "Shaping of the American Hospital, 1880-1910" before a Technology Studies Seminar in Room 20D-205 at 4pm today (Wednesday, April 6).

Later speakers in the current TSS spring series will include: Arthur I. Miller, professor of physics, University of Lowell, April 27; Joel Tarr, professor of history, technology and urban affairs, Carnegie-Mellon University, May 4; and Spencer Weart, director, Center for History of Physics, American Institute of Physics, May 11. Director of the Technology Studies Program is Professor Louis Bucciarelli.

## MIT People Invited To International Ball

The International Institute of Boston has extended an invitation to the MIT community—particularly the international community at MIT—to attend the 40th International Jubilee Ball at the Boston Park Plaza Hotel (formerly the Statler Hilton) on Saturday, April 30, from 7pm to 1am.

Guests, encouraged to appear in national costume, may purchase wine and homemade ethnic foods, dance in the Grand Ballroom, watch an international cabaret or a program of international dances.

Tickets will cost \$10 at the door; \$9 if purchased in advance; or \$7.50 each for a group of ten or more if purchased by April 20. For tickets or further information, call Mrs. Abed at 536-1081.

## Professors

(Continued from page 3)

Reading, England, in 1959, and the postgraduate diploma in animal nutrition and physiology from the University of Cambridge, England in 1960. He pursued doctoral studies at the University of California at Davis in nutrition, receiving the PhD degree there in 1965.

Dr. Young was a postdoctoral research associate at MIT in 1964-65 and instructor in nutritional biochemistry 1965-66. He became assistant professor of physiological chemistry in 1966 and was promoted to associate professor of nutritional biochemistry in 1970. His principal areas of interest are human nutrient requirements, protein and amino acid metabolism, regulation of skeletal muscle protein metabolism, effects of nutrition on aging, effects of advanced age on metabolism and nutritional requirements. He is a member of the American Institute of Nutrition, the American Board of Nutrition, the Nutrition Society (England), the American Society for Clinical Nutrition, the Gerontology Society and the American Chemical Society and a member of the editorial boards for two professional journals, the *Journal of Nutrition* and the *American Journal of Clinical Nutrition*.

# USSR's Arbatov Speaks At Kresge Monday Night

taining some democratic institutions and permitting "various degrees" of personal freedom as they pursue policies to build up their economies and the living standards of their people.

Mr. Arbatov, as director since 1967 of the U.S.A.-Canada Institute under the USSR's Academy of Sciences, advises the Soviet government on policies pertaining to the United States and Canada and often acts as his government's official spokesman on such matters. He and Anatoly F. Dobrynin, the Soviet ambassador to the United States, are considered to be the Soviet Union's two top experts on the United States.

It was Mr. Arbatov who gave his government's reaction to President Jimmy Carter's inaugural address, saying it would be received "with deep satisfaction by all sober people"—a phrase construed to include the Soviet leadership.

More recently, he has been one of his government's chief spokesmen in regard to President Carter's statements on human rights and how these might affect such matters as detente and arms control.

Mr. Arbatov has written extensively on the subject of arms control and is thought by many experts in the field to be involved at the highest levels in determining Soviet nuclear arms control policy.

President Jerome B. Wiesner of MIT is one of several persons at MIT and Harvard who have come to know Mr. Arbatov well through many years of Soviet-American discussions about the control of nuclear arms.

Mr. Arbatov was elected an alternate member of the Communist Party of the Soviet Union's Central Committee at the 25th Congress of the CPSU in 1976. He had been elected a deputy to the USSR Supreme Soviet in 1974, the year he also was elected a member of the Academy of Sciences of the USSR.

Mr. Arbatov holds the degree of Doctor of Science (history) and the academic rank of Professor in history.

From 1941 to 1944 Mr. Arbatov served in the Soviet Armed Forces.

He joined the Communist Party of the Soviet Union in 1943. In 1949 he graduated from the Moscow State Institute for International Relations and from then until 1960 did editorial work for the Foreign Literature Publishing House and for the magazines *New Times*, *Problems of Philosophy* and *Communist*.

In 1960-62, Mr. Arbatov was a political commentator for the journal, *World Marxist Review*, published in Prague. In 1962-64, he headed a department of the Institute of World Economy and International Relations. He worked at the Central Committee of the CPSU from 1964 to 1967, when he became director of the Academy of Science's U.S.A.-Canada Institute.

Mr. Arbatov is the author of the monograph, *Ideological Struggle in International Relations Today* (1970); one of the authors of the textbook, *The Fundamentals of Marxism-Leninism*, prepared under the general editorship of O.V. Kuusinen (1958); and leader of a team of scholars who prepared the monographs, *The USA: Modern Methods of Management* (1971), *Management of Socialist Production* (1974) and other works.

He has published a large number of articles in scholarly journals and in the Communist Party press dealing with various aspects of international relations, the ideological struggle, world economics and economic management.

He has been awarded the Order of Lenin, the Order of the October Revolution, the Red Banner of Labour (twice), the Order of the Red Star and the Badge of Honour.

## Call Mary Morrissey

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**BRAZILIAN LECTURER.** Ambassador Campos (left) chats with President Wiesner (center) and Dr. Norman Dahl (right) prior to Mr. Campos' "World Change and World Order" lecture. Dr. Dahl is in charge of the lecture series.



**COMMEMORATIVE MEDALLION** is presented to Dr. Sigvard Eklund (left) by MIT Provost Walter A. Rosenblith on the occasion of Dr. Eklund's "World Change and World Order" lecture at MIT.