



Cambridge City Manager, John H. Corcoran, holds a check for \$207,746 which completed payment of \$350,000—more than the City had requested—by MIT to the city in lieu of taxes on educational properties. Flanking Mr. Corcoran at the presentation last Wednesday, Nov. 21, are Walter L. Milne, left, MIT special assistant to the president for urban relations,

and Frederic W. Watriss, MIT associate treasurer and recording secretary. Earlier this month MIT paid the City of Cambridge \$830,080.60 in real property taxes on non-exempt property the Institute owns. In the past five years, MIT has paid more than \$8 million in taxes and in payments in lieu of taxes to Cambridge.

—Photo by Margo Foote

100,000 Gauss in Alcator

Highest Magnetic Field in Fusion Machine

An experimental device for studying the conditions necessary for harnessing nuclear fusion has achieved a magnetic field higher than any yet reached in a fusion machine. While the higher field does not necessarily represent a major step toward nuclear fusion, the researchers say, it will enable a better understanding of various components of the fusion process.

MIT's Alcator—a Tokamak-type fusion machine—has achieved a magnetic field strength of 100,000 gauss, compared with the previous record of 60,000 gauss reached briefly by a French device at Fontenay-aux-Roses near Paris.

Alcator, under development at MIT's Francis Bitter National Magnet Laboratory, is like other Tokamaks in that it features an "escape-proof" doughnut-shaped magnetic field to contain the plasma. Fusion researchers have found that leakage from this toroidal field is smaller than from a field possessing ends.

Alcator and its cousins aim eventually at containing plasma long enough and at high enough densities to achieve fusion and to extract useful energy. Plasma is the form of matter produced at million-degree temperatures—at which electrons are stripped from their atoms and exist in a free state.

Also like other Tokamaks, Alcator uses two magnetic fields working together to contain the

plasma. One is produced by current-carrying coils that encircle what corresponds to the edible portion of the doughnut. The other is created by an electric current flowing in the plasma itself—a

current induced by a transformer that passes through the hole in the doughnut.

The MIT device achieved the higher magnetic field because,

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Inside:

A listing of Committees Appointed by the President is found on the last two pages of this edition in a special format convenient for filing.

Alumni seminars focus on management and health topics. See story on Page 8.

Needlepoint enthusiasts simultaneously produce new versions of the MIT seal in stitches. Story on Page 3.

Faculty Vote Turns Down Academic Calendar Change

The MIT academic calendar will remain unchanged this year.

The faculty by a nearly unanimous vote rejected a proposal at its meeting last Wednesday to eliminate two vacation days in the second term in order to have the term end earlier than scheduled.

The change in the calendar had been sought by the Committee on Academic Performance to give departments, faculty committees and the registrar's office more

time to review and process grades between the end of classes and commencement.

Although the move was defeated, it was generally agreed that the problem was a recurring one and would have to be resolved. Some comments were made about possible interim measures and the need for a permanent solution, and President Jerome B. Wiesner said the matter would be discussed

(Continued on page 3)

MIT Officials Map Contingency Plans For Energy Squeeze

MIT officials have been exploring various contingency plans including possible closing of the Institute for short periods this winter should it become necessary because of the oil crisis.

"We do not expect to have to close," Philip A. Stoddard, vice president for operations, said. "We expect that we will—by conservation measures and by careful management of what oil we expect to receive—be able to maintain near normal operations through the winter."

Nevertheless, Stoddard said, state and federal officials have warned major oil users that shortages this winter may be larger than already forecast.

"If those forecasts are proven correct, emergency closings here and everywhere may become mandatory," he said. "We may have no choice."

"If so, we want to be prepared with plans that will have the least possible effect in terms of teaching, research and cost."

President Jerome B. Wiesner, at the regular monthly meeting of the faculty last week, said the university "will look at a variety of modes of operation that will make the least dramatic impact on educational and research processes and on employment."

"Our goal," he said, "is to maximize fuel savings and minimize disruptions."

A major problem, President Wiesner said, has been determining just how serious the oil shortage will become.

"Nowhere can we seem to get a handle on the magnitude of the problem," he said. "It almost seems to change hourly. The best information we have now is that Massachusetts will have a 30 percent, plus, shortfall in residual oils—the kind we use here at the Institute."

Suppliers cut MIT's gallonage of No. 6 residual oil for the month of November under the national voluntary oil allocation plan. The suppliers said similar 30 percent cuts—based on consumption a year ago—can be expected through the end of the heating season.

Since then, the Physical Plant Department, under Director William R. Dickson, has been able to reduce the amount of oil burned during most of November by more than 20 percent when compared with the same period of a year ago. The Physical Plant effort, aided in no small measure by unseasonably warm weather, has initially focused on reduction or elimination of nighttime and weekend heating via ventilating systems in the main complex of buildings, by lowering average domestic hot water temperatures for the university—including dormitories—from 140 degrees to 120 degrees, and by enlisting the aid of all MIT people in adopting conservation practices.

More recently, Physical Plant personnel have begun reducing the daytime heating provided to main buildings and dormitories, but because of the warm weather, these reductions have not yet been de-

Dec. 31 Closing Will Give Two 4-Day Weekends

MIT employees will have two four-day weekends during the holiday season instead of one.

John M. Wynne, vice president for administration and personnel, has announced a special holiday closing on Monday, Dec. 31, the day before New Year's Day.

This will come a week after a previously announced special closing on Monday, Dec. 24, the day before Christmas, thus giving employees two consecutive four-day weekends.

The decision to close Dec. 31 was made, Mr. Wynne said, to add to the employees' enjoyment of the holiday season and to save energy during the fuel shortage.

tectable.

"In some areas, because of bright sunshine and large windows, temperatures have become almost excessively hot," Dickson said.

"Under normal circumstances, we would have tried to control those higher temperatures with air conditioning or by cooling ventilation air. But these operations take oil, too, so we have just let those temperatures remain high."

Meantime, MIT—along with many other major users of residual oil in Massachusetts—received authorization from the state Department of Public Health this week to burn oil with as much as 2.2 percent sulphur content. The ceiling had been .5 percent. The federal Environmental Protection Agency last week, however, gave the state permission—following a hearing—to raise the limit because of the oil crisis.

Lobby Concert Today

A noon hour concert featuring a selection of oboe quartets by Mozart and Johann Stamitz will be presented today, Wednesday, Nov. 28, in the lobby of Building 7. The quartets will be performed by Nelson Gore, oboe, Janet Packer, violin, Jack Aiello, cello, and Allan Grodzinsky, viola.

IAP Deadline

Friday, Nov. 30, is the deadline for submission of material for the Second Guide to IAP '74. Listings submitted after Friday will be posted on an IAP bulletin board in the Building 7 lobby. The second guide is due to be distributed Dec. 12.

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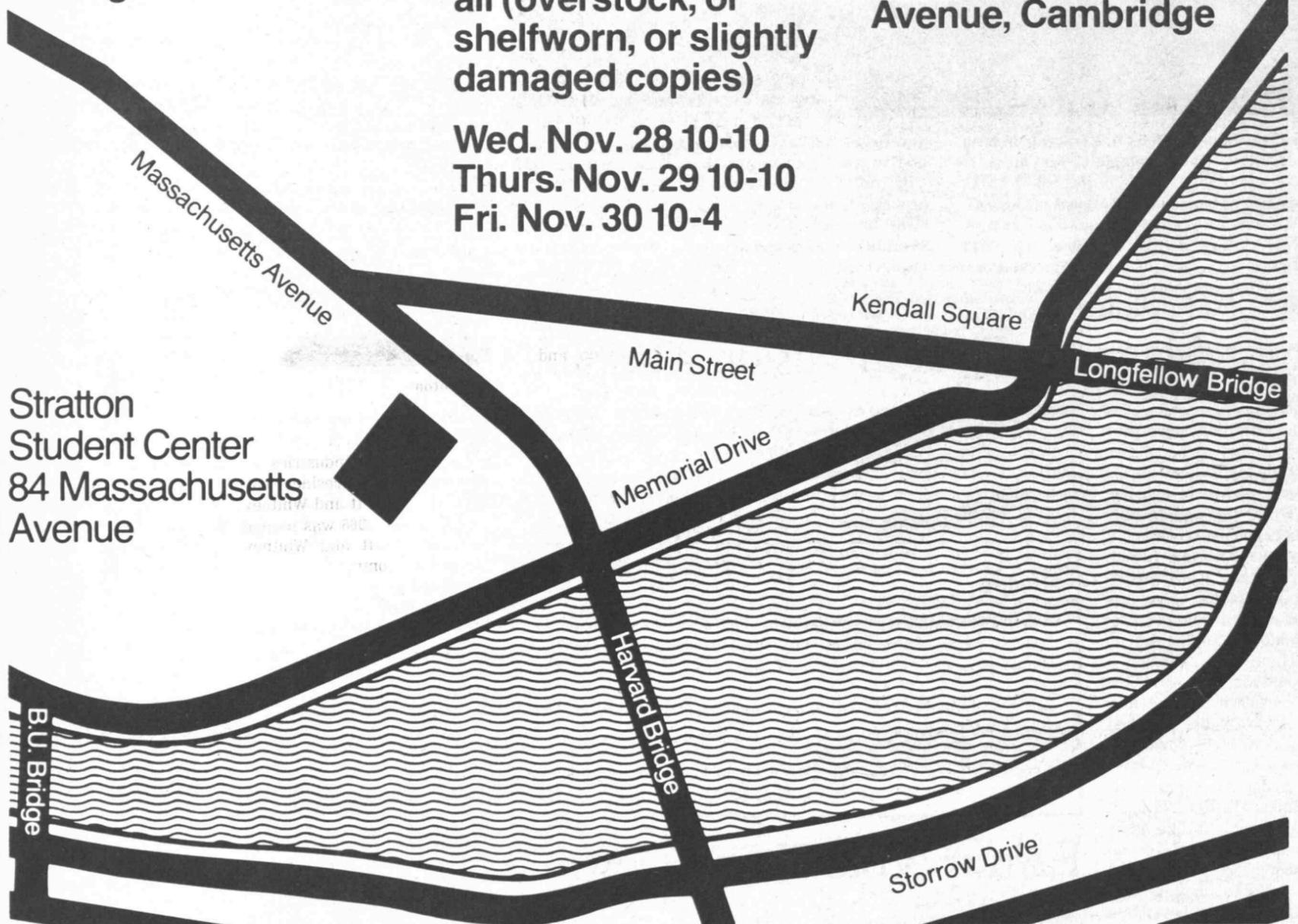
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Wed. Nov. 28 10-10
Thurs. Nov. 29 10-10
Fri. Nov. 30 10-4

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MIT
84 Massachusetts
Avenue, Cambridge



Academic Calendar Change Rejected by Faculty Vote

(Continued from page 1)
again at the December faculty meeting.

In presenting the motion to revise the calendar this year, Professor Arthur C. Smith, chairman of the CAP, said the committee was aware of dislocations that would be caused by making the change. But he said the committee had decided reluctantly to recommend the change as a short-term buffer against the weaknesses in the present system.

He cited an instance last spring in which a senior who had completed his degree requirements was not allowed to take part in the commencement ceremonies—

even though his parents had come a long distance—because questions about his eligibility to graduate could not be resolved in time.

Most of those commenting on the CAP proposal opposed the plan, which would have eliminated two Tuesday holidays, Feb. 19 and April 16, which are tagged onto the end of three-day holiday weekends.

By using these holidays as regular class days, and by shortening the term by one day, it would have been possible to move the end of the term forward three days, with classes ending on May 14 instead of May 17.

Among those speaking in oppo-

sition to the plan was Dr. Carola B. Eisenberg, dean for student affairs. She said the four-day weekends made possible by the Tuesday vacations are important to students either for catching up with work or as recreational breaks.

This was repeated by Andre R. Jaglom, a senior and student representative on the CAP, who said he had dissented from the committee's recommendations.

Mr. Jaglom said that taking away the Tuesday vacations was "a serious matter."

"They are important, psychologically, in breaking up the term," he said. He added that some

students able to go home on four-day breaks were not able to do so on three-day weekends.

The CAP had proposed another plan to shorten the term by three days, in which the Independent Activities Period would have ended a day early and two vacation days following it before the start of the second term would be eliminated. But Professor Smith said this proposal was found to have created some serious problems in connection with air travel arrangements and the scheduling of student activities, leading the committee to favor the second plan.

Professor Smith commented

that it would be impossible to move back commencement this spring because of commitments already made. But he said this might be one of the possibilities for a long-term solution.

Only five out of approximately 60 faculty members at the meeting favored the CAP proposal, which as an amendment to a faculty regulation would have needed a three-fifths vote to pass.

After the proposal was rejected, the faculty approved a motion saying it would be appropriate to require that spring term grades be submitted as early as possible, and no later than 4pm on Friday, May 24.

New Designs, Too

Needlepoint Projects Yield 2 MIT Seals in Stitches

MIT Dean for Student Affairs Carola B. Eisenberg and sophomore Albert L. Oliver Jr. might very well have needled each other a bit last week.

But it would have been in good fun.

On the same day, with neither having been aware of what the other was doing, they completed needlepoint versions of the MIT seal.

Then, brought together by a third party who knew both, they compared notes, or rather, stitches.

Dean Eisenberg and Mr. Oliver, a sophomore in architecture from Philadelphia, both designed their own versions of the seal—based on the modern design that came into use in 1966.

Mr. Oliver's design is the more traditional of the two, carried out in carnelian, grey and black in basic continental half-stitch. The seal's artisan and scholar are depicted as they are normally seen



Dean Eisenberg and Mr. Oliver, with seals. —Photo by Margo Foote with "MIT" superimposed on their bodies.

Dean Eisenberg's creation is carried out in full color and many different stitches. She has turned the two figures around to face each other because, she said, "I thought it was time they got reacquainted."

Both works are now being blocked and framed. Mr. Oliver plans to give his to a good friend as a Christmas present. Dean Eisenberg will hang hers in her office.

Needlepoint was brought to public attention recently by Roosevelt Grier, the former professional football player. He took it up as a hobby and went on to write a book about it.

Mr. Oliver took up needlepointing during a hospital stay last winter. The MIT seal was his second project. He has since used needlepoint as a basis for a three dimensional project in Professor Richard Filipowski's Form and Design class. The next project he plans is a small Peugeot emblem for his bicycle.

Dean Eisenberg has been doing needlework of various kinds since she was a little girl in Argentina—"where all nice girls were taught needlework." Her home and her office bear testimony to her artistry.

United Way: \$47,575 Not Enough

Contrary to reports, the Massachusetts Bay United Way campaign still has \$2 million to go to reach its goal for this year and MIT's lagging United Way drive seeks to raise about \$100,000 of the amount still needed.

The MIT United Way drive has netted \$47,575 so far—a little less than a third of this year's goal of \$150,000. The MIT United Black Appeal has raised \$6,981.

"Last week in a series of articles in Boston newspapers, it was announced that the UWMB had made its goal, said John Carley, an MIT

United Way organizer. "The articles were misleading as that announcement was based on a projection of expected receipts from schools and colleges, including MIT," he said.

The education division of the UW campaign (to which MIT and Harvard normally contribute over half the amount raised) tends to lag behind other contributing groups because of busy fall schedules, Mr. Carley said.

However, the United Way organization must begin to allocate funds for its 203 service agencies in early November in order to

close its books for auditing at the end of December. For this reason, the United Way makes an estimate of how much will come in from schools and colleges.

"This year the United Way has counted on the entire estimated goal from MIT and other institutions in the education division," said Dr. John Ross, professor of chemistry and this year's UW campaign leader at MIT. "It would be sorely felt if MIT fell short this year. Our money is urgently needed."

"Please, everyone contribute who hasn't," he urged.

Stanton Appointed Alumni Fund Officer

Paul N. Stanton, a former industrial executive, has been appointed associate director of the MIT Alumni Fund, effective last Nov. 21.

In this position, Mr. Stanton will share overall direction of MIT's \$3 million annual Fund, comprised of more than 22,000 donors, with other members of the Fund Staff. His chief responsibility will be the Fund's geographic organization, including the leadership gifts programs.

Mr. Stanton has been active in alumni activities for many years. He participated in the Second Century Fund and has taken an active role in alumni club and Class activities for the Fund.

"I am pleased to have this opportunity to be of help to MIT," Mr. Stanton said. "I made a decision to take a more active interest in the alumni activities of the Institute. I felt a strong desire to help MIT since it has been most beneficial for me and has contributed greatly to my success over the past 35 years."

A native of Boston, Mr. Stanton received the SB degree in mechanical engineering from MIT in 1939. After serving in World War II, he was associated successively



Mr. Stanton

with LaPointe Machine Tool Company, Cambridge Corporation, US Industries, and Colt Industries. In 1960 he became vice president and director of the Pratt and Whitney Company and in 1966 was named president of Pratt and Whitney Machine Tool Company.

Most recently Mr. Stanton has been a consultant to various companies. Since 1970 he has been vice chairman of C. Pappas Company and Pappas Enterprises in Boston and Athens.

While living in West Hartford, Ct., Mr. Stanton was president of the Chamber of Commerce and chairman of the city Air Pollution Control Committee.

Mr. Stanton is married to the former Theodora Sculos. They have homes in Falmouth and Framingham.

Schola Concert

The Schola Cantorum, MIT's newest choral group, will give its premiere performance on Sunday, Dec. 2, at 8pm in Kresge Auditorium.

The program will offer Monteverdi's *Messa a 4 Voce da Cappella*, the Orlando di Lasso *Prophetiae Sybyllarum*, and four madrigals by Monteverdi.

The Schola membership includes 30 singers from the MIT community and four professional soloists. The soloists are Mary Lee Cirella, of Arlington, soprano; Doreen Page, of Cambridge, alto; Richard Burke, of Hopkinton, tenor; and Tom Tomasovik, of Belmont, bass.

The group is directed by John Oliver, director of the MIT Choral Society and the MIT Glee Club as well as the Tanglewood Festival Chorus.

Japanese Pianist To Give Concert

Kiyoko Takeuti, a young Japanese pianist who has received favorable notice from critics in the US and abroad, will give a solo concert at 5:30pm, Tuesday, Dec. 4, in the MIT Music Library.

Ms. Takeuti will perform the Bach Partita No. 1 and the Schubert Sonata in A Major D. 959.

Ms. Takeuti began her performing career in her early teens and graduated from the Curtis Institute of Music in Philadelphia in 1971. At Curtis, she studied piano under Mieczyslaw Horowitz and chamber music with Mischa Schneider and the members of the Guarneri Quartet.

She was a soloist with the Philadelphia Orchestra in two student concerts in 1970-71, and with the

Cosmopolitan Young People's Symphony of New York in 1970-71. During the summers, she has been active as a participant in the Marlboro Music Festival and the Lucerne Music Festival.

The concert is sponsored by the MIT Music Section and will be free and open to the public.

Fluid Mechanics

Professor George Carrier, Department of Engineering and Applied Physics, Harvard University, will speak on "The Effect of Strain Rate on Diffusion Flames" at the Interdepartmental Fluid Mechanics Seminar at 4pm Tuesday (Dec. 4) in Room 2-349. Coffee will be served at 3:30pm.

Tax Annuity Enrollment Deadline Listed

Faculty and staff members who plan to join either of the two tax sheltered annuity plans now available must enroll by the third week in December in order to effect a salary reduction in January, according to Allan J. Urquhart, MIT benefits officer.

Enrollment by Dec. 21 is necessary, Mr. Urquhart said, to provide sufficient time for processing.

The optional annuity plans—offered by TIAA-CREF and the Prudential Insurance Company of America—were announced in October. A faculty or staff member who joins may elect to reduce his or her salary up to an amount allowable by the Internal Revenue Service. The amount used to purchase an annuity will be exempt

from annual federal income tax until received as a lump sum or as an annuity.

To enroll with TIAA-CREF, a faculty or staff member should contact the Benefits Office, Room E19-230, Ext. 3-4271, for application forms and descriptive information. The application form and salary reduction agreement should be returned to the Benefits Office when completed.

A representative from TIAA will be on campus to provide additional information and answer questions. Group meetings will be held in E19-758 Monday, Dec. 3, 2-5pm; E18-301, Tuesday, Dec. 4, 9:30am-noon; E18-301 Wednesday, Dec. 12, 2-5pm; and E18-301, Thursday, Dec. 13, 9:30am-noon.

A representative of Prudential is available to assist faculty and staff members in private consultations in Room 20C-205 on Tuesdays, 9:30am-4pm, and at Lincoln Laboratory on Wednesdays, 9:30am-4pm. Information on the Prudential Program and appointment scheduling may be obtained from the Benefits Office on campus and from the Lincoln Personnel Office.

Mr. Urquhart, who is coordinator of the tax deferred annuity program, said that the assistance of members of the accounting offices and computer facilities had been essential in establishing and implementing a tax sheltered program for MIT.

MIT Winter Sports Schedule 1973-74

VARSITY BASKETBALL

Coach: Francis C. O'Brien, Jr.
 Assistant: Derek K. Harps
 Co-Captains: Alan G. Epstein '75
 Robert L. Roth, Jr. '74
 Lawrence D. David '75
 Manager:

December			
Sat. 1	YESHIVA	HOME	8:15 PM
Tue. 4	BRANDEIS	HOME	8:15 PM
Sat. 8	TRINITY	HOME	8:15 PM

January			
Sat. 5	Palm Beach	Away	8:00 PM
Mon. 7	Fort Lauderdale	Away	8:00 PM
Tue. 8	Fla. Tech.	Away	8:00 PM
Thu. 10	F.I.T.	Away	8:00 PM
Sat. 12	R.P.I.	HOME	8:15 PM
Tue. 15	TUFTS	HOME	8:15 PM
Fri. 18	NORWICH	HOME	8:15 PM
Sat. 19	Lowell Tech	Away	8:00 PM
Tue. 22	Wesleyan	Away	7:30 PM
Sat. 26	QUEENS	HOME	8:15 PM
Mon. 28	Howard	Away	8:00 PM
Wed. 30	Bowdoin	Away	7:30 PM

February			
Fri. 1	COAST GUARD	HOME	8:15 PM
Wed. 6	Amherst	Away	8:00 PM
Fri. 8	Chicago State	Away	7:30 PM
Sat. 9	Carnegie-Mellon	Away	2:00 PM
Tue. 12	Maine	Away	7:30 PM
Sat. 16	Middlebury	Away	2:00 PM
Wed. 20	SUFFOLK	HOME	8:15 PM
Fri. 22	Bates	Away	3:30 PM
Thu. 28	W.P.I.	HOME	8:15 PM

VARSITY "B" BASKETBALL

December			
Thu. 6	BOSTON UNIVERSITY	HOME	7:30 PM

January			
Mon. 14	EMERSON	HOME	7:30 PM

February			
Mon. 4	Harvard	Away	7:30 PM
Mon. 18	HARVARD	HOME	7:30 PM

JV/FRESHMEN BASKETBALL

Coach: Arnold H. Singal
 Assistant: Kenneth T. Hewitt

December			
Sat. 1	HUNTINGTON SCHOOL	HOME	6:15 PM
Tue. 14	BRANDEIS	HOME	6:15 PM

January			
Wed. 9	PHILLIPS EXETER	HOME	4:00 PM
Sat. 12	BROWNE & NICHOLS	HOME	6:15 PM
Tue. 15	TUFTS	HOME	6:15 PM
Thu. 17	Wentworth	Away	4:00 PM
Sat. 19	Lowell Tech	Away	6:00 PM
Tue. 22	Wesleyan	Away	5:45 PM
Sat. 26	HUNTINGTON SCHOOL	HOME	6:15 PM
Wed. 30	Bowdoin	Away	5:30 PM

February			
Fri. 1	ST. ANSELM'S	HOME	6:15 PM
Wed. 6	Amherst	Away	6:00 PM
Mon. 11	WENTWORTH	HOME	7:30 PM
Sat. 16	Bentley	Away	2:00 PM
Wed. 20	SUFFOLK	HOME	6:15 PM
Fri. 22	Bates	Away	1:30 PM
Wed. 27	Phillips Academy	Away	3:00 PM
Thu. 28	W.P.I.	HOME	6:15 PM

GYMNASTICS

Coach: Robert F. Lilly
 Assistant: Paul J. Bayer
 Co-Captains: John H. Austin '74
 Lawrence D. Bell '74
 Manager: Neil H. Judell '76

December			
Sat. 1	Boston State College	Away	1:00 PM
Sat. 8	LOWELL TECH	HOME	2:00 PM
Sun. 9	PENNSYLVANIA	HOME	2:00 PM

January			
Sat. 26	YALE	HOME	2:00 PM
Wed. 30	Plymouth State	Away	7:00 PM

February			
Sat. 9	Coast Guard	Away	2:00 PM
Tue. 12	MASSACHUSETTS	HOME	7:30 PM
Sat. 16	DARTMOUTH	HOME	2:00 PM
Wed. 20	U.N.H.	Away	7:00 PM

March			
Sat. 2	New Englands @ Boston State		

VARSITY FENCING

Coach: Silvio N. Vitale
 Assistant: Eric T. Sollee
 Captain: Christopher Eckel '74
 Manager: Michael Sarfatti '76

December			
Sat. 1	BRANDEIS	HOME	2:00 PM
Sun. 2	YESHIVA	HOME	2:00 PM
Wed. 5	HARVARD	HOME	7:00 PM
Sat. 8	BROOKLYN COLLEGE	HOME	2:00 PM

January			
Sat. 19	S.M.U.	Away	2:00 PM
Sat. 26	DARTMOUTH	HOME	2:00 PM

February			
Sat. 2	BROWN	HOME	2:00 PM
Sat. 9	Holy Cross	Away	2:00 PM
Tue. 12	Harvard	Away	7:00 PM
Sat. 16	Trinity	Away	2:00 PM
Wed. 20	W.P.I.	HOME	7:00 PM
Fri. 22	Baruch	Away	7:00 PM
Sat. 23	Stevens Tech	Away	1:00 PM

March			
Sat. 2	New Englands		
Fri. 8	I.F.A. @ Harvard		
Sat. 9			

JV/FRESHMEN FENCING

December			
Wed. 5	HARVARD	HOME	7:00 PM
Sat. 8	Concord High	Away	2:00 PM

January			
Sat. 26	CONCORD HIGH	HOME	4:00 PM

February			
Tue. 12	Harvard	Away	7:00 PM

March			
Sat. 2	Interscholastics @ Concord High School		

SKIING

Coach: William S. Morrison
 Captain & Manager: D. Scott Weigle '74

January			
Fri. 18 & Sat. 19	Windham Carnival		
Fri. 25 & Sat. 26	Franklin Pierce Carnival		
February			
Fri. 1 & Sat. 2	Maine Carnival		
Fri. 8 & Sat. 9	Keene State Carnival		
Fri. 15 & Sat. 16	Nonwich Carnival - Div. II EISA		
Fri. 22 & Sat. 23	Middlebury Carnival - Div. I EISA		
March			
Fri. 1 & Sat. 2	Lyndon Carnival		

VARSITY HOCKEY

Coach: Benjamin R. Martin, Jr.
 Co-Captains: Richard J. Casler, Jr. '74
 Anthony R. Luzzi '74
 Manager: Alfred D. Lewis '75

November			
Wed. 28	Babson	Away	7:45 PM

December			
Sat. 1	TRINITY	HOME	7:00 PM
Sat. 8	WESLEYAN	HOME	7:00 PM

January			
Sat. 12	Bridgewater	Away	8:30 PM
Wed. 16	Maine	Away	7:30 PM
Wed. 23	Wesleyan	Away	7:30 PM
Sat. 26	HOLY CROSS	HOME	7:00 PM
Wed. 30	NICHOLS	HOME	7:00 PM

February			
Sat. 2	CONNECTICUT	HOME	7:00 PM
Mon. 4	PLYMOUTH STATE	HOME	7:00 PM
Sat. 9	Trinity	Away	2:00 PM
Tue. 12	BABSON	HOME	7:00 PM
Sat. 16	ASSUMPTION	HOME	7:00 PM
Wed. 20	Nichols	Away	8:45 PM
Fri. 22	AMHERST	HOME	7:00 PM
Tue. 26	BRIDGEWATER	HOME	7:00 PM

JV/FRESHMEN HOCKEY

Coach: John J. Foley

December			
Sun. 2	Graham	Away	4:30 PM
Sat. 8	Brooks School	Away	2:00 PM

January			
Wed. 23	Lawrence Academy	Away	
Sat. 26	EMERSON	HOME	2:00 PM

February			
Sat. 2	EMERSON (host)	HOME	2:00 PM
Wed. 6	Browne & Nichols	Away	3:00 PM
Sat. 9	BELKNAP COLLEGE	HOME	2:00 PM
Wed. 13	THAYER ACADEMY JV	HOME	3:00 PM
Sat. 16	BELKNAP COLLEGE	HOME	2:00 PM
Wed. 20	Governor Dummer	Away	4:00 PM

PISTOL

Coach: Thomas P. McLennan
 Co-Captains: Merrick J. Leler '74
 Karl A. Seeler '75
 Manager: Richard J. McCarthy '75

December			
Sat. 1	MERCHANT MARINE, COAST GUARD	HOME	9:00 AM

February			
Sat. 9	Army @ Coast Guard	Away	11:00 AM
Sat. 16	Villanova @ Pennsylvania	Away	10:00 AM
Sun. 17	Navy	Away	1:00 PM

March			
Sat. 2	BOSTON STATE, NEWARK COLLEGE	HOME	9:00 AM
Sat. 9	BOSTON STATE, JOHN JAY	HOME	9:00 AM

Sat. 16	NRA COLLEGE CON.	HOME	9:00 AM
Sun. 17	NRA INTERNATIONAL CONVENTIONAL	HOME	9:00 AM

RIFLE

Coach: Jon R. Moor
 Captain: Ned C. Forrester '75
 Manager: Timothy J. Allen '75

November			
Tue. 6	Maine, U.R.I.	Away	6:30 PM
Sat. 17	Providence	Away	6:30 PM

December			
Sat. 1	MAINE, PROVIDENCE, NORWICH	HOME	10:00 AM
Fri. 7	WENTWORTH	HOME	6:30 PM
Sat. 8	Norwich	Away	10:00 AM

February			
Fri. 8	BOSTON STATE	HOME	6:30 PM
Sat. 9	U.R.I.	Away	10:00 AM
Fri. 15	NORTHEASTERN	HOME	6:30 PM
Sat. 16	NRA Conv. Sectional @ U.R.I.	Away	10:00 AM
Fri. 22	Wentworth	Away	6:30 PM
Sat. 23	COAST GUARD, NORWICH, DARTMOUTH	HOME	10:00 AM

March			
Sat. 2	Coast Guard	Away	10:00 AM
Fri. 8	Northeastern	Away	6:30 PM
Sat. 9	NEL Finals & NRA Sectional	Away	
Sat. 16	NEL Finals & Sectional	Away	

VARSITY SQUASH

Coach: Edward A. Crocker
 Captain: Bruce R. Rhodes '74
 Manager: John A. Kowaleski, Jr. '75

December			
Sat. 1	Trinity	Away	1:00 PM
Mon. 3	DARTMOUTH	HOME	7:00 PM
Thu. 6	NAVY	HOME	8:00 PM
Sat. 8	Wesleyan	Away	7:00 PM

January			
Sat. 26	STONY BROOK	HOME	4:00 PM
Wed. 30	Bowdoin	Away	7:00 PM

February			
Sat. 2	Amherst	Away	2:00 PM
Wed. 6	Harvard	Away	5:30 PM
Tue. 12	BOWDOIN	HOME	7:00 PM
Fri. 15	Army	Away	4:00 PM
Sat. 16	Williams	Away	2:00 PM

Wed. 20	Yale	Away	7:00 PM
Sat. 23	WESLEYAN	HOME	2:00 PM
Tue. 26	TRINITY	HOME	7:00 PM

March			
Fri. 1			
Sat. 2	Nationals @ Pennsylvania		
Sun. 3			

FRESHMEN SQUASH

Coach: Manuel Weiss

December			
Sat. 1	Trinity	Away	1:00 PM
Mon. 3	DARTMOUTH	HOME	7:00 PM
Wed. 5	Phillips Exeter	Away	2:00 PM
Sat. 8	Wesleyan	Away	7:00 PM
Mon. 10	Middlesex	Away	7:00 PM

February			
Fri. 1	Tabor Academy	Away	3:00 PM
Mon. 4	Brooks School	Away	3:15 PM
Wed. 6	PHILLIPS ACADEMY	HOME	3:00 PM
Sat. 9	COLBY JV	HOME	2:00 PM
Wed. 13	MILTON ACADEMY	HOME	3:00 PM
Fri. 15	Army	Away	4:00 PM
Sat. 16	Williams	Away	2:00 PM
Mon. 18	HARVARD	HOME	2:00 PM
Wed. 20	Yale	Away	7:00 PM
Sat. 23	WESLEYAN	HOME	2:00 PM
Tue. 26	TRINITY	HOME	7:00 PM
Wed. 27	ST. PAUL'S SCHOOL	HOME	3:30 PM

SWIMMING

Coach: Charles Batterman
 Assistant: D. Gregory Pond
 Co-Captains: Daniel M. Bethencourt '75
 Peter A. Schulz '75
 Manager: Barbara L. Moore '76

December			
Sat. 1	R.P.I.	HOME	2:00 PM
Wed. 5	Tufts	Away	7:30 PM
Sat. 8	SPRINGFIELD	HOME	2:00 PM

January			
Sat. 26	Williams	Away	2:00 PM

February			
Sat. 2	Massachusetts	Away	2:00 PM
Wed. 6	Amherst	Away	7:00 PM
Sat. 9	Trinity	Away	2:00 PM
Tue. 12	BROWN	HOME	6:30 PM
Fri. 15	Wesleyan	Away	7:00 PM

Mon. 18	G.B.C.A.A. @ Harvard		
Tue. 19			
Sat. 23	BOWDOIN	HOME	2:00 PM

March			
Thur. 7			
Fri. 8	New Englands @ Brown		
Sat. 9			

INDOOR TRACK

Coach: Gordon V. Kelly
 Assistant: Peter M. Close
 Co-Captains: John F. Pearson '74
 Gary R. Wilkes '74

December			
Sat. 1	Bates	Away	1:30 PM
Sat. 8	W.P.I., BRANDEIS	HOME	1:00 PM
Sun. 16	Northeastern Relays	Away	

January			
Sat. 12	U.N.H.	Away	1:00 PM
Sat. 19	Tufts @ Williams	Away	1:00 PM
Fri. 25	COAST GUARD	HOME	6:00 PM
Wed. 30	COLBY	HOME	6:00 PM

February			
Sat. 2	BOWDOIN	HOME	1:00 PM
Fri. 8	G.B.C.A.A. @ Harvard	Away	5:00 PM
Sat. 9		Away	1:00 PM
Wed. 13	GOVERNOR DUMMER JV	HOME	3:00 PM
Sat. 16	Eastern		



Staff photographer Margo Foote came upon this solitary moment in the Building 7 lobby dramatized by the afternoon sunlight and shadow as Michael Arena, head window washer at MIT, gives his attention to some spots on the floor. The 65-year-old Mr. Arena, who resides in Hyde Park, has been at the Institute since 1946.

Alcator Achieves Highest Field in Fusion Machine

(Continued from page 1)

unlike other Tokamaks, its coils and transformer are cooled by liquid nitrogen. At liquid nitrogen temperatures of 77 degrees (Kelvin) above absolute zero, the coils and transformer can carry seven times the current possible at room temperature for the same power. Thus, the magnetic fields produced can be much higher.

"Physicists believe that eventual fusion machines will require magnetic fields only of the order of 50,000 gauss," according to Dr. Ronald Parker, a participant in the project. "Indeed, it would be unfortunate if fusion machines required 100,000 gauss, because such a field is extremely expensive to produce.

"The 100,000 gauss field represents an opportunity for us to extend our knowledge of plasma behavior into higher magnetic fields," he said. "One question we want to answer is how the confinement time for plasma varies with the strength of the magnetic field. Classical physics predicts that it increases according to the square of the magnetic field, but so far,

G. H. Estabrooks, 66

George H. Estabrooks, 66, a former guard on disability retirement since 1969, died on Sunday, Nov. 24. Mr. Estabrooks, who came to the Institute in 1957, leaves his wife, Marie, of Winthrop; a son, Douglas, of New Hampshire; and two daughters, Alberta M. Rezendes, of Winthrop, and Janice S. Brousseau, of Walham.

Louis Skorski, 60

Louis E. Skorski, 60, of Cambridge, a physical plant supervisor, died on Thursday, Nov. 22. Mr. Skorski, who had worked at the Institute for the past seven years, is survived by his wife Clara and son Michael.

empirical data indicate that in some regimes it increases only as the first power."

According to Dr. Parker, the higher magnetic field will enable the production of hotter plasmas, which will allow the scientists to conduct even more wide-ranging experiments in understanding plasmas. The MIT scientists announced achievement of the high field earlier this month at a meeting of the American Physical Society's Division of Plasma Physics, in Philadelphia.

Nuclear fission, the process currently used in nuclear power plants, consists of the splitting of heavy atoms, such as uranium, to release energy. Nuclear fusion consists of combining light atoms at temperatures of 80 million to 100 million degrees. This fusion, already achieved in the form of the hydrogen bomb, results in the production of heavier atoms, but also in the release of enormous amounts of leftover energy which could be used to produce electricity.

Nuclear fission as an energy source is limited by the scarcity of fissionable materials—notably uranium and plutonium—while fusion will use the almost limitless quantities of deuterium and other light elements on earth. Deuterium, or "heavy hydrogen" is very common—in fact, the world's oceans contain practically limitless amounts.

Fusion reactors will probably present fewer safety problems than fission reactors, because the total radioactivity involved is lower, and because fusion is so difficult to maintain that, in the event of a malfunction, a fusion reactor would simply stop operating.

Registration Date

A \$5 processing charge will be made for any first term registration change made after Friday.

80 Teams in Competition

Students Unite to Combat Fire

Sometimes when forest fires are put out, that isn't the end of it...So students at Washington State University are working on a device capable of detecting small hot spots that might rekindle a forest fire.

Sometimes there is no immediate way for firemen to reach persons trapped inside a burning building...So students at the University of Florida are designing a cannon that could shoot rescue packs, including breathing apparatus, to trapped inhabitants.

Sometimes fire apparatus can't maneuver in narrow city streets...So students at the University of Houston are developing a small fire truck capable of moving down side streets in order to reduce reaction time in cities.

Sometimes firemen can't get close enough to fires—to fight them effectively or to make rescues—because of intense heat...So students at the University of Texas are designing a life-support suit that includes a liquid air supply to cool the suit, allowing the fireman to walk directly into a blaze.

Sometimes a carelessly discarded match can start a conflagration or a forest fire...So another group of students at the University of Florida is designing a match that would self-extinguish after a set time.

Sometimes the heights of buildings frustrates rescue attempts in fires...So students at the University of Wisconsin are working on a high-rise escape mechanism to enable even untrained people to escape down the side of a burning building.

Altogether, in fact, about 80 teams of students from some 40 universities are working on a variety of projects in an intercollegiate Students Against Fires competition being sponsored by SCORE, Student Competitions on Relevant Engineering.

At MIT, one team already is at work—under the direction of Stanley Backer, professor of mechanical engineering—and others are in the process of being formed.

Advisory Group to Aid Search for Libraries Director

Provost Walter A. Rosenblith has announced reconstitution of an advisory group to aid the administration in selecting a successor to Natalie N. Nicholson as director of the MIT Libraries.

Miss Nicholson is scheduled to retire in July, 1975. She was appointed director last March. She had been acting director of Libraries since the retirement of Professor William N. Locke in July, 1972.

Members of the reconstituted advisory group are:

Provost Rosenblith, chairman.

Dr. Robert A. Alberty, dean of the School of Science.

Professor Stanley Backer, professor of mechanical engineering and chairman of the faculty Committee on Library Systems.

Professor Gene M. Brown, professor of biochemistry and associate head of the Department of Biology.

Professor Robert M. Fano, Ford Professor of Engineering and associate head of the Department of Electrical Engineering for Computer Science and Engineering.

Professor Eugene Goodheart, professor of literature in the Department of Humanities.

Irma Y. Johnson, Science Librarian.

Professor Judith J. Thomson, professor of philosophy in the De-

partment of Philosophy. "The SCORE concept represents a new approach in college education," said staff member Frank Harris, a 1973 MIT graduate in civil engineering. "This moves the usual competition among colleges and universities off the athletic fields into socially relevant problem areas where the teams compete by developing innovative, practical solutions to problems such as fire safety."

Mark Radtke, a senior at the Sloan School of Management and SCORE vice president, said the competition encourages the engineering student "to get his hands dirty."

SCORE, a student-run organi-

zation that grew out of the 1970 Clean Air Car Race, is sponsored the Urban Vehicle Design Competition of 1972.

The five general categories in the competition are detection systems, fire fighting, fire-fighting systems, prevention and rescue.

Interested MIT students—either undergraduates or graduate students—are asked to contact any of the following:

Professor Backer (Room 3-338, Ext. 3-2258); Richard G. Donnelly, assistant professor of chemical engineering (Room 12-145A, Ext. 3-3777), Mr. Radtke and Mr. Harris (Room E40-109, Ext. 3-6833).



New York City Fire Commissioner John T. O'Hagan and MIT management student Mark L. Radtke examine a fireman's helmet damaged by a manhole cover sent flying by an explosion. Radtke, a senior, is vice president of SCORE (Student Competitions on Relevant Engineering), a student corporation that sponsors intercollegiate engineering competitions. O'Hagan is an adviser on the current competition, Students Against Fires, which encourages students to develop innovative fire fighting apparatus. —Photo by Margo Foote

partment of Philosophy.

Joel Orlen, assistant to the provost, is secretary of the group.

Professor Rosenblith said that candidates from both inside the

Wellesley-MIT Bulletin Available

The 1974 spring bulletin for the Wellesley MIT Exchange Program is now available at the MIT Information Center, Room 7-111, and the Exchange Office, Room 5-104.

The bulletin provides general information about application and enrollment procedures, subject offerings, and resources available at each campus for those participating in the program, plus a listing of course offerings.

Copies of the Wellesley class schedule and catalogue are available in departmental headquarters, living groups, the MIT Exchange Office and the Information Center as well as a booth in the lobby of Building 10 from Nov. 26 to Dec. 3. Applications for the exchange are due Wednesday, Dec. 19 in the Exchange Office.

Institute and outside will be considered for the position. The Provost said that the diverse membership of the advisory group will help in making the search for the most able person to guide the Libraries a comprehensive one.

Menominee Speaker

Ada Deer, chairwoman of the Menominee tribe of Wisconsin, will speak at a meeting of the Community Fellows Program Tuesday, Dec. 4, at 5pm in Room E40-169. She will discuss how she reorganized her tribe. The meeting is open to the MIT community.

Water Resources

Professor David C. Major of the Department of Civil Engineering will present "An Assessment of Recently Approved New Federal Standards for Water Resources Planning and Investment" at a Water Resources and Management Seminar at 4pm Monday (Dec. 3) in Room 48-316.

Space Seminar

M. M. Vucelic, director of new business, Space Division, Rockwell International, Inc., will discuss "Soviet Aerospace Technology" at a Department of Aeronautics and Astronautics seminar at 4pm Monday (Dec. 3) in Room 37-252.

THE INSTITUTE CALENDAR

November 28
through
December 7

Events of Special Interest

MIT Press Book Sale – Student book sale, 50-95% off. Wed, Nov 28–Thurs, Nov 29, 10am-10pm; Fri, Nov 30, 10am-4pm; Sala.

Inbal Dance Theater* – Famous Israeli dance theater will perform Thurs, Nov 29, 8pm, Kresge Auditorium, at the Abramowitz Memorial Lecture. Tickets, \$1, Bldg 10 Lobby through Nov 29. Limit of two per person, MIT ID required. Proceeds to benefit the Chelsea Fire Relief Fund.

Fiction Festival* – John Hawkes will read from two of his novels, *Blood Oranges* and *Second Skin*. Sponsored by Humanities, Thurs, Nov 29, 8pm, Stu Ctr Mezzanine Lge. Donald Barthelme, short story writer, and Chinua Achebe, African author of *Things Fall Apart*, will read from their works Mon, Dec 3, 8:30pm, Lobdell, sponsored by Humanities, Council for the Arts. Both free, refreshments.

Who Killed President Kennedy?* – Robert Saltzman, founder of committee to investigate assassinations and implementer of the committee's computerized data retrieval system. LSC Lecture. Mon, Dec 3, 7:30 pm, Kresge Auditorium. Free.

SALT: Technological Impact on Progress and Prospects* – Sidney Drell, deputy director, Stanford Linear Accelerator Center. MIT-Harvard Arms Control Seminar. Wed, Dec 5, 4-6pm, Rm 9-150.

Seminars and Lectures

Wednesday, November 28

Cognitive Studies of Black Children in School and Community Settings* – Dr. C. Dalton Jones, psychology, University of Massachusetts, Amherst Joint Psychology & Division for Study & Research in Education Colloquium, 12n, Rm E10-013.

A UROP Symposium: Undergraduate Research in Physics* – Undergraduates presenting the results of their research. 2pm, Astrophysics Seminar Rm 37-252. Refreshments, 3:30pm.

Size Dependence of Self-Diffusion Coefficients* – T. Keyes, graduate student. Nuclear Engineering Doctoral Seminar. 2pm, Rm 24-307.

Lifetime Economic Planning for the Individual and the Family* – Richard Meyer, Harvard Business School. Operations Research Seminar. 4pm, Rm 24-121. Refreshments after, Rm 24-219.

Drifting Continents and the Localization of Creep Along Polymorphic Phase Change Boundaries in the Earth's Mantle* – Prof. Charles G. Sammis, geosciences, Pennsylvania State University. Earth & Planetary Sciences Colloquium. 4pm, Rm 54-100. Tea, 3:30pm, Rm 54-923.

Future Technological Developments and Policy for Postal Services* – Joseph Fleming, Herbert Hollomon, Charles Jackson, Abraham Tersoff & H.N. Upthegrove. Telecommunications Planning and Policy Research Seminar Series. 4-6pm, Rm 9-451. Coffee.

The Nature of Scientific Discovery* – Dr. Hans-Lukas Teuber, psychology. Respondent: Jerry A. Fodor, philosophy, psycholinguistics. Technology and Culture Seminar. 5:15pm, Rm 9-150. Buffet 6:45pm, Stu Ctr. Open discussion 7:30-9pm.

Thursday, November 29

The Economics of Livestock in the Sahel-Sudano Region* – Dr. Jean Tyc, deputy manager, SEDES. Civil Engineering Seminar. 3-4pm, Rm 1-236. Coffee.

Optimum Imaging Through Atmospheric Turbulence* – Prof. J. Shapiro, electrical engineering, RLE. Communications Seminar. 3-4pm, Rm 26-217.

Difference Between Second-Law Entropy and Informational Entropy* – Dr. George N. Hatsopoulos, mechanical engineering, president, Thermo Electron Corporation. Thermodynamics Seminar. 4pm, Rm 3-343. Coffee.

Profitable Airlines* – Donald W. Nyrop, president, Northwest Orient Airlines. Aero/Astro Flight Transportation Lab Seminar. 4pm, Rm 35-225.

Urban Noise: Can We Rise Above It?* – Dr. Joel M. Garelick, Cambridge Acoustical Associates. Interdepartmental Acoustics Seminar. 4pm, Rm 5-134. Coffee, 3:30pm, Rm 1-114.

Oil Pollution in the Oceans* – Prof. J.N. Butler, Harvard University. Analytical Chemistry Seminar. 4pm, Rm 8-105.

One Physicist Looks at Science Education* – Prof. Robert Karplus, division for study and research in education. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

Chemical Stabilization of Enzymes by Intermolecular Cross-Linking* – Oskar R. Zaborsky, PhD, Esso Research & Engineering Co. Nutrition & Food Science Seminar. 4:15pm, Rm 54-100. Coffee, 4pm.

Technical Training for Development?* – Shoukri Roweis, urban planning, University of Toronto, and George Ruthgers, electrical engineering. Seminar for Foreign Students and Participation in Development. 7pm, Walker International Stu Lge.

Engineers, Lawyers, Planners: Experts in the Process of Social Change – A Political Science Forum* – 7:30pm, Stu Ctr Rm 400.

Friday, November 30

Unusual Luminescence From Crystals Containing Eu²⁺ – Dr. Richard Fork, Bell Telephone Labs. Lab for Laser Physics Seminar. 11am, Rm 26-414. Coffee 10:30am.

A Shipper's View on How to Save the U.S. Railroad System* – William K. Smith, vice president, General Mills, Inc. Center for Transportation Studies Luncheon/Seminar Series. 12n, Stu Ctr Mezzanine Lge. Buffet \$2. Speaker 12:45pm (lecture free).

Lobster Tales, Turtle Tails and Monitor Trails* – Prof. Harold E. Edgerton & Mr. Charles E. Miller. Electrical Engineering Lecture. Slides and videotape. 12n-1pm, Rm 10-250.

The Energy Crisis* – Howard Margolis, CIS. Political Science Seminar. 2-4pm, Rm E53-482.

Phase Transitions in Molecular Crystals* – Prof. Alfred Huller, physics, astronomy, University of Massachusetts. Material Science Colloquium. 4pm, Rm 9-150. Refreshments, 3:30pm.

Electron Energy Confinement in ATC** – Dr. E. Mazzucato, Princeton Plasma Physics Lab. RLE, Plasma Dynamics Seminar. 4pm, Rm 36-261.

Challenge to Higher Education: A Single Standard of Excellence?* – Dr. Kenneth B. Clark, Distinguished Professor of Psychology, C.U.N.Y., president, Metropolitan Applied Research Center, NYC. Respondent: Jerome B. Wiesner, President, MIT. Technology and Culture Seminar. 5:30pm, Rm 9-150. Buffet 6:45pm, Stu Ctr. Open discussion 7:30-9pm.

Monday, December 3

Some Combinatorial Problems Arising in Multidimensional Extrapolation* – Dr. Jan Mycielski, mathematics, University of Colorado. Applied Mathematics Colloquium. 4pm, Rm 2-338. Tea, 3:30pm, Rm 2-349.

Electrokinetic Salt Reflection in Hyperfiltration Through Porous Materials* – David Yung, graduate student. Mechanical Engineering Doctoral Thesis Presentation. 4pm, Rm 3-343.

Tuesday, December 4

Policies in British Adversary Politics* – James Douglas, head of research, Conservative Party, England. CIS Informal Lunch-Seminar. BYOL. 12:30-2pm, Rm E53-482.

A Celebration of Pioneer 10: To Jupiter and Beyond** – William W. Ward, Lincoln Lab. Lincoln Lecture Series. 3:30pm, Lincoln Lab Cafeteria.

The Differential Geometric and Algebraic Strategies* – Prof. Robert Hermann, mathematics, Rutgers University. Electrical Engineering Decision and Control Sciences Group Seminar. 4pm, Rm 37-212.

Psychoacoustics and Hi-Fi; How Hi the Fi?* – M.F. Davis, C.L. Searle, electrical engineering. Student Branch of IEEE Lecture Series (first of 3). 4pm, Rm 9-150.

Introduction to MIT Sea Grant* – Ms. Barbara Passero, information manager, Marine Resources Information Center. Ocean Engineering Seminar. 4pm, Rm 3-446. Coffee, 3:30pm.

Strategy for Lobbying and Community Organizing* – Ms. Ada E. Deer, chairman, Menominee Tribe. Community Fellows Program Seminar. 5-6:30pm, Rm E40-169.

New Sounds for the Golden Oldies: Restoring Old Caruso Recordings* – Prof. T.G. Stockham, University of Utah. Course 6.015 Special Lecture. 7-9pm, Rm 26-100.

Wednesday, December 5

Chemistry and Pharmacology of Snake Toxins* – Dr. Chen-Yuan Lee, National Taiwan University. Biology Colloquium. 4:30pm, Rm 4-270.

Thursday, December 6

PDP II Users Meeting* – Report on DECUS 73. 2:30pm, Rm 39-540. Coffee, 2pm.

Psychoacoustics and Hi-Fi; Spatial Localization* – M.F. Davis, C.L. Searle, electrical engineering. Student Branch of IEEE Lecture (second of three). 4pm, Rm 9-150.

Fluctuations in One-Dimensional Magnets* – Dr. R. J. Birgenau, Bell Telephone Labs. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

Friday, December 7

Glass Spheres for Buoyancy in the Deep Ocean* – Sam Raymond, Benthos Co. Ocean Engineering Tankard Seminar. 4-5pm, Rm 5-314.

Community Meetings

Student Committee on Educational Policy – Harold Hanham, Dean of Humanities & Social Science, will speak on Humanities. Wed, Nov 28, 7:30pm, Stu Ctr Rm 353.

MIT Hillel Mattapan Day – A day of interaction with elderly from Mattapan. Thurs, Nov 29, 10:30am-4pm, Bush Rm 10-105. Info, x8529 Dorm, x8856 Dorm, or Hillel office x3-2982. Please sign up for at least one hour.

New England Regional Hillel Institute* – Includes study sessions on contemporary Jewish topics, services, chance to meet Jewish college students from New England. Fri, Nov 30-Sun, Dec 2, Boston University. Applications, Hillel Office, 312 Memorial Drive.

Pre-Professional Meetings* – Dr. Joel Feinblatt, University of Massachusetts Medical School, Thurs, Nov 29, 4-5pm, Rm 3-133. Prof. Tamar Frankel, Boston University Law School, Mon, Dec 3, 4-5pm, Rm 4-149.

Introductory PL/I for FORTRAN Programmers – Non-credit course consisting of lectures, exercises & machine problems. Nov 28, 29, Dec 3,5,7,10,12,14,17 & 19, 11am-12:30pm, Rm 39-530. Fee: \$15. Preregister, Lynn Penney, Rm 39-427, x3-6320.

Women's Forum – Dana Densmore will speak on various methods of self-defense. Follow-up sessions during IAP. Mon, Dec 3, 12n, Bush Rm 10-105.

Student Committee on Educational Policy* – Review & planning meeting on academic projects. Wed, Dec 5, 7:30pm, Stu Ctr Rm 353.

Student Art Association** – Open drawing workshop. Tues, 7:30pm, Stu Ctr Rm 429.

MIT Open House Committee** – Thurs, 7:15pm, Rm 26-065.

Urban Action Volunteer & Resource Center – Volunteer tutors, teachers urgently needed in Cambridge and Boston schools, as well as volunteers for other community agencies. Mon-Fri, 9am-5pm, Stu Ctr Rm 437, or call x3-2894.

Course Evaluation** – Sponsored by TCA & SCEP. Come help out. Info, lve msg at TCA, Stu Ctr Rm 450, x3-4885.

MIT Club Notes and Meetings

Bridge Club – ACBL Duplicate Bridge. Thurs, 6pm, Stu Ctr Rm 407. IMP-scored team games (similar to rubber scoring). Smaller IMP games Fri, 8pm, Sat, 2pm, Stu Ctr Rm 407. Jeff, x3-5285 or 864-5571.

Chess Club** – Sat, Sun, 1:30-5pm, Stu Ctr Rm 473.

Chinese Choral Society* – Singing. Sun, 3-6pm, Stu Ctr Rm 473.

Classical Guitar Society – Classes, group or private. Mon & Thurs, 5-8pm; Sat, 8am-12n; Rm 4-146,148,149. New group class for beginners every month. Vo Ta Han, 494-8353.

MIT/DL Duplicate Bridge Club** – Tues, 6pm, Stu Ctr Rm 473. Jeff, x3-5285 or 864-5571.

Fencing Club** – Wed & Thurs, 6:30-9:30pm, du Pont.

Goju Karate Club* – Mon, Thurs, 7pm, Stu Ctr Rm 407. Beginners enter class first week of each month. Info, Terry or Dick, 440-9631.

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

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

Kung Fu Club** – Northern Praying Mantis. Tues, Thurs, 7-9pm, T Club Lge. Info, H.C. Wong, 876-5071.

MIT Karate Club** – Evening classes Mon, Wed, 8-10pm, du Pont Wrestling Rm. John Miller, x3-1588.

MIT Magazine: Free Parking – Weekly meeting. Sun, 8pm, Walker Mem Rm 316.

MIT Soaring Association* – Meeting Thurs, Nov 29, 7:30pm, Stu Ctr Rm 473. Coffee & donuts.

MIT Wheelmen* – Wholesale parts orders placed, racing & touring events planned, informal discussion of everything about bicycling. Wed, 7:30pm, Rm 1-203.

Modeling Club – Physiologic and Endocrinologic Models** – Meeting Thurs, Nov 29, 4:30pm, Rm 16-141. Info, Mitchell Swartz, Rm 13-3041, x3-6737.

Outing Club* – Mon & Thurs, 5-6pm, Stu Ctr Rm 461.

Science Fiction Society* – Fri, 5pm, Rm 1-236.

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

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

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

Student Homophile League* – Meeting Thurs, Nov 29, 8pm, Rm 14E-307. Hotline number has been changed to 494-8227, for information, talk, help in coming out.

Tech Engineering News** – General staff meeting. Sun, 5pm, Stu Ctr Rm 453.

Technique*** – Yearbook staff meetings. Sat, 11am & Wed, 7:30pm, Stu Ctr Rm 451.

Tech Squares*** – Western style square dancing. Tues, 8-11pm, Sala. Admission \$1, first time free.

Tiddlywinks Association* – Wed, 8-11pm, Stu Ctr Rm 491.

Unicycle Club* – No more meetings until Walker Gym is open on Weekends. Watch this space for info.

Volleyball Club** – Serious volleyball, eventually leading to participation in Boston area tournaments. Sun (except vacations), 2-4pm, du Pont Gym.

Women's Gymnastics Club* - Mon-Fri, 5-7pm, du Pont Gym. Info, Ursula, x3-5954.

Wellesley Events

Wellesley College Theatre - Enter a Free Man* - By Tom Stoppard, directed by Paul Barstow. Fri, Nov 30-Sun, Dec 2, 8pm, Alumnae Hall Auditorium. Admission by Wellesley or MIT ID, or \$2.

Social Events

24-Hour Coffee House* - Inexpensive food, candy, non-alcoholic drinks are sold. Relax, play games, read. Daily, Stu Ctr, 2nd fl center lge.

Pot Luck Coffeehouse** - Live entertainment, cider, donuts, coffee. 8:30pm-12m, W20 Mezzanine Lge, 3rd fl. Performers & others interested in helping out, call Doug, x8766 Dorm.

Friday Afternoon Club** - Music, conversation and all the cold draft you can drink. Fri, 6pm, the Thirsty Ear, Ashdown Basement. Admission \$1 men, 50 cents women. Must be over 18.

Muddy Charles Pub** - Join your friends for music, beer, wine, snacks, conversation. Mon-Fri, 11:30am-2pm, 4-8pm, 110 Walker. Call GSC, x3-2195.

Deutscher Tisch - Wir treffen uns freitags von 1-2 in Lobdell, um auf Deutsch und ueber Deutschland zu reden. Wir sind an der schwarz-rot-goldenen Tischflagge zu erkennen.

Movies

Moment of Truth* - Humanities. Wed, Nov 28, 4pm, 7pm, Rm 10-250.

The Organizer* - Humanities. Wed, Nov 28, 7pm, Rm 14N-0615.

Member of the Wedding* - Humanities. Thurs, Nov 29, 7pm, Rm 10-250.

Der Dritte (The Third)* - Foreign Literature. German, no subtitles. Thurs, Nov 29, 8:30pm, Rm 10-250. Free.

Lady Sings The Blues - LSC. Fri, Nov 30, 7pm, 10pm, Rm 26-100. Admission 50 cents, ID required.

Ugetsu (Kenji Mizoguchi) - Film Society. Fri, Nov 30, 7:30pm, 9:30pm, Rm 6-120. Donation \$1.

Things To Come - Midnite Movie Series. Fri, Nov 30, 12m, Sala. Free, ID required. Bring your own blanket.

Man of La Mancha - LSC. Sat, Dec 1, 7pm, 10pm, Rm 26-100. Admission 50 cents, ID required.

Zatoichi and the One-Armed Swordsman* - Chinese Students Club. Mandarin with English subtitles. Sun, Dec 2, 2pm, 4pm, Kresge Auditorium. Admission \$2 adults, \$1 children, 50 cent discount at Foreign Student Office.

Room Service - LSC. Sun, Dec 2, 8pm, Rm 10-250. Admission 50 cents.

The Lady Killers* - Humanities. Mon, Dec 3, 7pm, Rm 10-250.

Henry V* - Humanities. Wed, Dec 5, 7pm, Rm 10-250.

The Red Desert* - Humanities. Wed, Dec 5, 7pm, Rm 14N-0615.

Der Dritte (The Third)* - Foreign Literature. German, no subtitles. Wed, Dec 5, 8:30pm, Rm 26-100.

The Concert for Bangladesh - LSC. Fri, Dec 7, 7pm 9:30pm, Rm 26-100. Admission 50 cents, ID required.

Greed (Eric von Stroheim)* - Film Society. Fri, Dec 7, 7:30pm, 9:30pm, Rm 6-120. Donation \$1.

King of Hearts - Midnite Movie Series. Fri, Dec 7, 12m, Sala. Free, ID required. Bring your own blanket.

Music

Noon Hour Concert Series* - The Wellesley Chamber Singers, conducted by Peter Sipple, will perform Spanish Renaissance music. Thurs, Nov 29, 12n, Chapel. Free.

In Concert* - The Contemporary Chamber Ensemble from New York, directed by Arthur Weisberg, featuring soprano Jan DeGaetani, will perform works by Castiglione, MIT's John Harbison, Wolpe & Schoenberg. Fri, Nov 30, 8pm, Kresge Auditorium. Free.

French Horn Ensemble** - Students from the University of New Hampshire present a concert of music for 12 french horns. Sat, Dec 1, 8:30pm, Burton Corner Dining Hall.

Schola Cantorum Concert* - Program includes Monteverdi, Orlando di Lasso. Sun, Dec 2, 8pm, Kresge Auditorium. Tickets \$3 reserved seats, \$2 unreserved, \$1 MIT Community; available in Bldg 10 Lobby and at door.

Music Library Concert* - Pianist Kiyoko Takeuti performing Bach and Schubert. Tues, Dec 4, 5:30pm, 160 Memorial Drive. Free.

Noon Hour Concert Series* - The Mordor String Quartet performing Hindemith and Brahms. Thurs, Dec 6, 12n, Chapel. Free.

MIT Festival Jazz Ensemble* - Directed by Herb Pomeroy, with Halbert White Sextet & MIT Concert Jazz Band present annual fall concert. Fri, Dec 7, 8:30pm, Kresge Auditorium. Free, tickets Bldg 10 Lobby.

Recorder Ensemble** - Music provided, but bring instruments and any music you wish to play. Tues, 7pm, ESG Hdqtrs, 6th fl bldg 24. All aficionados welcome, freshmen encouraged to attend. Details, David Dreyfus, x3-7787.

Theater

Rashomom* - MIT Community Players presents a play written by Fay and Michael Kanin, directed by Phoebe Wray. Thurs, Fri, Sat, Dec 6,7,8,13,14 & 15, 8pm, Kresge Little Theatre. Tickets \$2.50, \$2/students. Available at door or in Bldg 10 Lobby, starting Mon, Dec 3.

Dance

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

Concert - Margaret Beals* - A solo performance with guest cellist Gwendolyn Watson. Thurs, Nov 29-Sat, Dec 1, 8:30pm, Kresge Little Theatre. Tickets: \$2 in advance, \$3 at door; available TCA office, 4th fl Stu Ctr, or call 734-9334.

Exhibitions

Hayden Gallery* - Collages, prints and graphics by the German artist Kurt Schwitters in the Main Gallery and silkscreen prints by Corita Kent in the Corridor Gallery, through Sat, Dec 8. Gallery hours Mon-Sat, 10am-4pm. Free.

7 X 7* - An exhibition at the Creative Photography Lab of forty-nine photographs by seven midwest photographers. Thru Wed, Nov 28, W31-310. Hours: Mon-Fri, 9am-10pm, Sat, Sun, 12n-6pm.

Photography Exhibition* - 8x10 Contact Prints by Ron Rosenstock. Opens Tues, Dec 4, Creative Photography Gallery, 120 Mass Ave. Hours: Mon-Fri 9am-10pm, Sat, Sun, 12n-6pm, Free.

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

Music Library Exhibit - In honor of St. Cecilia, patron saint of music. Scores, books, pictures.

Athletics

Saturday, December 1* - V Basketball. Yeshiva, 8:15pm, Rockwell Cage. JV/F Basketball. Huntington School, 6:15pm, Rockwell Cage. V Fencing. Brandeis, 2pm, du Pont Fencing Rm. V Hockey. Trinity, 7pm, Ice Rink. Pistol. Merchant Marine, Coast Guard, 9am, du Pont. Rifle. Maine, Providence, Norwich, 10am, du Pont. Swimming. RPI, 2pm, Alumni Pool. JV/F Wrestling. Yeshiva, 8pm, duPont Wrestling Rm.

Sunday, December 2* - V Fencing. Yeshiva, 2pm, du Pont Fencing Rm.

Monday, December 3* - V&F Squash. Dartmouth, 7pm, du Pont Squash Courts.

Tuesday, December 4* - F&V Basketball. Brandeis, 6:15pm, 8:15pm, Rockwell Cage. V Wrestling. New Hampshire, Massachusetts Maritime Academy. 7pm, du Pont Wrestling Rm.

Wednesday, December 5* - JV/F&V Fencing. Harvard, 7pm, du Pont Fencing Rm.

Thursday, December 6* - Var B Basketball. Boston University, 7:30pm, Rockwell Cage. V Squash. Navy, 8pm, du Pont Squash Courts.

Friday, December 7* - V Rifle. Wentworth, 6:30pm, du Pont

Religious Services and Activities

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

Campus Crusade for Christ/College Life Family Time* - Singing, sharing, prayer & teaching from God's Word. Fri, 7-9:30pm, Rm 1-132.

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

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

Christian Science Organization* - Meetings, including testimonies of healing. Tues, 7:15pm, Chapel.

Hillel*: Services - Mon-Fri, 8am, Rm 7-102; Fri, Traditional 4:15pm, K kosher Kitchen, Non-Traditional 7:45pm, Chapel; Sat, 9am, Chapel. Classes - many interesting classes offered, for full schedule call Hillel office, x3-2982. Shabbos Meal - enjoy a traditional Fri evening meal at K kosher Kitchen, must order by Tues each week. Info and to order, Herbie Levine, x8403 Dorm.

Hillel Brunch - Dr. William B. Rosenthal, dean Wurzeiler School of Social Work, Yeshiva University, will lead discussion on "The Nature of the Self and Risking." Sun, Dec 2, 11:30am, Stu Ctr Mezzanine Lge. Brunch \$1.

Islamic Society* - Juma prayers. Fri, 12:15pm, Kresge Rehearsal Rm B. Discussion on the Qur'anic Interpretations, Sat, 5pm, ISC Lge, 2nd fl Walker.

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

Protestant Communion Service* - Wed, 5:05pm, Chapel.

Protestant Worship Services* - Sun, 11am, Chapel.

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

United Christian Fellowship* - Christians for Dinner and Sharing Meeting. Thurs, dinner, 5pm, Walker, followed by singing, sharing, prayer 6pm, Rm 6-321.

United Christian Fellowship* - Group study of world religions & Jesus Christ from biblical perspective. Sun, 9:30-10:30am, Rm 5-216.

Westgate Bible Study Meeting* - Includes study of the Gospel of Mark. Wed, 8pm, apt 1202 Westgate I.

Placement Interviews

The following companies will be interviewing Wed, Nov 28-Fri, Dec 7. Those interested may sign up in the Career Planning and Placement Office, Mon-Fri, 9am-4pm, E19-455, x3-4733.

Wednesday, November 28 - Boston Export Sales; Intel Corp; Joseph S. Ward & Assoc; Northeastern University - Graduate School of Business; The Shell Co.

Thursday, November 29 - The Shell Co; Institute for Defense Analyses; The Warner & Swasey Co; General Motors Research Labs.

Friday, November 30 - General Motors Research Labs.

Monday, December 3 - University of California, Berkeley - Graduate School of Public Policy. State University of New York - College of Environmental Science & Forestry.

Thursday, December 6 - Firestone Tire & Rubber Co.

Friday, December 7 - Carnegie-Mellon University - Graduate School of Industrial Administration.

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 December 5 through December 14 to the Calendar Editor, Room 5-111, Ext 3-3279, before noon Friday, Nov 30.

-A twin-bill concert of contemporary music featuring the well-known Contemporary Chamber Ensemble (shown left) with Arthur Weisberg, conductor, and noted mezzo-soprano Jan DeGaetani will be given Friday, Nov. 30, at 8pm in Kresge Auditorium. The program will include the Boston premiere of Confinement, by John Harbison, professor of music at MIT, Tropi by Castiglione and Incenters by Jacob Druckman. Jan DeGaetani will join the ensemble for a performance of Pierrrot Lunaire, by Schonberg. The concert, sponsored by the MIT Music Section, will be free and open to the public.



Alumni Seminars Focus on Management, Health Topics

Seven alumni seminars sponsored by MIT clubs across the nation are being given this school year—three are in the area of management and four in health-related subjects—to help alumni and other interested people keep abreast of changes occurring in these fields nationally and within the Institute itself.

The first of the seminars, on "Challenges to Contemporary Management," was held Saturday, Nov. 17, in Washington, DC.

Speakers for the half-day seminar, held at The American University, were Dr. William F.

Pounds, dean of the Alfred P. Sloan School of Management; Professor Edward B. Roberts, and Associate Professors Thomas J. Allen and John F. Rockart, all of the Sloan School. Discussion groups, chaired by Raymond L. Bisplinghoff, former dean of the MIT School of Engineering and currently serving as deputy director of the National Science Foundation and Gordon T. Yamad, an MIT alumnus who is director of the office of management systems and special projects in Washington, supplemented the talks.

Two other management seminars will be held in Puerto Rico, on Jan. 18, and in Chicago, on March 16. The San Juan meeting will feature discussions of the techniques of cost-benefit analysis, the energy crisis and the construction business. The meeting in Chicago—a major financial center—will deal with an economic overview of high finance and management in the country.

Other forthcoming seminars will deal with health-related activities at the Institute—basic research, bio-engineering, management and education research.

The first, on Jan. 19, will be sponsored jointly by the MIT Club of Miami and the University of Miami. Dr. Irving M. London, director of the Harvard-MIT Joint Program in Health Sciences and Technology, Dr. William F. Pounds and Walter A. Rosenblith, MIT Provost, will be among the speakers.

In February, the MIT Club of Southern California will present Professor Robert W. Mann, chairman of the executive committee in the division of health science and technology; Professor David F. Waugh, of the life sciences depart-

ment and Mr. Leon S. White senior lecturer in management. Mr. White was recently appointed commissioner of health and hospitals in Boston.

They will speak on fundamental research, related to medicine, in chemistry and physics; the application of health-related research in engineering and the management of health-care units. G. Peter Grant, director for Alumni Clubs, said this seminar would give an overview of "the major change over the last five years of MIT faculty shifting their emphasis to health-care related studies."

Seminars similar to the Miami and Southern California meetings will be offered in New York City in late March and Philadelphia on April 6.

This is the first year that the Alumni Association has offered this type of seminar. When local clubs were notified that the association would be offering the half day meetings requests were so numerous that a backlog now exists into 1974-75.

The seminars are financed by the local clubs. The club prints and mails publicity brochures, rents the space and provides any arrangement for food. The association supports the club by agreeing to assume the responsibility for any deficit that might occur. The association also provides traveling expenses for the speakers. The cost of a seminar for each participant is priced just above the break-even point.

'Rashomon' Drama

"Rashomon," the famous Japanese short story by Ryunosuke Akutagawa, will be presented by the MIT Community Players, Thursday through Saturday, Dec. 6-8 and Thursday-Saturday, Dec. 13-15, at 8pm in Kresge Little Theatre.

The MIT production is directed by Phoebe Wray, a Boston director and writer.

Tickets at \$2.50 and student discount tickets at \$2 will go on sale in the lobby of Building 10 at noon on Dec. 3.

Tech Travel Trip Off

The Tech Travel group fare trip to Seattle scheduled for Dec. 20 has been cancelled by United Airlines, according to Marty Davidoff, who organized it. Refunds on deposits made for the trip may be picked up at the Tech Travel booth in Building 10 daily from 11am-1pm. Mr. Davidoff said the airline informed him that space is available for regular fare reservations.

Donald L. Cook will speak on "Ion Energy Measurements by Charge Exchanged Neutral Analysis" at a Department of Nuclear Engineering doctoral seminar at 12 noon Tuesday (Dec. 4) in Room 38-166.

TECH TALK November 28, 1973 Volume 18, Number 21

Tech Talk is published 50 times a year by the News Office, Massachusetts Institute of Technology. Director: Robert M. Byers; Managing Director, News Office Publications: William T. Struble; Assistant Directors: Joanne Miller, Margo Foote (Photojournalist); Charles H. Ball, Dennis L. Meredith, Robert C. Dilorio; Business Manager: Paul E. Johnson; Reporters: Sally M. Hamilton; Damon P. Wright; Calendar of Events/Want Ads: Susan E. Walker.

Address news and editorial comment to MIT News Office, Room 5-111, Massachusetts Institute of Technology, Cambridge, Ma. 02139. Telephone Ext. 3-2701.

Mail subscriptions are \$5 per year. Checks should be made payable to MIT and mailed to Business Manager, Room 5-122, MIT, Cambridge, Telephone Ext. 3-3676.

New UROP Listings

For more detailed information on UROP opportunities listed, MIT undergraduates should call or visit the Undergraduate Research Opportunities Program Office, Room 20B-141, Ext. 3-5949 or 3-4849. Undergraduates are also urged to check with the UROP bulletin board in the main corridor of the Institute.

American Institute of Physics New York City

The Center for History of Physics at AIP maintains a collection of published works, letters, notebooks and other personal papers of prominent scientists from around the world at the Niels Bohr Library. A potential project has been suggested in the area of organizing and analyzing unique historical source materials documenting the development of 20th Century physics. Materials for analysis include unpublished autobiographies, transcripts of tape recorded interviews, pictorial collections and archival documents such as letters, notebooks and diaries. The project would take place at AIP headquarters in New York City, commencing during IAP and continuing over the summer.

New England Consortium on Environmental Protection (NECEP) Boston

The New England Consortium on Environmental Protection has suggested a project for MIT undergraduates entitled: "Energy Conservation and the Boston Chamber of Commerce."

Project will involve exploring energy conservation techniques and methods with the member companies and corporations of the Greater Boston Chamber of Commerce. After identifying the energy flow within several companies and firms, the effectiveness of alternative strategies to reduce energy consumption will be tested. As a result of this analysis, an "Energy Conservation Program" will be proposed for adoption as a working policy for the Greater Boston Chamber of Commerce.

For more information call or visit the UROP Office, 20B-141, x3-4849.

Lincoln Laboratory Lexington

Lincoln Laboratory is a center for research and development in advanced electronics, with programs in space communications, seismic discrimination and detection of earthquakes and underground nuclear explosions, computer systems, solid state physics, digital signal processing, radar systems and optics. Some representative areas of research are: detection of weak signals using large seismometer arrays; computer aided analysis of complex structures; properties and applications of lasers; computer graphics; application of radar techniques to problems of air traffic control; real-time data processing; and problems in quantum electronics and solid state physics. Students interested in these subjects or wishing to inquire about others should call Dr. Joseph Mindel, x181-225. There is a shuttle bus between the campus and Lincoln Labs in Lexington.

Foreign Studies

Graduate Canadian-Scandinavian Foundation Scholarships for Studies and Research in Scandinavia 1974-75

The Canadian-Scandinavian Foundation invites applications for grants to Canadian students for studies and research in Scandinavian countries. Recipients must utilize grants and scholarships during the academic year 1974-75. The awards are: The Swedish Institute Bursary will be offered to qualified Canadian students wishing to pursue academic studies on a postgraduate level, or other advanced studies or research. The candidate must spend up to eight months in Sweden. The Swedish-America Foundation Scholarships will be given to two qualified Canadian students who intend to spend eight months in Sweden to do graduate work, or other types of advanced studies and/or research. The CSF 1974 Special Purpose Grants aim toward partial financing of qualified Canadians who wish to spend a shorter period in Scandinavia. The Scandinavian Airlines System Travel Grant will cover transatlantic air fare to capital destinations in Scandinavian countries by the airline.

No particular form is needed when applying for the different awards. Send information on past studies and study plans plus transcripts

by March 20, 1974, to: Secretary of the Canadian-Scandinavian Foundation, Dr. Jan-Lundgren, c/o Dept. of Geography, McGill University, Montreal, Canada. For further information contact the Foreign Study Office, Room 10-303, x3-5243.

Postdoctoral World Health Organization International Agency for Research on Cancer Research Training Fellowships 1974-75

Applications for training fellowships are invited from junior scientists wishing to be trained in any aspect of laboratory and clinical cancer research. The Agency is, however, especially interested in receiving applications for training in epidemiology, biostatistics and environmental carcinogenesis—both chemical and viral. Priority will therefore be given to candidates working in these fields. Applicants should be engaged in research in medical or allied sciences and intend to pursue a career in cancer research.

Fellowships are awarded for one year and are tenable in a suitable institution abroad. Fellows will, in general, be selected from applicants with some post-doctoral research experience related to cancer in medicine or the natural sciences. They must have an adequate knowledge, both written and spoken, of the language of the country in which their fellowship is tenable. Applications cannot normally be accepted from people already holding fellowships enabling them to study abroad.

Stipends will vary according to the cost of living in the country of study. The cost of travel for the applicant and, in certain circumstances, that of his wife and children, will be met. Applications must reach the Agency not later than 28 Feb. 1974. The application forms are available from: The Chief of the Research Training and Liaison Unit, International Agency for Research on Cancer, 150, cours Albert-Thomas, 69008 Lyon, France. For further information see the Foreign Study Office, Room 10-303, x3-5243.

World Health Organization International Agency for Research on Cancer Travel Fellowships 1974

Applications are invited from established cancer research workers for travel fellowships to be awarded by the International Agency for Research on Cancer during 1974. The fellowships are intended to provide opportunities for visits to other institutions for consultation, collaborative planning of research projects, and the acquisition and standardization of new research techniques. Programs that are purely clinical in nature are not acceptable. A clear research theme must be evident in the application.

Applicants must be actively engaged in cancer research and should be qualified in natural or medical sciences. In particular, they should be on the staff of a university or research institution. Fellows must have an adequate knowledge, both written and spoken, of the language of the country in which they propose to make visits. Travel fellowships will be awarded for a maximum period of three months and may be spent in one institution or in several institutions which may be all in one country or in different countries. It should be noted that travel fellowships will not be granted to support participation in congresses and symposia, neither are they intended to supplement funds for sabbatical leave. Fellowships will cover the cost of travel to approved centers and an appropriate allowance towards the cost of accommodation and other incidental expenses. Applications will be reviewed in February, May, September and December. The closing dates for receipt of applications will respectively be 31 January, 30 April, Aug. 31 and Nov. 30, 1974. Application forms are available from: The Chief of the Research Training and Liaison Unit, International Agency for Research on Cancer, 150, cours Albert-Thomas, 69008 Lyon, France. For further information see the Foreign Study Office, Room 10-303, x3-5243.

Graduate Studies

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

Federal Deposit Insurance Corporation Graduate Fellowships

As one means of promoting research in banking and related fields, the Federal Deposit Insurance Corporation offers fellowships to graduate students who are about to begin writing their doctoral dissertations in the areas of banking, finance, and economics. The

awards cover a period of 12 to 15 months, beginning (after course work in completed) any month between July and October, 1974, and ending no later than Sept. 30, 1975. The maximum fellowship award is \$6,000, paid at the rate of \$400 a month, plus tuition. Some travel fees, clerical aid, and data processing support in a limited amount may be paid for as arranged at the time of selection. An additional award of \$500 will be given for completion of an accepted dissertation within the period covered by the fellowship. To be eligible, the applicant must be (a) a US citizen, (b) enrolled at a university in the United States offering a PhD or equivalent in the field of business or economics, and (c) have completed all requirements for the degree, except a dissertation, by no later than Oct. 1, 1974. Deadline: Jan. 8, 1974.

Josephine de Karman Fellowships

The awards consist of approximately 15 of \$2,500 each for the regular academic year. Students, in any discipline, entering senior undergraduate year and graduate students entering third year or after of graduate school are eligible. Applicants should have manifested exceptional ability and serious purpose. Special consideration will be given, however, to applicants in the Humanities. Open to foreign students already enrolled in a university located in the United States. Deadline: Jan. 31, 1974.

Other Opportunities

Summer Fellowship Program for Minority Students—Cornell University Medical College

A summer fellowship program for minority-group premedical students has the specific aims of increasing the number of minority-group students in leading medical schools, and of increasing their awareness of the great variety in medical career opportunities. Pre-medical students who have completed their junior year spend ten weeks as summer Fellows at the Medical Center. The Fellows receive a stipend of \$100 per week, and are housed in Olin Hall, the medical students' dormitory.

Fellows work three days a week at a variety of research activities with sponsors who are faculty members from different departments. The students in this program are often involved jointly with medical students who hold similar fellowships. Two mornings a week are devoted to a specially designed course in cardio-vascular physiology. The afternoons of these days are used for a series of discussions of health problems of ghetto communities, and visits to a neighborhood health center program.

Information regarding applications for fellowships and all other aspects of minority-group admissions can be obtained by writing to James L. Curtis, M.D., Associate Dean, Cornell University Medical College. Applications should be made early in the junior year and not later than April 15.

Summer Program for College, Graduate and Medical Students—The Jackson Laboratory, Bar Harbor, Me.

This program enables undergraduates, graduate, medical and veterinary students to participate fulltime in the research program of a member of the Laboratory's scientific staff. Twenty undergraduates and a varying number of graduate and medical students are selected each summer. The primary basis for selection are statements in the individual's own application about the degree of his/her interest, the extent to which he/she has implemented this interest with reading and science activities and his/her ability to express himself/herself. Also important are letters of recommendation and evidence of scientific ability as reflected in scholastic achievement records. Undergraduates receive a stipend of \$800 for the 10 week program. Stipends are not available for graduate, medical and veterinary students. A brochure describing the 1973 programs at the Jackson Laboratory is available in the Pre-professional Advising and Education Office, Room 10-186, x3-4158. Applications are available from the Research and Training Office, The Jackson Laboratory, Bar Harbor, Me. 04609.

Cross-Disciplinary Cardiovascular Training Program—Institute for Human Resource Development of Hahnemann Medical College and Hospital

The Cross-Disciplinary Cardiovascular

Training Program orients talented students into investigative and academic careers in cardiovascular disciplines. Enrollment is limited to 30 high ability junior and senior college students, medical college or graduate school students. The program lasts for 10 weeks from June 24 to Aug. 30, 1974. In addition to specific research projects, each student will receive exposure to the basic sciences as they relate to cardiovascular disease, as well as to specific cardiovascular subspecialty disciplines such as ultrasonics, electrophysiology, electrocardiography, cardiac catheterization, hypertension, renology, etc. Additional information and applications are available in the Preprofessional Advising and Education Office, Room 10-186, x3-4158.

Research Appointments for Undergraduates at Argonne National Laboratory

Argonne National Laboratory sponsors undergraduate research programs during the summer and fall of 1974. The program offers students majoring in biology, chemistry, computer science, engineering, mathematics or physics the opportunity to experience a research environment under the supervision of a professional scientific investigator. A successful applicant must be a mature junior or senior pursuing one of the curricula listed above (or a closely related one) and must be nominated by his/her department chairman. No prior research experience is necessary. Appointments are for 16 weeks. Each student will receive a \$100 honorarium. Additional information and applications are available in the Preprofessional Advising and Education Office, Room 10-186, x3-4158.

Mental Health Fellowship—Summer 1974—Department of Psychiatry, University of Virginia Medical Center

This program sponsored by the Grant Foundation gives the college student experience in the area of mental health services, including work under supervision in the psychiatric wards. Its availability for the student still in his undergraduate years allows him to test his fitness for a field in which he already has a theoretical interest, and to assess its appeal for him as a career choice. The Fellowship provides a laboratory for students in a wide range of social studies, since Fellows rotate through such divisions as patient services, child psychiatry, outpatient clinics, psychology, social work, and occupational and recreational therapy. Appointments are for 12 weeks and each Fellow receives a stipend of \$720. Additional information is available in the Preprofessional Advising and Education Office, Room 10-186, x3-4158. Applications are by writing to Vamik D. Volkan, M.D., Professor of Psychiatry and Coordinator of the Mental Health Fellowship Program, Box 203, University of Virginia Medical Center, Charlottesville, Virginia 22901.

Oak Ridge National Laboratory—Summer Employment

Oak Ridge National Laboratory operated by Union Carbide Corporation has a limited number of employment openings during the summer for students in technical fields. Applicants should have completed their BS degrees or above and have a grade point average of 3.0/4.0. Selection regarding these openings are usually made about mid-March. All application materials must be submitted by Feb. 15. Application forms and additional information are available in the Preprofessional Advising and Education Office, Room 10-186, x3-4158.

Undergraduate Research Training—Oak Ridge Associated Universities

The Undergraduate Research Training Program provides selected students with opportunities for independent study, research and development under the guidance of senior staff members at several major Atomic Energy Commission installations and other approved laboratories. Students majoring in physical, life and environmental sciences, engineering and mathematics are awarded temporary summer appointments on a competitive basis. Selection of trainees is based on scholastic record, aptitude, research interest, graduate school potential and acceptability in the on-going program of the laboratory of choice. Appointments generally start in June and run for ten weeks. Applications must be received, complete in all respects, by Jan. 7, 1974. Additional information and applications are available in the Preprofessional Advising and Education Office, Room 10-186, x3-4158.

CLASSIFIED ADS

Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Only Institute extensions may be listed. Members of the community who have no extensions may submit ads by coming in person to the Tech Talk office, Room 5-111, and presenting Institute identification. Ads may be telephoned to Ext. 3-3270 or mailed to room 5-105. Please submit all ads before noon, Friday, November 30.

For Sale, Etc.

Knight police/wthr r, \$15; Realistic pro mono trntbl, \$20; HP400A ACVTVM, \$25, nego. Dennis, x8-3333 Draper.

Antique mahog china closet, best. Marilyn, x3-4112.

Pool tbl, reg sz, gd cond, best over \$50. Joe, x7671 Linc.

Dresses, suits, w sz 8 & 10, \$5/ea. Dave, x3-3781.

Canon 518 518 super 8 movie cam, w/teleconverter, remote cntrl, close-up lens, all gd cond, \$200. Dr. Varma, x3-6737.

Pirelli stud snows, 550-13, t-less, 1/2 seas, \$30/pr; Samsonite card tbl w/ 4 fold chr, nw, \$30. Sumner, x8-1480 Draper.

Gray leath coat, f, hand embr in Turkey, sz 5, \$80 or best; brn full-lgh leath coat, m, sz 42L, \$100. Donna, x3-4271.

Ross bike, m, 5 spd, 1 mo old, ask \$50. x9266 Dorm.

Pr 7.75/15 stud snows, retread, used 2 mos, \$15. Stan, x412 Linc.

Bikes: Kent 20" f, hirise hndbr, banana st, exc cond, \$20; Rollfast 26" f, chrome fndr, \$15; Columbia 20" w/trn whls, m or f, nds tire, \$15. C. Briggs, x8-3967 Draper.

Down mummy bag, Northface Ibox, lg, gd cond, \$65. John, x3-5934.

Durst m 300 enlgr, \$45; enlarg lenses: 50mm f4.5, \$20, 75mm f3.5, \$15; misc gal & 1/2gal bottles, best; want file cab & cch, less \$40. x3-7787.

Port typwrtr, Royal man, exc cond, \$50. Tom, x3-4218.

T&C Frstn snows, 2, 8.45x15, stud, mtd, 2 seas, exc cond, \$25/ea. x497 Linc.

Fake fur bdspr, 2" acryl, red-gold, banded fox pattr, 5' w, lined, \$35. x0610 Dorm.

Xmas is coming, simple creative design slvr jewelry. Rochelle, x3-1752.

K tbl w/4 chrs, \$30. x3-6886.

Tv's: 19" color, \$199; b&w port, \$40; chr w/stool, \$65; 12" sq grn rug, \$95; 3 pc coffee tbl set, \$38; DR tbl, 4 chrs, \$70; desk, \$50; wd chest, \$15; dbl bed, \$40; 2 bdsprds, \$10, \$12; misc hsehold & xmas items. x3-2614..

Cagoule, outdr garment for ttl protection from wet wthr, nw, nvr used, org, w sz sm, \$10. Diane, x0610 Dorm.

Fig skt: b, blk, sz 7, \$6; g, wh, sz 2-3, \$3; pad hcky pants, for 10-11 yr old, \$3; shingrd, \$3; sm g bike, for 5-8 yr old, w/bskt, \$7; child desk, hinge top, \$6. x3-4923.

Oaiwa fbrglas skis, 180 cm, Salomon 505 bndgs, both \$65 or best; Reiker boots, sz 11, 5 hrs ski time, \$25. Robert, x8653 Dorm.

Venetian blind, 8'; 5 comb wdn scr & storm dr; 5 wdn storm wndws. John, x8-2006 Draper.

Sony TC-540 stereo tape rcrdr, 20w, incl spkrs, mics, etc. x9461 Dorm.

Moving to Fla, must sell: formica dinette tbl & 4 chrs, uphol bk & st, 30x40, w/ext 48, \$45 or best; 2 bar stools, wrought iron, aqua, lthr bk & st, \$25/ea. Mrs. Shechter, 298-0484.

Sealy Pstrpedic bed, \$110; 3 spd bike, f, \$45; tbl w/mtch chrs, \$50; lg wdn desk, \$30; asst hsewares, lving cntry, prices firm. Ken, 494-8212.

Snows, 2, VW, gd cond, \$24/pr or best. Tom, x7578 Linc.

Nearly nw stl belt radial Michelin snows, mtd, L78x15, 8.90x15, best. Bert, x8-4557 Draper.

Pckg deal, Zenith TV's, 19", b&w: 1 UHF, VHF, gd cond; 1 VHF, snd but no pix, unknown reas, \$50 or best. Carl x8-2876 Draper.

Bos Sym tkcts, 12, Sat series, Jan-Apr. Wolfgang, x3-3200.

Faberware Open Hearth broiler-rotis, 8 1/2x12", w/cvr, yr old, \$25. Venetia, x3-2550.

Soldering gun, dual heat, Weller 8200N, lk nw, \$10; multimeter, Lafayette 995076, nw ask \$25. John Bimshas, x8-3955 Draper.

Artists easel, tall, wdn, adjust, exc cond, \$25. Call, 484-9591, aft 4.

LR couch, nylon, toast clr, foam cush, 72", perf cond; LR chr, tapestry. x3-4563.

Miracord 50H MKII trntbl w/Stanton 681EE crtrdg. Pat or Joe, 267-2733.

Magnavox TV, 21" console mdl 2'x3', b&w, tubes, spkrs ok, nds transformer. Call, 665-4346.

Gerry kiddie pack, \$9; jolly jmp, \$7; colaps plypn, \$10. Tony, x3-5783.

Stud snows, pr, 735x14, mtd Chevy, \$20/pr. Bill, x8-4505 Draper.

Kowa SETR2 35mm SLR w/pistol grip, polarized filter, \$75 or trade for equiv twin lens reflex. Foley, x461 Linc.

Old refrig, \$20; 2 nat gas frnc converters, 210,000 BTU; Falcon 4 hole 13" rims, 2/\$5. Skip, x146 Linc.

Fr 8 spd bike, nrly nw, nego. Sam, x3-6928.

Pr 215 cm crs-cntry skis w/bndgs, pr crs-cntry boots, durable, \$35 or best. Don, 262-1767, aft 6:30.

Hcky skates, b, sz 3, Bauer; girls Hyde fig skates, used; \$16 ea. x182-183-251 Bedford. Tires, J78x15 slite used. x8-2004 Draper.

Atlas Wthrgd snows, 2, ww, 4 ply, 735x14, \$25/pr; ww Delta 100, 1, 670x15, \$10. Rob, x3-5629. Tires, blk wall, F78-15, mtd Ford; 2 blk wall, 7.35x15. J. Golis, 182-183-201, Bedford.

Heathkit solid st amp, mdl AA21D, cost \$150, best. Call, 489-2772.

Baby carriage. Dilip, x3-5814.

Storm wndws, alum, wh, 30x39, 23x51, \$15.80 ea. Bill, x5437 Draper.

Hart Competition skis, lk nw, 205 cm, w/Dovre bndgs & safety strap, \$125; Trappeur boots, lk-nw, sz 11 1/2E, incl tree, \$80. Kenneth, x7614 Linc.

Vehicles

'64 Buick Spec conv, well kept, fantastic performer, \$300. Mary, x7194 Linc.

'65 Peugeot 404, 100K, nw clutch & strtr, runs well, body fair, r, nw spare, avail 12/15, \$300. x3-1913.

'65 VW conv, nds minor repairs, runs well, \$150. x3-5757.

'66 VW Karman Ghia, body gd, eng, rebt, nw batt, recent tune, \$450 or best. Joe, x36729.

'67 VW sqbk, snrf, rebt eng, nw br, runs well, nds some wk, snows, best over \$500. Mike, x3-7597.

'67 Ford sta wgn, sm V8, ac, p st, gd mech cond, \$750 or best. Ehud, x3-2517.

'67 VW bus, exc br & eng, clutch ok, some rust, \$450. Call, 861-7965, aft 6.

'68 Volvo 142, 22 mpg, exc eng, cln int, \$1,050; lk nw Konica Autoreflex T, 52mm f/1.8, \$120. Call, 876-0221.

'68 Ford LTD wgn, fine cond, \$975. Tom, x8-3987 Draper.

'68 Pontiac Firebird, 80 K, std, fair cond, \$400. Masato, x8736 Dorm, lve msg.

'68 Mustang, auto, p st & br, r, gd cond, \$700 or best; sunbeam hairdry, salon, hrdly used, \$10. x3-2082.

'69 Opel Rally Spt, incl mtd snows, ski rack, lst \$675. Ron, x7668 Linc.

'69 Chevy Camaro, 52K, auto, 8 cyl, h, ac, p st, gd mileage, gd mech cond, \$1,190. George, x3-4944.

'70 Chevy Nova, auto, p st & br, r, 50 K, gd cond, \$1,500. Joerg, x3-5626.

'71 Ford Mustang Mach 1, mint cond, bckt sts, disc br, red-blk int, going back to school, best. x3-5100.

'71 Saab 99-2CM, 25 K, trlr hitch, snows, amfm, \$1,900. Call, 391-9631, evgs.

'72 Ford Gal 500, 4 dr, grn, vinyl rf, auto, p st, r, exc cond, snows, \$1,900. x3-6823.

'72 Grand Torino, gold, brn top, p st & br, ac, \$2,650 firm. Harvey, 495-1000 x2828.

'73 Dodge Polara wgn, 9 K, auto, p st, disk br, p r wndw, snows, \$3,100. x8-3370 Draper.

'73 Chevy Caprice conv, 22 K, amfm w/r spkr, \$3,000. Pat, x3-2996.

'73 CJ5 Jeep, exc cond, recent tune, \$2,500. Al, x5873 Linc.

Housing

Arl, 6 Rm duplex, lg yd, d&d, use of Indry, \$285 incl wtr, elec. Bruce Julien, x3-7850.

Bos, Fenway, sub 1/1, LR, sm BR, K, \$150. Call, 266-9578, aft 5:30.

Bos, Beac St, nr Mass Ave, furn or un, 3BR, LR, DR, pking, cln, sunny, avail 1/1, \$335; also 4 poster mahog bed, sgl, w/box spr, matt, sev rugs, \$45/all, nego, or sep. Call, 267-1622.

Camb, rm, share B w/1, bfast priv, privacy, exc loc for MIT, \$40/wk. Call, 547-4763.

Camb, 2 BR, LR, lg K, encl snprch, beaut fl, safe ngrhhd, pking, avail 12/15, beaut apt, \$215 incl h. x3-4996.

Medford, 4 cln rms, 1st fl, no pets, sec dept, \$150 + h. Call, 623-7283.

Saugus, 3BR col, exc cond, 20 min car MIT, must find buyer, renter w/ or w/out opt to buy. x3-6168.

Waltham, Warrendale sec, settle estate: 7 Rm cape, prch, gar, \$31,500 or best. Bob Strong, x8-1416 Draper.

Conway, NH, chalet, slps 10, 2B, all elec, frpl, \$180/wk, \$650/mo, + elec & tel. Frankel, x3-6824.

Hse, 5 BR, rent 2/74-1/75, furn, yd, prch, 10 min wk H Sq, \$450. x3-5937.

Sugarbush condo, on mt, for wk 2/17-2/22, slps 15, e lvls, 5 BR, 3 B, sauna, snkn LR w/frpl, all elec K, DR, card rm, etc, ski to & from lift. Linda, x3-7022.

Weston, Vt, ski hse avail dec, xmas-nw yr, slps 8, 3 BR, compl equip, qt loc on town rd, ski Stratton, Bromley, Magic, Okeno & others, v reas. Jean-Claud, x477 Linc.

Animals

Blk kittens, 2, m, f, 6 wks, nd loving home, free. Oksanna, x3-5656.

Lost and Found

Lost: Old grey Schaeffer pen, "right you are '68" engraved, sentimental value, reward. Tak, x3-7820.

Lost: \$10 reward for rtn sorely missed cat, med-lg blk hr, wht chest, feet, 6-7 toes, gone since 11/10, bet Krklnd-Camb St, H-Inman Sq. Bill, x3-6737.

Wanted

Rmmate, Bos, Beac St apt w/2 f, own rm, walk MIT, LR, K, frpl in BR, avail Jan, \$140. Cindy Lee, x3-6737.

Washer & gas dryer, exc cond. Adriana, x3-2013.

Rmmate, 2 f, 4 person coop Bel, nr T, roomy hse, approx \$90 incl h. Call, 489-3073, evgs.

Buy or borrow 1/73-7/73 Radio Electronics Mag; 8/72 Electronics Illus Mag. Paul, x3-4211.

Classical guitar, \$150 range. Richard, x8-3371 Draper.

Fender twn reverb amp; Selmer or Buffet clarinet. Larry, x7500 Linc.

Grad stu, live Tang Hall 23A for Jan, below \$120, nego. Call, 494-9194. Apt, 3-4 f, 12/28, nr MIT, w/K facil. Lai-Chan, 233-6523.

Carpool, Rte 93 (Methuen, Haverhill, Lawr area), dly, flex hrs, DL 7. x8-1153 Draper.

Rmmate, m, share lg 3 BR apt, off Comm Ave, Bri, avail 12/1, \$67 + util/ea. Bob, x3-5505.

Carpool, Brocton-MIT, Mon-Fri, hrs 8-4:30, lve 6:50am. Jerry 588-0486, aft 6.

Carpool, Brocton & So Shore-MIT, 5 dys/wk, 9-5. Chuck, x3-6275.

Rmmate, w/3 MIT grad Tech Sq, own BR, avail mid Jan-Mar 1, \$53/mo. x3-7579.

Used f fig skates & skates for 4 yr old. Eugenia, x3-5935.

Grad stu nds hsemates, cpl pref by ldlrd, 1/1-7/15, Lex, 4 blks Ctr, 4 BR, dead end st, nr tennis cts & pool, fenced yd, pets ok, tl rent \$350 + util. Call, 861-7234.

For chldrn bsmnt plyrm: tbl & chrs, lg carpet, blkbrd. Lou, x3-1549.

Rmmate, f, thru 6/74, w/mthr, 2 girls, 1800 Mass Ave, \$150 w/rm & brd. Dorothy, x3-1631.

Hcky skates, fit m 8EEE (8-11). Doug, x0382, lve msg.

Transport of violin to Austin, Tex. x3-4909.

Translators for all lang. Call, 354-7878.

F, 1-2 shares avail, Sugarbush, 26+, coed condo, on mtn, ski to & from lift, all mod conv. x3-7022.

Radial Snows, pref stud, 155x12, gd cond. x3-3270.

Miscellaneous

German tutoring, review, translations, Yale PhD. x3-4771.

Aero dept members who are tardy in making United Way-United Blk Appeal pledges, pls make pledge & rtn cards to Jean Louis, Rm 31-254, x3-1760.

Exp typist avail for non-tech work. x3-7410.

Singing & piano lessons by exp Eur-trained tchr, free intro lesson, reas. x3-2082.

IAP 1-to-1 exchange w/stu Middlebury Col, Vt, open to any undergrad: skiers, chance to ski in Vt. For Stu Office, Rm 10-303, or Carol, 492-3629.

Wl give beg or intermed level clarinet or sax lessons in exchn for beg lessons on flute. Bob Cava, 227-9499, aft 6.

Wl do typing at home, letters, reports, etc, reas. Call, 325-0295.

Typing, report, thesis, in IBM, 100 wpm, accurate. Ginny, 969-7100 x234.

Wl babysit in Westgate apt. x3-5348.

Positions Available

This list includes all non-academic jobs currently available on the MIT campus. Duplicate lists are posted each Tuesday preceding Tech Talk publication date on the Women's Kiosk in Building 7, outside the Office of Minority Affairs, 4-144, and in the Personnel Office E19-239, on the day of Tech Talk publication. Because transfer activity has been low in biweekly jobs Grades I-IV, Personnel interviewers will refer any qualified applicants on all biweekly jobs Grades I-IV as soon as possible after

their receipt in Personnel. Employees at the Institute should continue to contact their Personnel Officers to apply for positions for which they feel they qualify.

Virginia Bishop	3-1591
Mike Parr	3-4266
Philip Knight	3-4267
<i>(secretary - Joy Dukowitz)</i>	
Sally Hansen	3-4275
Jack Newcomb	3-4269
Evelyn Perez	3-2928
<i>(secretary - Mary Ann Foti)</i>	
Dick Higham	3-4278
Pat Williams	3-1594
Claudia Liebsny	3-1595
<i>(secretary - Dixie Chin)</i>	

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

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

73-1138-A	Secretary IV
73-1148-A	DSR Staff
73-1200-R	Secretary IV
73-1205-A	Secretary III
73-1121-R	Technician B
73-934-R	Work Coord Exempt
73-1206-R	Stu Accts Rep Exempt
73-1132-R	Payroll Clerk III
73-1160-R	Sr Clerk III
73-861-R	Secretary III
73-946-A	Sr Clerk III
73-1154-R	Secretary III
73-1152-R	Secretary III
73-1187-A	Secretary III
73-1188-A	Secretary III
73-1208-A	Sr Clerk III
73-1106-R	Painter

The following positions are on HOLD pending final decision:

73-1192-A	Libr Gen Asst III
73-1196-R	Secretary IV
73-1195-R	Secretary IV
73-1141-R	Edit Sec IV

Administrative Staff member will work in the area of resource development dealing with individual contributors. Develop strategies and programs, prepare reports, provide advice and counsel of a legal nature for resource development activity. Some travel required to represent MIT. Must have legal training and preferably some experience as a counselor in practice or a job situation utilizing legal training. Writing and organizational ability; motivation, enthusiasm required. 73-480 (5/30).

DSR Staff member will plan, manage, and execute high-quality research projects having a strongly experimental orientation. Familiarity and experience with low-speed flight and wind tunnel testing methods and advanced piloting aviation type aircraft; Ph.D. in Aerodynamics and five years applicable research and development experience required. 73-488-A (6/20).

Biochemist - DSR Staff member will participate in lipoprotein studies, and will supervise the activities of several technicians in a clinical research setting. Ph.D. or M.D. in Biochemistry required, as well as experience with lipoprotein and supervising. 73-515-R.

Manager of Subsystem Development - Administrative Staff in the Programming Development Office will provide technical direction of the design, development, and maintenance of software subsystems under the OS/360, OS/VS2, and Multics Operating Systems. Minimum of 7 years professional experience, and 2 years experience in technical management. 73-912-R (9/12).

Systems Analyst - DSR Staff at the Cambridge Project will adapt Time Series processor programs for use with the Consistent System on Multics. Knowledge of calculus, econometrics, statistics, and linear algebra; extensive PL/I programming experience on Time Sharing Systems; familiarity with TSP-CSP required. Position is temporary until 6/74. 73-845-R (8/29).

Environmental Engineer - Administrative Staff in Physical Plant will organize and direct an Institute-wide energy conservation program. Survey campus buildings to determine areas of possible energy economy; plan procedures; maintain the Institute's compliance with environmental requirements. BS in Electrical Engineering with a basic knowledge of building Mechanical systems for heating, ventilating, and air conditioning. Experience in engineering design or operation of buildings. Experience in energy conservation helpful. 73-875-R (9/5).

Director of Personnel Development - Administrative Staff will coordinate the Career Development and Training Program. (Continued on page 10)

(Continued from page 9)

grams for all non-academic personnel. Responsible for organization development; assess training needs; plan and develop new training programs; coordinate existing training and development programs; develop career planning and counseling capability. Experience in organization development and career development and planning desirable. 73-1116-A (10/17).

DSR Staff in Metallurgy will perform scanning transmission electron microscopy and high spatial resolution electron probe microanalysis of biological specimens; prepare thin films to use as microanalysis standards; technical subjects. BS with experience in the performance of high spatial resolution and physical constants of thin film, or MS degree required. 73-1127-R (10/24).

Technical Librarian - Administrative Staff will design and implement procedures for organizing and maintaining an Industrial Administrative Information Systems. Process and document EDP reference manuals, technical journals, internally prepared documentation. Aid in implementation, and thereafter maintain, formal methods of interfacing with vendor support personnel. Be directly involved in process of documenting material developed by technical support group, including editing and re-writing of such material. Will also edit and re-write material for a Programmer's User's Guide. Knowledge of methods for development and maintenance of a Special Library required; minimal knowledge of data processing concepts and terminology desired. 73-953-A (9/19).

Administrative Staff in the Office of Personnel Relations will assist the Wage and Salary Administrator with the development, implementation, and long term maintenance of a formal, integrated classification and salary administration program. BS degree or equivalent and 2-4 years of direct experience with the administration of a formal exempt classification and compensation system required. Familiarity with basic statistical methodology is desired. 73-1108-A (10/17).

Administrative Staff - Program Administrator in the Office of Sponsored Programs will represent the department with respect to sponsored programs in a number of academic departments and laboratories, including proposal review and submission, grant contract negotiation and post-award administration. Experience in an academic department or research laboratory working with faculty principal investigators on sponsored programs preferred. Experience in MIT financial or business administration valuable. 73-1156-A (10/31).

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

Computer Operator IV will operate IBM Model 135 and all peripheral equipment associated with it, including disk drives, tape units, card reader/punch, printers. Must have a good knowledge of DOS job control, multi-programming experience and be capable of understanding operating instructions. Midnight to 8:00am shift. 73-1221-R (11/21).

DSR Staff - Systems Analyst at Cambridge Project will adapt Time Series Processor programs for use within the Consistent System on Multics. Knowledge of calculus, econometrics, statistics, and linear algebra; extensive PL/1 programming experience on Time Sharing Systems; familiarity with TSP-CSP required. This position is temporary 7/1/74. 73-749-R (8/8).

DSR Staff in Earth and Planetary Science will interpret Mars picture data, and diffuse reflection spectral fractures arising from electronic transition; perform spectroscopy of asteroids and reflection spectroscopy of lunar samples; coordinate research and projects in the Planetary Astronomy Laboratory; supervise undergraduate assistants; write reports, proposals and papers. Experience in the fields of planetary surfaces, observational astronomy, igneous petrology, optical properties of solids, lunar sample analysis and computer programming. Candidate should have an academic background in geology and principles and techniques of optical astronomy. 73-1218-A (11/21).

Technical Assistant - Academic Staff in Nutrition and Food Science will be trained to do routine chemical analyses manually and using the Technicon Autoanalyzer, and trained in the operation of an amino acid analyzer and mass spectrometer. Individual should have a college degree and background in chemistry or biology to perform chemical analyses on body fluids. Experience in chemical

chemistry helpful but not necessary. 73-1213-A (11/21).

Planner/Architect - Administrative Staff in Planning Office will concentrate on long-range planning for existing environmental conditions, define problems, develop plans and design concepts; degree in Architecture required; degree in Planning preferred. Minimum of 5 yrs experience and the ability to work independently important. 73-880-R (9/15).

Administrative Staff Planner will direct long-range physical planning for the various efforts of the planning team; develop budgets and schedule of government agencies and community groups. Must have a Masters degree in Planning and a minimum of 5 yrs experience. 73-535-R (6/13).

Engineering Assistant - Exempt in the Fuel Research Laboratory of Chemical Engineering will analyze and calculate emission rates of nitric oxide, carbon monoxide, carbon dioxide, and soot from gas range burners. Will also design and make modifications to the equipment. Associate degree in Physical Science or engineering minimum requirement. 73-1084-A (10/17).

DSR Staff at the Laboratory for Nuclear Science will program for the APC group. Work on existing bubble chamber data analysis programs and develop new programs. Familiarity with FORTRAN; BS or equivalent in physics or math required. 73-1166-R (11/7).

DSR Staff - Electronics Engineer in the Center for Space Research will design, test and check out scientific experiments for space satellites; assist in system design; test and integrate the developed experiment in the spacecraft and participate with prelaunch support. Emphasis is placed on low noise; low level analog circuitry but thorough familiarity with digital electronics and logic design of the experiment is required. BS degree in EE with experience in the design, development and testing of solid state low level analog systems; familiarity with modern semiconductors in space applications and modern signal detection theory and applications required. 73-1241-A (11/28).

DSR Staff in the Research Laboratory of Electronics will work on problems concerning interactions of atom with the radiation field. Individual should have a recent Ph.D. degree with strong background in atomic physics and laser techniques. 73-1243-R (11/28).

Administrative Staff - Assistant to the Director of Financial Aid will assist students and their families in describing and resolving financial problems related to study at MIT. Evaluate financial need of individual students; participate in the aid delivery system; coordinate Institute resources; allocate funds to students; prepare governmental reports; assist with the admission process; contribute in research and survey studies on aid policies and procedures. Candidate should have a sincere interest in students and all aspects of college administration and management. Good communication skills required. 73-1180-R (11/14).

Technical Instructor - Temporary Academic Staff in Physics will develop and construct, under faculty guidance, prototype experiments for an undergraduate instructional laboratory. Job involves woodworking and elementary machining of metals and some elements of electronics. BS in Physics is necessary. Job ends 6/30/74. 73-1199-R (11/14).

DSR Staff in the Center for Space Research will analyze and interpret plasma data from satellite-borne plasma experiments. Recent Ph.D. in space plasma physics or related area required. Candidate should have had direct experience with the analysis and interpretation of experimental results related to the interplanetary plasma. 73-1183-A, 73-1184-A (11/14).

Senior Secretary V in the Radioactivity Center will perform general secretarial duties necessary for smooth office functions. Contact patients and invite them to come to MIT for Studies; maintain all records; handle correspondence, travel arrangements and hospitality duties. Knowledge of medical terminology helpful; excellent skills and maturity important. 73-1197-R (9/12).

Secretary IV in Mechanical Engineering will handle general secretarial duties for a group of faculty, researchers, and students. Maintain accounts; type technical reports, proposals; transcribe from shorthand and machine dictation. Excellent typing required. Shorthand and dictaphone skills, ability to organize within a very busy office is important. 73-1058-R (10/10).

Senior Secretary V in the Arteriosclerosis Center will coordinate the office activities of the Director of a multifaceted medical research program. Schedule appointments, conferences, lectures, maintain student records and appointments and a variety of office files; periodically prepare reports; type

manuscript reviews and other materials. Individual will have extensive telephone contact with other medical areas and patients. Good organizational skills; ability to establish priorities and supervise junior secretaries required. Knowledge of medical terminology and machine transcription helpful. 9:30-5:30. 73-1088-R (10/10).

Secretary IV in Academic department will type correspondence, proposals, DSR reports, manuscripts, these (much of it technical); keep DSR account records; maintain small library; compose routine letters; assist professor with details of registration. Ability to work independently and to write letters important; accurate typing essential; knowledge of shorthand, technical typing and bookkeeping preferred. 73-578-R (6/27).

Senior Secretary V to the Ocean Engineering Department Head will perform a variety of complex duties. Answer correspondence independently or from verbal instructions; maintain busy schedule of appointments; assist with salary review; act as department liaison with other Institute offices; organize and maintain departmental files; coordinate work of other secretaries during peak periods. Excellent shorthand or speedwriting, and typing skills; several years responsible secretarial experience required; ability to organize and to establish priorities; initiative and poise essential. 73-1155-R (11/7).

Secretary IV in the Office of the Vice President and Treasurer will handle general secretarial duties, assist with administrative functions. Candidate should have the ability to grasp the basics of the insurance industry and to deal with legal terminology. Excellent secretarial skills required; shorthand preferred. Maturity to make decisions, establish priorities, and ability to work under office pressures important. 73-1159-R (11/7).

Secretary IV to a Professor in Economics will handle all general secretarial duties; type correspondence, course material, technical manuscripts; perform editorial secretarial duties for *Econometrica*. Good typing and organizational skills required. 73-1170-R (11/7).

Secretary IV to the Director of the Industrial Liaison Office will handle all office procedures including accounting and some statistics necessary in operation of a large office. Excellent typing and shorthand skills are essential; previous experience required, preferably at MIT, business school background preferred. 73-1031-R (10/3).

Secretary IV for Institute Secretary for Corporations will organize and run the office. Very accurate typing needed for some letter-perfect copy. Other typing duties required speed. Preliminary research on corporate prospects; gather backup information for visits; draft not-too-technical correspondence. Work closely with other Institute offices in obtaining pertinent data; receive visitors. Flexible, adaptable, good telephone presence. 73-1091-R (10/10).

Secretary IV in Mechanical Engineering will handle bookkeeping for computerized accounts; maintain budget records; prepare materials for courses; type technical reports. Secretarial school background or previous experience preferred; knowledge of bookkeeping, key-punching, or other computer techniques helpful. Good typing and the ability to work for several people required. There is a lot of student contact in this job. 73-1104-R (11/14).

Secretary IV (part-time) in the Center for Advanced Visual Studies will handle general secretarial duties. Excellent typing skills needed for final-draft manuscript typing and general correspondence. Individual should have editorial skills and an interest in the arts. 20-25 hour work week. 73-1162-R (11/14).

Secretary IV to the Executive Officer of Chemical Engineering will handle general secretarial duties; maintain petty cash account; receive visitors. Previous secretarial experience preferred; ability to anticipate, maturity to handle problems and work independently required. Good shorthand and typing skills necessary. 73-1191-R (11/14).

Secretary IV in Mechanical Engineering will handle general secretarial duties necessary for the smooth function of this busy office. Type technical reports, proposals, papers, class notes; answer routine correspondence; maintain files; Previous secretarial experience, excellent typing skills required; experience in technical typing, shorthand preferred; ability to establish priorities important. 73-1193-R (11/14).

Secretary IV (temporary) to three Personnel Officers will handle general secretarial duties; schedule appointments; check references; up-date job books. Good typing, organizational skills required. Job runs 12/10-12/31/73. (voucher) (11/28).

Secretary IV in Nutrition will perform general office duties for three faculty; maintain files, handle correspondence. Good typing, shorthand and dictaphone skills required; some knowledge of medical, biological and/or chemical terminology helpful. 73-1230-R (11/21).

Secretary IV in the Sloan School of Management will handle routine secretarial duties for several faculty members in the Management Science group. Type correspondence, class materials, manuscripts (some technical), ability to establish priorities and to effectively deal with industrial contacts important in the smooth operation of this one-person office. 73-1219-R (11/21).

Secretary IV in Metallurgy will perform general secretarial duties for two professors. Type class material, correspondence from machine records and files; coordinate busy office schedules; handle petty cash fund. Good typing and shorthand skills required; ability to set priorities; familiarity with technical terminology and computers helpful. 73-1220-R (11/21).

Secretary III - IV to the Manager of Self Study Subject Development (Center for Advanced Engineering Study) will handle general secretarial tasks; perform scheduling for video taping; filming sessions, viewings; perform some accounting functions; type technical material; act as liaison between the office and individuals it deals with. Maturity; ability to handle detail; excellent typing essential. 73-1245-R (11/28).

Secretary III - IV to three professors in Chemical Engineering will type correspondence, course material, technical manuscripts; handle general office duties; assist in maintenance of student records. Excellent typing skills required (technical typing preferred); ability to work with students and for several people important. 73-1246-R (11/28).

Secretary III (part-time) in the Dean for Student Affairs Office will assist with general secretarial and administrative duties necessary for the operation of Talbot House, Student Center/Kresge. Good secretarial skills; and the ability to learn quickly important. 12 hour work week. 73-1198 (11/21).

Secretary III in Biology Headquarters will handle correspondence, memorandums, typing of class notes and quizzes for the Undergraduate Officer; assist with the registration process; maintain files. Accurate typing required; ability to deal with students, faculty and staff important. 73-1212-R (11/21).

Secretary III in Physical Plant will handle applications for use of the Student Center, Kresge and the Chapel; maintain files of records; type Student Center Committee correspondence; handle billing of LSC movies, events, weddings. Good business skills required. Ability to deal effectively with students, visitors, and others who use the facilities. 73-1237-R (11/28).

Senior Clerk IV (Documentation) in the Center for Policy Alternatives will organize and maintain an extensive document collection of English and foreign language publications for a research group involved in the area of science, technology and public policy. Search current literature, order publications pertinent to the center; document and catalogue material; handle correspondence. Accurate typing required; knowledge of French and German or Russian desirable. Familiarity with MIT's library system preferred. 73-1248-R (11/28).

Jr. Programmer V in the Arteriosclerosis Center will assist in design, development, and evaluation of a Medical Data Management System. Candidate must have a sincere interest in working in a medical environment and have the ability to collaborate with medical personnel. Previous data management experience, knowledge of PL/1 and familiarity with 360/370 OS desirable. 73-1182-A (11/14).

Administrative Assistant V in the Summer Session Office will assist with the office administrative functions. Handle and supervise the processing of applications and notifications of admission; maintain records of communications; arrange publication of publicity material for programs; coordinate mailing lists ability to assume responsibility, to compose and type correspondence, to coordinate details required. MIT experience would be helpful. 73-1247-A (11/28).

Technical Assistant V - (part-time) will assist in the design and preparation of art exhibitions; research and locate special art display materials and techniques; work with the manager to determine the most effective lighting for the art objects, and prepare a photographic record of exhibitions when needed. BA or equivalent art experience required. 18 hour work week. 73-1210-A (11/28).

Technical Assistant IV for Lincoln Labs in Cambridge. Data librarian and computer operator. Assist in record keeping for a library of seismic data. Maintain a document library. Run jobs on small computer system. Key punching. Dis-

patcher and coordinator for jobs submitted to other computers. Some training or experience in computer technology. Familiarity with elementary computer concepts and equipment. Fortran exposure desirable. One or two year technical institute course or equivalent satisfactory. Enthusiasm and interest in learning more important than extensive training or experience. Dorothy Petrovich, x7305 Linc.

Senior Library Assistant IV in the Barker Engineering Library will be assistant in the Processing Office for Monographs and Catalog Maintenance. Verify catalog records; process incoming monographs; supervise various card catalog processes. Previous library experience in cataloguing/processing department, some library science courses in bibliography, experience is a necessity. Accurate typing required. 9-5 or 10-6. 73-1231-R (11/21).

Library General Assistant III will assist the Project MAC librarian with circulation of reading room material, and in performing clerical tasks. Interest in helping users; ability to work independently and accurately with details important. Some previous work experience required. 35 hour work week. 12n-8pm. 73-1222-A (11/21).

Technical Typist III in the Chemical Engineering Department will type large volumes of reports, manuscripts, proposals from rough drafts using a magnetic tape typewriter. Excellent skills; ability to handle typing of equations and chemical symbols; good skills in punctuation and paragraphing required. Ability to work independently important. 73-1238-R (11/28).

Clerk-Typist II in Nutrition and Food Science will assist the secretary to the Administrative Officer with general office duties. Type proposals and reports, handle billing of xerox changes. Ability to work with figures a must. 73-1235-R (11/28).

Clerk II (part-time) will handle general office duties including preparing Institute mailings, purchasing supplies, and running errands. Must be flexible to work on various assignments. 20 hour work week. 73-1211-A (11/28).

Microfilm Assistant II or III in the Microreproduction Laboratory will be trained in the techniques of micrographics: planetary and rotary camera filming, microfiche production, photographic enlarging, and other methods. Candidate should have an interest in technical photography, mechanical aptitude, and a willingness to learn. Some experience in microphotography desirable but not necessary. 40 hour work week 8-5. 73-1224-R (11/21).

General Cook at the Faculty Club must be able to read, understand and follow recipes for all types of food preparation. Make sauces, cook meats, vegetables, prepare salad ingredients. Prepare menu items for luncheons and some items for dinner. General knowledge of all types of food preparation; good experience in first class club or restaurant required. Ability to read and understand English important; will generally prepare American-type food. 6am-2pm. 73-1228-R (11/21).

Waitress/Waiter (part-time) at the Faculty Club will set up silver and china on dining room tables. Take member orders; serve food and beverages. Clear, clean and reset tables. Experience helpful, but not necessary. Shift: 5pm-9pm. Position may require weekend work. 73-1201-R (11/21).

2nd Class Engineer must have a Mass second class Engineer's license or higher. Individual must be willing to work on any shift. 73-182-R (4/73).

Electrician for Physical Plant will install and maintain all types of electrical equipment and systems. Ability to work from blueprints, verbal instructions or sketches as necessary. Some electronic experience desirable. Must be able to work all shifts and on irregular schedule. Minimum of five years experience and Mass State license required. 73-1107-R (10/17).

Technician A (E and M) in the Radioactivity Center will maintain electron equipment associated with controlled low background facility, breath radon and thoron equipment; troubleshoot nuclear pulse instrumentation; do construction and wiring. Individual must have a strong background in pulse and digital circuits; experience in use of oscilloscopes and other test instruments; ability to use shop machinery. Experience in repair of electronic instrumentation helpful. 73-1186-R (11/28).

Painter in Physical Plant must have minimum of 5 years experience in all phases of painting, including interior and exterior work, preparation and mixing paint materials and matching colors, thorough knowledge of the various materials, tools, equipment and rigging used in the trade. Must have a Painter rigger's License and be able to work effectively on staging and ladders. 40 hour work week. M-F. 73-1240-R (11/24).

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