Massachusetts Institute of Technology



January 7, 1976 Volume 20 Number 21



Dean Burchard with Winston Churchill at the Midcentury Convocation in 1949.

Telephone Seminar Planned

MIT and American Telephone and Telegraph announced Tuesday they will hold a two-day symposium at MIT to assess past and future impact of telecommunications technology on society

The symposium will take place March 9-10 as part of the 100th anniversary of the telephone's invention.

International leaders in education, science, engineering, communications, business and government will participate.

MIT President, Jerome B. Wiesner, said the principal topics to be explored in workshop sessions will be the social effects of the telephone during its first 100 years, the future impact of computers and information processing, and the two most basic aspects of human communications-language and understanding.

The symposium will include several special events, among them an opening address by President Wiesner and a closing dinner at which AT&T Chairman John D. deButts

will speak. William C. Mercer, president of New England Telephone, will preside at the dinner.

President Wiesner said the symposium will lead off a series of workshop studies to be carried out by the university during the bicentennial year on aspects of the modern world in which science and technology play a major role.

'The invention of the telephone by Alexander Graham Bell a century ago," he said, "deserves appropriate (Continued on page 6)

Study Urges Nutrition Funding

Important areas of research vital to strengthening the US food protein supply are either inadequately funded or are entirely neglected in terms of research needs, a study coordinated by MIT's Department of Nutrition and Food Science has found. The study was released Friday, Dec. 19.

The intensive study, supported by grant from the National Science Foundation, urged that \$200 million be provided over the next 10 years for work in 14 research areas selected as having high priority. (See Box.)

Dr. Nevin S. Scrimshaw, head of the MIT department, and Daniel I.C. Wang, professor of nutrition, directed the study, which was coordinated by Dr. Max Milner, who recently retired from the United Nations where his position was scientific secretary and director of the secretariat, Protein-Calorie Advisory Group of the

United Nations System.

Dr. Scrimshaw said that the main contribution of the study was the identification of major gaps in US research efforts for the development of protein resources to the end of the century

Priorities include application of new developments in biology and food technology to conventional agriculture, better identification of (Continued on page 6)

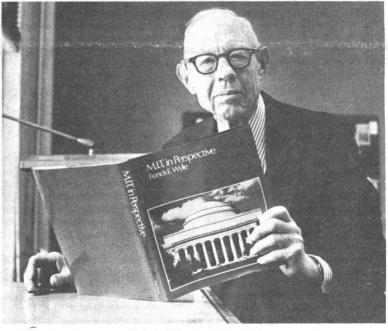
John E. Burchard, Emeritus Dean, Dies

John Ely Burchard-Dean Emeritus of the MIT School of Humanities and Social Science, widely respected architectural critic and historian, authority on housing and urban beauty, and renowned educator and scholar who championed the convergence of science and culture and the melding of technological progress humanism-died Thursday with (Dec. 25) at the Massachusetts Gen-

eral Hospital in Boston. He was 77. Dean Burchard had been in ill health for four years and was hospitalized on several occasions. He entered the hospital last on Dec. 8, his 77th birthday.

Despite his illness, however, Dean Burchard remained active and recently completed his final book, Bernini Is Dead? Architecture and the

(Continued on page 8)



Mr. Wylie with a copy of his new book.

Wylie Book: New Glimpse

From William Barton Rogers famed note, "May this not prove a memorable day," as classes began at MIT February 20, 1865, through announcement of the 1975 Nobel Prize to Dr. David Baltimore last October, highlights and sidelights of MIT's history are chronicled in a new book, MIT in Perspective, by Francis E. Wylie, to be published March 5, by Little, Brown.

Advance sale of the book (\$15.00) has begun for the MIT community and alumni. Copies are available from Walter L. Milne's office (Rm 5-208), from the Alumni Association (Rm E19-437A), and at the Tech Coop

Mr. Wylie, who retired in 1970 after years as director of public relations at MIT, said he first conceived of the book during MIT's Centennial in 1961.

"We found Samuel Prescott's When MIT was "Boston Tech" very helpful in recapturing the early days (Continued on page 3)

Events to Commemorate Martin Luther King Week

uiet Corridor

8-302

A week-long series of public events at MIT will commemorate the birthday of the late Dr. Martin Luther King, Jr., January 12-16, 1976.

The observance will be organized around the theme "Reflections of the Dream: Past, Present and Future.' Highlight of the week will be a keynote address Wednesday, Jan. 14, at 12:30pm in Kresge Auditorium by Walter J. Leonard, assistant to the president of Harvard University. The memorial observance will

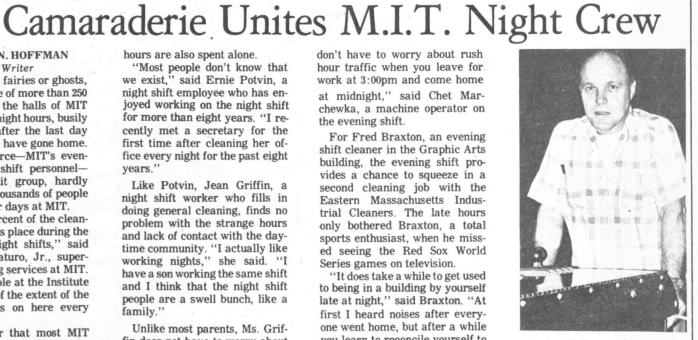
begin at 12 noon with a silent march from MIT's main entrance (77 (Continued on page 8)

King Day

The Institute will be closed Thursday, Jan. 15, in observance of the birthday of Martin Luther King, Jr. The usual pay practices applying to special Institute closings will be in effect.

> hours are also spent alone. "Most people don't know that we exist,' said Ernie Potvin, a night shift employee who has enjoyed working on the night shift for more than eight years. "I recently met a secretary for the first time after cleaning her office every night for the past eight years.' Like Potvin, Jean Griffin, a night shift worker who fills in doing general cleaning, finds no problem with the strange hours and lack of contact with the daytime community. "I actually like working nights," she said. "I have a son working the same shift and I think that the night shift people are a swell bunch, like a family.'

don't have to worry about rush hour traffic when you leave for





One of the 20 women evening and night shift building services employees, Jean Griffin of Cambridge works from 11pm until 7am. Although her husband Walter, an MIT evening shift mailperson has been at MIT for 14 years, this is Ms. Griffin's first year on the MIT night shift.

Not brownies, fairies or ghosts, but a work force of more than 250 persons haunts the halls of MIT during the late night hours, busily cleaning long after the last day shift employees have gone home.

By ELLEN N. HOFFMAN

Staff Writer

This work force-MIT's evening and night shift personnelare a close-knit group, hardly known to the thousands of people who spend their days at MIT.

"About 99 percent of the cleaning at MIT takes place during the evening and night shifts," said George J. Pesaturo, Jr., supervisor of building services at MIT. "But most people at the Institute are not aware of the extent of the work that goes on here every night."

Little wonder that most MIT employees never see the 144 building services night shift employees. They report to work at 11pm and leave at 7am. The 110 evening shift workers who come in at either 3 or 4pm and leave at 11pm or midnight do have some contact with day personnel, but the majority of their working

Unlike most parents, Ms. Griffin does not have to worry about struggling out of bed to get the youngest of her four children off to school in the morning-she takes care of that when she gets home from work-before she goes to sleep.

Another advantage of the late shifts is missing rush hour. "You work at 3:00pm and come home at midnight," said Chet Marchewka, a machine operator on the evening shift.

For Fred Braxton, an evening shift cleaner in the Graphic Arts building, the evening shift provides a chance to squeeze in a second cleaning job with the Eastern Massachusetts Industrial Cleaners. The late hours only bothered Braxton, a total sports enthusiast, when he missed seeing the Red Sox World Series games on television.

"It does take a while to get used to being in a building by yourself late at night," said Braxton. "At first I heard noises after everyone went home, but after a while you learn to reconcile yourself to the sounds of an empty building.'

Because evening and night workers have to cover a lot of territory every night-more than 70 buildings-they work separately, often in touch only with their supervisors, who, equipped with

(Continued on page 3)

Evening shift machine operator Chet Marchewka of Everett is shown with the self-propelling scrubbing machine that he operates nightly at MIT. Unlike some evening workers who go to bed after work, Marchewka frequently stays up until 4 or 5am-painting.

INSTITUTE NOTICES

Announcements

Wellesley-MIT Exchange-Spring term course descriptions, schedules & registration information available in Exchange Office, Rm 7-108

First Annual IAP Diplomacy Tournament*-Sat, Jan 10, 17 & 24, 10am-5pm, New West Campus. Admission \$.50/person or \$1/team (1-3 persons). Info & registration: x5-7422 Dorm

Second Term Registration-Registration material due in Registrar's office, Rm E19-335, Mon, Jan 12. There will be a \$5 fine for any registration received after this date. Material available in Registrar's office.

February Degree Recipients-Cards enclosed with Feb degree notice must be returned to Rm E19-344 no later than Fri, Jan 23 to indicate whether diplomas are to be mailed, called for in person, or if attendance at Commencement, May 28, 1976 is planned.

Basic Pistol Marksmanship Course-Thurs. Jan 8, 6:30pm, duPont Pistol Range. Fee: \$20, covers everything. Open to first 20 members of community to register. Registration: Tom McLennan, x3-3296 or Andy Platais, x8-1417 Draper

R/O Co-ordinator-The Freshman Advisory Council is looking for a creative, innovative, responsible undergraduate to serve as 1976 R/O Co-ordinator. Salary \$1,000. Proposals due by 1/12/76 at FAC, Rm 7-103.

IAP Notices

IAP #7, Innovation Projects Seminars-Will begin Wed, Jan 14 (not Mon, Jan 12), 1-2pm, Rm 37-252

IAP #127a, Current Directions in Artificial Intelligence-Wl meet Wed (not daily), Jan 7-28, 1pm, AI Common Rm, 8th fl Bldg NE-43.

IAP #137, Economics of Energy Supply and Demand-Will be given Tues, Jan 27 (not

IAP #259, Recent Developments in Neurobiology: Implications for the Diagnosis and Treatment of Neurological Disorders-Will meet Fri, Jan 16, (not Fri, Jan 9), 2:30-4pm, Rm 56-134

IAP #269, Shallow-Water Ship Hydrodynamics -will be offered Jan 20-23, 2pm, Rm 5-314, not as listed in IAP Guide

IAP #391, How to Succeed in Job Hunting-has been cancelled

Stochastic Estimation on Cable TV During IAP-A 19-lecture series on "Stochastic Esti-mation" will be one of the features of the new Institute Cable TV System during IAP. The lectures, by Professor Michael Athans, are part of a self-study subject on "Modern Control Theory" produced by the Center for Advanced Engineering Study. The programs will be shown on Channel 8 every weekday morning at 10am starting Tues, Jan 6.

"Introduction to Experimentation" on Cable TV During IAP-A self-study subject on "In-troduction to Experimentation" will be offered during IAP on the new Institute Cable TV System. The lectures and demonstrations by Professor Ernest Rabinowicz, mechanical engineering, will be shown on Channel 8 at 11am. The series starts Thurs, Jan 8, and runs for 14 weekday mornings through Mon, Jan 26. Those wishing to take this subject should obtain a copy of the study guide (\$10.50) and textbook (\$4.95) at the Center for Advanced Engineering Study (Rm 9-234). Students wishing to receive credit (4 units) for taking the subject must also complete all homework and

volved in a study of how wheelchair design and construction materials can be modified. The research director, a quadraplegic himself, wants to reduce the weight of a chair while maintaining strength at stress points. The research would include an analysis of what disabled persons don't like about present designs and a modification of materials and design to lighten a chair.

Charles Stark Draper

Laboratory Cambridge, Ma The Draper Lab offers a wide range of projects in which students can become involved. The following projects are among those being offered: 1.) Analysis, design, and model fabrication of a tape drive mechanism. 2.) High pressure effects on electronic and elctromechanical devices. 3.) Readout for a magnetic compass with high resolution. 4.) Constant-speed drive for a tow tank instrument station. 5.) Design of a hydraulic pressure enclosure. 6.) Design of a special purpose cas-sette tape reader. 7.) Design of emmissivity laboratory test fixture. 8.) Computer software development.

Massachusetts Attorney General's Office

The Massachusetts Attorney General's Office, Administrative Law Division, represents the Massachusetts Department of Public Utilities in a rates case involving the Boston Edison Company. A decision was made by the DPU to allow Boston Edison to increase its rates to all customers. This decision is being appealed to the Massachusetts Supreme Judicial Court. In preparation for the court hearing, the Attorney General's staff is reviewing the economic and financial data prepared by Boston Edison in support of its claim that a rate increase is needed. A student with background in economics, finance, or accounting would work with the legal staff of the Attorney General's Office in the interpretation of the financial data and in the preparation of the brief for the court hearing.

Computer Sciences

The project deals with the structure of biological macromolecules and their analysis through computer applications. The aim is to develop and implement a number of innovative programs for solving and interpreting the structure of molecules, especially macro-molecular nucleic acids. A PDP 11/50 system is available. The student should have a back ground in Fortran programming and preferably experience with computers of the PDP 11/50 type.

Contact Professor Alexander Rich, x3-4715, or Dr. Gary Quigley, x3-4710.

Dynamic Control of Urban Transportation Systems

Several openings exist for students who are interested in understanding the dynamics and control of freeway and signalized arterial traffic systems using optimization techniques Different aspects of flow optimization (for different performance criteria such as time de lay, energy consumption) using linear and nonlinear programming techniques, automated detection and location of accidents and subsequent dynamic rerouting of traffic, optimal synchronization of traffic, optimal synchronization of traffic signals, mathematical model validations using actual data. The research will involve both analytical and digital simulation studies (FORTRAN program ming is sufficient). The students will interact with an existing research team under the direction of Professor M. Athans. Contact Dr. Paul K. Houpt, Rm 35-318, x3-2351 or Dr. Stanley Gershwin, Rm 35-407, x3-3149.

The Children's Hospital

Boston, Ma. Medical Center An opportunity exists for a UROP student in a laboratory involved in basic cancer reearch. In particular, they have focussed on the mechanism of growth of normal and tumor cells in such systems as the tissue culture flask, the chorioallantoic membrane of the developing chick embryo and the corneas of the rabbit eye. Studies on tumor cells have focused on such tumor properties as angiogenesis (the ability of a tumor cell to induce the growth of blood vessels in the host) and invasion (the ability of a tumor cell to penetrate and grow in host tissue). Studies on normal cells have concentrated on the elucidation of the factors required for normal cell growth and the cessation of normal cell growth. Detailed knowledge of the mechanisms of normal cell growth are needed to understand what goes wrong in the cancer cell. Immediate projects include: the purification and characterization of this protein; determining whether this protein is made by a normal cell; and measuring the levels of this protein in tumor cells that are growing wildely.

Children's Hospital Boston, Ma. Determination of the motions and instantaneous centers of rotation of various joints in the body. To date only the hip and knee have been studied. Using radiological technique, normal subjects and patients with various pathological joint disorders will be examined to determine the instantaneous size of rotation of the shoulder, elbow, and ankle. Facilities are available in the lab for performing such x-rays with an x-ray technician.

professional Advisory and Education Office, Rm 10-186, x3-4158.

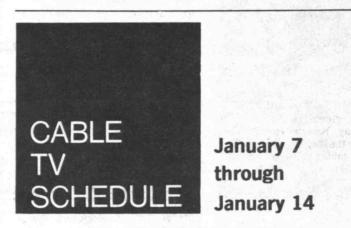
Summer Program at Brookhaven National Laboratory.

Brookhaven National Laboratory in Upton, NY is offering summer trainee appointments to students majoring in applied math, physical and life sciences, and electrical, chemical and nuclear engineering. The program is from June 14 through August 27 and open only to students who will have completed their junior or senior year by June 1976. It is designed to give research experience involving such fields as effects of radiation, application of tracer techniques, nuclear medicine, and high and low energy particle accelerators. Stipends will be \$115 weekly, and there is a travel allowance. The deadline for application and for receiving letters of reference is January 31, 1976. For more information contact the Preprofessional Advisory and Education Office, Rm 10-186, x3-4158.

MIT Club Notes

MIT Bridge Club-IAP meetings, Jan 9-31: Fri, 7:30pm-12n; Sat, 1:30-6pm; Stu Ctr Rm 473

MIT Figure Skating Club**-A chance for figure skaters who feel confident at skating forwards and who can at least make an at-



CHANNEL 8

Wednesday, January 7, 1976

10:00

3:00

5:00

11:00

4:00

10:00

11:00

2:00

5:00

10:00

11:00

2:00pm

12:00 noon

- Surface Chemistry-Lecture 3: Measurement of Surface and 9:00am Interfacial Tensions of Liquids (1)-Professor J.Th.G. Overbeek
 - Stochastic Estimation-Lecture 2: Review of Probabilistic Concepts-Professor Michael Athans MIT Science Reporter-John Fitch interviews Professor
- 12:00 noon Harold Edgerton
- 2:00pm Surface Chemistry-Lecture 4: Measurement of Surface and Interfacial Tensions of Liquids (2)-Professor J.Th.G. Overbeek
 - Engineering in the '70s-Engineering Design at MIT-Professor W.C. Flowers
 - Science Reporter (Repeat)

Thursday, January 8, 1976

- 10:00am Stochastic Estimation-Lecture 3: Response of linear systems to white noise inputs-discrete time case-Professor Michael Athans
 - Introduction to Experimentation-Lecture 1: Experimentation -Professor Ernest Rabinowicz
- Surface Chemistry-Lecture 5: Adsorption-Analytical Aspect 1:30pm -Professor J.Th.G. Overbeek
 - Humanitas-The Greek View of Humanity and Science-John Finley, Harvard University

Friday, January 9, 1976

- 9:00am Surface Chemistry-Lecture 6: Thermodynamics of Fluid Interfaces-Professor J.Th.G. Overbeek
 - Stochastic Estimation-Lecture 4: Response of linear systems to white noise inputs-continuous time case-Professor **Michael Athans**
 - Introduction to Experimentation-Lecture 2: Performance of Instruments-Professor Ernest Rabinowicz Women's Program with Niti Salloway
 - History of Electrical Engineering at MIT-Host John Fitch in-
 - terviews Professor Karl Wildes
 - Women's Program (R)

Monday, January 12, 1976

Surface Chemistry-Lecture 7: Spreading-Surface Films of Insoluble Monolayers-Professor J.Th.G. Overbeek

Parameter Estimation (2)-Professor Michael Athans

tempt to skate backwards to meet as a group. Sun, weather permitting, 11:30am-1pm, skating rink. Free, need athletic card & skates.

MIT Goju Karate Club**--Mon, Wed & Fri, 7-9pm, Stu Ctr Rm 407. Info: 536-1830.

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

Religious Activities

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

Campus Crusade for Christ*-Family Time Fri, 7:45pm, Rm 37-252.

Celebration of Holy Comm n**-MIT Lutheran & Episcopal Ministry. Wed, 5:05pm, Chapel. Supper following, 312 Memorial Dr.

Chirstian Worship Service*-Sun, 10:45am, Chapel. Refreshments following service.

Hillel*-Traditional services Fri, 4pm, Kosher Kitchen & Sat. 9am, Chapel.

Prayer Time**-Lunch hour Bible classes led by Miriam R. Eccles. Fri, 1-2pm, Rm 20E-226.

All are welcome.

The Society of Friends (Quakers)-Luncheon Fri, 12n, bsmnt of 312 Memorial Dr. For those interested in the Society of Friends and possible formation of worship group on campus.

Gallery, MIT, and at the Institute of Contemporary Art, Boston. The showing will be the first comprehensive presentation of Oldenburg's work in the Boston area. Organized by the Walker Art Center in Minneapolis, the exhibition explores Oldenburg's particular in-

Oldenburg

Exhibition

Scheduled

A major exhibition of sculpture,

drawings and prints by Claes Olden-

burg will open Jan. 17, 1976, and con-

tinue through Feb. 25 at both Hayden

terest in six themes: Geometric Mouse, Fagends, Standing Mitt with Ball, Clothespin, Three-Way Plug, and Typewriter Eraser.

More than 250 works tracing the development of these themes over the last several years in prints, drawings, models, soft sculptures, and large metal works will be shared by both galleries. Each theme is shown in many variations in material as well as content.

Oldenburg plans to attend public opening receptions to be held at the Institute of Contemporary Art and Hayden Gallery from 8 to 11pm Friday, Jan. 16. Shuttle buses will run continuously between the two locations during the opening.

In addition, Oldenburg will give a slide lecture at MIT in Room 26-100 at 8pm Tuesday, Jan. 13. Admission will be \$1.

A catalogue including photo documentation and special chronology and bibilography and a poster designed by Oldenburg especially for the Boston showing will be available at both galleries.

The Council for the Arts at MIT assisted in bringing the Oldenburg exhibition to the Institute.

Echoes

50 Years Ago

The death of the eminent MIT geologist, William O. Crosby, '76, was announced.

A new egg substitute for cooking use developed by Professor Bunker of the Biology Department was reported in Technology Review.

40 Years Ago

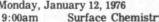
Alumni and friends presented MIT with nine new sailing dinghies, bringing the number of boats in the fleet to 25.

Sports seemed to take on a new vigor as Tech basketball team won a 5 point victory over Harvard and the Beaver Pucksters played rings around Northeastern.

President Compton announced that the Institute would adopt a new policy of stabilizing the size of freshmen class admitted each year. A quota of 600 was given as the projected acceptance of first year students.

25 Years Ago

A \$5.25 million grant from the Sloan Foundation was given to the Institute for a School of Industrial Management. The Lever House on Memorial Drive was acquired to school. the new Dr. Karl T. Compton was named recipient of the first William Proctor Prize for Scientific Achievement. Prepared by Ethel I. Newell, MIT Historical Collections, x3-4444.



Tues, Jan 6), 10am-12n, Rm 39-500.

New UROP Listings

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

Attention

UROP has saved \$6,000 in printing costs by not issuing a new UROP Directory for spring 1976. This money is available for funding students' research proposals for IAP and spring term. The 1975/1976 UROP Directory is current for spring term. Also, check the UROP bulletin board, Tech Talk, or the UROP office for the most recent available projects both onand off-campus

Veterans Administration

West Roxbury, Ma. Hospital The Research Director of the Massachusetts Chapter of the Association of Paralyzed Veterans of America would like to become in-

Other Opportunities

Summer Fellowship Program for Women Interested in Medicine.

The Medical College of Pennsylvania is offering a summer fellowship program for women interested in medicine. It is limited to residents of Pennsylvania who have completed at least one year of college. The eight week program includes helping on a specific project. viewing medical and surgical procedures, and attending seminars and grand rounds. It is structured to give the student an overview of the field of medicine to help her make a decision about medicine as a career option Stipends and Federal Work Study grants are available to students in need of financial assistance. Applications should be made as soon as possible. Personal interviews are being scheduled for January and February. For additional information, contact the Pre-

Stochastic Estimation—Lecture 5A: The Bayesian Approach to Parameter Estimation (1)-Professor Michael Athans Introduction to Experimentation-Lecture 3: Errors of Measurement-Professor Ernest Rabinowicz 1972 World Peace Lectures-Buckminster Fuller

Introduction to Experimentation-Lecture 4: Combination of

Tuesday, January 13, 1976 Stochastic Estimation-Lecture 5B: The Bayesian Approach to

10:00am

11:00

Lobby Seven 12:00 noon 1:30pm

3:00

5:00

9:00am

10:00 11:00

12:00 noon 3:00pm

5:00

Errors-Professor Ernest Rabinowicz Surface Chemistry-Lecture 7: Spreading-Surface Films of Insoluble Monlavers (R)

The Energy Crisis: Fact versus Myth-A Global Perspective-**Professor Bernard Feld**

Lobby Seven (R)

Wednesday, January 14, 1976

Surface Chemistry-Lecture 13: Charged Interfaces-Electrochemistry of the Phase Boundary-Professor J.Th.G. Overbeek Stochastic Estimation-Lecture 6A: The Discrete-Time Kalman Filter (1)-Professor Michael Athans Introduction to Experimentation-Lecture 5: The Normal Distribution-Professor Ernest Rabinowicz Personnel Program with Jim Culliton Engineering in the '70s-Undergraduate Engineering Projects:

A Change in the Rules of the Curriculum Game-Professor **Margaret MacVicar**

Personnel Program (R)

TECH TALK Volume 20, Number 21 **January 7, 1976**

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Page 2, Tech Talk, January 7, 1976

Cable TV Debuts

MIT Cable Television, following a script laid out more than a year ago, this week began broadcast operations across a two-mile loop that extends from West Campus housing to the Hermann Building near Kendall Square.

From television sets in Buildings 7, 9, 10, the Student Center, and three dormitories, viewers watched a special inaugural program that officially opened the cable at noon on Monday, January 5. The cable now has two operational channels—MIT stations 8 and 10 on the standard TV dial. As many as fourteen additional channels can be added in accordance with need and funding support.

The first program was broadcast on Channel 8, scheduled to operate from 8am to 6pm Monday through Friday during IAP. Channel 10 is not yet operative, but when it becomes so, it is expected to run 24 hours a day.

Dr. James R. Killian, Jr., speaking on the first cable program, said MIT had been selected by the Sloan Foundation to provide programming that would be useful nationwide.

"Now that the MIT Cable Television System is in place, we face a challenge to make it serve the best interests of our education and our community life," he said. "Two institutions-Dartmouth and MIThave been selected by the Sloan Foundation to provide a demonstration of how this technology can be useful to faculty and students alike. The Foundation was primarily interested in the development of software and expressed the hope that these two institutions could provide a programming demonstration that would be useful nationwide."

President Jerome Wiesner, also a featured guest on the first program, this week recognized the opening of the cable with the announcement that he is appointing an MIT Cable TV Policy Board. The 10-member group will be chaired by Professor Roy Kaplow of the Department of Materials Science and Engineering and the Division for Study and Research in Education. The Board will include faculty, staff and students. Persons at MIT are invited to present program ideas or specific tapes for consideration for inclusion in the schedule. All suggestions or submissions should be made to Niti Salloway, who is acting as manager of the cable program. She can be reached at MIT x3-3625.

Among the programs scheduled for the first week of operations on Channel 8 are MIT Science Reporter with John Fitch as host, Engineering in the Seventies, a pre-recorded address by Professor Woodie C. Flowers to high school math and science teachers, a women's program with Niti Salloway, live telecasts of Lobby 7 events, and a taped summary of Professor George W. Rathjens' seminar on nuclear reactor safety,

Ravi Shankar Concert Planned

Ravi Shankar and Alla Rakha, masters of Indian music, will give a sitar and tabla concert on Saturday, Jan. 10, at 8:00pm in Kresge Auditorium.



MIT Cable TV's inaugural program attracts several Lobby 7 viewers.

held earlier this month (See Cable TV listings on Page 2 for exact times).

Instructional programs that will be featured during the cable's initial experimental period include a 19lecture series on "Stochastic Estimation" by Professor Michael Athans, director of the Electronic Systems Laboratory, and a series of talks on surface chemistry by Professor J. Theodor G. Overbeek.

In addition, a self-study course, "Introduction to Experimentation," will be offered by Professor Ernest Rabinowicz for a series of 14 programs, beginning January 8. Students may receive four units of credit for the course, which requires a study guide, textbook, and final examination.

Cambridge Forum Lists 3 From MIT

Three members of the MIT community, Mary Rowe, special assistant to the president and chancellor for women and work, Morris Adelman, professor of economics and Lloyd Rodwin, Ford International Professor of Urban Planning, will participate in the 1975 Cambridge Forum series, "Questions for America's Third Century."

The forum, open to the public without charge, is held every Wednesday evening at 8pm at 3 Church St., Harvard Square.

On Jan. 14 Mary Rowe will appear with psychologist Robert Fein discussing "The Future of Men and Women: What is Androgyny?" On Feb. 18 Professor Adelman and Stephen Breyer of Harvard will speak on Cable TV viewing locations are in the lobbies of Buildings 7 and 10; the library on the fifth floor of the Student Center; the lounges in the Fassett Lounge of the East Campus dormitories, Senior House and Bexley Hall; and Room 9-329.

Much of the present organizational structure of this full cable system is informal. The initial, experimental period of operation during IAP is regarded as a time for verifying technical aspects of the equipment and locations of viewing equipment, and devising general guidelines for programming. Other operating issues to be considered are appropriate structures for scheduling and new directions for development. These will be considered by the Policy Board now being formed.

"Break Up the Oil Cartel?" and on March 19 Professor Rodwin will lecture on "The Future Metropolis: Can it be Made Humane?"

Papers Invited

The Grants Peer Review Study Team—established by the National Institutes of Health in September to study the NIH system of having scientific peer groups review grant applications—will hold public hearings in Chicago Feb. 12, San Francisco Feb. 19, and Bethesda, Md., Feb. 26.

Dr. Ruth I. Kirschstein, director of the National Institute of General Medical Science and chairperson of the study team, said written comments also are being sought and should be sent to Dr. Mathilde Solowey, study team executive secretary, Room 4A35, Bldg. 31, NIH, Bethesda, Md., 20014, before Jan. 16.

'MIT in Perspective'

(Continued from page 1)

of the Institute," Mr. Wylie said, "but that book ended in 1916, and there was no single historical record for the period from 1916-1961."

"David S. Woodbury, '21, author of Elihu Thomson, Beloved Scientist and Let Erma Do It, The Full Story of Automation," developed a historical research summary during the Centennial period which I found most useful when I undertook this book," he said.

The 207-page book contains 280 drawings and photographs, arranged in chapters which detail moments of significance for MIT as well as discussing the development of both traditional and modern disciplines. "The panoramic view that [Mr. Wylie] provides is, I think, an exciting one . . . this pictorial story of MIT is presented in a manner that is absorbing and contributes very much in its own special way to the comprehension of the Institute's history and character."

M.I.T. in Perspective

Francis E. Wylie

Dental Clinic Now Open To All MIT Employees

Effective January 1, 1976, the MIT Dental Service is open to all MIT personnel.

Until now only students, student spouses and Health Plan Members could use the Dental Service for routine treatment. Employees who were not Plan members could use the service only for acute and emergency dental problems. Now all MIT employees and students and student spouses may use the Dental Service on a fee-for-service basis.

The MIT Dental Service is located on the first floor of the Infirmary (Building W5), between McCormick Hall and Baker House. Hours are Monday through Friday, 9am to 4:30pm.

The clinic is staffed by two full-time and two part-time general dentists, one part-time endodontist (specialist in root canals), one part-time periodontist (gum specialist), one part-time oral surgeon, two dental hygienists, four dental assistants and two secretaries.

Services provided by the clinic include consultation on dental problems, examination, cleaning (prophylaxis), instruction in oral hygiene (plaque control), fillings, crowns, bridges, root canal treatment, gum treatment, dentures (complete, partial or repair of existing dentures), extractions, oral surgery, and referrals to other dentists or specialists. The only dental services not provided are pediatric dentistry (patients must be 14 years or over) and orthodontic dentistry (teeth straightening).

Care is provided on a fee-forservice basis and fees are established according to the type work to be done. (Fees are comparable to those of non-MIT dentists.) There is also a charge of \$15 for a broken appointment unless 24-hour notice of cancellation is given. Being more than 15 minutes late is also considered a broken appointment.

Appointments can be made by phoning x3-1501. For an initial exam you will be seen first by the hygienist who will x-ray and clean the teeth. After that the dentist will examine you and determine a treatment plan with you.

For emergency and acute dental problems, call x3-1501 and the secretary will arrange for you to see a dentist as soon as possible, probably the same day.

As with most dental services, there may be a delay of several weeks for appointments particularly during the peak period (i.e. during the semester).

For further questions call 253-1501.

Corridor Camaraderie

(Continued from page 1) walkie-talkies, coordinate the late hours' work.

Not a mop and broom operation, the building services crew covering the Institute seven days a week—is assisted by large power scrubbers, polishers and sweepers which can easily take the place of several persons using hand equipment. However, it is not yet economically advantageous to have automated equipment aiding the two evening shift mail sorters who, each night, must



An avid roller skater, Fred Braxton was once a semi-pro baseball player for the Cambridge Tigers. sort approximately 12,000 pieces of mail.

This can prove to be a lonely existence, but according to Chief Olivieri of the MIT Campus Patrol, it is not especially dangerous. "Most of the criminal activity at MIT takes place during the day," said Olivieri. The 254 evening and night shift building services employees, their eight supervisors, nine dormitory watchmen and ten campus patrolmen coordinate their activities to watch for problems which might arise during the night.

There is a system by which employees working alone in isolated buildings call in to the Campus Patrol at specific hours. "If, for some reason they don't, " said Ted Doan, manager of building services, "a supervisor is sent immediately to check things out."

Every so often an experiment will blow up or something will go wrong with equipment and MIT's after hours people have to deal with the problem. However, these are just added tasks.

What has to be dealt with every night, though, is the daily cleaning efficiently carried out by MIT's often unseen work force the evening and night shift employees.

Every Picture Tells a Story

"M.I.T. in Perspective" offers for the first time a panoramic view of the history of M.I.T. Through the inspired juxtaposition of 280 dramatic photographs and drawings with a lively, impressionistic text, Francis E. Wylie richly evokes the experience of generations of students and faculty members from the Institute's founding to the present. Concise, balanced, often humerous, and highly informative, "M.I.T. in Perspective" is a must for the bookshelf of every alumnus and friend.

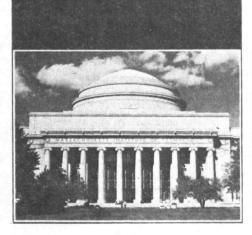
Shankar, who has received critical acclaim for ingeniously blending the musical styles of the East and West, has composed extensively for the ballet and the cinema, including the music for Satyajit Ray's Pather Panchali and the Hollywood production of Charly. His music has been played by the London Symphony Orchestra and he has also performed at Woodstock, the Monterey Pop Festival and Lincoln Center.

When playing together at New York's Philharmonic Hall, Ravi Shankar and Alla Rakha received a rave review from Don Heckman of *The New York Times*, who called them "Indian classical musicians of the first order."

Admission to the concert, sponsored by Sangam, the Indian students' organization at MIT, will be \$5 and \$7. A \$2 discount will be given for anyone with a student ID. All seats are reserved. For reservations or further information contact Sangam at x3-3522 between 6:30 and 9:00pm. "... Rather than attempting to weave stories into a broad, continuous fabric, as a skillful historian would do, I have taken liberties with chronology and, for more or less logical reasons, have manipulated history to provide self-contained sequences," Mr. Wylie wrote in the preface. "One will therefore find 1975 pictures mingled with those of 1875."

Because of the extensive use of pictures, the book is especially appealing as a record of how MIT has changed and grown over the years. The text—some 60,000 lively words—describes not only the great breakthroughs which raised MIT to its position of preeminence in science and technology, but also moments of significance to the Institute itself, such as the great celebration commemorating the move to Cambridge in 1916, the closing of the Radiation Laboratory after World War II, and even student pranks and protests.

As President Jerome B. Wiesner wrote in a foreword:



In a unique combination of pictures, captions, and text, this book has indeed put "M.I.T. in Perspective." Send in your order today.

BOOK ORDER FORM

I wish to order _____ copie(s) of the book, *M.I.T.* in *Perspective*, \$15 per copy, (Mass. residents add \$.75 for state sales tax), by Francis E. Wylie and have enclosed a check for \$_____.

Checks should be made payable to M.I.T.-Picture Book.

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Allow three weeks for delivery.



January 7 through January 18

Editor's Note: Anyone connected with MIT – students, employees and faculty – are encouraged to participate in IAP activities. Some courses, in fact, are particularly designed for "lay-people." The number in parentheses in many Calendar entries refers to the IAP course number, in case additional information is needed.

Events of Special Interest

IAP Blood Drive – Mon, Jan 12 & Tues, Jan 13, 9:45am-3:30pm, Sala. Appointment sheets available at TCA office, Stu Ctr Rm 450. Donors from fall Blood Drive eligible. Info: TCA, x3-4885.

Earth & Planetary Sciences Lectures for Non-Science Personnel – Wed. Jan 7: The Solar System: Sun and Planets – W. H. Pinson, geology – Thurs, Jan 8: Lesser Bodies of the Solar System: Comets, Meteors, Meteorites and Satellites – W. H. Pinson, geology. Fri, Jan 9: Age Measurements of Terrestial Rocks – S. Hart, geology & geochemistry. Tues, Jan 13: Sediments and Sedimentary Rocks – J. Southard, geology. Fri, Jan 16: What's Cooking in the Laboratory of Paleomagnetism? – A. Brecher, research associate. All 12n, Rm 54-611.

Molecular Biology for the Non-Scientist (23) – Thurs, Jan 8: How We Know How Information is Transferred from Genes (DNA) into Functions (Proteins) – David Botstein, genetics. Mon, Jan 12: History of Biology in the Making: The Recombinant DNA Safety Controversy – Charles Weiner, history of science & technology. 1pm, Rm 56-401.

Physics for Everyone (289) – Mon, Jan 12: Why Do We Believe in Atoms? – Rainer Weiss, physics. Wed, Jan 14: A Physicist Sticks his Nose into Biology – Felix Villars, physics. All 12n, Rm 6-120.

What Does Food Engineering Have in Common with Samuel Taylor Coleridge – James Flink, food engineering; Food for the Future – Cho Kyun Rha, food process engineering. Research in Nutrition & Food Science Seminar (260). Fri, Jan 16, 12n, Rm 16-134. "Lay-people" encouraged to attend.

Seminars and Lectures

Wednesday, January 7

Synthetic Fuels: Economics and Technology – Martin Zimmerman, Sloan School; Ogden Hammond, DSR staff. Energy Laboratory: Seminar Series (137). 10am, Rm 39-500.

Photoelectrochemical Cells: Theory and Practice – Mark S. Wrighton, chemistry. Chemistry Seminar (37). 10am, Rm 4-231.

Free Trip to UROP: A Student Symposium (202a) – UROP student guides describing the joys of undergraduate research. 1-5pm, Rm 9-150.

High Pressure Phase Transformations of Olvine, Pyroxene and Garnet and the Mineralogy of the Mantle^{*} – John L. Liu, Research School of Earth Sciences, Australian National University. Earth & Planetary Sciences Colloquium. 2pm, Rm 54-915.

Megavitamin Dosing – Fact and Fancy – George Wolf, physiological chemistry. Nutrition & Food Science Seminar (257). 2pm, Rm 16-134.

Topics From Artificial Intelligence – Seymour Papert, mathematics; Cecil and Ida Green Professor of Education; co-director, Artificial Intelligence Laboratory. IAP Math Club Lecture (215a). 2pm, Rm 3-370.

How Universal is Economic Theory? – Michael Manove, Boston University; Evsey Domar, Ford International Professor of Economics. Current Economic Issues (70). 2pm, Rm E52-394.

Transportation Vehicles: A Comparative Morphology – E. E. Covert, aero/astro. Highlights in Aeronautics & Astronautics Seminar (4). 2pm, R m 33-206.

Oman, aero/astro. Highlights in Aeronautics & Astronautics Seminar (4). 2pm, Rm 33-206.

A Student's Guide to Career Opportunities in Nutrition and Food Science – James Flink, food engineering. Nutrition & Food Science Seminar (261). 3pm, Rm 16-134.

Brillouin Scattering as a Form of Many-Body Spectroscopy – Thomas Greytak, physics. Lectures on Physics (285). 3:30pm, Rm 6-120.

An Explanation for the Orbital Dynamics of Meteorites – Charles Peterson, G. Earth & Planetary Sciences Lecture Series (63). 4pm, Rm 54-425.

James Michael Curley the Man* – Francis Moloney, assistant director, Boston Public Library. The City in the Age of Machine Politics: James Michael Curley's Boston Series. 8pm, Rm 9-150.

Friday, January 9

Monitoring and Control of Electric Power Plant Effluents – Michael F. Ruane, Energy Lab DSR staff. Energy Laboratory: Seminar Series (137). 10am, Rm 39-500.

Grievance Procedures for Students and Employees^{**} – Claudia Liebesny, assistant director of personnel; Mary P. Rowe, special assistant to president & chancellor for women & work; Clarence G. Williams, special assistant to president & chancellor for minority affairs; Mary O. Hope, assistant dean for student affairs; John B. Turner, assistant dean for graduate school office. Being a Minority Employee and Student at MIT (361b). 12n, Rm 4-231. Minorities encouraged to attend.

Where are the Solar Neutrinos? – Paul Joss, physics. Problems in Modern Astrophysics Seminar (291). 2pm, Rm 37-212.

Engineering Analysis in Computer Age – T. H. Pian, aero/astro. Highlights in Aeronautics & Astronautics Seminar (4). 2pm, Rm 33-206.

Optimization Conditions for Problems with Multiple Constraints^{*} – M. L. J. Hautus, electrical engineering, University of Florida. Systems, Communications and Control Seminar. 3pm, Rm 37-212.

Topics in Set Theory – S. Sageev, mathematics. Annual IAP Logic Week Lecture (215). 3pm, Rm 2-390.

Liquid Crystals and Superconductivity – Thomas Greytak, physics. Lectures on Physics (285). 3:30pm, Rm 6-120.

Life at Boston Tech – Azel Mack,'15; Waldo Pike, '15. Historical Collections "They Were There" Seminar (423) with photos and/or films of the period. 3:30pm, 2nd fl Bldg N52. Pre-register.

Weathering of Planetary Surfaces – Robert Huguenin, sponsored research staff. Earth & Planetary Sciences Lecture Series (63). 4pm, Rm 54-425.

Monday, January 12

Guided Tour of National Magnet Lab – Research Applications of High Magnetic Fields (183). 10am, Rm NW14-2209.

Options and Problems of Energy Alternatives – William Jones, research associate, Energy Lab. Energy Laboratory: Seminar Series (137). 10am, Rm 39-500.

Burd-Man Powered Flight – J.W. Mar, aero/astro. Experimental Research for Undergraduates Seminar (2a) with laboratory tour. 10am, Rm 33-419.

Kalahari Hunter-Gatherers: Special Problems of a Non-Landed Minority Group in a Developing Country – representatives of the Kalahari People's Fund; Mel Connor, biological anthropology, Harvard University; John Marshall, Center for Documentary Anthropology. Victims of Progress: Indigenous Peoples and their Modern World (121a). Discussion & films. 12n-3pm, Rm 14E-304.

Finding the MONITOR – Harold E. Edgerton, Institute Professor and Professor of Electrical Measurement, Emeritus. The Uses of Sonar and Underwater Photography Seminar (90a). 12n, Rm 4-402.

Invention and New Enterprise Development Seminar – Jacob Rabinow, National Bureau of Standards. Aero/Astro Seminar (8). 12n, Rm 37-212.

Sloan Luncheon Seminar Series – Dean William F. Pounds will speak. Sloan School of Management Seminar (332c). 12:15pm, Rm E52-461.

Legal Structure and Process: A Brief Introduction** – Jeffrey A. Meldman, Sloan School. Sloan School Seminar. 1pm, Rm E52-143.

The SSP, MIT's New Fast ECL Signal Processing Computer* – Jack Allweiss, RLE. RLE Seminar. 1:30pm, Rm 36-428.

Scoring Multiple Choice Exams and Predicting Baseball Averages -

Immunology and Cancer – Paul D. Gottlieb and Herman N. Eis_{ex} immunology. Discussions on Cancer Research (134). 4pm, B_{l} E17, 6th fl conference rm.

Sy

Testing Einstein's Theory of General Relativity with the Sol System as a Laboratory – Charles C. Counselmann III, planeta sciences. Earth and Planetary Sciences Lecture Series (63). 4pm, R. 54-425.

Where and How the Chemical Industry Fits in Relation to All₁ Industry – Jordan J. Bloomfield, Monsanto Company. Chemi_{St} Lecture Series (31a). 4pm, Rm 4-270.

Some Aspects of Ion Transport in the "Purple Membrane Halophilic Bacterium H. Halobium – S. Roy Caplan, Laboratory Membranes & Bioregulation, the Weizmann Institute of Science visiting scientist, Harvard-MIT Program in Health Sciences Technology. HST Biomaterials Science Seminar. 4:30pm, R 37-212. Coffee 4pm.

Tuesday, January 13

Basic Physics of Superconductivity – Research Applications of High Magnetic Fields (183). 10am, Rm NW14-2209.

Conservation of Energy – James W. Meyer, Energy Lab Progra Director. Energy Laboratory: Seminar Series (137). 10am, Rr 39-500.

Aerodynamics of Race Cars and Other Vehicles – E. E. Larrabe aero/astro. Experimental Research for Undergraduates Seminar (2 with laboratory tour. 10am, Rm 33-419.

TM and Athletics – Understanding Transcendental Meditation (426). 10:30am, Rm 4-270.

MIT Development Foundation – Richard S. Morse, management president of Development Foundation. Sloan Luncheon Semin Series (332c). 12:15pm, Rm E52-461.

Legal Research and Advocacy: A Brief Introduction** – Jeffrey Meldman, Sloan School. Sloan School Seminar. 1pm, Rm E52-14 Film, "Case in Point," will be shown.

Why are You Allergic? - Lisa Steiner, MD, immunology. Biolog Seminar (28). 1:30pm, Rm 56-520.

Economic Growth and All That – Robert Solow, Institu Professor, economics. Current Economic Issues Seminar (70). 2pn Rm E52-394.

Where in the World Am I? W.M. Hollister, aero/astro. Highlights Aeronautics & Astronautics Seminar (4). 2 pm, Rm 33-206.

Area Traffic Control and Network Equilibrium – Nathan Gartne visiting scientist, Operations Research Center; Risk Management Joseph Ferreira, Jr., urban studies & operations research. Operation Research Center Seminar Series (185). 2: 30pm, Rm. 24121.

Careers in Medicine – Joseph Brenner, MD, associate psychiatristichief, medical department. Preprofessional Advising & Education Seminar (189). 3pm, Rm 7-133.

Tokamaks I-Design and Basic Principles – Ronald Parker, DSR stat Magnet Lab. Magnetic Fields and Energy: Fusion and Magnet hydrodynamics Seminar (182). 3pm, Rm NW14-2209.

Ethics and Esthetics in Babel's Red Cavalry – Victor Terras, Brow University. Russian Literature Lecture Series (103). 3pm, R 14E-304.

Computer-aided Legal Research^{**} – Jack R. Buchanan, Unite State Supreme Court Judicial Fellow. Computers in Court 14 Series. 3pm, Rm E52-143.

Solar Winds from Rotating Stars – Stanislaw Olbert, physic Lectures on Physics. (285). 3:30pm, Rm 6-120.

First 100 years of Geology at MIT – Robert R. Schrock, geolog emeritus. Earth & Planetary Sciences Lecture Series (63). 4pm, R 54-100.

A Laser Plate-Making System for Newspapers* – Harold I. Becker manager of systems design, Laser Graphic Systems Corp., Sudburg Ma. ESL, Electrical Engineering & Computer Science Newspape Technology Seminar. 4pm, Rm 10-105.

Contacts Between the lac Repressor and DNA Revealed by Chemid Means – Dr. Walter Gilbert, Harvard Biological Laboratoria Biology Colloquium. 4:30pm, Rm 6-120, Coffee 4pm, Bldg 56, 50 fl vestibule.

Slide Presentation* – Claes Oldenburg, artist. Committee on t Visual Arts presentation. 8pm, Rm 26-100. Admission \$1.

Boston Neighborhoods from 1915-1940* – Alan Lupo, autho creator of "The Reporter" TV series. The City in the Age of Machine Politics: James Michael Curley's Boston Series. 8pm, R 9-150.

Topics in Recursion Theory – Philip Lavori, mathematics. Annual IAP Logic Week Lecture (215). 3pm, Rm 2-390.

Chemical Bonding in Amorphous Semiconductors – Marc Kastner, physics. Lectures in Physics (285). 3:30pm, Rm 6-120.

Perspectives of the Founders' Philosophies – Julius A. Stratton, '23, President of the Corporation, Emeritus. Historical Collections "They Were There" Seminar (423) with photos and/or films of the period. 3:30pm, 2nd fl Bldg N42. Pre-register.

Remote Sensing of the Compositions of Planetary Surfaces – Thomas McCord, planetary physics, director of George R. Wallace, Jr. Astrophysical Observatory. Earth & Planetary Sciences Lecture Series (63). 4pm, Rm 54-425.

Thursday, January 8

Health Effects of Energy Production Processing and Consumption – James Gruhl, Energy Lab DSR staff. Energy Laboratory: Seminar Series (137). 10am, Rm 39-500.

TM and Health – Understanding Transcendental Meditation (426). 10:30am, Rm 4-270.

Biomedical Engineering: Spatial Orientation - L. R. Young & C. M.

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Herman Chernoff, applied mathematics. IAP Math Club Lecture Series. 2pm, Rm 3-370.

Analytical Models of Imperialism – Kenneth Flamm, G. Topics in Political Economy Seminar (78). 2pm, Rm E52-394.

Flutter Vibrations of Aircraft and Structures – J. Dugundji, aero/astro. Highlights of Aeronautics & Astronautics Seminar (4). 2pm, Rm 33-206.

Careers in Medicine – Alvin Poussaint, MD, psychiatry; director of student affairs, associate dean of students, Harvard Medical School. Preprofessional Advising and Education Seminar. (189). 3pm, Rm 7-133.

Approaches to Fusion – Benjamin Lax, physics, director of Francis Bitter National Magnet Laboratory. Magnetic Fields & Energy: Fusion and Magnetohyrdodynamics Seminar (182). 3pm, Rm NW14-2209.

Computer Records As Evidence**-Jack R. Buchanan, United States Supreme Court Judicial Fellow. Computers in Court IAP Series. 3pm, Rm E52-143.

Physics of Music – Bernard Burke, physics. Lectures on Physics (285). 3:30pm, Rm 6-120.

The Move to Cambridge – R. Stevens and S. Dunning, '17. Historical Collections "They Were There" Seminar (423) with photos &/or films from the period. 3:30pm, 2nd fl Bldg N52. Pre-register. J-150.

Wednesday, January 14

Guided Tour of High Field Bitter Magnets – Research Application of High Magnetic Fields (183). 10am, Rm NW14-2209.

Solar Energy: Heating and Cooling – John Fan & Philip Jarvine Lincoln Laboratory. Energy Laboratory: Seminar Series (137 10am, Rm 39-500.

Wind Effects on Buildings – F. Durgin, aero/astro DSR stal Experimental Research for Undergraduates Seminar (2a) will laboratory tour. 10am, Rm 33-419.

Invention and New Enterprise Development Seminar – Mari Donovan, inventor. Aero/Astro Seminar (8). 12n, Rm 37-212.

Career Development – Edgar H. Schein, organizational psycholog management. Sloan Luncheon Seminar Series (332c). 12:15pm, ^{RI} E52-461.

Tort Law: Brief Introduction** – Joseph E. Vittek, Jr. aero/astro. Sloan School Seminar. 1pm, Rm E52-143.

Fifth Symposium on Undergraduate Research* – Nutrition & Food Science Symposium. 2pm, Rm 16-134. Refreshments 4pm, Rd 16-139.

The Central Limit Theorem – Mathematics Lecture (217a). 2pn Rm 2-390. Synthetic Oxygen Carriers as Blood Substitutes – Jack E. Baldwin, chemistry. Chemistry Seminar (42). 2pm, Rm 4-370.

Energy from the Wind – Rene H. Miller, H.N. Slater Professor of Flight Transportation; head of aero/astro. Highlights in Aeronautics & Astronautics Seminar (4). 2pm, Rm 33-206.

Careers in Medicine – Shirley Driscoll, MD, pathology, Harvard Medical School. Preprofessional Advising & Education Seminar (189). 3pm, Rm 7-133.

Tokamaks II-Laser and Optical Diagnostics for Fusion – Daniel Cohn, DSR staff, Magnet Lab. Magnetic Fields & Energy: Fusion & Magnetohydrodynamics Seminar (182). 3pm, Rm NW14-2209.

Inside Mainland China – A Recent View – Herb Lin, G. Slides & commentary of a 6 week trip. ESG Wednesday Seminars (138). 3pm, Rm 24-612.

What's New from the MIT Satellite X-Ray Observatory? - George Clark, physics. Lectures on Physics (285). 3:30pm, Rm 6-120.

Bosworth's Grand Plan – O. Robert Simha, '57, director of planning. Historical Collections "They Were There" Seminar (423) with photos &/or films from the period. 3:30pm, 2nd fl Bldg N52. Pre-register.

Discussion of the Orbital Rendezvous Paradox – Charles C. Counselman III, planetary sciences. Earth & Planetary Sciences Lecture Series (63) with 2 films. 4pm, Rm 54-425.

How Technological Changes Affect the Chemical Industry – Jordan J. Bloomfield, Monsanto Company. Chemistry Lecture Series (31a). 4pm, Rm 4-270.

Adventures in Mind Control – Psi Club. Independent offering (353). Lecture on Silva Mind Control. 5pm, Rm 4-159.

Gettin' Our Share: Women and Money – Anni Bruckner, board of directors, Mass. Feminist Federal Credit Union; Mary Heinking, prospective business school student. Independent Offerings (383c). 5:30pm, Rm 3-343.

Thursday, January 15

Detection and Interpretation of Weak Magnetic Fields of the Human Body – Research Application of High Magnetic Fields (183). 10 am, Rm NW14-209.

Mechanics of TM – Understanding Transcendental Meditation (426). 10:30am, Rm 4-270.

CO₂ Laser Solenoid Fusion – Ward Halverson, DSR staff, Magnet Lab. Magnetic Fields & Energy: Fusion & Magnetohydrodynamics Seminar (182). 3pm, Rm NW14-2209:

Friday, January 16

Opportunities for Preprofessional Education in the Department of Nutrition and Food Science – S.A. Miller, nutritional biochemistry; H.N. Munro, MD, physiological chemistry; P.M. Newberne, nutritional pathology. Nutrition & Food Science Seminar (258). 10am, Rm 16-134.

Application of Magnetic Fields to Basic Scientific Investigations in Biology and Medicine – Research Application of High Magnetic Fields (183). 10am, Rm NW14-2209.

Solar Energy: Direct Conversion – David Adler, Cecil H. Green Professor of Electrical Engineering, Energy Laboratory: Seminar Series (137). 10am, Rm 39-500.

Undergraduate Experimental Research: How to Prepare an Experiment – A. Shaw, aero/astro technical instructor. Experimental Research for Undergraduates Seminar (2a) with laboratory tour. 10am, Rm 33-419.

Invention and New Enterprise Development Seminar – Bernard Gordon, Analog Corporation. Aero/Astro (8). 12n, Rm 37-212.

Child Care and Social Services on and off Campus^{**} – Margaret Sand coordinator, child care office; Myra Rodriquez, social worker, medical department. Being a Minority Employee and Student at MIT (361b). 12n, Rm 4-231. Minorities encouraged to attend.

The Conflict Over Economic Policies – Franco Modigliani, Institute Professor, Professor of Finance and Economics. Sloan Luncheon Seminar Series (332c). 12:15pm, Rm E52-461.

Introduction to the IBM 029 Keypunch at the East Campus Computer Facility – Sloan School of Management Seminar (331). 1pm, Rm E52-074.

Hercules X-1: Unravelling the Mysteries of an X-Ray Star – Paul Joss, physics. Problems in Modern Astrophysics Seminar (291). 2pm, Rm 37-212.

MHD Power Generation – M.S. Martinez-Sanchez aero/astro.

International Cooking – Sponsored by Technology Wives Organization. Tasting Chinese food prepared by Brenda Sun. Wed, Jan. 14, 8pm, Rm 10-340. Info: Jenny Gordon, 547-6471 or Judy Cooper 652-1062.

Hillel Weekend Retreat – Fri, Jan 16-Sun, Jan 18, Camp Grossman. Contact Rick Field, x5-8264 Dorm, for details.

Social Events

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

Movies

Walkabout - Barker Library Film/Food Fest (157b). Wed, Jan 7, 12n, Rm 10-500. Lunch for sale.

Closeup of Mars; Mare Tranquillitatis; Volcano Surtsy; The Sun – Earth & Planetary Sciences Film Theatre (62). Wed, Jan 7, 2pm, Rm 1-190.

Walkabout – Barker Library Film/Food Fest (137b). Wed, Jan 7, 5pm, Rm 10-500. Wine & cheese for sale.

Skylab - Skylab Movie Series (10). Thurs, Jan 8, 12n, Rm 33-206.

The Airplane at Play; Phi Beta Epsilon; Civil Engineering Camp – Historical Collections Pictures of the Past (409). Thurs, Jan 8, 12n, & 1pm, Rm 6-120.

Gottingen and New York: Reflections on a Life in Mathematics – Mathematical Movies (227). Thurs, Jan 8, 2pm, Rm 10-250.

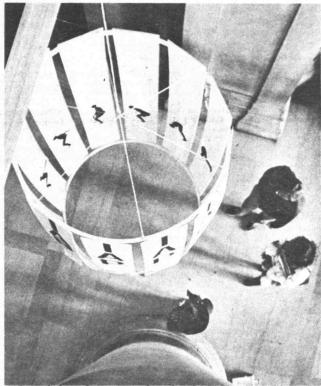
In the Beginning; History: Layer by Layer; The Not So Solid Earth; Dinosaurs in the Wall – Earth & Planetary Sciences Film Theatre (62). Thurs, Jan 8, 2pm, Rm 1-190.

How to Make A Woman – Sex Roles: Film Series & Discussion (417). Thurs, Jan 8, 7pm, Rm 14N-0615. Admission \$.25 (opt). Followed by small mixed discussion groups.

Oceanography: Study of the Oceans; Ocean Tides: The Bay of Fundy; Ocean Currents; What's Under the Oceans? – Earth & Planetary Sciences Film Theatre (62). 2pm, Rm 1-190.

The Tall Blonde Man with One Black Shoe** - LSC. Fri, Jan 9,7 & 9:30pm, Rm 26-100. Admission \$.50, ID required.

Moby Dick** - LSC. Sat, Jan 10, 7 & 9:30pm, Rm 26-100. Admission \$.50. ID required.



A barrel-shaped structure hanging in Lobby 7 is this year's display for new IAP listings. The exercising figures—logo of the 1976 IAP Guides—seem to dance on the inner surfaces of the barrel.

Saboteur** - LSC. Sun, Jan 11, 7 & 9:30pm, Rm 26-100. Admission \$.50, ID required.

Symmetry; Seashore; Spring; Embryo; Protein Synthesis – Also additional films on developmental biology. Three Afternoons of Bio-Flicks (26). Mon, Jan 12, 1-3pm, Rm 4-370.

Law of Gravitation – Feynman Film Series (283a). Wed, Jan 14, 1pm, Rm 26-100.

The Alaska Earthquake; The Restless Earth: Earthquakes; The Restless Earth: Plate Tectonics; Earthquakes: Lesson of a Disaster; Earth Science: Earth's Interior – Earth & Planetary Sciences Film Theatre (62). Wed, Jan 14, Rm 1-190.

I'm Going to Tamper With Your Beliefs a Little – Oxford Philosophy on Film (277). Wed, Jan 14, 3pm, Rm 26-100.

Metropolis – Barker Library Film/Food Festival. Wed, Jan 14, 5pm, Rm 10-500. Wine & Cheese for sale.

Robinson Crusoe on Mars** – LSC. Wed, Jan 14, 7 & 9:30pm, Rm 26-100. Admission \$.50, ID required.

Skylab – The First 40 Days – Skylab Movie Series (10). Thurs, Jan 15, 12n, Rm 33-206.

Men's Lives – Sex Roles: Film Series & Discussion (417). Thurs, Jan 15, 7pm, 14-0615. Admission \$.25 (opt). Followed by small mixed discussion groups.

Reflection of Mathematics to Physics – Feynman Film Series (283a). Fri, Jan 16, 1pm, Rm 26-100.

Topology – Mathematical Movies (227). Fri, Jan 16, 2pm, Rm 10-250.

Great Lakes: How They Were Formed; The Earth: Resources in its Crust; The Milky Way; The Depths of Space – Earth & Planetary Sciences Film Theatre. Fri, Jan 16, 2pm, Rm 1-190.

The Idea of Freedom – Oxford Philosophy on Film (277). Fri, Jan 16, 3pm, Rm 26-100.

Inspector Clouseau** – LSC. Fri, Jan 14, 7 & 9:30pm, Rm 26-100. Admission \$.50, ID required.

The Last Hurrah* – The City in the Age of Machine Politics: James Michael Curley's Boston Series. Fri, Jan 16, 8pm, Rm 2-190. Admission \$.50.

Captain Blood** - LSC. Sat, Jan 17, 7 & 9:30pm, Rm 26-100. Admission \$.50, ID required.

Humshakl – Sangam. Indian movies with English subtitles. Sun, Jan 18, 2:30pm, Rm 26-100. Admission \$.50 with ID. Info: x5-9774 Dorm. Indian refreshments available.

Witness for the Prosecution** - LSC. Sun, Jan 18, 7 & 9:30pm, Rm 26-100. Admission \$.50, ID required.

Music

IAP Concert – Program includes violin and piano sonatas by Beethoven and Bartok. IAP Course 118 concert organized by Stephen and Beatrice Erdeley. Fri, Jan 9, 8pm, Kresge.

Ravi Shankar and Alla Rakha in Concert* – Sponsored by Sangam. Sat, Jan 10, 8pm, Kresge. Tickets: \$7 & \$5, \$2 discount for students. All seats reserved. Reservations: x3-3522, 6-9pm.

Dance

MIT Folk Dance Club – International: Sun, 7:30-11pm, Sala. Balkan: Tues, 7:30-11pm, Stu Ctr 491. Informal: Fri, 12n-1:30pm, Bldg 7 Lobby.

MIT Folk Dance Club* – Workshops with Mandala Fold Dance Ensemble. Sun, Jan 11, Balkan singing 1pm, couple dances 2:30pm, Sala.

Exhibitions

Claes Oldenburg Exhibition – Sponsored by Committee on Visual Arts and Institute for Contemporary Art. Exhibit Sat, Jan 17-Wed, Feb 25, Hayden Gallery. Hours: 10am-4pm daily, 6-9pm Tues. Opening reception Fri, Jan 16, 8-11pm.

MIT Historical Collections* – Permanent exhibition Mon-Fri, 9am-5pm, Bldg N52, 2nd floor. Bicentennial Exhibits: Katharine Dexter McCormick, '04: Vannevar Bush, '16, and Karl Taylor Compton, in Bldg 4 corridor.

Schumann at Work on a Song* – Music Library Exhibit of manuscript facsimiles & pictures. Daily, Bldg 14E.

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

33-206.

Hugo Wolf's Goethe-Lieder – Martin Dyck, German & Literature. Lecture and recordings in German. Winterliederfest (110). 3pm, Rm 14N-225.

Magnetohydrodynamics – Bruce Montgomery, DSR Staff, Magnet Lab. Magnetic Fields & Energy: Fusion & Magnetohydrodynamics Seminar (182). 3pm, Rm NW14-2209.

The Suffrage Movement and MIT – Florence Luscomb, '09. Historical Collections "They Were There" Seminar (423) with photos &/or films of the period. 3:30pm, 2nd fl Bdlg N52. Pre-register.

Recent Research Development at Monsanto – Jordan J. Bloomfield, Monsanto Company. Chemistry Lecture Series (31a). 4pm, Rm 4270.

Community Meetings

Boston Bicentennial for Foreigners (92) – Sponsored by Wives Discussion Group & Medical Department. Wed, Jan 7: The Revolution, an exhibit explaining events leading up to the Revolution, 2nd fl, Quincy Market. Wed, Jan. 14: The Karolik Collection of American painting, folk art, watercolors and furniture of 18th & 19th centuries, Museum of Fine Arts. Bus leaves Ashdown 1:15pm, sign up Rm 11-203. Fee: \$1. The Geology of Zuni Salt Lake Marr; Katmai; Time Changes the Land; Glaciation – Earth & Planetary Sciences Film Theatre (62). Mon, Jan 12, 2pm, Rm 1-190.

Logic Lane – Oxford Philosophy on Film (277). Mon, Jan 12, 3pm, Rm 26-100.

Technology 1934 – Historical Collections Pictures of the Past (409). Tues, Jan 13, 12n & 1pm, Rm 6-120.

The Classical Groups as a Source of Algebraic Problems Mathematical Movies (227). Tues, Jan 13, Rm 10-250.

The Water Below; Little Plover River Project: a Study in Sand Plains Hydrology; Flow in Alluvial Channels; John Wesley Powell: Canyon Geologist – Earth & Planetary Sciences Film Theatre (62). Tues, Jan 13, Rm 1-190.

The Day Tomorrow Began; The First Twenty-Five Years – Nuclear Films (250a). Tues, Jan 13, 3pm, Rm NW12-222.

Growing Up Female: Six Becomes One – Sex Roles: Film Series & Discussion (417). Tues, Jan 13, 7pm, Rm 14-0615. Admission \$.25 (opt). Followed by small mixed discussion groups.

Les Abysses – French Film Series. Tues, Jan 13, 7:30pm, Stu Ctr Mezzanine Lge.

Metropolis – Barker Library Film/Food Festival. Wed, Jan 14, 12n, Rm 10-500. Lunch for sale.

Athletics

Home Schedule*-Thursday, January 8 – V Basketball. New Jersey Institute of Technology, 7:30pm, Rockwell Cage. Monday, January 12 – V 'B' Basketball. Emerson, 7:30pm, Rockwell Cage. Thursday, January 15 – V Hockey Brooklyn College, 7pm, rink. W Basketball. Fort Devens, 8pm, Rockwell Cage. Saturday January 17 – JV/F, V Basketball. Trinity, 6:15pm & 8:15pm, Rockwell Cage. W Basketball. Trinity, 6:15pm, duPont Gym. V Hockey. Clark, 7pm, rink. JV/F, V Wrestling. Coast Guard, 2pm & 3:30pm, duPont wrestling rm.

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 Jan 14 through Jan 25 to the Calendar Editor, Room 5-111, Ext. 3-3279, before noon Friday, Jan 9.

Tech Talk, January 7, 1976, Page 5



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 Insti-tute extension. Only Institute exten-sions may be listed. Members of the community who have no extensions 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 5-111. Please submit all ads before noon, Friday, Jan. 9. They will be printed on a first come, first served basis as space permits.

For Sale, Etc.

Exc 12x14 avocado sculptured broad-loom, \$100. Call, 275-6476, aft 4.

Mtl snow wings, 2, \$2/ea; Bauer 99 hcky skates, sz 9½, \$40; yard ham-mock. R. Strong, x8-1418 Draper.

Nw, 4 hcky sticks, Victoriaville, \$10. Mrs. Walsh, x3-2746.

Knitting yarn, Pomfret 100% virgin wool, royal blu, 7 skeins. Sharon, x3-5656.

Binoculars, 80x40, b nw, orig \$70, ask \$50; 2 dinette sets; buffet; refrig, \$15; sm desk, \$25; wool blk & red maxi coat, sz 14, \$15; wht rabbit fur parka, sz 14, \$20. x3-4437.

M hcky skates, CCM sz 9, senior A style, b nw. x3-3506.

Pr H78x15 snows, mtd, gd cond, \$40. Call, 696-3750.

Pr G78x14 Sears Dynaglas ww snows, mtd, blncd Buick rims, lk nw, \$40. Hank Goodman, x8-4166 Draper.

Pr Semperit stud radial snows, sz 175 SR 13, mtd 13" Fiat 124 rims, exc cond, \$75 or best. Nancy, x5348 Linc. Mtd snows for BMW 2002, \$25/ea or

best. Frailey, x3-4974.

Twn matt & box spr w/funky wd 30's frame, \$35 or best. Jane, x3-5042. TV-typwrtr as designed by Radio Elec.

95% assembled, unit incl exc keybrd, \$250 or best. Call, 489-1634, evgs.

Valiant 13" whl & stud snow, \$2. x3-3072.

Phillips GA 212 trntble, ADC XLM cart (nds nw stylus), \$105; Dynaco PAT 4 (nds nw boards) \$55, Stereo 80 (replaced output transistors) \$95; to-gether \$140 (not incl trntble) Jim, x3-7175 aft 6.

Nw Gen'l Tire ww, 6.00x15, \$15 or best; mpl dbl bed w/slats, \$15 or best. Paul Dudra, x3-6405.

Crystal champagne & wine glasses, 6 ea; 3 mtch cane bttm chrs, 1 rocker, 2 reg, \$35/ea; rnd empire style tbl, 35" diam, damaged; wing chr; arm chr; all turn of century. Call, 625-4117, aft 3pm.

Advent 201 cassette deck, 3 yrs, perf cond, patch cords, many cassettes w/rcrdings (Dolbyized), 2 boxes virgin CRO2 Advent cassettes (same as rcrdings). Call, 782-7689.

Bauer wht fig skates, exc cond, child sz 8, \$8. x7492 Linc, M,T,Th.

Rug, 9x12, was \$55 in Sept, \$30; K fan, nw Oct for \$48, \$35. Charles, 494-8995, lve msg.

Wind driven generator sys compl w/prop, tower, cntrls, 200W, 12VDC gen, \$500. Sarah, x3-5763.

DR furn: rnd tbl, 42" diam, 4 chrs, 6' tall hutch, \$150 compl; chrome & glass chandelier, \$75. Dave, x3-6291.

Munari Raleigh 950 ski boot sz M 8, flo-fit system, used 6X, \$50 or best. A. Marshall, x5416 Linc.

Free tires, pr 6.00x13 ww, wl pass x8-3754 Draper.

2 dressers, \$20/ea; 2 LR chrs, \$5/ea; hassock, \$5; red & wht crib, \$20. Call, 494-8714

Tele-Lentar telephoto lens, 300mm f5.5, \$80; microfiche reader, Xerox mdl 2240, \$165. Call, 494-0046.

Kelly Springfield stud snows, H78x15, 1 used, 1 seas, 1 nvr used, rims incl. Pat, x8-2376 Draper.

Decorative, lg oil lamp, \$16; 23" sgl bulb plant light, \$12; daylight bulb, \$2. extendable desk lamp, flour/ incadescent comb, \$15; decorative rotating lamp, \$5. Carol, x3-1332.

Vehicles

'56 Linc Continental Mark II, mech v gd, body gd, car unaltered, nothing missing, everything works, many new parts, receipts & owner manual, \$2,200. Buck, x3-3185.

'63 Buick Le Sabre wgn, over 100K, nds batt & muff but exc transp, \$150. Paul, x5747 Linc.

'64 VW bug, selling parts, hood, trunk lid, doors, fndrs, trans, radio, etc, or buy all \$150 (eng, rear bmpr, 1 fndr missing). x8-3379 Draper.

'67 Ply Fury wgn, 65 K, 16 mpg hwy, gd shape, must sell, ask \$250. Per, x 3-39 20.

'67 Chevy Imp, exc run cond, gd tires, 58 K, \$150. Antonio, x3-4197.

'67 Olds Delta 88, all power, AC, gd run cond. \$395. Ken, x3-4426.

'67 Buick Spec, nw trans & brakes, gd cond, must sell, lvg cntry, \$400 or best. Harrison, x3-1853.

'67 Chevy Imp, 2 dr, auto, p st & br, radio, AC, 4 nw tires, cln, best. Call, 484-3564.

'68 Chevy Nova exc run cond, 60 K, gd tires, \$800; Sony b&w TV, 3 yrs, \$100 or best. David, x3-5720.

'68 Saab sed, 2 stroke eng, best. Call, 484-4642. Wed 8-10pm.

'68 Olds Toronado, gd body, runs well, ask only \$375. Call Tom today, x5-8157 Dorm.

'69 Chevelle, exc cond, 40 K, \$1,000. x8-3652 Draper.

'69 Spitfire, nds work, \$250. Mike, 267-2867.

'69 VW bug, great cond, blu w/wht int, tape deck, ski rack, must sell, no reas offer refused. Diane, x3-1473.

'69 Ply Satellite wgn, hi mileage, rough body, exc motor, cheap, best. Call, 494-8714.

'70 Toyota Corona Mark II, 4 dr, std, exc cond, no rust, stl radials, v reliable, 25-30 mpg, \$1,100. x8-2577 Draper.

'70 Ply Fury wgn, 383 eng, 9 psgr, AC, nw exh, ask \$1,000. Gene, radials.

x7736 Linc. '71 Ply Fury, 4 dr hdtp, all power, exc cond, 50.5 K, \$1,200. x3-4733.

Housing

Arl, 3¹/₂ BR colonial hse, d&d K, frpl LR & fam rm, DR, 1¹/₂ B, garage, 2 blks T, park, working cpl pref, \$455/mo or ask \$53,800, wi consider rent w/opt to buy. DeVilliers, x3-5686.

Belmont Hill, avail 2/1, no lse, pref yr+ stay, pref married grad stu, fum apt, BR, K area in LR-DR, B, den w/frpl, garage, patio, ht & util, nr T to H Sq, qt area. Call, 489-3116.

Bklne, nice qt furn rm in priv home, all util w/refrig, hot plate, 3½ mi MIT, \$25. Call, 738-4685, aft 6.

Bklne, spac BR/sitting rm, K priv, pkg, qt loc for study, \$20/wk. 5 min T, qt lo Call, 734-2168.

Camb, Mass Ave, BR, K, LR, B, sub immed, \$185 incl ht. Don, x3-5718.

Chelsea, exc Wdlawn sect, 4 rm apt, no pets, patio yard, sec dept & refs reqd, \$200 + elec. Angelo, x5760 Linc.

Lex, 2 BR ranch, frpl LR, eat-in K, full walk-out bsmnt, carport, 1/3 acre w/lots trees, nr town conservation land, \$39,500. x3-5868.

Som, MIT bldg, BR, carpet, AC, furn K, Indry, pkg 1 car, avail now, \$250 incl ht. Call, 528-6024.

Ski rental, Gunstock, NH, 3 BR, frpl. of indr pool, saunas. x8-4415 use Draper. Fryeburg, Me ski rental, 3 BR chalet

Telephone Seminar Planned

(Continued from page 1) commemoration because it shaped the whole character of modern life.

"Bell's invention and its impact on society are testimony to human ingenuity, progress and our ability to make life better through technological innovation and development.'

President Wiesner noted that the nation's communications network is testimony to the organization, planning and resourcefulness of the American telephone industry.

"The development of the telephone was not just the invention of a device," he said, "but rather a feat of organization which should be better understood by all of us.

"The differences in telephone service between countries do not result from a basic difference in the devices available; they result mainly from differences in the organization of the industry.

"Our symposium can convey through these differences the message that the benefits we can obtain from science are heavily dependent on the institutional structures used to exploit science. We are pleased that the Bell System has joined us in making these studies of this most characteristic and significant technology of the twentieth century.'

Co-host deButts said:

"We look on the telephone's centennial year not only as an occasion for celebration but as an opportunity to enhance our own understanding of the role of communications in our society.

'When we learned that communications was one of the areas selected by MIT for study during the bicentennial, we thought it natural to join these activities with those of the Bell System.

"MIT, as one of the nation's leading technological universities, is an appropriate focal point for such

Wanted

Overhaul manual for '62 Ford Flcn eng, 100 hp, 6 cyl. Charlie, x8-3301 Draper.

Arch stu to draw plans for elevated flood-proof priv dwelling. Jane, x8-3386 Draper.

B&W TV; bkshlvs; big desk. Stavros, x3-7107.

Wanted rmmate, 51/2 rm apt in Cambridgeport, LR, DR, K, 2 BR, bk porch, \$140/mo incl ht + util, immed or Jan 1. Joan, 661-9671.

Amer Flyer mdl trains. Earl, x8-1566 Draper.

Apt to rent Jan 15-Feb 1, 5 rms, nr MIT, pref campus. Call, 489-0186.

Used Scott postage stamp catalog set, '73 or newer. Ed, x139 vol for yrs Linc.

Med sz Amer car, such as Nova, [']69 or '70, or VW wgn. Miguel, 641-0258.

Have pr used child skates? Want to sell, loan, or give away? Nd boy sz 3, girl sz 13 or 1. Sam Benichasa, x8-3686 Draper.

Stu cpl want to rent sm hse, cottage, garage apt, etc, in qt loc N or W of Bos, exc refs. David Thompson, x8-1734 Draper.

HP-45 or HP-35 calculator. Jan, x3-7139.

Dead storage for auto, now thru Aug, 1976. x3-2818.

Someone to cln hse in Harv Sq area, 4-5 hrs every 2 wks &/or to help w/occasional parties, pay nego. x3-3450.

Refrig in gd cond. Ranjan or Steve, x5-6126 Dorm.

an event.'

The symposium will be the major event marking the telephone's centennial, although the Bell System will conduct numerous other activities during the year. It was in Boston, on March 10, 1876, that Bell first used the telephone to transmit intelligible speech. At the time of his experiments, he was a professor of vocal physiology at Boston University and also lectured at MIT.

Scholars from a number of universities already have been commissioned to prepare papers for the workshop sessions. A series of preliminary sessions is being held to prepare for the symposium, and following the March event papers in each of the three major topic areas will be edited for book publication.

Dr. Norman C. Dahl, formerly professor of mechanical engineering at MIT and presently consultant to the president and provost, is coordinator of the workshop studies program.

Dr. Ithiel de Sola Pool, MIT professor of political science, is in charge of the workshop on the social effects of the telephone.

The workshop on the future impact of computers will be the co-responsibility of Dr. Michael L. Dertouzos, professor of electrical engineering and director of MIT's Project MAC,

and Dr. Joel Moses, associate professor of computer science and engineering and associate director of Project MAC. Project MAC is MIT's internationally known laboratory for advanced research in computer science and engineering.

Dr. Morris Halle, professor of linguistics at MIT, and Dr. George A. Miller, professor of psychology at Rockefeller University, will direct the workshop on language and cognition.

President Wiesner said, "It is now clear that the U.S. bicentennial year is occuring in the midst of a period of intense worldwide dislocations whose probable effects will be that the U.S. will find a quite different world in the third century of its nationhood.

"Science and technology are intimately involved with most of these dislocations, either as one of the presumed casual factors or as a potential source of relief.

"Consequently, as its contribution to the celebration of the country's bicentennial, MIT is making these studies aimed at bringing understanding of how the creation and management of science and technology can contribute to a more intelligent and humane ordering of the new conditions we will face in the world of America's third century."

for all agricultural technology and

for innovative food science applica-

"In addition, it is certainly in the

national interest to explore, through

a modest long term investment on

the part of NSF, the contributions

which various unconventional food

sources might make to US and world

food supplies late in this century, in

supplementing agricultural food pro-

The report's research recommen-

dations and priorities were based on

several conclusions, including the

-US agriculture will continue in

the foreseeable future to supply in

abundance the protein foods and fees

to which this country has become ac-

customed, but it will obviously do so

with rising costs and increasing

pressure on our land, energy and en-

-A strengthening of US food and

agricultural research capabilities

will be necessary to ensure con-

tinued growth of food export, a

major contributor to the mainte-

nance of favorable US trade bal-

ances. With adequate research sup-

port, and if other appropriate poli-

cies are adopted, US food export

capacity at least until 1985 should in-

crease at a rate following the trend

-Even with probable improve-

ments, the agricultural production

capacities of some major food deficit

developing countries will not soon be

adequate to feed their growing popu-

lations. They will need to import food

for many years to come and the

US will play a leading role in supply-

ing those needs, largely on regular

established prior to 1972.

commercial terms.

vironmental resources.

Nutrition Funding

tions.

duction."

following:

(Continued from page 1) human protein needs and the assess-

ment of the protein value and safety

of foods and the long range develop-

The report assigns highest priority

"A prerequisite to the efficient

to research on nutrition and toxi-

utilization of food supplies is the de-

termination of human protein re-

quirements at all ages and the evalu-

ation of the capacity of various kinds

of dietary protein to meet them," the

report said. "Moreover, no uncon-

ventional sources of protein for food

or feed can be utilized until relevant

questions of their safety for this pur-

The objective of the fundamental

research recommended in nutrition.

the report said, is to improve greatly

the knowledge of protein require-

ments for individuals of all ages in

terms of what is needed for growth,

pregnancy, lactation, periods of en-

vironmental stress and recovery

from disease. The research should

also seek to improve methods for

measuring the quality of proteins, in-

cluding novel and processed kinds.

toxicology research, that improved

toxicity testing techniques be de-

vised for preclinical as well as for

clinical testing of new or processed

proteins and that means be devel-

oped for removing any undesirable

In addition, Dr. Scrimshaw said

funds should be available "to

support research in as yet unidenti-

fied meritorious proposals or to rein-

force successful developments in

Last March, when the NSF grant

for the study was announced, Dr.

Scrimshaw pointed out that "US

factors encountered.

any areas."

The report urged, in proposing

pose have been resolved."

ment of novel protein sources.

cology.

Sz 5-12 & 3-6 preteen chldm clothes; gd cond fold up 3 spd bike; sz 4 ice sk; compl set sz 2 skis; 2 new GE rcrd players; chldrn player organ; fl mdl Amana frzr, best. Dorothy, x8-2868 Draper.

F fig skates, sz 5, v gd cond, wl swap for sz 6 or \$20. Gail, x3-4885, aft 7pm.

GE amfm clock radio, gd cond, \$15. Maureen, x3-3748.

Pr tckts to Hepburn play, Sat evg, Jan 10, \$15. x172 Linc.

Leitz Prado 35 mm slide proj w/slide loading, \$125 nego. x3-6711.

GE 9" clr port TV, approx 6 yrs, gd shape, nds minor work but pic v gd. exc clr, \$75. Bob, x252 Linc.

Grn wool plush rug, 12x11, used 3 mos, \$140; solid birch ply rerd cubes, \$15/ea; desk/tbl, \$35; teak platform bed; frames for wall hangings, bed; 42"x 40", \$5/ea. David, 646-5854.

Nw hand-made early Amer steeple clock w/gong, 20" hi, \$175. Call, 862-5904.

TV, b&w, \$55; dbl bed w/hdbrd, \$40;

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Conway, \$125/wk. Steve, x5584 Linc.

Animals

AKC cocker spaniel, m, 9 mos, gd w/chldrn, moving, must sell, ask \$175. Dean, 646-8938.

Free yr old b&w f cat, declawed, litter trained, v gentle & affectionate, perf for chldrn, nds gd home. Sherry, x3-6261.

Free beaut Sib husky/gldn rtrvr pups, 4 wks, own purebred parents, found from exper this combo makes exc dogs. Ralph, x3-2921

Lost and Found

Found: Indian nickel charm bracelet outside Stu Ctr Fri, Dec 5, 4:15pm. Evan, 232-3257.

Found: set keys on Amherst St nr Kresge, Dec 17, turned into Campus Patrol.

Found: Challis scarf, 12/16, ownr must identify. Martha, x3-5124.

Lost: SMTI '67 class ring, E19 area, reward. Margaret Jardin, x 3-6271.

Found: dog Mon, Dec 29, 7pm, West Garage, f grmn shep type, fawn clr, blk tipped tail. x3-2697. Memory, pref 16K CMOS but all offers over 4K bytes (even core) considered; also IBM courier italic, dual gothic, artisan, or script typeballs; "the Stop-per" bike lock; wl pay cash. x5-6549 Dorm

Roomates

Ashdown, spr sem, m, apt has own LR & K. x5-9865 Dorm, evgs.

F for mod AC 2 BR Wtrtwn apt, furn or un BR, avail now, on bus line, \$124 incl ht, pkg. Madeline Keyes, x3-3636 \$124

M non-smoking rmmate, share apt in hse w/2 EE grad stus, N Camb nr Radcliffe. Steve or John, x3-7351.

Carpools

Ride wanted M thru F from Star Mkt, Beac St, Camb to & from MIT, 9-5 flex. x3-7720.

Ride wanted w/congenial f or grp from Oak Sq, Bri to MIT 9-5, wl share exp. Barbara, 3-5944.

Miscellaneous

Nd more space? Donate old file cabinets to us. Julie McLellan, x3-4791.

search and development in the area of non-conventional sources of dietary protein to supplement those likely to be available from conventional sources are badly fragmented, underfinanced, uncoordinated, and in some of the most important areas, entirely lacking."

The study's findings confirm this. In announcing its recommendations, the report said it "recognized that sponsorship of research to improve the production efficiency or lower the cost of traditional agricultural food sources would continue as the major concern of the USDA (US Department of Agriculture), the state universities and agricultural experiment stations, and the agribusiness industries. However, notwithstanding an expenditure of over a billion dollars annually in the US on relevant agricultural research, largely by the above agencies, many useful and important opportunities do exist for productive complementary support by NSF for research in the basic biological and biochemical sciences which are the foundations

-It is anticipated that domestic and world demand for US soybeans as a primary protein resource, notwithstanding increasing production in other countries such as Brazil, will grow faster than for other food or feed crops. While a major breakthrough in soybean yields may occur, it is not likely to be effective in the next 10 years. For the foreseeable future, therefore, a continued increase in soybean prices relative to those for other grain crops is anticipated. This will stimulate interest in alternative protein sources of both conventional and unconventional types.

-The reclaiming of organic wastes of all kinds for food and feed use is a major priority both to reduce environmental pollution and contribute to total food supply.

-The study recognized that acceptance by the US consumer of novel protein foods to any significant extent will require innovative marketing and promotional approaches which, to be effective, must go beyond emphasis on nutritional benefits.

POSITIONS **AVAILABLE**

This list includes all non-academic jobs currently available on the MIT campus. Duplicate lists are posted on the women's kiosk in Building 7, outside the offices of Special Assistants for Women and Work (10-215), and Minority Affairs (10-211), and in the Personnel Office (E19-239). Personnel interviewers will refer any qualified applicants on all biweekly jobs Grades II-IV as soon as possible after their receipt in Personnel. Persons who are not MIT employees should call the Personnel Office on extension 3-4251. This list includes all non-academic jobs

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

Dick Higham	3-4278
Pat Williams	3-1594
Carolyn Sheer	3-1595
(secretary — Dixie Chin)	
Virginia Bishop	3-1591
Mike Parr	3-4266
Ken Hewitt	3-4267
(secretary — Joy Dukowitz)	
Sally Hansen	3-4275
Lewis Redding	3-2928

(secretary - Susan Bracht)

Acad. Staff, Administrative Officer, in Materials Science and Engineering to manage administration of under-graduate and graduate program, financial, personnel and business matters of the Department. Duties include assist-ing in preparation of general and funded research budgets; monitoring of budgets and expenditures; providing staff support to Department committees; overseeing operation of under-graduate and graduate programs; hiring and training of support staff; coordinating matters related to physical plant (space changes, renovations, etc.). Oversee all personnel, accounting, purchasing processes. Formal training, in business administration, preferably at the MBA level, including experience in computerized accounting and management systems required. Famil-iarity with MIT procedures helpful. C75-34 (1/7/76).

Spons, Res. Staff, temporary in Mechanical Engineering will conduct re-search on physiology of joints and total joint replacement devices: conduct in vitro experiments in mechan-ical simulation equipment as well as in vivo experiments with animals. One third time will be spent at Harvard Animal Facility, Concord, Ma. B.S. in Biology or Mech. Eng., extensive knowledge of hydraulic servo-systems and strain gage instrumentation, some medical or biology background required. Temp. to Dec., 1976.

Spons. Res. Staff, in Earth and Planetary Science, will be responsible for advance scheduling, coordination and real-time supervision of very-longeline interferometry observations NASA space tracking stations; baseline by computer programming and processing of VLBI tracking to determine geo-detic, selenodetic, and lunar-orbit parameters. A minimum of one year parameters. A minimum of one year related experience, advanced knowl-edge of radio electronics, space tracking, VLBI techniques, FORTRAN scientific programming and use of large IBM System /360/370 computer sys-tems required. Position requires travel and irregular work schedule D75-255 and irregular work schedule. D75-255 (1/7/76).

Admin. Staff, Alumni Regional Repre-sentative for Boston District will be responsible for all Alumni Assn. programs in metropolitan Boston area and Alumni Relations programs generally. Position requires interaction with alumni, MIT faculty and administra-tion. MIT degree or extensive knowledge of the Institute also necessary. Will report directly to executive Vice President of the Alumni Assn. A75-73 (1/7/76).

Acad. Staff. Tech. Asst., Biology, to perform administrative and experi-mental work in large active molecular biology lab: introduce lab procedures personnel; design new pro-when necessary; solve probto new cedures lems. Lab interest is in RNA synthesis and processing, protein synthesis regu-lation, molecular hybridization. Requires: B.S. or B.A. plus lab research experience. Experience with tissue culture, cell fractionation, radioactive isotope labeling, gel electrophoresis, ultracentrifugation desired. Ability to work independently is necessary. Position available Feb. 1, 1976. C75-35 (1/7/76).

histogramming programs SIMEK and KIAWA) D75-249, 250 (1/7/76). such as desirable.

Spons. Res. Staff in Energy Lab to maintain and upgrade existing computer system: assist in development of mathematical models for fluidized bed combustors. Master's degree in Chemical Engineering, background in fluid dynamics, heat and mass transfer, fuel conversion and combustion, as well as experience in mathematical model development, computer simulation, data analysis, model testing, evaluation and technical reporting required technical and reporting required. D75-253 (1/7/76).

Admin. Staff, Associate Staff Writer, in Resource Planning will work with Proposals and Publications writing staff in preparation of proposals to individ-uals, foundations, corporations; pre-pare other fund-raising statements, brochures, newsletters. Will compile and organize a wide variety of information, often obtained through interviews with MIT faculty and administration College degree and a administration. College degree and a minimum of one year's professional writing experience required. Candidate must be able to work independently, often under severe deadlines. Knowl-edge of MIT desirable. A75-74 (1/7/76).

Admin. Staff, Documentation Man-ager, Office of Administrative Informa-tion Systems to develop and administer a system of data processing methods, standards and procedures. Will have responsibility to assure complete, fully-documented standards which are cur-rent with changes in hardware/soft-ware; communicate methods and pro-cedures to Department management and staff; insure security of documentation and integrity of program and production libraries; establish and maintain library of all documentation master files as well as a technical library of related vendor documenta-Bachelor's degree or equivalent tion. combination of education and experi-ence, training in data processing, experience in development of standards and procedures, supervisory, oral and written communication skill re-quired. A75-71 (12/17).

Admin. Staff, Project Planner, in Planning Office: will develop and maintain long range planning data on Institute population, program and space needs and their financial implications; develop planning criteria, project schedules and budgets; consult with project clients; prepare presentation materials in written and graphic form. Bachelor's degree in Architecture or Planning, or equivalent combination of education and experience, 2-5 years experience in architecture and planning project functions, demonstrated writ-ten and graphic communication skill necessary A75-72 (12/17).

Acad. Staff, Asst. Science Librarian to be responsible for selection and collecbe responsible for selection and collec-tions in Biology, Nutrition and Physio-logical Psychology; acts as subject specialist on complex reference ques-tions in Life Sciences; handle varied promotional and orientation activities (guide preparation, seminars, etc.). MLS plus an undergraduate degree in biology or chemistry required. Candi-date should have a minimum of 3 years professional experience, preferably in reference or collection development. C75-33 (12/17).

Spons. Res. Staff, in Artificial Intelligence Lab to do postdoctoral research to adapt and develop basic artificial intelligence ideas for applied purposes. Initial focus will be in large data base and personal assistant application areas. Strong background in Artificial Intelligence, Ph.D. in computer science required. Positions begin in June, 1976. D75-243, D75-244 (12/17).

Exempt, Technical Assistant, Obser-ving Assistant in Earth and Planetary Sciences to assist astronomers at optical observatories; coordivarious nate reduction and analysis of several observing programs; supervise dark-room assistant in processing related photographic materials. Experience in operation of various optical telescopes in use of electro-optical instrumentation and spectrograph operation required. Applicants must be familiar with observation techniques in near-UV, visible and near infrared, with the operation of most major optical observatories with extension correc-tions, use of standard stars and other calibration requirements to achieve better than 1% spectrophotometry. $F_{7.5}^{2.5} = (4) (77/76)$ E75-48 (1/7/76).

Admin. Asst. (Exempt) in the Center for Policy Alternatives will perform administrative duties relating to accounting, payroll, personnel project administration, space and purchasing matters. Will work closely with Center administrators, project managers, students and academic and research staff personnel. Knowledge of bookkeeping accounting procedures (preferably MIT experience) important. Good typing skill; must enjoy detailed work and a busy office. If the office. 40 hour week. E75-46 (12/17).

schedule patient appointments, meetings; transcribe surgical notes and routine correspondence; handle patient billing; maintain files; act as liaison with hospital on surgery schedule and other matters. Previous secretarial experience, preferably in medical field, excellent secretarial and organization skills, as well as the ability to deal sensitively with patients required. B75-685 (1/7/76).

Secretary IV to Sloan School faculty member working in finance and investment securities fields. Handle volume correspondence and manuscript typing, including some technical data. Arrange appointments and travel; do occasional library research. Position includes opportunity to learn securities field. Excellent typing, organization skills and telephone manner required. Familiarity with investment securities and options helpful. B75-687 (1/7/76).

Secretary IV to handle varied secretarial duties in the Medical Department Orthopedic Clinic; schedule appointments; answer phones; transcribe medical material; act as liaison with area hospitals. Excellent typing and organizational skills, previous secretarial experience, preferably in medical setting, required. B75-688 (1/7/76).

Secretary IV to 4 Chemistry Dept. faculty members: type corresponfaculty members: type correspondence, technical manuscripts; audit monthly statements; arrange travel and appointments. Technical typing, or-ganization skill required. Experience with machine transcription desirable, B75-690 (1/7/76).

Secretary IV to two faculty members in Biology will perform general secre-tarial duties including composing own correspondence, typing from hand-written draft, machine dictation; moni-tor research grants; handle personnel related matters; gather and prepare material for proposals; arrange semi-nars. Excellent typing, experience with dictation equipment, some experience with MIT accounting procedures desir-able. Must be able to organize and complete work independently. Position begins in April or May, 1976. B75-665 (12/17).

Secretary IV to 4 faculty members, physics department: type technical reports, manuscripts; arrange travel and appointments; maintain budget records, file. Requires excellent typing skills, 3-5 years experience, ability to work under pressure. Technical typing skill desirable. B75-675 (12/17).

Secretary III-IV to assist with a Center for Advanced Engineering Study pro-ject relating to collaboration between education and industry to expand male and female understanding of work in technology and science. Individual will perform general secretarial duties: type, file, arrange meetings. Secretarial training and/or experience required. Position can be structured to accommodate full or part-time candidate (3-5 days per week). B75-684 (1/7/76).

Secretary III-IV, Office of the President and Chancellor, to provide secre-tarial support for Analytical Studies and Planning Group: schedule appoint-ments; maintain files, financial records; type. Will also provide general assistance on project (help prepare documents, type some lengthy reports. Requires: excellent typing, proof-reading skills, initiative; ability to work pressure, set priorities. 37½. Position includes some overunder hrs/wk time. B75-671 (12/17).

Secretary III-IV to 2 Project MAC academic staff members: perform general secretarial duties including technical typing, transcription of machine dictation; schedule meetings; maintain files. Will handle some secre-tarial duties for other staff. Typing skill, ability to work independently required. B75-674 (12/17).

Secretary III Part Time in Law-Related Studies Office. Will type, maintain several accounts, answer phone in busy office. Good typing, ability with figures required. Much internal liaison with faculty, employees and students. 15-20 hrs/wk. B75-691 (1/7/76).

Lib. Gen. Asst. III, temporary, Circulation Asst., in Hayden Library: interpret policies for borrowers; tabulate statistics; collect fines; type charge cards; substitute in bookchecking and stacking functions; assist in student employee training. High school gradu-ate, or equivalent, typing skill, ability aandle detailed work, required. college helpful. Hours: Tues.-10am-6pm; Sat. 9am-5pm. May to handle detailed Some Fri, work evenings or weekends in emergen-cies. Temp. through June, 1976. B75-676 (1/7/76).

Accouting Asst. V Center for International Studies, to assi

Gannett Seminar: Laser Plate Making

A seminar on using lasers for paper applications. making newspaper plates will be held Tuesday, Jan. 13, at 4pm in the Bush Room (Rm. 10-105).

Harold I. Becker, who received an SB in electrical engineering from MIT in 1956 and is now manager of systems design at Laser Graphic System Corporation in Sudbury, will be the lecturer. He will discuss design requirements for making newspaper printing plates directly from the pasteup and features of the Laser Graph System, a laser-based computer-controlled plate maker capable of producing offset and thin letterpress printing plates for news-

The seminar, which is open to the public, is the sixth in a series of 12 being offered over a three-year period through a grant from the Frank E. Gannett Newspaper Foundation.

The lecturer at the next meeting on Feb. 10 will be Robert Elkin, who graduated from MIT in 1974 with SB degrees in electrical engineering and management and who is now with the Minneapolis Star and Tribune. He will discuss the Newspaper Systems Development Group's full-page composition system.

A Message from the IRS

(The Internal Revenue Service has requested employers to notify their employees of the following tax revision for 1975.)

A new law entitles many persons whose total income was less than \$8,000 in 1975 to a special payment or credit called the Earned Income Credit. This payment or credit (a maximum of \$400) can only be claimed by filing a 1975 Federal income tax return.

- To find out if you qualify, answer the following questions.
- 1. Did you receive less than \$8,000 total income during 1975 that included salary, wages, tips, or other employee compensation?
- 2. Did you maintain a home in the United States for yourself and at least one dependent child for the entire year?
- 3. Was that dependent child under 19 years of age or a full-time student?

If you answered yes to all three questions, you probably qualify. Check the 1975 Federal tax instructions for further information on the Earned Income Credit.

skills; ability to use office machines, including calculator, and to work under pressure. B75-681 (1/7/76).

Clerk III in the Admissions Office to operate IBM Magnetic Card machine (will be trained) to send out over 200 letters per day to prospective students; will handle special projects during summer, prepare packets for fall mailing. Excellent typing, spelling, organization skills required. Must enjoy detailed work and be able to occasion-ally work under pressure. High school or business school hackground proferred. Non-smoking office. B75-580 (10/22).

Accts. Payable Clerk II-III in Comptroller's Acctg. Office will process invoices: apply discounts; check purchase orders; prepare summary of outstanding commitments. Also, pre-pare expenditure totals; prepare material for keytape entry. Ability to work with figures and proficiency with adding machine required. B75-667 (12/17).

Clerk II, Temporary, file clerk in Admissions Office to handle volume alphabetical filing. Position requires previous filing experience, accuracy, speed and the ability to work on one's feet continuously. Non-smoking office. Temp. through 4/15/76. B75-680 (1/7/76).

Technician A, Radiation Protection, in the Environmental Medical Service. (Work site is at Bates Linear Accelera-tor, Middleton, Ma.) Will advise oper-ating personnel on radiation hazards; operate radiation monitoring systems; establish control levels; supervise all radiation acrost of research opervise radiation aspects of research operation. Graduation from a 2-year day technical school or equivalent, plus a minimum of 2 years applicable experience required. (Degree in Health Physics may be substituted.) Experience in radiation protection or health physics desirable. Applicants must be able to work rotating shifts. H75-172 (1/15/76).

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

ADMINISTRATIVE STAFF: A75-56, Sr. Consult./Trainer, Per-sonnel Development (10/8)

A75-59, Applications Programmer, Off. of Admin. Inf. Syst. (10/22)

A75-60, Systems Analyst, Off. of Admin. Inf. Syst. (10/2) A75-63, Asst. Director, Develop-ment Off. (11/5)

C75-31, Asst. Humanities Librarian, Science Library (11/19) C75-32, Asst. Rotch Librarian for Visual Collections, Rotch Lib. (12/10)

ACADEMIC STAFF:

- SPONS. RES. STAFF: D75-8, Biophysicist, Nat. Magnet Lab. (6/25)
- D75-48, Economist, Energy Lab.
- D75-40, Learning (6/25) D75-107, postdoc res., Lab. for Nuc. Sc. (6/25) D75-111, Programmer, Artifical Intell. Lab. (6/25) D75-112, Engineer, Energy Lab

(6/25) D75-120, Systems Programmer. Lab. for Nuc. Sc. (11/26) D75-125, energy modeling, Energy

Lab. (8/6)

- Lab. (8/6) D75-150, Systems Programmer, Hith. Sc. & Tech. (9/3) D 75-161, E conomist/Policy Analyst, Energy Lab. (9/10) D75-167, end-use technology, Ener-gy Lab. (9/17) D75-169, Plasma Physicist, Res. Lab. of Elec. (9/17) D75-178, Programmer, Center for Space Res. (10/1)
- Space Res. (10/1) D75-205, Research Engineer, Economics (10/22)

- nomics (10/22) D75-210, machine vision research, Artificial Intell. Lab. (10/29) D75-219, continuing education, Chemical Eng. (11/5) D75-220, Executive Director, con-tinuing education, Chemical Eng. (11/5) (11/5)
- D75-222, biochemist, Nutrition and
- Food Science (11/12) D75-226, neurophysiological re-search, Cent. for Space Res. (11/19) D75-229, Research Engineer, Ener-
- gy Lab. (11/19) D75-230, Engineer, Energy Lab (11/19)
- D75-232, Programmer, Center for Space Res. (11/26) D75-234, computer specialist, Proj.
- MAC (11/26)

HOURLY:

H75-55, Tech. B., Lab. for Nuc. Sc. (6/25) H75-117, Tech. B, Radioactivity

Center (10/15) H75-120, Campus Patrol Officer

(10/1)H75-143, 2nd Cl. Eng. (10/15) H75-171, Second Cook, Food Ser-

vice (12/17) The following positions have FILLED since the last issue of Tech

C75-30 Acad Staff

E75-45 B75-661	Exempt	
B75-661	C. Clark III	
	Sr. Clerk III	
B75-646	Secretary V	
B75-637	Secretary III	
E75-47	Exempt	
D75-153	Spons. Res. Staff	
B75-560	Comp. Op. IV	
B75-638	Secretary IV	
B75-658	Secretary IV	
B75-630	Secretary IV	
B75-614	Acctg. Asst. V	
B75-254	Sr. Clk. IV-V (cancl'd.)	
H75-163	Genl. Helper	
	Secretary IV	
	Spons, Res. Staff	
	Secretary III	
	Sr. Clerk III	
	Secretary V	
	Admin, Asst. V	
	Secretary IV	
	Secretary IV	
	Sr. Clk. III	
	Secretary IV	
	Secretary IV	
	Secretary IV	
010 000	Decrevary 11	
The follow	ing positions are on HOLD	
issions The following positions a pending final decision:		
pending in	ar dectsion.	
B75-627	Secretary III	
	Asst. Science Lib.	
	Spons. Res. Staff	
	Spons, Res. Staff	
	Secretary III-IV	
	Spons. Res. Staff	
	Spons. Res. Staff	
	Spons. Res. Staff	
010-222	opons, nes, bian	
Ter	ch Talk, January 7, 1976, Page 7	
	E75-47 D75-153 B75-560 B75-638 B75-638 B75-630 B75-614 B75-614 B75-614 B75-648 D75-202 B75-666 B75-661 B75-666 B75-6673 B75-666 B75-669 B75-669 B75-669 B75-669 B75-669 B75-669 B75-669 B75-669 B75-659 B75-647 B75-593 The follow pending fin B75-627 C75-29 D75-240 D75-166 B75-663 D75-111 D75-234 D75-222	

Spons. Res. Staff, computer program-mer, part time, temp., in Psychology Department: perform various statistical analyses using PSTAT and Fortran; graph and chart significant results; design statistical tests; research different methods of data analysis and review any new, related programs. Requires M.A. in computer science or related field. Position is half-time and will run 5 or 6 months. D75-247 (1/7/76).

Spons. Res. Staff, in Laboratory for Nuclear Science to do postdoctoral research in high energy physics. Ph.D. in Physics, at least 5 years experience with bubble chamber data reduction in Physics problems required. Experience with standard bubble chamber reconstruction programs (i.e., THRESH and GRIND or TVGP and SQUAW, and with data summary types and standard

Secretary IV to two Regional Direc-tors, Alumni Fund will type correspondence, follow up on various activi-ties with members of volunteer organi-zation; assist in development and maintenance of information file on alumni activities; collect and maintain statistical data; compose routine cor-respondence; arrange travel; assist other secretaries as required; arrange meetings, luncheons, dinners. Typing and organization skill as well as ability to interact with people required. Shorthand or speedwriting helpful. B75-677 (1/7/76).

Secretary IV, part-time, temp. to work Mechanical Engineering several for faculty members: type correspondence and technical material; arrange travel, appointments, coffee seminars; handle sic bookkeeping tasks. High school graduate, or equivalent, shorthand, machine transcription, technical typing skill required. 25 hrs/wk. Temp. to 9/1/76. B75-679 (1/7/76).

Secretary IV to two surgeons in Medical Dept.: will act as receptionist;

Officer and serve as back-up in all office procedures: handle account handle s, travel vouchers, petty cash; financial transactions; check records. post accounging office statements; prepare financial reports. Requires: thorough knowledge of accouting procedures; ability to work independently. Institute experience desirable. B75-672 (12/17).

Clerk IV, part-time, in Civil Engineering: to maintain logs and register folders for graduate admissions; type correspondence; answer phone in-quiries; handle mailings. Experience with detailed work, accurate typing, required. Admissions experience helpful. 20 hrs/wk. B75-689 (1/7/76).

Senior Clk. III, General Purchasing to handle a wide variety of duties related to invoice and purchase order pro-cesses: sort and distribute forms and invoices; file, alphabetically and numerically; post account numbers; help resolve shipping problems; perinvoices: form occasional messenger duties. Accuracy with detail required. B75-678 (1/7/76).

Senior Clk. III, Fire Protection Moni-tor, Physical Plant. Primary responsibilities: monitor alarm system during fire drills & tests; communicate system status via phone, 2-way radio, keypunch. Other duries: prepare work orders; handle work requests, petty cash. Requires: High school diploma; typing, organizational, communication

Martin Luther King Week Noted

(Continued from page 1)

Massachusetts Ave.) to Kresge Auditorium

Also participating will be the Reverend John Brandon, pastor of St. Paul's AME Church in Cambridge, and the MIT Gospel Choir. Jennie Patrick, a graduate student in chemical engineering from Atlanta, Ga., will preside. The program will begin with a recording of one of Dr. King's sermons. A reception will follow the ceremony at McCormick Hall.

Mr. Leonard, formerly assistant dean and assistant director of admissions and financial aid at Harvard Law School, coordindevelopated ment of Harvard's Affirmative Action Plan



and is now guiding its implementation. He was a founder of the Southern Christian Leadership Conference, is a member of the board of directors of the National Urban League of Eastern Massachusetts and a life member of the NAACP. Events of the week will begin

exhibition and tape recordings depicting the life and times of Dr. King, in the MIT main Lobby at 77 Massachusetts Avenue. Included will be "Letter from a Birmingham Jail," recorded by Dr. King just two weeks before his death.

On Tuesday, Jan. 12, at noon, the film, "King: A Filmed Record. Montgomery to Memphis," will be shown in the Building 10 Lobby. The film, narrated by Dr. King, was nominated for an Academy Award.

Also on Tuesday will be a seminar on "Love and Intimacy in Black and Fe-Male male Relationships" presented by Ann Ashmore Poussaint, clinical psychologist in the Boston

area. The seminar-5-7pm in MIT Room 98150-will be sponsored by John B. Turner, assistant dean of the MIT Graduate School, and the **Minority Graduate Student Advisory** Committee.

MIT will be closed Thursday, Jan. 15, Dr. King's birthday. MIT this year has adopted the date as an official Institute holiday.

clude Friday, Jan. 16, with a noontime showing of the film, "Legacy of a Dream," narrated by James Earl Jones, in the Bush Room (Rm. 10-105).

Commemoration events were arranged under auspices of the MIT Office of the Special Assistant to the President and Chancellor for Minority Affairs by a committee composed of students, faculty, staff members and religious counselors. Committee members are:

Students: Yolinda L. Hinton, a junior in mechanical engineering from Cincinnati, Ohio; John W. Arnett, III, a senior in electrical engineering from Memphis, Tenn.; James E. Clark, a senior in electrical engineering from Quincy, Fla.; Lynne D. Richardson, a senior in life sciences from Jamaica, N.Y.; Carolyne Clay, a graduate student in materials science and engineering from Chicago, Ill.; Philip G. Hampton, Jr., senior in chemical engineering from Washington D.C. and Jennie Patrick

Faculty and staff: Philip L. Clay, assistant professor of urban studies and planning; Patricia A. Garrison, assistant equal oppor tunity officer; Barbara Wyatt, secretary in the Office of Minority Affairs, and Clarence G. Williams, special assistant to the president and the chancellor for minority affairs.

Religious counselors: the Reverend John Crocker, Episcopal chaplain; the Reverend Constance Parvey, Lutheran chaplain; Rabbi Melvin Gottlieb, Jewish chaplain; the Reverend Robert Moran, Roman Catholic chaplain, and Steven Murphy, associate Roman Catholic chaplain.

Obituaries

Raymond E. Boyd

Raymond E. Boyd, who retired in 1971 after 35 years with MIT, died Dec. 11 at St. Elizabeth Hospital, Brighton. He was 70.

Mr. Boyd, whose position at retirement was administrative assistant to Professor Frederick J. McGarry, then a member of the Department of Civil Engineering, now with the Department of Materials Science and Engineering, is survived by his wife, Grace; two daughters, Mrs. Harold G. Arsenault of Newton and Mrs. Marcy Mazer of Weymouth, and nine grandchildren. He made his home at 35 Columbia St., Watertown.

For many years he was administrative assistant in the former **Department of Building Engineering** and Construction which was absorbed in the late 1950s by the Department of Civil Engineering. Mr. Boyd was a member of the MIT Quarter Century Club.

Clifton A. Starbard

Clifton A. Starbard, a library assistant at Hayden Circulation, died Dec. 24 at Mt. Auburn Hospital. He was 69.

Mr. Starbard, employed at MIT

since 1966, is survived by his wife, Janice; a daughter, Carol Beckwith of Reading; a son, Craig, of Watertown; two sisters, Ruth Glass of Worcester and Alberta Herlihy of Springfield, and five grandchildren. His home was at 26 Murrah Hill Rd., Cambridge.

Fred Burge

Fred Burge, who retired in 1960 after 26 years as a custodian with Physical Plant, died Dec. 29. He was

Mr. Burge, who made his home at 34 Glenwood Ave., Cambridge, is survived by his wife, Elizabeth, also a retired MIT employee; a son, Fred, and a sister, Olive B. Baker of Newfoundland.

Mr. Burge, who joined MIT in 1934, was a World War I navy veteran.

Charles Bir

Charles Bir, a supervisor of technicians at the Francis E. Bitter National Magnet Laboratory, died Dec. 28 at his home, 26 Glenn Ave., Chelmsford, after a short illness. He was 53.

He is survived by his wife, Doris, and two sons, Richard and Robert.

Mr. Bir joined the Magnet Lab staff in 1960 after working for three years at Lincoln Laboratory.

The week-long program will con-Monday, Jan. 12, at noon with an ies, Emeritus Humanities Jean John E. Burchard J of bachelor of science in architec-1944. During his term of office, plans

(Continued from page 1)

Social Purpose, to be published next spring by McGraw-Hill Publishing Co., New York. Dean Burchard had told associates the book represents a culmination of his career in architectural studies and is aimed at illuminating the social purposes of architectural forms.

MIT President Jerome B. Wiesner said "John Burchard was an intellectual leader and a rare human being.

"His creative genius in the arts and letters was enriched with a deep understanding of their relationship to the natural sciences," he said. 'Drawing upon his education and background in architecture, he developed a vision of what the humanities and the arts could do on this campus and that vision was an important force in establishing within the Institute the traditions of a modern university. He was one of the great builders of the Institute and MIT would not be what it is without him. He served with enormous distinction as first dean of the School of Humanities and Social Science, directed the study that led to the founding of MIT's Center for International Studies, and was a close friend and trusted advisor of five presidents of MIT."

Howard W. Johnson, former president of MIT and now chairman of the MIT Corporation, said "John Burchard had a superb capacity for turning ideas into action. Equally at home in the worlds of science and of the humanities, he epitomized the ideal of the Renaissance man. Historian, critic, humanist, he helped shape in countless ways the present style and character of the Institute.

Professor Burchard was impressario of MIT's Mid-Century Convocation on the Social Implications of Scientific Progress, which marked the inauguration of Dr. James R. Killian as President of MIT and at which Winston Churchill spoke. He was later the principle architect of MIT's great centennial observance in 1961.

an and The City (MIT Press and Harvard University Press, 1963), which he wrote with Professor Oscar Handlin, and The Voice of the Phoenix: Postwar Architecture in Germany (MIT Press, 1966).

Dean Burchard was responsible for the present form of the journal, Daedalus, published by the American Academy of Arts and Sciences. Long a Fellow of the Academy, Dean Burchard was its vice president in 1953 and president from 1954 to 1956. While president, he joined with the late Harlow Shapley in reforming the Academy's publication into a major journal of intellectual thought under the editorship of Gerald Holton. Dean Burchard considered his initiatives on behalf of the present Daedalus to be among his proudest achievements.

As general chairman of MIT's mid-century convocation in 1949, Dean Burchard was host to the late Sir Winston Churchill who delivered the keynote convocation address. As general chairman of MIT's centennial celebration in 1961, he was host to British Prime Minister Harold Macmillan who presented the keynote address at that meeting.

Dean Burchard, following retirement from MIT, was from 1964 to 1968 principle consultant to the Bay Area Rapid Transit Authority in San Francisco and was considered responsible for many of the innovative architectural and planning considerations that went into the design of that high speed public transportation system. While in California, he was a visiting professor at the University of California at Berkeley and was acting dean of the College of Environmental Design there from 1966 to 1968

Dean Burchard was the first dean of the MIT School of Humanities and Social Science, which was founded in 1950 and which he served until his retirement in 1964. During his admin istration the school grew substantially in size, influence and reputation, partly because of the significance of its relationship with the fields of science, engineering, architecture and industrial management, for which MIT had been best known. MIT's Center for International Studies was established and strong graduate programs were developed in political science, philosophy, psychology and linguistics. As dean, he was responsible for the initiation of Course XXI, in which students major in humanities or social sciences in combination with science or engineering. Also, he inaugurated the unique "Humanities in French" courses offered to qualified underclassmen. Dean Burchard was born in Marshall, Minn., Dec. 8, 1898. After two and one-half years at the College of Liberal Arts of the University of Minnesota, his education was interrupted by service with the US Army Medical Corps, American Expeditionary Forces, until 1919. He was graduated from MIT with the degree

tural engineering in 1923, and received the degree of master of science in 1925. While a graduate student, Dean Burchard was assistant to the head of MIT's Department of Civil and Sanitary Engineering, He also served as a part-time instructor in English from 1924-25; in architecture, from 1926-30; and wrote musi-



Burchard as painted by Dean Dorothy Rand Greenough.

cal criticism for the Boston Evening Transcript and the Boston Globe.

Upon completion of graduate work, Dean Burchard joined Bemis Industries, Inc., of Boston, and during a period of 13 years became director of research, vice president, and a member of the board of directors of that corporation and of its subsidiary, Housing Company. It was during this period that he became known for work in housing. In 1938 he returned to the Institute as director of the Albert Farwell Bemis Foundation with the rank of professor.

were consummated for the construction of the Charles Hayden Memorial Library. He served as a member of the Cooperative Committee on Library Building Plans which, under a Rockefeller Foundation grant, prepared a monograph, "Planning the University Library Building," published by the Princeton University Press in 1949. He was chairman of the subcommittee of three charged with producing this monograph. In addition, Dean Burchard served as consultant to numerous universities in library planning.

Meantime, Dean Burchard's involvement with the design and planning of the new library for MIT turned out to have profound effect on the musical life of Boston, indirectly, and on the artistic life of the city directly.

Dean Burchard had a hand in originating the now-popular public rehearsals of the Boston Symphony Orchestra and his interest in these programs grew directly out of what had been some original hopes for the Hayden Library. When the Library was opened, Dean Burchard opened negotiations with the BSO with the hope that Friday and Saturday concerts might be brought to the library by cable for the benefit of students here. While this plan did not materialize, it did lead Dean Burchard into discussions with the BSO trustees out of which came the public rehearsals, originally intended for college students. In addition, Dean Burchard became one of the founders and organizers of the Youth Concerts of the BSO. Here at MIT, Dean Burchard's interests in music led to the establishment of the Humanities Series of concerts and other events of high cultural interest.

Still another way in which Dean Burchard's work on the Hayden Library design had a lasting effect on Boston was through the Hayden Gallery. It was Dean Burchard who was responsible for having the Gallery there in the first place and in the form that it is in. He also started the idea of having visiting exhibitions and raised the first money to support them. In the years since, MIT's Hayden Gallery has become a leading Boston area center for the exhibition of major art shows. In 1949, he was a delegate to the UNESCO conference on documentation in Paris. In August, 1951, Dean and Mrs. Burchard went to Australia at the request of the Australian government and spent three and a half months there and in New Zealand, working on problems of the building of the Australian National Library. He was a member of the eight-man delegation of American educators who visited France and Norway in the summer of 1957 on request of the French and Norwegian governments. He was a member of the panel on Science and Engineering Education of the President's Science

Advisory Committee, which prepared the report issued by the White House on May 24, 1959, entitled "Education for the Age of Science"; and has been a member of the Commission on Instruction and Evaluation of the American Council on Education. In 1960 he was one of four American delegates to a conference in Japan on "Science and Modern Civilization."

Dean Burchard wrote extensive. for periodicals on housing, library planning, architecture, and educational and cultural subjects. He was co-author with Lincoln Thiesmeyer of Combat Scientists and editor of Rockets, Guns and Targets, both of which were in the series dealing with the official history of OSRD; coauthor with Albert Farwell Bemis of The Evolving House; and author of Q.E.D., the history of MIT's activities in World War II. He was consulting editor on architecture of the Encyclopaedia Britannica, member of the editorial board of Daedalus, and was consulting editor of The Architectural Record (1958-61). He has lectured or given principal addresses at almost every major university in the United States and several in Canada, Japan, Pakistan, Australia and India. He served twice as visiting professor at the University of California at Berkeley, and was Lowell Lecturer at the Boston Museum of Fine Arts in 1955.

He was consultant to numerous American universities, including Yale, Princeton, Harvard, Smith College, Wayne State University, Michigan State University, the University of California, Rice Institute, New York University and Georgia Institute of Technology. He was a member of the Board of Trustees at Mount Holyoke College (1951-1961); the Board of Trustees of the Boston Museum of Fine Arts (1957-60); of the Advisory Board of the US Merchant Marine Academy, Kings Point, New York (1953-1960); principal consultant to the Graham Foundation for Advanced Studies in the Fine Arts, Chicago (1955-1960); and chairman of the MIT Press Board (1946-1964). He was awarded insignia of the Ordre des Arts et Lettres (Officier) by the Government of France in 1964. Awarded numerous honorary degrees, Dean Burchard was also a member-at-large of the American Council of Learned Societies (1951-1955), and a member of the Chi Psi and Tau Beta Pi Fraternities, the St. Botolph Club and the Examiner Club as well as a Fellow of the American Academy. Survivors include his wife, the former Marjorie Walker Gaines, and two sons, John Ely Burchard 3rd of Dhahran, Saudi Arabia, and Marshall Gaines Burchard of Boston. Dean and Mrs. Burchard made their home for many years in Bedford, Mass. Since 1968, they made their home in the Beacon Hill section of Boston.

"A great teacher and a distinguished scholar, his place in the history of the Institute is assured and his passing will be mourned by thousands of MIT alumni."

Dean Burchard was celebrated for several books. He was co-author with Albert Bush-Brown, then a professor of architecture at MIT and later president of the Rhode Island School of Design, of the book, The Architecture of America, A Social and Cultural History, published by Atlantic-Little Brown in 1961, which had been commissioned as part of the centennial celebration of the American Institute of Architects and which reviewers said "filled in a major gap" in American architectural literature.

Later books included The Histori-

From 1940 to 1945, Dean Burchard was on leave of absence from the Institute serving progressively as executive officer of a committee of the National Research Council; chief of one of the 18 divisions of the National Defense Research Committee: chairman of the two ad hoc committees engaged in studying the problems of navigation and of demolition of obstacles to landing operations-both in preparation for the great amphibious operations which marked the last phase of the war; and deputy chief of the Office of Field Service. Dean Burchard headed four military-scientific missions to theaters of operation which included the United Kingdom, the Caribbean, the Central Pacific, and Germany. In recognition of his war efforts he was awarded the Medal for Merit, the nation's highest civilian award, by President Truman in February, 1948.

Dean Burchard returned from war work in 1946 to take up duties as director of Libraries of the Institute, a post to which he was appointed in

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