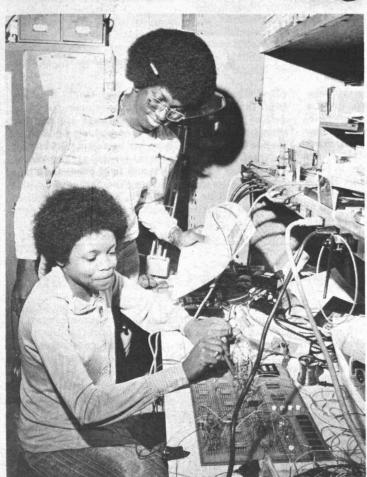
Massachusetts Institute of Technology July 20, 1977 Volume 22 Number 2

Lincoln Offers Program for Minority Undergraduates



Willie Ann Brown, seated, of Jackson, Miss., and Gregory Williams of Indianola, Miss., are in their second year with a unique program at Lincoln Laboratory designed to expand career opportunities for minority undergraduate students.

-MIT Photo by Calvin Campbell

By ROBERT C. DiIORIO Staff Writer

A unique program designed to expand career opportunities for minority undergraduate students has begun its third year at MIT's

Lincoln Laboratory.
Twenty-one students, selected from predominantly black colleges in the South or Southwest, are participating in the Work-Study Program this year, 10 for

the first time. The students are taking courses and handling specific work assignments at Lincoln Laboratory, a federally spon-sored center for research and development in advance electron-

The students' work assignments reflect a broad range of activities underway at Lincoln Laboratory which extend from fundamental investigations in science through technological development of devices and components to the design and development of complex electronic systems.

For example, Willie Ann Brown, a physics major at Jackson State University in Jackson, Miss., and a second-year student in the program, wrote computer programs last year that were used in determining the noise levels of infrared camera digitalization systems. Glen T. Goeloe, an electrical engineering major from Southern University in Baton Rouge, La., also in his second year with the program, assisted in the fabrication of silicon devices and in tests to improve the quality of such devices. He also learned to make diodes, transistors, resistors, and capacitors.

Sheila M. Rogers, an electrical engineering student from Tennessee State University in Nashville, Tenn., who has completed two years in the Lincoln Laboratory program, was assigned to the Data Systems Division last year and was involved in a study of digital devices.

The program had its beginnings four years ago with discussions involving Lincoln Laboratory officials and Dr. Frederick S. Humphries, then executive director of the Institute for Services to Education (ISE), an organization located in Washington, D.C. that specializes in the problem of equalizing educational opportunities.

"The ISE held its annual meeting in Boston four years ago," recalled Henry W. Fitzpatrick, assistant director of the laboratory. "We were interested in transferring some surplus material to black colleges and contacted the ISE for an appointment during the annual meeting. The group which came to the laboratory was headed by Dr. Humphries. When we met, we found we discussed black education in general more than we discussed surplus property.

Several of the black college

representatives pointed out at the meeting that the number of minority students entering engineering was low and that the dropout rate for minority students was high. Mr. Fitzpatrick, aware that the laboratory's 20-year-old Staff Associate Program which trains people for graduate engineering degrees, had not been heavily used in recent years, decided to explore whether these two numerical facts of life could be brought together in a way that might be helpful.

Mr. Fitzpatrick, along with John Dargin, the laboratory's personnel manager, and Dr. Clarence Williams, special assistant to the president and to the chancellor for minority affairs, met again with Dr. Humphries and worked out the broad outline of a program.

"We agreed what was really needed was hands-on engineering experience during the undergraduate years," Mr. Fitzpatrick said.

Lincoln Laboratory then enlisted the help of the Department of Electrical Engineering and Computer Science and the Department of Physics. Dr. Arthur C. Smith, graduate officer of the electrical engineering and computer science department and Dr. Anthony P. French, academic officer for the physics department, were involved in the initial meeting. Dr. Smith has maintain-

(Continued on page 4)

James Wei to Head Chemical Engineering

Dr. James Wei, widely noted for his pioneering research, industrial accomplishments and academic contributions, has been appointed Warren K. Lewis Professor of Chemical Engineering and head of the Department of Chemical Engineering, effective Sept. 1.

He is presently the Allan P. Colburn Professor of Chemical Engineering at the University of Dela-

Dr. Alfred A. H. Keil, Dean of the School of Engineering at MIT, announced the appointment and said that Professor Wei (pronounced way), in fulfilling a commitment made several months ago, will be at the California Institute of Tech-Sherman Fairchild Distinguished Scholar of Chemical Engineering.

Major Groups Meet on Campus

Two large groups are meeting on campus this week.

About 140 persons, primarily from industry, are attending a five-day seminar (Monday through Friday) presented by the MIT Center for Information Systems Research. The meeting concerns recent findings on major issues in the information systems area.

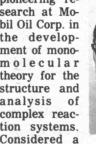
About 750 people, including guests, are attending the 5th International Conference on Crystal Growth. MIT Professor August P. Witt of the Department of Materials Science and Engineering, is president of the sponsoring organization, the American Association for Crystal Growth. The conference continues through Friday, Ju-

Dr. Raymond F. Baddour, Lammot du Pont Professor of Chemical Engineering, asked to be relieved of his responsibility as MIT department head in July 1976 after having served in the position for seven years. Dr. Kenneth A. Smith accepted the appointment as acting

head of the department. "Professor Smith led the department through a challenging period when undergraduate enrollment grew substantially, sponsored research increased significantly, a new practice school station was established and active recruitment resulted in addition of four new faculty members to the department," Dean Keil said.

Professor Wei is a distinguished chemical engineer who is national

known for pioneering research at Mobil Oil Corp. in the development of monomolecular theory for the structure and analysis of complex reaction systems. Considered a



major contribution to the chemical engineering literature, Professor Wei's work resulted in three awards, one of them the American Institute of Chemical Engineers' Professional Progress Award, which is only rarely given for work carried out while in an industrial

Professor Wei's work became the foundation for Mobil Oil Corporation's computer models of refinery processes. He followed up

(Continued on page 3)

It's Hot!

For members of the community required to work or study in non-air-conditioned space, the Medical Department recommends following common sense for maximum comfort.

Wear light clothing. Drink plenty of liquids. Use fans to help move air

Stay out of the sun-there is often a 10 to 15-degree difference in temperature between sunny and shaded areas.

Richardson Wins NCAA Scholarship

Frank Richardson of Sac City, Iowa, MIT's greatest distance runner, has been named a recipient of the National Collegiate Athletic Association Postgraduate Scholarship. This marks the first time ever that a Tech trackman has been so honored by the NCAA Scholarship Committee.

Richard compiled a spectacular collegiate career record at MIT, winning four All American honors. He placed fourth in the 1975 NCAA Division III three-mile run and finished fourth and fifth in the 1975 and 1976 National Division III Cross Country Championships.

More recently, Frank won the Greater Boston three-mile and the Eastern College Division six-mile and was runner-up in the IC4A 10,000 meters. He then topped off his collegiate career by placing first in the NCAA Division III 10,000 meters last month. This win qualified him for the University Division Championships held at the

(Continued on page 5)

Memorial Service Friday For Professor J.H. Keenan

at 9:30am Friday at the Friends Meeting at 5 Longfellow Park, Cambridge, for retired MIT Professor Joseph H. Keenan of Belmont and Nantucket, an internationally recognized authority on thermodynamics.

Professor Keenan, 76, died Sunday at Mt. Auburn Hospital a few hours after being stricken at his home in Belmont. He had staunchly maintained an active life while battling lung cancer for the last three years. Only two years ago he travelled to Iran to lecture on thermodynamics.

A member of the MIT Department of Mechanical Engineering

faculty since 1934, Professor Keenan was known for his outstanding research on the thermodynamic properties of steam. One of his major works, textbook,

the Thermody namics, published in 1941, has had

a continuous and widening in-

A memorial service will be held fluence on teachers of thermodynamics in all branches of engineering and is considered to be the basis of the modern day teaching of thermodynamics, the study of the mechanics of heat. The book was translated into Russian in

Professor Keenan, who once described thermodynamics as the study of water "gone crazy with the heat," was widely recognized for the development in 1936 of an orderly and rational set of steam tables, Thermodynamic Properties of Steam, which quickly were put into use worldwide. He later coauthored volumes of Air Tables and Gas Tables which had similar influences in the then developing

(Continued on page 8)

Next Issue

The next issue of Tech Talk will be published on August 10. The Institute Calendar for that issue will cover the period of August 10 through September 4. Deadline for entries for the calendar, classified ads and notices will be Friday, August 5, at noon.

MIT to Host International Polymer Conference

More than 100 leading scientists, engineers, industrialists and educators will take part in the first International Conference on Polymer Processing to be held Aug. 15-18 at MIT.

Professor Nam P. Suh of MIT. conference chairman, said the goal of the conference is to establish more productive programs of re-

search and development and to increase the rate of technological innovations. Ten invited lectures and 57 papers will be given during the four-day conference.

Professor Suh of the MIT Department of Mechanical Engineering is head of the MIT-Industry Polymer Processing Program. The program

(Continued on page 4)

Piano Recitals to Conclude Summer Concert Series

Piano recitals by John Buttrick on Friday, July 22, and by Beatrice Erdely on Tuesday, July 26, will conclude the MIT summer concert

Both concerts, sponsored by the MIT Music Section, will be at 8pm in Kresge Auditorium. The public is invited to attend free of charge.

Mr. Buttrick will play two preludes and fugues from Bach's Well-Tempered Clavier, Book II; Beethoven's Sonata No. 21 in C Major, Opus 53; The Cypresses of the Villa d'Este and Funerailles by Liszt, and Twenty-four Preludes, Opus 75, by Chopin.

Mrs. Erdely will play a Sonata by Marcello-Bartok; Mozart's Sonata in A Minor, K. 310; Brahm's Variations on a Theme by Robert Schumann, Opus 9, and Chopin's B Minor Sonata, Marcello originally wrote the sonata for cembalo, an early keyboard instrument, and organ; Bartok transcribed it for

piano. Mr. Buttrick, associate professor of music at MIT, has studied with Isidor Philipp, Rudolf Serkin and Beveridge Webster while attending the Juilliard School of Music and the Marlboro Festival School of Music.

He made his first European tour in 1961. Subsequent annual tours have taken him to major cities of England, Germany, Switzerland,



Austria and Israel. In the past year he went on a concert tour of Israel, Switzerland and Germany and gave a concert series in California.

His solo recitals have been augmented by appearances as chamber music collaborator and orchestral soloist with orchestras in Boston, Philadelphia, Chicago, Dallas and Los Angeles. He has played for many European radio stations and has recorded the complete Chopin Mazurkas and works of Mozart and Liszt.

Mrs. Erdely began piano studies at the American Conservatory of Music in Chicago. Among her teachers were Heniot Levy and later, Eduard Steuermann of the Juilliard School of Music.

She won the Society of American Musicians competition and was presented in debut at Orchestra Hall in Chicago. She later performed at Town Hall, Station WQXR and the ABC network. She has been soloist with the Chicago

Rotberg to Chair **AHA** Committee

Robert I. Rotberg, professor of history and political science in the Department of Political Science, has been elected chairman of the nominating committee of the American Historical Association.

The association with 16,000 members, is the world's largest academic professional organization in the humanities and social sciences.

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



Symphony, the Grant Park Symphony and the Cleveland Orches-

She performs with her husband, violinist Stephen Erdely, as the Erdely Duo. Together they have given recitals in New York, Cleveland, Washington, D.C., Boston, and at colleges throughout the US.

Mrs. Erdely is on the piano faculty of the New England Conservatory of Music and teaches at Brandeis University



July 20 - August 10

11am-1pm

RHETORIC & JOURNALISM (Course 21.940) with Ed Diamond, Guest: Clay Felker. Recorded BASEMENT VIDEO PRESENTS

"Brother Blue".

THE PRESIDENT & THE PRESS
(Course 17.27) with Ed Diamond.
Recorded 3/24/77.
BASEMENT VIDEO PRESENTS
"Brother Blue".

Thursday, July 21 Channel 8

SIGVARD EKLUND Director General of the International Atomic Energy Agency. Recorded 3/24/77 for the "World Change & World Security" lecture series.

12noon-1:30pm

THE PHYSICIST. Produced by the Video Club.

Friday, July 22 Channel 8: 12noon-1pm

THE PRESIDENT & THE PRESS (Course 17.27) with Ed Diamond Recorded 3/24/77.
RHETORIC & JOURNALISM (Course 21.940) with Ed Diamond. Guest: Clay Felker. Recorded 3/18/77.

1-3pm

BASEMENT VIDEO PRESENTS "Brother Blue".

Monday, July 25 Channel 8: 11am-12noon

12noon-1pm

THE PRESIDENT & THE PRESS

(Course 17.27) with Ed Diamond. Recorded 3/24/77. CAMERA TECHNIQUES FOR VIDEO TAPE/LIGHTING FOR

VIDEO TAPE PRODUC-VIDEO SYSTEM/HOW TO PRO DUCE A VIDEO TAPE PRO GRAM/HOW TO PERFORM ON TELEVISION and A PRACTICAL GUIDE TO SETS AND PROPS VIDEO TAPE PRODUC TION. A series of instructional tapes for people interested in lear-ning about video tape production. Produced by 3M Company, each tape runs for approximately 20

RHETORIC & JOURNALISM (Course 21.940) with Ed Diamond. Guest: Clay Felker. Recorded

Tuesday, July 26

Channel 8: 12 noon-1pm 3-4:30pm

BASEMENT VIDEO PRESENTS

"Video Dancing".
WILLY BRANDT Chairman of the Social Democratic Party of Ger-many and President of the Socialist International. Recorded 3/9/77 for the "World Change & World Security" lecture series.

Wednesday, July 27 Channel 8: 11am-12noon R

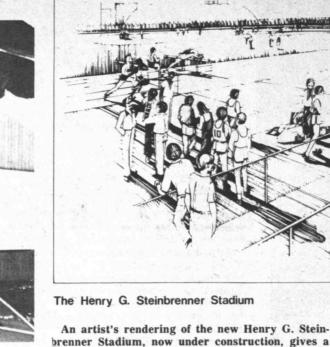
RHETORIC & JOURNALISM (Course 21.940) with Ed Diamond. Recorded 3/25/77. BASEMENT VIDEO PRESENTS

1-2pm 2-3pm

4-5pm

"Video Dancing".
THE PRESIDENT & THE PRESS (Course 17.27) with Ed Diamond Guest: George McMillan. Record-

BASEMENT VIDEO PRESENTS "Video Dancing".



The Henry G. Steinbrenner Stadium

An artist's rendering of the new Henry G. Stein-

tion this fall. Mr. Steinbrenner, a Great Lakes shipping executive, was a star of MIT's track team in his four years at the Institute. He was captain in his senior year and is the only MIT runner ever to have won an outdoor national track championship. He received the SB degree in naval architecture and engin-

eering in 1927. The Henry G. Steinbrenner Stadium

will be located 90 feet west of the existing field track

good idea of how the facility will appear upon comple-

Thursday, July 28 Channel 8

WILLY BRANDT Chairman of the 10-11:30am WILLY BRANDT Chairman of the Social Democratic Party of Germany and President of the Socialist International. Recorded 3/9/77 for the "World Change & World Security" lecture series.

AN EYE TO THE PAST "Social Beaver" & "A Bell for MIT". 1-2pm

Friday, July 29 12 noon-1pm

1-2pm

THE PRESIDENT & THE PRESS(Course 17.27) with Ed Diamond. Guest: George McMillan. Recorded 4/7/77. RHETORIC & JOURNALISM (Course 21.940) with Ed Diamond. Recorded 3/05/77.

Recorded 3/25/77 BASEMENT VIDEO PRESENTS

4-5pm

Monday, August 1 Channel 8:

2-3pm

11am-12noon

THE PRESIDENT & THE PRESS (Course 17.27) with Ed Diamond. Guest George McMillan. Recorded RHETORIC & JOURNALISM

(Course 21.940) with Ed Diam Recorded 3/25/77.

Tuesday, August 2 Channel 8: 11am-12noon

ORIENTATION TO THE HEAR-ING IMPAIRED CHILD BASEMENT VIDEO PRESENTS 12noon-1pm 3-4:30pm

"Time Machine".

DAVID HAMBURG President of Institute of Medicine of the US Na tional Academy of Sciences. Recorded 3/21/77 for the "World Change & World Security" lecture series.

Wednesday, August 3

Channel 8: 11am-12noon

RHETORIC & JOURNALISM (Course 21.940) with Ed Diamond. Guest: John Driscoll of the "Boston Globe". Recorded 4/8/77. BASEMENT VIDEO PRESENTS "Time Machine". BASEMENT VIDEO PRESENTS "Time Machine".

Thursday, August 4

10-11:30am

DAVID HAMBURG President of the Institute of Medicine of the US National Academy of Sciences. Recorded 3/21/77 for the "World Change & World Security" lecture

ORIENTATION TO THE HEAR ING IMPAIRED CHILD 12noon-1pm

Friday, August 5

RHETORIC & JOURNALISM Guest: John Driscoll of the "Boston Globe". Recorded 4/8/77.
BASEMENT VIDEO PRESENTS

Monday, August 8

4-5pm

Channel 8

10-11am

CAMERA TECHNIQUES FOR VIDEO/TAPE LIGHTING FOR VIDEO TAPE PRODUCTION/SET UP AND CARE OF A VIDEO SYSTEM. A Series of instructional tapes for people interested in learning about video tape production. Produced by 3M Company, each tape runs for approximately 20 minutes.

RHETORIC & JOURNALISM (Course 21,940) with Ed Diamond. Guest: John Driscoll of the "Boston Globe". Recorded 4/8/77. 2-3pm

Tuesday, August 9

Channel 8: 11am-12noon

HOW TO PRODUCE A VIDEO TAPE PROGRAM/HOW TO PER FORM ON TELEVISION/A
PRACTICAL GUIDE TO SETS
AND PROPS FOR VIDEO TAPE
PRODUCTION. Produced by 3M Company.

BASEMENT VIDEO PRESENTS

12noon-1pm

4-5pm

"MIT Housing".
ROBERT MCNAMARA President 3-4:30pm

of the World Bank. Recorded 4/20/77 for the "World Change & World Security" lecture series.

Channel 8: 1-2pm

BASEMENT VIDEO PRESENTS "MIT Housing".

BASEMENT VIDEO PRESENTS

Newberne Serves On Water Panel

Dr. Paul Newberne, professor of nutritional pathology in the MIT Department of Nutrition and Food Science, is a member of the National Research Council Committee on Safe Drinking Water which has just completed an 18-month study of US municipal water supplies.

The findings of the Committee, whose study was mandated by the Safe Drinking Water Act of 1974, are contained in a summary report delivered recently to Congress and the Environmental Protection Agency.

The full report, a 1,000-page compendium of potentially adverse effects of 161 different elements and compounds, both natural and artificial, will be published in a few weeks, according to NRC.

The summary report says that although there is "no hard evidence" that at current levels any of the compounds found in US drinking water causes cancer, the abundance of uncertainties about their toxic and carcinogenic effects demands "a cautious approach."

Massachusetts Institute of Technology

which it will replace. The outdoor track, field and

game facility will have a 400-meter running track, as

well as facilities for the steeplechase and all field

events except the hammer throw which will be held

outside the stadium. There will be a game field within

the track oval and permanent seating arrangements.

The surface for the track and field events will be a

synthetic all-weather surface. The game field within

the oval will be natural turf. The stadium will be

dedicated at the first track meet to be held in April

Armstrong Book Out

Robert C. Armstrong, assistant professor in the MIT Department of Chemical Engineering, has collaborated with three former or present members of the University of Wisconsin faculty on texts recently published by John Wiley and Sons Inc. of

Dynamics of Polymeric Liquids, Vol. 1: Fluid Mechanics and Vol. 2: Kinetics Theory discuss the experimental data and molecular theories which describe polymer solutions and melts.

INSTITUTE **NOTICES**

Announcements

Freshman Advisors-Needed for the 1977-78 academic year to assist freshmen with various academic and non-academic decisions and situations they will face. If you'd like to get to know a few freshmen well and feel you can offer something to them in their adjustment to MIT, contact Freshman Advisory Council, Rm 7-103, x3-6771 for information.

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

Family Day Care Program—Child Care Office is currently accepting applications. If you are interested in caring for infants or toddlers in your own home, please call Child Care Office, Rm 4-144, x3-1592.

Religious Activities

The Chapel is open for private meditation 7am-

United Christian Fellowship*-MIT-IUCF prayer, singing, bible study and fellowship, Wed, 7pm, Rm 1-236. Info: Bill Spencer

Tech Catholic Community*-Mass, Sun, July 24, 31 & Aug. 7, 9:30am, Kresge Little Theatre

Club Notes

Beginner's Sailing-Instruction, Weds, 5:15pm, thru summer, MIT Sailing Pavilion.

MIT Bridge Club*-ACBL duplicate open pairs game Thurs, 7pm, Stu Ctr Rm 407. Info: 494-8593. Admission .25.

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

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

MIT Goju Karate Club*-Instruction, Wed & Fri, 7-9pm, Stu Ctr Rm 491 or 407. Info: x3-2018. Hobby Shop**-Mon-Fri, 10am-6pm, Rm

W31-031. Fees: \$10/term for students, \$15/term for community. Info: x3-4343. MIT Juggling Club*-Juggling practice and

get-together Suns, 12:30-4:30pm, Kresge Oval (in front of Stu Ctr). We teach beginners. MIT Nautical Association**-Basic Shore School, Wed, 5:30pm, MIT Sailing Pavilion, free. Racing***-Summer series racing. Tues and Thurs; Novice Racing Clinic, Mon.;

5:30pm, MIT Sailing Pavilion, free Tech Model Railroad Club-Meetings, Sat,

20E-214, x3-3269 Tech Squares*-Club Dance, Tues, 8-11pm, 2nd Fl. Stu Ctr. for club level dancers. Admission \$1.00. Fall Krash Kourse (free beginner class), Tues, 8-11pm, beginning Sept. 13, 2nd Fl Stu Ctr. Info: Marianne, x3-6724.

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Mandatory Measures Needed For Energy Conservation

Two engineering experts, writing in the current issue of Technology Review, say significant energy conservation won't occur in the industrial sector unless the government enacts strong mandatory measures requiring improvements in energy efficiency.

Boosting energy prices won't provide sufficient stimulus for industrial conservation, say Thomas F. Widmer of Thermo Electron Corp., Waltham, Mass., and Professor Elias P. Gyftopoulos of the MIT Department of Nuclear Engineering, because energy costs still average well below 10 per cent of value added for all manufacturing.

"Thus, even large additional rises in fuel prices will not necessarily place overwhelming conservation pressures upon manufacturers,' they wrote.

Mr. Widmer directs Thermo Electron's engineering and product development programs and is involved in efforts to make advanced energy technology available commercially. Professor Gyftopoulos, Ford Professor of Engineering at MIT, has extensive academic and industrial experience in theoretical studies of energy systems as well as energy policy and technology. Their article is based on energy conservation work being done at Thermo Electron, of which Professor Gyftopoulos is a director.

Mr. Widmer and Professor Gyftopoulos said that it is "quite certain" that each energy-consuming task can be reorganized "to achieve the same result at equal or lower cost, and use far less energy.

"There is an enormous opportunity for reduced energy consumption per unit of product in every sector of the economy and if we do not take advantage of this opportunity our economic well-being and security will be endangered.

There are "firm technical and economic bases that underlie this seemingly bold assertion," they

"Re-optimizing energy end-uses will, of course, require long-term commitments involving significant restructuring of all sectors of society," the authors said. "This restructuring cannot happen automatically because of many institutional barriers and many distortions of the free market system introduced by past

"But these barriers and distortions are not insurmountable. They can be largely eliminated if we attack them with a comprehensive energy policy . .

The article includes a description of an accelerated conservation policy proposed by the authors.

Measures of various energy-using tasks have given low efficiency ratings, the authors continued. For example, residential and commercial space heating has a rating of 6 per cent, air conditioning and refrigeration 5 per cent and paper production less than 1 per cent, they said.

'We're not suggesting that energy efficiency will ever approach

Mr. Widmer and Professor Gyftopoulos said.

efficiencies indicate the enormous opportunity for energy savings. . . No fundamental scientific barriers exist to prevent substantial improvements in energy end-use effectiveness," the authors emphasize

"There are clear and compelling economic advantages to the nation for conserving more energy," they wrote. "Before this can occur, however, we must resolve the differences between two different sets of economic assessments that ultimately determine how we balance energy conservation. The problem is that investment decisions on conservation are generally made by a completely different group than that responsible for capital investments in energy supply. These two groups op-

cesses, even in the remote future," erate under substantially different ground rules for return-on-investment and access to capital markets . . . Thus, it is totally unrealistic to suppose that the so-called 'free market' approach will produce an optimal allocation of the nation's scarce capital resources among energy supply and conservation op-

> "Nothing resembling a free marketplace exists today, given the fact of cartel pricing for petroleum, and considering the long history of massive federal subsidies to the energy supply industry-research and development grants, depletion allowances, guaranteed return on utility investments, etc.

"This fact has often been obscured by those who promote price deregulation as the only means for a comprehensive energy policy.'

ames Wei to Head

(Continued from page 1) the application of the theories he developed through Mobil's applied research laboratories and then through the engineering design and control of commercial refinery

His research accomplishments and his industrial and consulting experiences have gained for him a professional reputation which is among the finest in the chemical engineering world.

Professor Wei received his bachelors degree in chemical engineering from the Georgia Institute of Technology in 1952 and the SM and ScD degrees from MIT in 1954 and 1955. He joined Mobil Oil Research of research chemical engineer to senior scientist or research in catalysis and reaction engineering, applied mathematics and petroleum refining over a period of 13 years

After attending the Advanced Management Program at Harvard's Graduate School of Business Administration in 1969, he became the manager of longrange analysis and long-range forecast and planning of supply and demand of energy for Mobil Oil Corp. He served in that position until 1970.

The following year he joined the University of Delaware as Allan P. Colburn Professor of Chemical Engineering and since then has carried out research and teaching in catalysis and reaction engineering, transport in biological systems, control of emissions, coal gasification and the economics of the chemical processing industry.

He was visiting professor of chemical engineering at Princeton University in 1962-63 and visiting professor of chemical engineering at the California Institute of Technology in 1965.

Professor Wei has been a consulting editor since 1964 for the McGraw-Hill Series in Chemical 100 per cent for real devices or pro- Engineering, a member of the executive board of Chemical Technology since 1971, a member of the editorial advisory board of Chemical Engineering Communications and of the editorial board of Industrial and Engineering Chemistry Reviews since 1972 and a member of the editorial board of the Journal of Bioengineering since 1976.

Mobil Oil Corporation, Battelle Memorial Institute and Minnesota Mining and Manufacturing Co. and an adviser to the National Institute of Environmental Health Sciences, the National Science Foundation and the Environmental Pro-Agency, and has served on committees and panels of the National Academy of Sciences.

His awards include the American Chemical Society's Petroleum Chemistry Award in 1966 and the American Institute of Chemical Engineers' Professional Progress Award in 1970. In 1968 he was Institute Lecturer on Catalysis and Reactors for the AIChE. In 1973 he was the Peter C. Reilly Lecturer at the University of Notre Dame and in 1974 he was the Richard H. Wilhelm Lecturer at Princeton and the plenary lecturer at the Third International Symposium on Reaction Engineering in Evanston, Ill.

Professor Wei is a member of the AIChe and the American Chemical Society. His work with the AIChE includes membership on the program committee since 1964, membership on the awards committee since 1970 and its current chairman; director and a member of the council, 1970-72; chairman of the education subcommittee of the Dynamics Objectives Committee, 1975-77, and US coordinator of the World Congress on Chemical Engineering, held last year in Amsterdam.

He is also a member of Sigma Xi, Tau Beta Pi, Phi Kappa Phi, Alpha Chi Sigma, the American Association for the Advancement of Science and the American Association for University Professors

He has been a consultant to the

Faithful mechanical steeds, parked in herringbone pattern atop West Garage await the return of their drivers. -Photo by Calvin Campbell

School of Science Appointments Announced from Yale University.

Three new appointments have been made in the School of Science, and one promotion has been announced.

The new appointees are: William H. DuMouchel, appointed associate professor of applied mathematics in the Department of Mathematics for three years beginning July 1, 1977; Eugene B. Trubowitz, appointed assistant professor in the Department of Mathematics for three and one-half years, beginning January 1, 1978; and Rick L. Danheiser, appointed assistant professor in the Department of Chemistry for three years beginning July 1, 1977. John G. Sclater has been promoted to professor from associate professor, beginning July 1, 1977.

Dr. DuMouchel, who specializes in statistics, is associate editor of the Journal of the American Statistical Association. He has taught at University College, in London, England, the University of Michigan, and the University of California in Berkeley. He received his SB from the University of

Dr. Trubowitz has written on Hill's operator, the inverse problem for periodic potentials, and Hill's surfaces. He received his SB from New York University in 1973, and his PhD from the Courant In-

stitute in 1977.

Dr. Danheiser is a member of Phi Beta Kappa, and Phi Lambda Upsilon, the honorary chemical society. He received his AB from Columbia College in 1972, his AM from Harvard University in 1975, and his PhD at Harvard in 1977.

Professor Sclater, a native of Edinburgh, Scotland, was assistant research geophysicist at the Scripps Institution of Oceanography until 1972, when he was appointed associate professor of marine geophysics at MIT. He has been chief scientist on six expeditions, and co-chief scientist on three others. He is a member of the Geological Society of America, and the American Geophysical Union. From 1975 to 1976, he was Swiney Lecturer at Edinburgh University. He received the BSc in physics from Edinburgh University in 1962, Detroit in 1965, his SM in 1967, and the PhD from Cambridge Uni-MPhil in 1968, and PhD in 1971, all versity in 1966.

Received in World Capitals WAES Study Widely

Reports reaching MIT from 15 world capitals indicate that the recently published study of the Workshop on Alternative Energy Strategies (WAES) has received wide recognition as an accurate assessment of global energy options in the period 1985-2000.

Three heads of state-in Japan, Sweden and Iran-have been briefed on the report by members of the WAES team and the report is being translated into Persian, French, Swedish, Japanese and Portuguese. Plans for additional translations are being made.

WAES, a project sponsored by MIT in association with the MIT Energy Laboratory, was directed by Professor Carroll L. Wilson, Mitsui Professor in Problems of Contemporary Technology, Emeritus, at the Sloan School of Management.

Its report, Energy: Global Prospects 1985-2000, published by McGraw-Hill Book Co., was made The major newsmagazines, both

public May 16 at news conferences in Washington, D.C., and in the capitals of the 14 other nations from which the 35 WAES participants came.

The participants-leading business, government and academic figures-were called together for the unique two-and-a-half-year study by Professor Wilson who conceived the WAES format as an experiment in dealing with global problems.

The conclusions of the WAES report were widely reported in the world press and on radio and television. There were extensive frontpage articles in several major newspapers, the London Times, the Financial Times of London, the New York Times, the Washington Post, and the Los Angeles Times, among them. The Associated Press and United Press International moved reports of the WAES news conference on their wires.

I. Freeks Stri

here and abroad, printed accounts. In Iran, the Kayhan International carried the following headline: Monarch Endorses Global 'Energy War Call.'

(Although the word "war" does not appear in the WAES report, many press accounts carried the word in the context suggested by the Iranian headline, probably because the final WAES conclusion underscores the necessity of a unity of purpose and a willingness to mobilize "never before attained in time of peace." The word "war" also had been used widely by the press in April, the month before the publication of the WAES report, in reporting President Carter's call for the "moral equivalent of war" in solving the energy

In the days immediately following the May 16 news conference in Washington Professor Wilson

appeared on the NBC-TV program, Today; was interviewed for a CBS-TV energy special to be aired Aug. 31; lectured in London under the auspices of the Fellowship of Engineering and the Royal Society; met in Tokyo and Osaka with the Japanese members of the WAES team and briefed the Prime Minister on the report; met in Stockholm with Sweden's Prime Minister and members of the Parliamentary Energy Commission; lectured in The Hague as a guest of the Royal Institution of Engineers; testified before the House Ways and Means Committee, and briefed Sen. Henry Jackson.

In addition William F. Martin, a program officer with WAES, participated in a seminar with the House Ad Hoc Committee on Energy, and Paul Basile, also a WAES program officer, and David Sternlight, chief economist for Atlantic Richfield Co., who was a WAES associate, wrote an article for the June issue of Technology Review, the magazine of science and technology published at MIT.

There remains, in the words of Professor Wilson, "a massive task of public education.'

"It appears," he told WAES participants in a recent report, "that the WAES report is becoming accepted as the most authoritative assessment of global energy options in the period 1985-2000.

"Increasingly it is also understood that actions taken now can have only limited effect by 1985. but unless they are taken now the formidable changes after 1985 can have catastrophic impacts."

Tech Talk, July 20, 1977, Page 3



Kim T. Hylton of Mt. Vernon, N.Y., waits for the crash that didn't come.



"Timber." The foundation of Tereska A. Roberts' tower lets her down. She is from Petersburg, Va.



Looking good is the design of I Barl

MITE Excites

The object: Design and build a cards and staples-that will sup- highlight of the two-week program. about four pounds.

The contestants: 37 high school MIT public is invited. students spending two weeks at Introduction to Engineering The winner was selected from the now in its third year, is designed to on the basis of cost of construction, motivate minority students to con- assuming a cost of \$1 for each sider engineering as a career. card, each fold of a card and each Seven students who were in the staple used. Cardona's design cost MITE program last year, will a spartan \$31. enter MIT in September.

The tower contest is a warm-up structure-using only computer to a bridge-design competition, the port a common brick which weighs about four pounds. It will be run on Friday, July 22 in Rm 4-249, from 9am to 3pm. The

Edward Cardona of Carona, MIT taking part in the Minority N.Y., built the winning card tower. (MITE) program. The program, devices which supported the brick

Dr. Ernest G. Cravalho, associ-The program, sponsored by the ate dean for educational programs Office of the President and Chan- in the School of Engineering, dicellor, exposes the students to the rects the program for MIT. Workeight fields represented by the de- ing with Dean Cravalho in the propartments in the School of Engin- gram is Richard Willemann, a eering and to the nature of engin- teacher at Wellesley Junior High

NRC Appointee Disagrees With President's Policy

The Wall Street Journal, reporting Tuesday, July 19, on Senate confirmation hearings involving MIT Professor Kent F. Hansen, whom President Carter has nominated to the Nuclear Regulatory Commission, said the professor disagrees with the President on a key nuclear issue.

The headline said: "Nominee to NRC/Scores Carter Stand/On Breeder Reactors." The subhead said: "MIT Professor, Unwittingly Picked by President, Backs Project at Clinch River."

The Journal's reporter began the article: "President Carter unwittingly nominated for the Nuclear future. Regulatory Commission an indivi-

policy on nuclear breeder reac-

The report said that Professor Hansen of the Department of Nuclear Engineering at MIT told the Senate Environment and Public Works Commission that he disagrees with Mr. Carter's attempts to kill a nuclear breeder reactor project at Clinch River, Tenn.

Professor Hansen was quoted as saying the cancellation of the project would be "premature" and that the \$1.9-billion plutonium-fueled plant "should be built" because breeder reactors are needed as alternative energy sources for the

The article continued: "Later, dual who opposes White House Mr. Hansen told reporters that

Neustadtl Named MIT to Host International ME at Review Polymer Conference Sara Jane Neustadtl of Cam-

bridge, a member of the board of editors at Technology Review since 1973, has been appointed managing editor of Technology Review, John I. Mattill, editor, has announced.

Ms. Neustadtl succeeds Dennis L. Meredith who has left MIT to be-

come director of the News Bureau at the California Institute of Technology Pasadena. Mr. Meredith is the author of two books, Father Power (New York: David McKay, Co.,

1974) with Henry Biller and Search at Loch Ness (New York: Quadrangle/The New York Times Book

Ms. Neustadtl received the BS degree in 1971 and the MS degree in 1973, both from the College of Communications at the University of Illinois, Urbana. While at the University of Illinois she worked at the College of Engineering Publications Office as editor of the newsletter, "Engineering Outlook."

At the Review, Ms. Neustadtl has been responsible for the 'Trend of Affairs' section of the magazine.

viewed him for the post, including energy adviser James Schlesinger, didn't ask for his opinion of the Clinch River project . ."

(Continued from page 1) was initiated four years ago by seed funding provided by the Experimental R&D Incentives of the National Science Foundation (now the Industrial Program of the NSF's Research Applied to National Needs Program) as an experiment for cooperative research between

universities and industry.
"This conference," Professor Suh said, "is organized to reflect this cooperative spirit and to promote this type of interaction between academia and industry.'

Sponsors of the program and conference, in addition to MIT and the NSF, are AMP, Inc., General Motors Corp., Goodyear Tire & Rubber Co., Instrumentation Laboratory, Inc., ITT Corp., Kendall Co., Rogers Corp., and USM-Bailey Div.

"Over the past 20 years," Professor Suh said, "the polymer pro-cessing industry has experienced a period of significant growth and development. As a consequence, the amount of new knowledge and the number of new problems to be solved have also increased greatly.

'This conference will attempt to establish the state of fundamental knowledge and assess the major problem areas for future work in the field by bringing together leading scientists, engineers, industrialists and educators in an international

Conference sessions will be held White House officials who inter- in Kresge Auditorium on the MIT campus.

> Among the most important accomplishments of the MIT-Industry Polymer Processing Program during its first three years are a new

electrical-mechanical mixing process for viscous liquids; fiberreinforced plastics that are two and one-half times tougher than regular composites; a quick and direct processing technique for thermoplastics and a reaction injection molding machine that can deliver a large amount of liquid resins at a very fast rate. Nine patent applica-tions have been filled by MIT on these processes and three patents have been issued by the US Patent Office. The patents are based on graduate students'thesis work published in leading scientific and engineering journals. Industrial firms are planning to use some of these processes.

diSessa Promoted

Dr. Andrea A. diSessa of Bedford, special lecturer in the MIT Division for Study and Research in Education (DSRE) since 1975, has been promoted to assistant professor in DSRE.

Professor diSessa's primary interest is the development of more intuitive and learnable ways of presenting mathematics and physics at the secondary and university levels. This summer, for the second consecutive year, he is associate director of a National Science Foundation sponsored program for high-ability high school students in mathematics, physics and computer science.

He received the AB degree from Princeton University in 1969 and the PhD degree from MIT in 1975, both in physics. Since 1972 he has been a member of the MIT Artificial Intelligence Laboratory's

Lincoln Offers Program for Minority Undergraduates

ed a close involvement in providing planning, counseling and tutorial services.

Thus was born the Lincoln Laboratory Summer Work-Study Program. Ten engineering or physics students are brought into the program each summer, following completion of their freshman year. Those who successfully complete the summer of work and related study are invited back for a second, and then a third year. The ultimate objective is that each year thereafter several would qualify for admission to graduate study at MIT. If admitted, they would be included in the Laboratory's Staff Associate Program and, upon receipt of an advanced degree, be made offers of staff appointments by the laboratory.

John B. Turner, associate dean of the MIT graduate school, says the Lincoln Laboratory program "is a very important prototype model for increasing the number of minority students in engineering and research at MIT and at the national level. It is one of several efforts being made that we hope will have a general catalytic effect on developing more minority student involvement in graduate engineering

education.

Lincoln pays the transportation costs for the students accepted for the program. Students pay their own housing and meals expenses. Housing is in campus dormitories.

The students have been aided in their adjustment to the campus and to the area by many people, principally Dean Turner, Carola B. Eisenberg, Dean for Student Affairs, Professor Smith and members of the black student body and of the electrical engineering and computer science de-

Susan H. Colcock, coordinator

for the program at Lincoln, and Richard W. Kilson, associate personnel manager at the laboratory, said the following students are involved in the 1977 summer

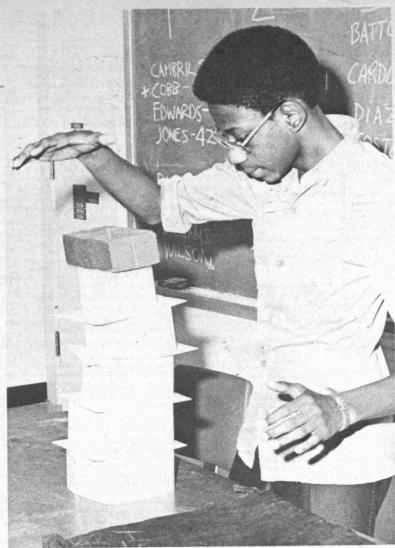
Third year students: Sheila M. Rogers, Hopkinsville, Ky., Tennessee State University; Aubrey C. Warner, Bogalusa, La., Southern University, Baton Rouge, and Cedric A. Wooten, Columbia, La., Southern Universi-

Second year students: Michelle Adams, Nashville, Tenn., Tennessee State University, Nashville; Willie Ann Brown, Jackson, Miss., Jackson State University, Jackson; Martin D. Connor, Pittsburgh, Pa., Morgan. State University, Baltimore, Md; Glen T. Goeloe, Grosse Tete, La., Southern University; Duane D. Holmes, Fayetteville, N.C., Rutgers University, New Brunswick, N.J.; Andrew H. Jones, Houston, Tex., Texas Southern University, Houston; Mickey D. Shelton, Petersburg, Tenn., Tennessee State University, and Gregory E. Williams, Indianola, Miss., Jackson State University,

First year students: Christine A. Boston, Baltimore, Morgan State University; Patricia Brown, Jackson, Miss., Jackson State University; Annie L. Bullock, Manson, N.C., North Carolina A & T, Greensboro; Sterling Cheston, Norlina, N.C., North Carolina A & T; David Clark, Baton Rouge, La., Southern University; Williams Fields, Nashville, Tenn., Tennessee State University; Rocky Galloway, Jackson, Miss., Jackson State University; Lisa Gibbs, Baltimore, Morgan State University; Wanda Moses, Nashville, Tenn.. Tennessee State University, and Karen Timpson, Adamstown, Md., Morgan State University.



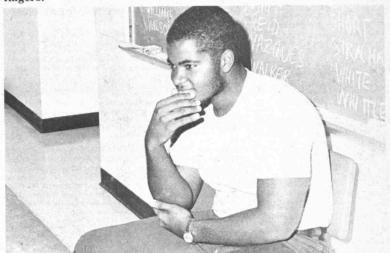
of L Barker of South Hadley, Mass.



The best laid plans of Aaron K. Golden of Brooklyn, N.Y., begin to crum-



"Oh no," Lorraine A. Russell of Providence, R.I., peeks through her fingers.



Michael E. Battle of Washington, D.C., watches the competition.

Photos by Calvin Campbell

July 20 through August 14

Seminars and Lectures

Monday, Jul 25

oplex, A Concept in Recycling and Energy Conservation* - Dr. David A. Stafford, microbiology, University College, Cardiff, Wales. In-ustrial Microbiology and Biochemical Engineering Group Seminar. 4pm, m 66-144. Dr. Stafford will be available for consultation with students, taff members and faculty. Contact A.L. Demain, x3-1711.

Community Meetings

Vives' Group** — Group leader, Myra Rodrigues, social worker, Medical Pept; Wed, 3-5pm, Stu Ctr West Lng. Babysitting Stu Ctr Rm 473. Karen,

Cross-Cultural Patterns of Childbirth* — Dr. Shailini Singh, MIT Obstetrician. Prenatal and Parent Education Group Meeting. Wed, Jul 27, 2n-1:30pm, Infirmary, 3rd flr conference rm (take front stairway at elevator). Bring lunch, coffee, tea, juice avail. Info: x3-1316.

aculty Club Special Dinner*** - Clam Bake: lobster, steamers, salad ar, corn on the cob, \$9.20 incl tax. Wed Jul 27, Happy Hour 4:30-6:30pm, inner served 5:30-8:00pm. Reservations, x3-4896.

ntensive Stained Glass Course** - Taught by Mark van Note. Sponored by MIT Student Art Association. Design & create your own stained lass panel. Thurs-Sun, Jul 28-31, 6-9pm, Stu Ctr Rm 429. \$25-\$30. Info: x3-

MIT Quarter Century Club*** - Clam Bake. Tues, Aug 9, 5:30pm, Walker Greensward.

aculty Club Special Dinner*** - Lobster Night, salad bar, dessert table, 8.50 incl tax. Wed, Aug 10, Happy Hour, 4:30-6:30pm, dinner served 5:30-

Social Events

15 Lansdowne Disco** - MIT Night sponsored by the Undergraduate Association. Thurs, after t0pm, 15 Lansdowne St., Boston, near Fenway Stadium. Admission free with MIT ID.

T.W.O. Picnic at the Boston Pops** - Sun, Jul 24 (Rain date, Sun Jul 31), meet at 5pm, Eastage Apts, walk or subway to Esplanade Hatch Shell, concert begins at 8pm. Bring your picnic supper. Info: Linda Morecroft, x3-2319 or x3-6088, or Barbara Wall, 484-1716, days and early evgs. Free.

T.W.O. Beach Party at Crane's Beach** - Sun, Aug 7 (Rain date, Sun Aug 14), Meet at beach's First Aid Station, 11am. Crane's Beach is near state bird preserve with hiking trails. Parking, \$4/car. Bring food and drinks. Map & carpool: Barbara Wall, 484-1716, days & early evgs. Info: B. Wall, or Wendy Glasser, x3-5869.

Movies

LSC Double Feature** - Fri, Jul 22, Rm 26-100. The Hunchback of Notre Dame, 7pm Charles Laughton & Maureen O'Hara. The Seven Year Itch, 9:30pm, Marilyn Monroe Comedy. Admission 75¢ w/MIT or Wellesley

Street of Shame (Mizoguchi)* - MIT Film Society. Fri, Jul 22, 7:30 & 9:30pm, Rm 6-120. Donation, \$1.25.

Gypsy** — LSC Movie. Sat, Jul 23, 7 & 10pm, Rm 26-100. Musical starring Rosalind Russell & Natalie Wood. Admission, 75c w/MIT or Wellesley ID.

I'm No Angel** — LSC Movie: Fri, Jul 29, 7 & 9:30pm, Rm 26-100. Mae West & Cary Grant. Admission 75¢ w/MIT or Wellesley ID.

Yojimbo (Kurosawa)* - MIT Film Society. Fri, Jul 29, 7:30 & 9:45pm, Rm 6-120. Donation, \$1.25.

All the King's Men** — LSC Movie. Sat, Jul 30, 7 & 9:30pm, Rm 26-100. The rise and corruption of a Southern politician, starring Broderick Crawford and Mercedes McCambridge. Admission 75¢ w/MIT or Wellesley ID.

Notorious** - LSC Movie, Fri, Aug 5, 7 & 9:30pm, Rm 26-100. Hitchcock Movie starring Cary Grant and Ingrid Bergman. Admission 75¢ w/MIT or Wellesley ID.

Sanjuro (Kurosawa)* — MIT Film Society. Fri, Aug 5, 7:30 & 9:30pm, Rm 6-120. Donation \$1.25.

It Happens Every Spring** - LSC Movie. Sat, Aug 6, 7 & 9:30pm Rm 26-100. Scientist Ray Milland discovers wood repellent and becomes an unbeatable baseball pitcher in this comedy. Admission 75¢ w/MIT or Wellesley ID.

The Last Hurrah** - LSC Movie. Fri, Aug 12, 7 & 9:30pm, Rm 26-100 Spencer Tracy plays an old-time political boss of a big New England City. Admission 75¢ w/MIT or Wellesley ID.

Double Suicide (Shinoda)* - MIT Film Society. Fri, Aug 12, 7:30 & 9:30pm, Rm 6-120. Donation \$1.25.

Music

John Buttrick Piano Recital* — Two preludes and fugues from the Well-Tempered Clavier, Book II by Bach; Sonata #21 in C Major, Opus 53 by Beethoven; The Cypresses of the Villa d'Este & Funerailles by Liszt; Twenty-four Preludes, Opus 75 by Chopin. Fri, Jul 22, 8pm, Kresge. Free.

Beatrice Erdely, Piano Recital* - Sonata by Benedetto Marcello originally written for cembalo (an early keyboard instrument) and organ, transcribed for piano by Bela Bartok; Sonata in A Minor, K. 310, by Mozart; Brahams' Variations on a Theme by Robert Schumann Opus 9; Chopin's B Minor Sonata. Tues, Jul 26, 8pm, Kresge. Free.

Dance

MIT Summer Dance Workshop** - Workshop in composition led by Beth Soll, and self-motivated projects. Tues & Thurs, 5-7pm, duPont W31-125. Info: Stina Cooke, 491-6050, lv msg.

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

Exhibits

Oriental Art Exhibition & Sale* — Marson Ltd, Baltimore, MD. Sponsored by MIT Student Art Association. Mon & Tues, Jul 25 & 26, 10am-5pm, Stu Ctr, Wst Lng.

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

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

Canones* - Music Library, Rm 14E-109. Examples of the use of canons from 7 centuries of music

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

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

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 Aug. 10 through Sept. 4 to the Calendar Editor, Room 5-111, Ext. 3-3270, before noon Friday, Aug 5.

Scrimshaw on Nutrition Panel

Dr. Nevin S. Scrimshaw, Institute Professor, professor of human nutrition and head of the Department of Nutrition and Food Science at MIT, was among 13 nutrition specialists who recently completed a National Research Council report for the White House on prospects for avoiding global famine over the next several de-

The cautiously optimistic appraisal concludes that given the political will and a worldwide mobilization of effort, U.S. research and development capabilities can help "overcome the worst aspects of widespread hunger and malnutrition within one generation." De-

veloping nations, the report said, will have 1.8 billion more people to feed by the end of the century and to do this those nations will need to find ways to double food production, make more efficient use of available food, and continue to reduce birth rates.

The study was done at the request of former President Gerald Ford. Committee chairman was Dr. Harrison S. Brown, professor of geochemistry and professor of science and government at California Institute of Technology. Also on the committee from the Boston area was Dean Howard H. Hiatt of the Harvard School of Public Health.

Libraries Promote David Ferriero

David S. Ferriero has been appointed humanities librarian, effective July 1, 1977.

A member of the MIT Libraries staff since 1965, Mr. Ferriero most recently served as assistant humanities librarian with principal responsibility for reference and interlibrary borrowing services. He has been a member of several internal library committees and has also served as vice president and president of the MIT Library Staff Association.

Mr. Ferriero holds the BA degree in English and the MA in English literature from Northeastern University and the MLS from Simmons College. He participated

in the MIT Administrative Development Program in 1975. Mr. Ferriero will begin work toward the doctorate in library science at Simmons College in September,

Mr. Ferriero's current professional responsibilities include chairmanship of the Readers' Services Committee of the Boston Library Consortium, membership on the NELINET Committee on Interlibrary Communication, and vice chairmanship of the Local Arrangements Committee for the 1978 National Conference of the Association of College and Research Libraries, to be held in Boston.

Richardson

(Continued from page 1)

University of Illinois. Frank placed eleventh (fifth native American) in an international field in the 10,000 meters.

Richardson was also recently named recipient of two of MIT's top athletic honors, the Class of 1948 Award presented to the Senior Athlete of the Year on the basis of performance in intercollegiate athletics and the Kispert Award to MIT's top scholar-athlete.

Frank Richardson will attend Iowa State School of Veterinary Medicine in September.

CLASSIFIED

Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and Institute extension. Only Institute extensions may be listed. Members of the community who have no exten-sions 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, Aug 5. They will be printed on a first come first serve basis as space permits.

For Sale, Etc.

Bausch & Lomb mcrscpe, lenses 10x, 47x, 97x oil immrsn, 10x & 15x wd fld objetvs, micromtr stage w/37°C htr, endnsr lgtng. x3-2338.

Dunlop tires, 2, 6.45-14, \$10/ea or \$15/both; bike carrier for car, \$10. Jerry, x3-6074

Upright Hoover vouum w/attchmnts, perf oprtng cond, \$25. Herb, x5721 Linc. Antique ivory dinette set w/china clst, dining area

sz w/dvdr to mtch, fairly nw, rsnble, x3-372

Fridgidaire refrdg, wht, exc cond, 5', \$115. x3-1720. F 3 sp bike, \$35; Baby crrge, \$30. Cathy, x3-5957.

Raleigh Intrntl '73, 2312" frm, DB531, all Campy equipped, \$400 or best. Allan, x3-5646, 12-5.

Nrsry grwn trees, wht spruce, scotch pine, 3'-6', \$1/ft. Mario, x8-2588 Draper.

Teldyne 15w amp, \$75; BIC 940 trntbl, AT11 crtrdge, 1 yr, \$75; 4 SD spkrs, 24x14x10, nw \$50, ask \$25/ea. Dick, x5548 Linc.

Dbl sz mttrss & bx sprng, perf cond, \$50; DR tbl, \$10; Sofa, \$10; Cntr tbl, \$5; Bkshlf, \$5; Tbl w/4 chrs. \$7; Hi K chr. \$2. Call 776-7488

Phonemate 400 phone answrng mach, \$100 nego. Herb, x3-7787

TI 56 prgrmmble, 12 yr, lk nw, \$50. x3-1570. HP-67, \$300; Typwrtr, \$8. x5-9893 Dorm.

Must sell 18' boat, exc cond, fbrgls ovr Marine plywd, also trlr & 40hp Johnson outbrd, \$850 or best. Call 663-8257.

Air cond, 11000btu, 3 yrs, \$120; dbl bd, \$20; gld rug, 12x16, \$25; 3 drwr chst, \$15; Smsnte tbl & 3 chrs, \$20; stl rec rck, \$10; toy chst, \$8; baby drssng tbl, \$8; baby swng, \$5; htr, \$10; golf clubs, 10 pcs, \$20; tea tbl, \$5; rec shlf, \$5. Lee, 494-8597.

French Astra 10 sp bike, \$65. Donna, x3-5118

Olivetti PRAXIS 48 elec typwrtr, exc cond, \$130; Stereo equpmnt: Sansui amp, Realistic 2 spkrs & trntbl, \$120. Kita, x3-1835.

Bentwd rckng chr, wlnt & cane, \$80, x3-5803

Refrdg, \$120; push mwr, \$25; trntbl, \$50; bike, \$35; desks, tbls, swng & reclning chrs. Call 522-5184. Csstte stereo tape deck, Realistic SCP-1, br nw, nvr used, cost \$50, ask \$25. Nichols, x314 Linc.

Raleign Grand Prix, 21", m, just ovrhld, exc cond. Adra, x3-2227, lv msg.

Refrdg, \$150; drssr, \$200; rckng chr, \$35; air cond, \$60. Call 484-3540.

Formica top K tbl, 30x48, oval w/mtl edgs, 112"sq chip in top, \$25; Frnch hrn case, no hndle, beat up offer. Tony, x3-5717.

Hotpnt wshr, gift, br nw, nvr used, ask \$275, nego. Danny, x8-4270 Draper.

Dbl bed, refrdg, desk, 4 ladder back chrs. Kent Davey, Helen Paraghaemian, 484-6403.

GE prtble air cond, 43 lbs, mdl TE604F, 4000btu. 2spds, auto-thermo, nw, ½ price barg; Munsey baker/broiler, \$7.50. Garrard trntbl, \$7.50. Cal 566-5873, thurs or fri bef 8:45am, or thurs 6-10pm.

Apt sz Hoover wshr, exc cond, best; Popular 606 hi-

pwr electronic flash, acdc, rechrgble, almst nw best; GM infant love st, \$7. Albert, x3-7798.

Emerson Quietkool 8,000btu, w/wrnty, 1 yr, hrdly used, \$190 or best, x3-5620.

Persian rug, best design, made in Kashan, 52x65, ask \$650. Mohammad, x3-3782.

Hsptl bed w/mttrss, mech, maple hd & ft brds, lk nw, \$230; Lge wdn office desk, nds refnshng, \$15; Refrdge, top freezer, operates wl, nds refnshng, \$15. Charles Lindberg, x7333 Linc.

Turkey! My HP-67 is only \$325, w/all access & you

Misc auto pts: TR3 pts; MG leather sts, wire whls , tonneau cvr, nc grills; Volvo rear sts, whls series. Best, or free. Mike 924-3656, lve msg & no

Sears 19" color tv, 3 yrs, \$200, x8-3200 Draper. Pirelli tires, 2, pract nw, w/rims, sz 205-15, 1 rim 5 lugs, G78-15, frm Dge van; 2 mag whl rims. x5826 Linc.

Aqualungs, one 70 cu in, one 30 cu in, bth crtfied & hydrstatclly tsted 6/77, \$120/both. Dr. O'Pray, x3-1505.

Aquarium: 20 gal, all glss, pump, ug fltr, plnts, fsh, lgts, grvl, \$50. Cort, x3-1638.

Schwinn Contntl m 10 sp bike, exc cond, lgts, xtras, \$110 or best. Farzad, 494-9178.

M bike, 3 sp. 26", w/bskt, \$50, x3-3719.

TV, nw tubes, burnt-out pctr tube, gd for pts, \$5. x5-9659 Dorm, evgs, kp tryng.

'69 Scotty trvl trlr, 15', stve, ice bx, gas htr, sink

Fisher x100B stereo amp, mhgny cbnt; Fisher 90-R tuner; Sherwd S-3MX Multiplex adaptor; all tube type, gd wrkng ordr, \$70/all. x7488 Linc. Swmng pool, 15x4, fltr, accssries, \$150 or best, x3-

Beaut wd console b&w tv, 24", RCA New Vista, w/sep UHF cnvrtr, best. Linda, x3-2916.

GE Super-Pro blowdryr, 1400w, 5 attchmnts, nvr used, \$25 or best. Tom, 868-7094.

F ice skates, sz 6, \$12; tennis rckt, \$9; All hrdly used x3-1661

Gibson SG elec guitar, gd cond, \$220 or best; Phono/am/fm stereo,\$50. Call 484-7490.

Couch & 2 chrs, 3 yrs, exc cond, \$100 or best; K tbl & 4 chrs, exc cond, \$30 or best. x3-6625.

Hsehld gds, K set, BR furn, mttrss, bureau, tv stnd, carpt, other, also plants. David, x3-6742. Wedgwd stoneware, own-to-tbl, 45pc set in crtn,

retail \$260, wl sell for \$100. Anne, x3-2450. Harmon/Kardon Rabco SP-7 trntbl, less than 1 yr,

\$250. x5-8652 Dorm Ingrnd alum pool, 4x8 sctns (16x32 total), dvng bd, slide, fltr, pump, 6' chn-lnk fence (200 ft). x3-6351.

Upright piano, \$100, Fred, x5-8230 dorm. Lg "poof" chr filled w/shrded foam, yel & blk fake fur cvr, 4½ diam, 2' hi, gd cond, ask \$75; b&w TV fair cond, wrks but could use wrk, UHF & VHF. x5

7687 Dorm. Two Advent "sml" spkrs, 6 mo, ask \$150; Dual 1228 w/Shure M95ED crtrdge, ask \$130. John, 494-

8765, aft 6.

Sears Kenmore prtble dsh wshr, 2 yrs, exc cond, cost \$220 new, ask \$125; Sears Kenmore hvy dty wshr, 1½yrs, exc cond, cost \$260 nw, ask \$150; both avail 8/1. x3-6215.

Hardwick 36" gas stove w/space htr, exc cond, \$50; Frdgaire refrdg, 7 cu ft, fair cond, \$15; Porcelin sink w/drn brd & base cbnt, exc cond, \$50. x3-6975.

Kelvinator Series 4 air cond. 9000BTU, 3 sp. EER=10.5 (7.5 amps), rmvble frm cbnt for easy in stlltn, 1 yr, nw cond, \$195. x3-6736.

NO SMOKING & similar signs, 10¢-\$1.50. Dave, x3-5121, 3-447

Dbl bed, \$40; Chst, \$25; Tbl, \$18; Hrdryr, \$15; Stroller, \$15; Lamp, \$8; B&W 9" tv, \$39; Casstt rcrdr, \$40; Ktchnwre, \$15; more. Call 494-9076,

B&W 19" tv & cbnt, perf wrkng cond, w/rcrd plyr & radio which nd wiring. Call 322-3034, aft 5

Stereo Rcvr, \$110; Dolby noise rdctn unit, \$65; Scott S-10B spkrs, \$135; PE trntbl by Dual, \$65; 8-trk plyr, \$27; nego. Mike, 661-8857.

M 10 sp bike, nds wrk, gd for parts, make offer.

Chrysler Airtemp air cond, 6000BTU, \$95; Brlr ovens, lg, \$30, sm, \$15; 9x12 blugrn rugs, \$35 & \$10; sml mats, \$1; Combo lock, \$2; Cool Mist humidifier, \$5. David, 628-8231, evgs.

Fldg bikes, 2, 3 sp, nw cond, \$100 or best. x8-1584 Draper

M 5-sp bike, \$20; 4 chnl color organ, \$30; Bean bag chr, \$10. Ken, 926-3349.

Roberts 1040 tape deck, \$5; 5 drwr drssr, \$10. Ron,

Moving: crpt, avocado, 9x12, wool w/mtchng pad, exc cond, just cleaned, \$75; Nturl Sheepskin rug, bgt in Iceland, almst nw, \$10. Call 567-4567.

Filing cbnt, 4 drwr, letter file, pntd wd, cbnt, vy gd cond, \$30; Colorful blnkt-striped jckt w/hd, f sz 7 wrn 2x, \$27, x3-5742.

Violin, exc cond, bght nw at \$280, used less than 2hr, \$180 firm. Call 494-8149.

Frdgdaire wndw air cond, 2 sp. 8,000BTU, lk nw, exc cond, orig \$220, now \$130; BSR McDonald 510 rcrd chngr & dst cvr, exc cond, \$50. x8-2577 Draper.

Selmer Bundy trumpet, \$40; Wff'n'Proof set, \$4; Bck issues of *The Objectivist*, '67.'68, free to first person who correctly pronounces Ayn Rand. Roy, 861-6369, evgs.

GE Canister vacuum w/all accssries; Pr D78 14" tires on rims, \$45 nego. x3-4314. Olivetti Lettera 32 prtble typwrtr, exc cond, nw

ribbon, \$35. Jim. x3-3559.

Motocross bike, 400cc, lk nw, must be sold; hlmt, misc nw pts. Chuck, x8-3705 Draper.

O'Day Javelin 14' sailbt w/mtr & trlr, \$1,325. Call 332-0767. Garrard SL65B rcrd chngr w/beaut hand md wd base & dst cvr, and Pickering XV15-400E crdrdge \$40; Raleigh LTD-10 m 10 sp bike, \$40. Alan, 232

Tennis rckts: Wilson T2000, Head Arthur Ashe, prce. x3-4528

Car Bed, \$5; Playpn, \$10; Crib, \$20. x7029 Linc. Formica top K tbl w/4 chrs, \$25; Studio couch, \$25; Twn bx sprng & mttrss, \$20; Fl sz foam mttrss, \$40; Sofabed, gld crdry, \$20; Wckr chr, \$5; Sml dsk, \$10; Z Beanbag chrs, \$10; Pole Imps, \$5. Den-na, x3-4378.

Fedders Air cond, 10,000BTU, 220V, 7.8 amps, 18"x27"x17". Api, 547-0490, evgs.

Beaut wht lace curtains w/rds, 30"x60", 7 pr, \$5/ea; Snows G78x14, \$10/pr; M bike, 26", \$30; Hrdryr, \$5. Yukio, x3-1835.

Vehicles

'57 Buick Super Dynaflo V8, gd running cond, 68K orig mi, exc for restoration, \$250 or best. Doug, x7119 Linc.

'63 VW, reblt eng, rns gd, bdy fair, nw bttry, \$225 or best. Call 484-6455.

'65 Buick Skylark cnyrtbl, \$350 or best. Info 354-

65 Olds F85, 4 dr, 6 cyl, auto, radio, studded snows, \$250, x3-5613,

'65 Renault, extnsvly ovrhld, exc cond. Mary, x3-

'66 Dodge Dart, 2 dr, slant 6 eng, bad eng bearings, best. Howard, x3-3496

'67 Volvo, mech gd, bdy fair, ask \$400. x3-1384. '67 Volvo 122S Classic wgn, nw tires & mtd snows, compl mntnce rcrd avail, \$800 or best. P. Hanks. x8-3533 Draper.

'68 Chevy Biscayne, 69K, vy gd cond, \$345. Call

'69 Dodge Dart, 4 dr, nw trans, gd mech cond, hi mileage, best. Dan, x3-6404.

'69 MGB prts car, eng, xmit, ovrdrve, all intrnl pts excpt radiator, wire whls, only 40K, most bdy pnls wrckd, wl sell indiv pts or whole car, make offer. Margaret, 625-1387, evgs til 12m.

'70 Byick Skylark, exc cond, \$1,100. Hakim, x5-

'70 Ford Econoline van, E300, 6 cyl, std, w/sink, stove, dbl bed, gd shape, \$1,195. Kathleen, x3-

'70 VW bug, exc running cond, 20K on rebuilt eng, amfm, 8 vy gd tires, \$900. x7781 Linc

'70 VW Bug, yel, exc mech cond, nw brks, gd tires semi-auto shift, amfm, nds lttle bdy wrk to lk nw ask \$700. Call 322-3034. '71 Gremlin, gd mech cond & body, 80K, owner

lvng cntry, must sell, \$850. Dave, x3-3555 '70 Ply Valiant, 4 dr, 6 cyl, auto, 76K, radials, nw exh; '72 Renault R12, 4 dr, std, 51K; either, \$975.

John, x8-2570 Draper

71 Triumph GT6, nw clutch, frnt suspnsn, rns wl.

'71 Volvo wgn, mvng to Tex in Aug, must sell. Eleonor or Steve Sagin, 1-562-9409, aft 6.

 $^{\circ}71$ VW cmpr, pop top, exc int, nds eng wrk, \$1,500 or best. x8-1592 Draper. '71 BSA Lightning (650cc), dual carbs, real quick, 7K, \$900 firm. Paul, x3-6231.

'71 Norton Commando mtrcycl, 750cc rdstr, vy gd cond, nw rear tire, bttry, 12K, \$1,000. x8-2185 Draper.

'72 Vega, auto, ac, 48K, gd cond, \$800. Paul, x3-

'73 Chevy Estate Wgn, 9 pssngr, ac, vy clean, pret ty car, no dents, 1 owner, compl trlring pkg, \$2,495 or best. Karen, x8-4584 Draper.

'73 Chevy Impala, 4 dr, ac, pwr st & brks, gd cond, 70K. Call 734-0235.

'73 Ford 9 pssngr Cntry Squire, 76K, gd cond, snows & rims, nw brks, \$1,700. x5407 Linc.

'73 Vega htchbk. exc cond, 48K, pr studded snows, \$1,200 or best. Call 494-9123. '74 Datsun 260Z, auto, ac, 26K, Michelins & snows, must sacrifice, \$4,500 or best. Sarah, x3-

'74 Pinto Runabout, ac, 4 sp trnsmssn, exc cond, \$1,875. Barry, x3-7233.

'75 Camaro, 350 eng, auto, pwr st, vinyl rf, 23K, ask \$3,500. x5526 Linc.

'75 Yamaha RD 350, nw in '76, exc cond, w/hlmt, \$600 or best. x3-7423.

'76 Cutless Supr, slvr w/brgndy landau, ac, amfm stereo, 8 trk, pwr st & brks, bckt sts, \$4,500 or best. Susan, x3-4701.

'77 Dodge Aspen S.E., 2 dr vinyl rf, br nw, under 10K, must sell. x3-4574.

'77 Ply Volare, 4 dr sedan, pwr st & brks, auto, 7K, wht w/grn vinyl int, reas. x3-2772.

'77 Cimatti moped, 2 mo, rear bskt, mirror, dual gas tnks, 200 mi rnge, hlmt, chn & lck, \$450 or best. Jack, x305 Linc.

'71 Chevelle Malibu, 8 cyl, auto, opts, studded snows, orig owner, \$1,200. Don, x7811 Linc.

'71 Chevy Vega, 2 dr, blu, \$620. Been Hen, 661-7909, aft 5:30.

'71 Dodge van, 8 pssngr Beauville, 67K, trlr htch, gd cond, \$1,750; elec dryer, 3 mos, \$125. x3-3567. '71 Fiat 124 spt, exc cond, 5 sp, amfm, best. Call

'71 Ford Torino 500, blu w/wht vinyl top, V8 351 cu, gd mech cond, nds bdy wrk, avail Aug, \$800. Masa, x3-6891.

Housing

Personnel Interviewers will refer any qualified ap plications on all biweekly jobs as soon as possible after their receipt in Personnel.

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

Information on openings at Lincoln Laboratory (Lexington, Ma.) is available in the Personnel

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

Pat Williams Carolyn Scheer (Secretary - Ann Perkins) Virginia Bishop 3-1591 Mike Parr Ken Hewitt (Secretary — Paulette Chiles)

Sally Hanser 3-4275 Lewis Redding Richard Cerrai 3-4269 (Secretary - Jenni Liebman)

onsored Research Staff, Resource Economist, in the Energy Lab to participate in a research group studying and modeling the economic supplies of primary energy resources: coal, oil, gas, nuclear materials. Participate in studies of methods to estimate primary energy resources and reserves; par-ticipate in studies of national energy policy. A Ph.D. or equivalent experience in resource economics or a closely related field required. Position also requires experience and/or training as a geologist/geophysicist and applied mathematics and statistics background. R77-124 (7/20)

assist in coordinating design, installation, testing and maintenance of facilities for basic and applied research programs; prepare work orders; solicit and evaluate bids; monitor performance of electricians

Academic Staff, Associate Humanities Librarian to have overall responsibility for operation of Humanities Library in absence of Humanities Librarian. Duties will include supervision of and participation in reference and information services; scheduling and training of staff; selection and maintenance of collection; coodination of user duration activities. Position requires MIS from and maintenance of concernon, cooland of our education activities. Position requires MLS from an accreditied library school, broad subject background in Humanities and supervisory experience. Three to five years professional experience in academic reference/public sevices also necessary. Knowledge of the literature of Humanities subject areas desirable. C77-33 (7/20).

Research Laboratory of Electronics will be system manager for the PDP-11 computers in the

will involve observational study of new sources found in AFCRL/AFGL Sky Survey, and will utilize photometric and spectroscopic techniques in the optical and infrared, as well as microwave spectroscopy. A Ph.D. in Physics or Astronomy is equired as well as familiarity with observing and laboratory methods used in infrared astronomy and with computer programming. R77-122 (7/20)

Academic Staff, Nursing Supervisor, in Medical Department Evening Ambulatory Clinic will provide primary nursing care as well as supervise up to 6 nurses and support personnel, and related staffing and administrative functions. Applicants must be Mass. Registered Nurses and graduates of an Adult Nurse Practitioner or Physician Assistant Program. Experience in primary care and super-visory/administrative ability also necessary. Hours: Mon.-Fri. 4pm-12am. rotating weekends (day or evening shifts). Will also rotate on-call duty with other nursing supervisors. C77-34 (7/20).

Sponsored Research Staff, Instrumentation Physicist, in the National Magnet Laboratory to assist in design, selection and evaluation of instrumentation systems used for research in the physical and biological sciences. A Bachelor's or degree in experimental physics electrical engineering plus 5 years research related experience required. Thesis or work experience should be in several of the following areas: cryogenics, temperature measurement and control, low level AC and DC measurements, magnetic Refrdg/freezer, wl trnsprt. Stephen Rustow, x3-

Allston, 1086 Comm Ave, sub, unfurn BR apt, avail now-8/31, sum rate \$185/mo incl ht, Sept opt. nr T. Julie, 253-5040. Visiting prof sks furn hse/apt nr gd schls & MIT, 3BR, exch for London hse or rent up to \$700, lngst pssble duration 8/1/77 to 8/1/78. x3-5268.

Allston, nr T, 3BR apt, nr shops & action, lg rms, avail 9/1. Rick, 787-5288, evgs. Arl, avail 8/1, 1 story, 2BR hse, range & refrdg prov, fl bsmnt, lg yd, prkng for 2 cars, quiet dead end st, nr schls, T, \$325 + util. Laura, x3-5658.

Exp draftsprsn for pt-tme drafting, potential for lng-trm emplymnt. Info, Phil, x3-7139.

Used American compact auto, vy gd cond. Judy,

Sml car. x3-2419.

Apt, 1 or 2 BR, pref nr MIT, 8/1-11/30, \$150-\$250. Carey, x3-7563. Apt for Aug in ret for chores or lw rent, rel & respnsble. Sue, x3-1702.

Fan; tennis rckt. Call 536-0819, evgs.

Used fldng baby stroller, x3-6146.

Camb, Dana Hl, 2BR apt for grad stu, under \$300 htd. Bill, 661-3361.

Used refrdg; Qn sz bed; twin bed. x3-2292.

Ride to NYC, Thurs or Fri, Jul 21 or 22. x3-2480.

French stu sks people for 1 mo trvl around the USA by car in Aug. Michel for info, 547-4485.

Roommates

Arl, furn effic apt, prkng for 1 car, nr T, avail 8/1, \$185 incl util. Owner, 396-0573.

Bos, Back Bay, studio, sub Aug w/Sept opt, furn,

Bos, Back Bay, Gloucester St, attrctve BR apt w/frpl, avail 8/15, \$275 incl util. Bruce, 253-1949.

Bos, Ben Hl, Aug sub w/fall opt, 2BR, Chstnut St, sunny, grt vw, \$365. x3-1720.

Brklne, Chstnt Hl, eng tudor, slate rf, beams, stained glass, 3BR, 212B, wlk to schls and T, avail 8/15, ask mid 80's. Call 566-1828, aft 6 or wknds.

Brklne, St Paul St, nr Beacon, lux BR condo, balc

ac, pool gar pkg, 7th flr sunset vw. Dick, x3-5897

Brklne, BR & stdy, \$150 incl util, nr T, sub thru 8/31. Call 494-8379.

Camb, nr Cntrl' Sq. lux BR apt w/ac, dw & dsp, 1¹2B, nr T, 15 min wlk to MIT & Harv, avail 7/1, \$320. Behrooz, 354-3772, bef 10am, aft 7pm.

Camb, nr Cntrl Sq. BR apt w/ac, dw, dsp, 112B, nr T, 15 min wlk to MIT & Harv, avail immed.

Camb, Frsh Pond, 5 rms, \$325. Call 661-1593.

Camb, Harv Sq, 3 rm apt, \$180, for vy quiet prsn.

Cmbrdgprt, 6 rm sgl hse w/gar, lg yd, 3BR, lg K, wlkng dst to MIT, \$33,000. Call 354-3412, evgs.

Chelsea, exc Woodlwn area, 4rms, avail 8/1, ww patio yd, no pets, off-st prkng, \$225 incl ht, ht wtr gas. Call 894-5314, evgs.

Christwn, nr Monument Sq. 2BR apt, 3rd fl rstrd

Victorian hse, hme of Emeritus MIT prof, mod K, rf sundk, \$425, incl util. x3-1991.

Everett, 2BR, avail 1Aug, nr T, \$145 + util. Call

Lynn, \$165 + util, 2BR, nce nbrhd, 13 blks to ocn

35 min to MIT. x3-2311.

also, furn BR dormer, \$145 + util (gas), nce nbrhd,

Som, Prtr Sq, nr T, 2BR mod apt, ww, ac, avail immed w/Sep opt. Owner, 729-9130.

Swampscott, compl furn hme for rent while on Sabbatical, 5BR, 3½B, 3 frpl, 2 car gar, grdn, nr beach, \$675. Call 595-2343.

W. Peabdy, for sale, \$64,900, cstm blt 2BR, lg furn bsmnt convrt to BRs or compl mother-in-law apt, 2B, cntrl ac, sec syst, intrcm, sunprch, fully lndscpd, many xtras. Owner, 535-0592.

E Falmouth, 2BR cttge for sum rntl, nr bchs, avail Jul & Aug. Call 325-5069, evgs.

Ellisville, So Shore, ocn frnt cttge, 2BR, mod K, priv beach, beaut vw, \$180/wk, 7/31-8/14. x3-3367.

ME, lk frnt cabin nr Bethel, 3BR, sunny bch.

Highland Lk, Stoddard NH, lkfrnt cttge, all facil,

frpl, scrnd prch, rowbt, slps 6 cmfrtbly, 2 hrs frm Bos, \$185/wk, avail 8/6-8/20. x8-1130 Draper.

all mod conv, grand vw, wl consider selling bldgs sep. Owner, x3-7153.

NH, 2BR cttge & bnkhse on sml, cln lk in Wht Mts, canoe & rowbt incl. Call 1-369-8054, evgs.

Loving hme nded for f spade 2 yr old tortoise shl

Baby gerbil wntd for pet. Karen, 232-9111, days.

Toy poodles, 8 wks, 2m, 1f, have papers, shots, \$130. x3-6351.

Dog, ¹zhusky, ¹zgldn lab, 1¹z yrs, m, affec, wlbehav & trained, healthy, nds gd hme — pref w/chldrn or playful people, lvs to play, fetch, romp,

cuddle, has deep nasty growl that's exc deterrent to strngrs, won't bite. Betty, x3-2237.

Free kitten, 11 wks, shrt hair, gray tiger. John,

Wld prsn who helped self to my wallet please return it w/my papers. Thank you — N14-431.

Lost, Kodak Tele-Instmtic cmra, initls SC, nr

Henry Moore sclptr in Grt Ct, reward. Stina, 491-

Found, on cmps, affectnt gray tiger male cat, to ownr or gd hme. x3-3168.

Furn his or apt in gd schl distrct for visiting Australian prof, 9/25 to xmas. x3-6809.

Dbl bed, twn bed, DR set, LR set, vacuum, sewing

Vstng scntist, wife, & child, sk 2-3BR furn hse or apt, conv to MIT, for 9/77-6/78, have well behav sml dog & cat, wl pet or plant sit. x3-3601.

Hvy duty Garden Cart or hvy 12" whis for same.

Lost and Found

Wanted

Baby food jars. x3-3666.

nach, Call 494-0153.

Free kittens, 1m, 1f, 3 mos, x8-3674 Draper

Animals

Wakefld, NH, frmhse, vntge barn, 170 acres sale, nr lks, ski resorts, 4BR, mod cntry K, w fl B

\$195 incl util. x3-3214.

Behrooz, 731-5284.

MIT prissnis, 3, sk lg unfurn hse in gd cond, to rent or buy, Camb area, min 8BR, lg K, prkng, yd, x3-5954.

KLH-40 mechanics w/ or w/out elec, any cond; old cheap file cbnt; wrkng or not b&w tv, must be Sanyo; sm water fire ext; cheap (old) cmputr prphrls; wl pay cash. Call 494-8888.

Allston, lkng for apt before nw lease starts? Rm in 3BR hse w/K, LR, 2 prchs, dead end st, nr T, avail for Aug, \$80 nego. Brenda, x3-2851. Arl, grad stu nds 1 tidy prsn to shr 1st flr of 2 fam hse, 5rms, unfurn, prkng, nr T, \$125 + util. John, x3-1725.

Bos, Beacon Hl, nr Pub Grdn, prsn to shr spac 2BR apt, own rm, nr T, avail immed, \$237. x3-1593.

Bos, 1 or 2 rmmts for lg 2BR apt nr Pru, \$175. x3-Camb, f to shr beaut sunny apt nr Harv Sq w/2 f, own BR w/prch, avail 9/1. Eillen, x3-5804.

Camb, 1039 Mass Ave, m or f to shr 2BR apt w/m MIT undrgrd, conv, gd area \$107, Ask housing! Eliav Dahan, 301-486-2878.

Camb, sum sub, m to shr apt w/2 oth m, own rm nr MIT/BU, exc nghrbhd, furn, 1st flr, \$100 + util. Steve, x7858 Linc.

Cam, Harv St b/w Harv & Cntrl Sq. F, 24+ for roomy 2BR apt, eat-in K, lgt, airy LR, non-smkr pref, \$122 incl ht & ht wtr. Catherine, x3-5682. Mrblhd, addtnl prsn to shr 4BR, 2B, ocn frnt sum rntl. Call 631-0951, aft 6

Carpools Wld lk to join or form carpool from Amesbury or nrby cmnty to Camb/MIT, must be in Cam by 7:30am. x3-1491.

Miscellaneous

Dan's Van, stu mvrs, moving & furn dlvry, prof, careful, econmcl, refs avail. 1 man, \$10/hr, 2 men, \$16/hr. Call 661-1683. Hrdwd fl
rs, sanded & refnshd profssnlly, 50¢ sq ft. Christine, x
3-2743.

WI do babysttng in my hme or yrs, if nr MIT or Cntrl Sq. Saro, 492-4650, aft 6.

For chrtr, 22' Sloop (O'Day), slps 4, sink, facil, etc, full set sails, 6HPOB, moored Cataumet, Bzzrd's Bay, \$250/wk, exp & rel parties only. Dave, x7638

Mature f avail for babysitting in Bos/Camb/Arl area. Call 646-6021.

Heating, air cond, vntlatn, inslatn wrk to be done. Arthur DuBois, 891-7499, aft 4:30. Driver & 12ton pick-up avail for lt mvng, reas rates. Rae, 666-8388.

WI type thesis, manu, reports, etc, fast & accur.

Tech typing to yr specs, equations, x3-5705: Tech typing serv: theses, manu, rpts, IBM Selec. x3-1566

WI type theses, manu, tech, fast & accur, IBM Correcting Selec. Debbie, x3-1848.

Thesis typing, fast & accurate. Sandy, x3-4342. Learn to sail aux sloop in Boston Harbor, x3-2441.

Tech & non-tech typing, resume & letters repetitively typed on Mag II. Susan, x3-2047. Wntd: prsn to drive cmfrtbl ac car to San Fran-

cisco area, lvng Bos approx 7/30, arriv SF by 8/9. Call 444-6172. Retired? 55 or over & thnkng about it? Join MIT-Camb Chptr, Am Assoc of Reired Persons. Info: Membrshp Chrprsn, Jim Maclary, x3-2745.

Surplus Property

MIT surplus property for transfer or sale for research or teauhpmghpgoggwmyhomly.

Twohytwpnless stl 500 gal wtr tnks, w/cvr, Info, W.A. Derry, Property Officer, x3-2777.

technology, analog and digital circuitry. K77-131

ored Research Staff in the Center for Cancer Research to do research in areas of biochemistry, virology and tissue culture of marine leukemia virus; grow virus stocks; infect cultures; fractionate infected cells. A Bachelor's or Master's degree in Biology, strong background in biochemistry and molecular biology required. Ap-plicants must have experience in laborato: y biochemical techniques. R77-134 (7/20).

Sponsored Research Staff, in the Center for Cancer Research to perform various laboratory procedures: inject antigens; bleed rabbits; prepare antisera and monospecific antibodies. Will also perform immunological and biochemical analysis of cellular proteins through immunofluorescence, radioimmune precipitation, polyacrylamide gel analysis; and prepare and process phoromicrographs. A Bachelor's degree plus experience in cell biology and biochemistry is required. R77-127 (7/20).

Admin. Staff, Assistant Director, for the MIT Associates Program (providing member industrial firms access to the Institute's educational and research programs): act as liaison among MIT company representatives, MIT faculty and staff; identify and solicit new member companies. A degree in engineering or science, 2 years technical experience (preferably in engineering) a manageexperience (preferably in engineering), a management perspective and marketing background required. MBA or equivalent preferred. A77-49 (7/20).

Admin. Staff. Publicity Mngr., for the MIT Press to have responsibility for liaison with Institute and other media representatives; prepare news relea

POSITIONS AVAILABLE

all non-academic jobs currently 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 the Special Assistant for Women and Work (10-215) and Minority Affairs (10-211), and in the Personnel Office, (E19-239). During the summer months, an interim listing of new positions will be posted at the above locations on the Medianeday when Tech Talk is not will be posted.

Wednesdays when Tech Talk is not published (July 13, July 27, August 3, August 17, August Sponsored Research Staff, Assistant to the Plant Engineer in the National Magnet Laboratory: will

plumbers, carpenters, masons, riggers. A Bachelor's degree in engineering, or equivalent, plus at least 5 years applicable experience re-quired. R77-130 (7/20).

ored Research Staff, Programmer, in the

Cognitive Information Processing Group: will coordinate installation of drivers for UNIX and the CIPG Image Processing System, and other system improvements; implement new programs required by research projects; assist new users in learning the system. A Bachelor's degree in electrical engineering or computer science, competence in language programming and familiarity with some higher level language required. Experience in use of mini-computers and with PDP-II also necessary. R77-132 (7/20). Sponsored Research Staff, to do postdoctoral research in the Center for Space Research. Work

field effects, transport and resonance phenomena optical and laser measurements, vacuum

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nd an annual newsletter; solicit and follow up eviews; arrange radio and TV appearances for uthors; identify prospective publicity sources yefor new and old titles; submit books for awards; rrange special events (author parties, autograph sessions, etc.). Will interact as necessary with other MIT Press divisions (editorial, promotion, marketing, etc.). A Bachelor's degree, or narketing, etc.). A Bachelor's degree, or nuivalent, formal training in journalism as well as ing skill and experience required. Applicants ald also have public relations experience, erably in book publishing or a related field. A77-47 (7/20).

dmin. Staff, Industrial Liaison Office, Admin. Staff. Industrial Liaison Office, in a Program providing interface among MIT faculty, staff and representatives of member companies of Program. Will also solicit new member companies. Position involves domestic travel. A Bachelor's degree in an engineering filed preferably mechanical, as well as a Master's degree, or equivalent experience required. Candidates should also have at least 2 years industrial least 2 years industrial experience

Sponsored Research Staff, Technical Editor/Writer, in the Energy Laboratory to provide editorial service to the Lab in preparation of technical reports and publications; define research, write and edit information for reports, pamphlets, newsletters. Position requires a Bachelor's degree, or equivalent education and experience training in a basic science, engineering or perience, training in a basic science, engineering or mathematics, and at least 4 years of editorial or writing experience in science, techniques the science activities. R77-133 (7/20). technology

ponsored Research Staff, Programmer, part-time Earth and Planetary Sciences to write software or control of experiments and data processing. Ex-perience with PDP-11 family, with Fortran and as-membly languages required. Familiarity with matrix algebra desirable. 15-20 hrs./wk. R77-136 7/20).

Academic Staff, Technical Asst., temp., in the School of Humanities and Social Science, Educational Programs section will coordinate archival and oral history project to document response of scientists and public to new biological research developments; assist project director in monitoring events; collect documents; prepare materials for publication; maintain archival files and catalog; serve as liaison with individuals and organizations. Applicants must have editorial, organizational and office managerial skills. Knowledge of biology, science policy, history, a cataloguing experience desirable. C77-32 (7/20)

Exempt Staff Accountant, in the Comptroller's Accounting Office to be responsible for accounting activities involving internal cost audits of research contracts and grants; coordinating accounting, cash flow and audit functions with Office of Sponored Programs and other MIT departments; oreparing billing, fiscal and financial reports as repreparing billing, fiscal and financial reports as required. B.A. in Accounting, or equivalent combination of education and experience required. Ability to communicate well with a wide variety people also necessary. E77-32 (7/20)

Admin Staff, Admin. Asst., in Architecture to as ist Department Head in the Coordination of a wide variety of faculty and committee activities; prepare working drafts, annual reports; handle ad-ministrative aspects of several departmental func-tions. A working knowledge of the field of architecture and/or academic administrative experience is required as well as strong organizational ability re uired, A77-34 (6/1).

Admin. Staff, Applications Programmer, in Administrative Computing Services to translate external program specifications into computer ternal program specifications into computer programs; prepare program logic diagrams and data flow; program, test and debug programs; document new or modified programs; assist users with programming problems; attend classes, seminars to maintain currency in programming field. An associate's degree and programming experience are required. A77-38 (6/15).

consored Research Staff, temp., in Earth and Sponsored nesser of Stay, the sponsored nesser of Stay, the Planetary Sciences to perform analysis of basaltic rocks. Responsibilities will include sample grinding and preparation; dissolution of sample; analysis by isotope dilution and mass spectrometry. Will also perform microprobe analysis of glass and analysis by x-ray fluorescence and gas chromatography. Position requires experience in basalt petrography. Familiarity with performing analysis helpful. Temp. through Dec., geochemical analysis helpful. Temp, through Dec 1977. R77-118 (7/6).

Sponsored Research Staff in Sloan School System Dynamics Group to assemble, organize and main tain computer files of a large-scale computer simulation model of the U.S. economy. Selected applicant will be trained in IBM Time Sharing command language, JCL, DYNAMO and Prime and will participate in technical documentation, technical drawing and user assistance. Bachelor's degree, computer programming experience and at tention to detail required. Interest in socia systems modeling, economics and dynamics desirable. R77-119 (7/6).

Academic Staff, Technical Asst., in Biology to do research involving the isolation and physical characterization of key components of the blood coagulation systems. Will also study molecular mechanisms by which components interact in diffilling the components interact in mechanisms by which components interact in fulfilling their physiological roles. A Bachelor's degree and good laboratory skill required. A background in physical chemistry or biochemistry preferred. C77-29 (7/6).

Academic Staff, Technical Asst., in Biology to Academic Staff, Technical Asst., in Biology to prepare solutions, gels for electrophoresis; assist with various experimental procedures. Will also handle some laboratory management duties. Posi-tion requires a Bachelor's degree in Biology or Chemistry. 32 hrs./wk. C77-30 (7/6).

Academic Staff, Technical Asst., in Biology to prepare and purify radioactively labeled neurotoxins to use in studies of membrane proteins from neural tissue. Other duties include maintenance of Drosophila melanogaster stocks; preparation of culture media; autoradiographic processing of slides and performance of various other laboratory operations. B.S. or M.S. in Biochemistry, Biology or Chemistry and experience in protein chemistry Chemistry and experience in protein chemistry required. Applicants should be familiar with routine biochemical procedures including column chromatography, centrifugation techniques, electrophoresis and isotopic techniques. Familiarity with eukaryotic genetics helpful. C77-31 (7/8).

Admin. Staff, Asst. Editor, for Technology Review, (MIT Alumni Association) to participate in all editorial activities: solicit and evaluate articles; edit and illustrate articles for publication; write being ent and illustrate articles for publication; write brief accounts of current developments based on journal articles, seminars or other sources. Will be responsible for editorial management of one or more magazine sections. Applicants should have a degree or equivalent experience in a science or engineering field, as well as at least one years's ex-perience in solices. perience in science writing for semi- and non technical audiences. A77-44 (7/6).

Admin. Staff, Assistant to the Director, of the Ad pissions Office will do analytical studies of the admissions market and selection process. Will also assist in regular functions of the admissions process; interview prospective students; prepare related correspondence; travel to recruit students. minimum of a bachelor's degree with a packground in mathematics and statistics is re quired. The ability to write under time pressure, experience with computers, management and social science course work is desirable. A77-11 (7/6),

Admin. Staff, Editor in Chief at the MIT Press to supervise the activities of the Acquisition and Editorial groups in the development of its book publishing program. Responsibilities include: solicitation of manuscripts for publication process; head! handling of personnel related functions (hiring, salary, etc.); development of budgets, and monitoring of expenditures; interaction with MIT aculty and others to make publishing decisions.

Applicants must have formal education and/or professional training in staff administration, budgeting, procedures, systems and control development, long range planning. Familiarity with marketing of an academic list, and with production design fulfillment operations also necessary. A background in scientific, technical medical business multishing designable. medical, business publishing desirable

Exempt, Engineering Asst., in the Energy Lab to select or design, test, install a wide variety of electronic equipment and electro mechanical devices. Duties will include analog and digital circular devices. cuit design and debugging and interfacing with a DEC PDP 11/05 computer. A minimum of a Bachelor's Degree in Electronic Engineering Technology plus at least 5 years applicable experience, preferably in industry, required. Knowledge of computer sciences and simple programming helpful. E77-34 (7/20).

Exempt, Accountant, in the Sponsored Accounting Section of the Comptroller's Accounting Office to perform internal cost audits of research contracts and grants; coordinate accounting, cash flow and and grants; coordinate accounting, cash flow and audit functions with Office of Sponsored Programs, other MIT administrative and academic depart-ments; prepare billings and varied liscal reports a required. A general business education plus 3-5 years accounting experience, or a Bachelor's degree in Accounting, or equivalent education/experience required. E77-33 (7/20).

Exempt, Admin. Asst., in the Loan Collection sec tion of the Student Loan Office to have full respon sibility for the collection of an assigned group delinquent loans. Duties will include counseli. terminating students on repayment policies and procedures; tracing borrowers; arranging routine and special repayment plans based on borrower's financial and/or personal circumstances; recommending alternative collection actions (legal agency). Applicants must have accounting skills necessary to apply complex repayment terms, and excellent oral and written communication ability. Loan collection experience desirable. E77-29, E77-20, 17/20.

Exempt, Admin. Asst., in the Urban Studies and Planning Community Fellows Program to handle all administrative aspects of the Program provide information on Program content, admission procedures, etc. to prospective students and others; prepare descriptive literature (write, design layout); assist in arranging seminars; act as liaison with other Institute departments; plan and arrange travel for Program staff and guests; devales and travel for Program staff and guests; develop and monitor budgets; assist in all aspects of orientation of new Program participants. Position includes some clerical functions for which typing skill is necessary. Project management experience, written and spoken communication skills and some experience, in financial management. financial management are required. perience in fir E77-31 (7/20).

Exempt, Asst. Food Production Supervisor, in Food Service to assist in all areas of responsibility including daily production, inventory and quality control, purchasing and sanitation. Position requires a degree or experience in food production area of food service, technical knowledge of menu planning, quantity food preparation, quality control and food purchasing procedures. Irregular hours and weekend work may be necessary. E77-27 (76)

Exempt, Claims Investigator for the MIT Health Plan to be responsible for inital investigation and processing of claims submitted from physicians, hospitals and patients; interpreting Health Plan contract and policies and procedures of Blue Cros s/Blue Shield in order to approve claims; directing communication with hospitals, Blue Cross/Blue Shield and Health Plan members; maintaining claim logs and preparing weekly and monthly claim reports. College training and 2-3 years health care insurance experience required. Excellent oral and written communication skills and ability to use own judgement also necessary. E77-28 (7/6).

Tech. Asst. IV in the Center for Advanced Engineering Study to design text material. Duties will include graphic design and technical illustration; copy preparation; layout of curriculum in electronics and related technologies. Professional experience as Graphic Designer or Technical Illustrator required. Knowledge of engineering electronics helpful. B77-254 (6/22).

Tech. Asst. IV in the Center for Advanced Engineering Study will coordinate the operation of the Tutored Video Instruction Program: schedule equipment use with Video Services; arrange for or handle taping of classes and for routing of tapes; prepare billing and handle other clerical aspects of program; arrange for preparation of promotional material. May recruit and train student operators. Position includes typing. Excellent organization skills, typing ability required. Experience with video operations (or willingness to learn) required.

Admin. Asst. V to a large Earth and Planetary Sciences research group to organize and oversee all clerical and administrative activity for the group; monitor expenditures of research funds; act as liaison with funding agencies, with department headquarters and others. Will also handle some library research duties. Strong administrative ability including financial management skill reability including financial management skill required. Typing ability is also necessary. B77-342 (7/20).

Admin, Asst. V for three Earth and Planetary Sciences faculty members to assist in proposal preparation and submission; prepare and monitor budgets; oversee contract compliance; act as liaison with other MIT departments on contract accounting matters; do some manuscript editing; superivise secretary. Good administrative skills, ability to set priorities and work dependently required. Institute experie desirable. B77-316 (7/20). dependently Institute experience

Secretary V in the Office of the Secretary of the Institute which provides staff support to Corporation Visiting Committees and Joint Advisory Commit-tee. Duties include liaison among Committee nembers and MIT senior officers and faculty prepare correspondence; handle large mailings; arrange Committee meetings, maintain files. Excelent secretarial skills, education and/or experience, ability to deal effectively with Corporation members and MIT senior officers required. Ability to organize and carry out detailed projects with ac curacy also necessary. Knowledge of MIT procedures desirable. 37 ½ hrs./wk. B77-305 (7/20).

Secretary IV-V in the Dean for Student Affairs, Preprofessional Advising and Education Office to handle a variety of duties to assist students who are considering legal or medical careers: schedule and publicize visits by law/medical school representatives; answer routine questions on professional school application procedures; assist in editing handbooks; compose routine cor-respondence; compile statistical data; handle various other duties as necessary. Applicants must be able to work effectively with students and faculty, and have secretarial experience. Non-smoking office. B77-309 (7/20).

Secretary IV to Political Science faculty member secretary IV to Political Science faculty member and other involved in administration of un-dergraduate program: advise students on require-ments; maintain student files; compile statistics; perform general secretarial duties. Excellent secretarial skills, ability to work effectively with a wide variety of people required. College training equivalent experience, also necessary. B77-(7/20).

Secretary IV to Political Science faculty member to perform general secretarial duties and assist with the job placement service for graduate stu-dents: maintain placement files; arrange related meetings, travel. Position requires at least 3 years secretarial experience and machine transcription skill. College training is preferred. B77-317 (7/20).

Secretary IV in Chemical Engineering to handle various aspects of graduate admissions process: correspond with prospective students; maintain related files. Will also assist with thesis review process; compile departmental statistics; coor-dinate recruitment of students by industry and other organizations. Ability to set priorities and to handle changing work assignments required. Applicants should have excellent typing skills. B77

Secretary IV to work with faculty and staff of the Political Science Department's Public Policy Political Science Department's Public Policy Program: type various material; inform students about course availability and requirements; arrange meetings and travel; assist in internship placement and publicity. Excellent general secretarial skills, as well as at least 2 years experience required. Applicants must have command of English language and some writing skill. College training preferred. B77-319 (7/20).

Secretary IV to 2-3 Urban Studies and Planning Secretary IV to 2-3 Urban Studies and Planning faculty members to handle a variety of general secretarial duties; type correspondence, reports, class material from machine dictation; arrange appointments and travel; maintain files; may ass pointments and travel; maintain flies; may assist other secretaries with typing or phone coverage. Excellent typing skill, ability to transcribe machine dictation required. Secretarial experience is also necessary. Editing and shorthand skills are desirable. B77-330, B77-331, B77-332, B77-333 Excellent

Secretary IV to several staff members in the Energy Laboratory to type correspondence and reports; answer phones; file; make travel arrangemaintain accounts including ments; maintain accounts including verifying monthly statements. General secretarial skills required as well as ability to handle fluctuating wo load. Minimum of three years working experience or equivalent combination of training and experience also necessary. B77-325 (7/20).

Secretary IV, part-time, in the National Magnet Lab to perform general secretarial duties including typing of technical manuscripts and grants; organizing laboratory schedules; expediting purchase orders; maintaining liaison with subjects of medical research experiements. Secretarial and administrative experience and technical typing ability required. Ability to work independently also necessary. 17½ hrs. /wk. B77-324 (7/20).

Secretary IV in the Research Laboratory of Electronics to a research group: type technical manuscripts, course material correspondence; perform all other general secretarial duties as necessary. Good general secretarial skills including the ability to set priorities and organize several projects simultaneously security. simultaneously required. Position requires ability to learn use of computer editing equip

Secretary IV to a Materials Science and Engineer Secretary IV to a Materials Science and Engineering faculty member to type technical material; schedule appointments; make travel arrangements; maintain accounts; handle administrative responsibilities for large undergraduate course; provide secretarial assistance to additional staff members as required. General secretarial skills required as well as ability to deal well with a wide variety of people in a busy setting. Familiarity with MIT helpful. B77-297 (7/6).

Secretary IV to three Chemistry Dept. professors to type correspondence, technical reports, grant proposals and course material; arrange appointments and travel; monitor research accounts. Excellent typing and organizational skills and ability to set profities required. The technical control of the profit of the control of the to set priorities required. Two to three years secretarial experience preferred. B77-301 (7/6)

Secretary IV to campus Architect and professional staff in Physical Plant. Will type various material and verify accuracy of its content; develop format for manuscripts and assure grammatical accuracy arrange travel; maintain complex filing system, budget preparation; perform other duties as required. Secretarial school training and experience, or equivalent combination of education and experience required. B77-285 (7/6).

Secretary IV to the Director and research staff members in the Center for Advanced Engineering Study to type correspondence, manuscripts, reports; edit drafts; maintain filing system; answerphones; xerox; make travel arrangements; maintain project accounting records. Excellent typing skill including technical typing ability required as well as ability to communicate well with a wide variety of people 87-299 (7/8). well as ability to communicate variety of people. B77-292 (7/6),

Secretary IV to Science Librarian and professional staff: type correspondence, reports, other materials; maintain a petty cash fund; order sup-plies; file; handle meeting room reservations and other assignments as necessary. Secretarial school training plus 2 years experience, ability to handle routine as well as special work assignments re quired. B77-282 (7/6).

Secretary IV in the Sloan School Systems Dynamics Group to type papers, correspondence, and manuscripts on correcting selectric and/or unand manuscripts on correcting selectric and/or un-complicated computerized typing/editing equip-ment from drafts and occasional tapes for research group; maintain and update master document file; handle some telephones, appointments, travel ar-rangements, records and filing. Ability to work under pressure. Excellent typing required; good com-mand of English grammar helpful. Two years ap-plicable working experience, or equivalent, prefer-red. Willingness to learn use of editing equipment also necessary. B77-171 (7/6).

Secretary IV in Nutrition and Food Science secretary IV in Nutrition and rood Science to faculty members and research staff studying subjects such as appetite regulatory mechanisms, chemistry of food systems. Will handle general secretarial duties including transcription of machine dictation. Good secretarial skills re-quired. Familiarity with medical/biological ter-minology helpful. Secretarial school training preferred. B77-269 (7/6).

Secretary IV to 2 Economics Department faculty members to handle secretarial duties related to academic program and to publication of a profes-sional journal: type correspondence, class materials; maintain files; arrange travel and appointments; maintain records of received manuscripts; prepare related correspondence. Excellent typing skill, willingness to learn technical typing required. Applicants should have ability to organize work and to work without close supervision. B77-270 (7/6).

Secretary IV in Linguistics and Philosophy head-quarters to handle all general secretarial duties inquarters to handle all general secretarial duties in cluding: typing manuscripts, proposals; maintain ing student records; answering student inquiries. arranging travel. May have some editorial respon sibilities. Good typing, shorthand or ma transcription ability required. B77-272 (7/6).

Secretary IV to two-three Chemistry faculty members to type correspondence, technical manuscripts, course and other material; arrange appointments and travel; monitor accounts, A minimum of two years secretarial experience and technical typing skill preferred. Applicants must be able to set priorities and work with a variety of people. B77-200 (5/25).

Secretary III-IV to several faculty members in Aeronautics and Astronautics: type course material, correspondence, technical papers; arrange weekly conferences; arrange travel; answer phones. Good typing skill, some office experience required. Position requires security clearance or ability to obtain one. B77-334 (7/20).

Sec. III-IV to two Electrical Engineering and Computer Science faculty members to arrange appoint-ments and travel; monitor research accounts; type course material, technical reports, journal articles and correspondence from handwritten draft and machine dictation; develop and maintain filing system. Technical typing skill required, B77-337 (7/20)

Secretary-Library Asst. III-IV in the Humanities Library to handle general secretarial duties; prepare student payroll reports. Will also handle responsibilities to support Interlibrary Borrowing Service: type forms: maintain records and statistics; perform bibliographic searches. Ability to organize work and to handle detail with accuracy required. Typing skill necessary. Office and/or library experience helpful. B77-303 (7/20).

Secretary III-IV in Meteorology to faculty and research staff: type correspondence, manuscripts including some technical material; arrange travel and appointments; maintain a small departmental library (order books, journals; maintain records; been shelper in the correspondence). keep shelves in order). Excellent typing and anization skill required. College training help ful. B77-286 (7/6).

Secretary III-IV in the Electrical Engineering and Computer Science Dept. to handle varied secretarial duties including: typing; scheduling department conference rooms; processing requests for keys; maintaining department personnel records using an on-line interactive computer system; sharing responsibility of answering Department headquarters phones. Selected applicant will be trained in the use of interactive computer system. Convert secretarial skills, which is the contractive computer system. Convert secretarial skills, which is the contractive computer system. Convert secretarial skills which the contractive computer system. puter system. General secretarial skills, ability to set priorities and to work with minimal supervision required. Familiarity with computer systems helpful. B77-298 (7/6).

Secretary III-IV in the Economics Dept. for 2-3 professors to type research reports, class material, correspondence from handwritten draft and machine dictation; organize articles to be submitted to various journals; maintain files and correspondence of faculty recruiting committee. Excellent trains and control of the cont cellent typing and organization skills, good knowledge of English grammar required. B77-293 (7/6).

Secretary III-IV to Chemical Engineering Administrative Officer to handle general secretarial duties in headquarters office. Will also maintain duties in headquarters office. Will also maintain departmental contract/grant records; assist in various arrangements for visiting personnel. Ability to organize own work load, general secretarial skills required. Secretarial school training preferred. Shorthand and/or machine transcription skills (or willingness to learn) also necessary. Position involves extensive contact with MIT faculty and students as well as representations. MIT faculty and students as well as represen-tatives from industry and other universities. B77-

Secretary III, floater, in the Medical Department Secretary III, loater, in the Medical Department to handle a variety of secretarial duties, relieving for other secretaries during vacation, illness, lunch hours and in peak work loads; transcribe machine dictation (correspondence, reports); prepare mailings; file. Will also cover in reception area and ings; file. Will also cover in temperature office areas as necessary. Excellent typing skill, flexibility for changing work assignments, previous secretarial experience, preferably in a previous secretarial experience, prefer medical setting required B77-340 (7/20)

Secretary III, part-time, for the Committee on the Visual Arts to organize and maintain filing system; greet and assist visitors; arrange meetings; record and type meeting minutes: type correspondence and type meeting minutes; type correspondence and other material; review accounting statements for accuracy; maintain mailing list and calendar for all activities handled by Committee. Excellent typing, familiarity with contemporary art re-quired. Bachelor's degree helpful. 28 hr./wk. B77-212.

Secretary III, part-time, in Chemistry to type respondence and manuscripts; maintain files; process invoices for payment; fill reprint requests; answer phones. Position requires good typing and general secretarial skills. 20 hrs./wk. B77-304 (7/20).

Secretary III in the Office of the Dean, School of Secretary III in the Office of the Dean, School of Architecture and Planning. Will perform general secretarial duties for Dean and others: type; answer phones; maintain office supplies; assist with preparation of coffee and sherry hours. Applicants should have good general secretarial skills, command of English grammar, ability to transcribe machine dictation. Secretarial temping of formal secretarial training desirable perience or formal secretarial training desirable B77-335 (7/20).

Section Head V in the Collections Office, Barker Engineering Library, to establish daily work flow and priorities; train and direct assistants in searching and ordering material for collection; search and order technical reports; coordinate processing of user requests for additions to collection; handle a variety of additional duties, as required. Experience in acquisition or collections unit of library required. Applicants must also have supervisory and tyning, skill. Bibliographic as supervisory and typing skill. Bibliographic experience, familiarity with organization of card catalogues, knowledge of engineering reference sources desirable. B77-341 (7/20).

Library Gen. Asst. III in the Libraries Catalogue Library Gen. Asst. III in the Libraries Catalogue bepartment to type catalogue entries on OCLC 100 terminal; perform clerical aspects of reclassification and cataloguing: type reference cards for authority files; prepare charge cards. Some college or business school training, ability to interpret complex directions for computer terminal input, typing ability required: Library experience helpful. 12N-8PM, M-F. B77-307 (7/20).

Library Gen. Asst. III, in the Libraries Reserve Book section: process research book lists; maintain circulation records and statistics; prepare overdue notices; maintain order of shelves and rearrange as necessary; supervise student assistants. Typing skill, ability to apply policy with tact and to organize work required. Position may include even or weekend work on a prescheduled basis. B77 321 (7/20)

Clerk IV in Civil Engineering Academic Programs Office will answer student inquiries; compile statistical data; maintain files; prepare compile statistical data; maintain files; prepare copy for printing; perform a variety of other clerical duties. Typing skill, 3 years office experience or equivalent education and experience required.—MIT experience, knowledge of keypunching helpful. B77-311 (7/20).

Sr. Clerk IV, part-time, in Civil Engineering to handle various duties related to departmental admissions process: answer inquiries about admismissions proceeds: answer inquiries about admis-sions procedures; maintain log; compile statistics; operate memory typewriter (will be trained). Three years office experience or equivalent combination of education and experience, organization skills re-quired. 20-30 hrs./wk. Applicants must have flexquired. 20-30 hrs/wk. Applicants must have flex-ibility to work hours necessary to handle office workload. B77-310 (7/20).

Sr. Accounting Clerk IV in the Systems Dynamics Group of the Sloan School of Management to verify accuracy of accounting statements and handle related follow-up; compute xerox billings; issue petty cash; type budgets; answer visitors inquiries, or refer to others; order, index and distribute publications. Typing skill, ability to work in-dependently, and facility with figures required. B77-289 (7/6).

Sr. Clerk III-IV, part-time, full-time, in the Center for Cancer Research to post information from various forms; prepare invoices for approval, check statements against orders; analyze expenditures and commitments; prepare detailed financial reports on grants and funds. Applicants must be able to maintain complex records and to abstract required information from them. A facility with figures and typing skill also necessary. Part-time: 20 hrs./wk. (B77-328). Full-time: B77-329 (7/20).

Sr. Clerk III in the Student Loan Office, Comptrollers Acctg. Office to answer borrower inquiries by letter, telephone or in person on billing status and other matters; receive mail and take required action; record payments; review borrower accou and make adjustments. Applicants must have ability to learn and apply a complex loan system and be familiar with the use of computer systems. Typing and communication skills also necessary. B77-291 (7/6).

Sr. Clerk-Typist/Receptionist III, part-time, in Dept. of Naval Science. Will greet visitors; answer inquiries of students and others; type varied material: maintain files. Good general skills required as well as flexibility for changing assignments. Applicants should have secretarial school training or equivalent work experience. 20 hrs./wk. B77-326 (7/20).

Sr. Clerk III in the Libraries Microreproduction Laboratory to process requests for lab services: prepare work orders and billing; answer related inouries over phone and in person; maintain files. May assist in securing materials from branch libraries as necessary. Typing skill, command of English language, ability to organize work required. Familiarity with bookkeeping procedures is helpful. B77-320, B77-322 (7/20).

Cashier III in the Comptrollers Acctg. Office, Cashier's Office, to receive and disburse cash; prepare receipt slips; log mail receipts; cash personal checks; prepare checks for deposit; prove cash fund. Applicants must be able to handle a large volume of cash transactions with speed and accuracy, and be able to operate a calculator. B77-

Sr. Clerk III in the Personnel Records section to status; employee termination; new employee status; employee termination; new employees; act as liaison with other personnel sections and payroll office regarding employee records; perform other related clerical duties and special projects (i.e. annual reviews) as required. High school graduation, or equivalent, plus three years clerical experience required. Good typing skill, accuracy with detail and ability to deal well with people on the phone and in person also necessary. B77-296 (7/6).

Clerk II-III, file clerk, in the Accounts Payable sec tion of the Comptrollers Accounting Office: will file various material using alphabetic and numeric systems; secure materials from files as requested; maintain folders; label drawers and assure general order of files. Will also handle other general clerical duties as required. Ability to handle alphabetic and numeric filing with accuracy required. B77-271

Clerk II in the Travel Section of the Comptroller's Accounting Office to assist in preparing and distributing checks. Applicants must have typing skill and ability to operate adding machine.B77 327 (7/20).

Hourly, Matron, in the Medical Department to Houry, Matron, in the Medical Department to clean offices, examination rooms, lavatories and other areas; dust, empty trash, wash appliances and perform other duties necessary to maintain cleanliness and order; stock necessary supplies in assigned areas; prepare cofee. Neat appearance, efficient work habits required. Previous work experience desirable. 40 hrs.,6AM-2PM, H77-111 (7/90) (7/20).

Hourly, Asst. Animal Technician, to perform various duties to care for laboratory animals: feed and water as directed; clean cages; perform other housekeeping in animal areas; monitor animals condition, and report to supervisors and others. Knowledge of and ability to work with animals required as well as graduation from high school. Applicants must be willing to attend formal work related educational programs. Animal care experience preferred. H77-98 (7/20).

Hourly, Technician B (electronic) in the Center for Advanced Engineering Study to repair television cameras, video decks and associated video production equipment plus other related duties. Applicants must be graduates of 2 year day technical school or have equivalent applicable experience. Knowledge of video production including audio, lighting and portable remote setup is desirable. H77-110 (7/20).

Hourly, Driver-Utility, in the Lab for Nuclear Science, Bates Linear Accelerator, Middleton, Ma. to drive, pick up and deliver items; handle and move material as necessary; clean and care for work area and assigned equipment. High school graduation, or equivalent, unrestricted Mass. drivers license, class 1 or 2, a good driving record and 3 years commercial driving experience required. Applicants must be able to lift heavy weights and to pass physical examination required for driving. H27 109 (700). for drivers. H77-108 (7/20).

Hourly, Painter, in Physical Plant. Position requires at least 5 years experience in all phases of painting trade including interior and exterior work. preparation and mixing of paint materials and matching colors, through knowledge of the various materials, tools, equipment and rigging used in the trade. Applicants must also have Painter Riggers license, and ability to work effectiviely on staging and ladders. H77-86 (7/20).

Hourly, Sheet Metal Worker in Physical Plant re Hourly. Sheet Metal Worker in Physical Plant requires at least five years recent experience in sheet metal trade and layout experience in parallel line development triangulation, radial line pattern development. Experience with insulation procedures, new air handling systems and modifications to older type systems also necessary. Applicants must be qualified in Arc welding, frozing and oxy/acetylene procedures, and have a working knowledge of machinery applicable to sheet metal fabrication. Position requires irregular shift and/or irregular schedule. H77-112 (7/20).

Hourly, Polisher, in Physical Plant to clean and apply protective finishes to all types of floor sur-faces. Must know proper use of detergents and other compounds applied to floors. 4PM-Midnight (H77-101); 11PM-7AM H77-105 (7/6).

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

ADMINISTRATIVE STAFF

A77-3, Systems Prog., Info. Processing Serv.

A77-15, Director, MIT Alumni Fund (4/13) A77-21, Systems Prog., Info. Processing Serv. A77-29, Asst. Labor Relations Mngr., Personnel

A77-29, Asst. Labor Relations (6/1)
A77-31, Director, School of Eng. (6/8)
A77-32, Mngr., Text Sales, MIT Press (6/8)
A77-34, Admin. Asst., Architecture (6/8)
A77-38, Appl. Prog., Admin. Comp. Serv. (6/22).
A77-39, Asst. Dir., Off. of Spons. Res. (7/6)
A77-41, Asst. Wage & Salary Admin., Personnel

BIWEEKLY:

B77-151, Sec. IV, Aero/Astro Dept. (5/4) B77-155, Sec. IV, Industrial Liaison Prog. (5/11) B77-175, Sec. IV, Dean for Stdn. Affairs (5/25) B77-179, Sec. IV, Biology (5/25) B77-191, Sec. III-IV, Off. of Pres. & Chanc. (6/2-

B77-196, Sr. Clerk IV. Alumni Assn. (6/1)

B77-215, Sec. IV, Math Dept. (6/8) B77-218, Sec. IV, Biology (6/8) B77-219, Sec. IV, Energy Lab. (6/8) B77-221, Reactor Oper. IV, Nuclear Reactor

Lab. (6/15) B77-226, Sec. IV. Plasma Fusion Ctr. (6/15)

B77-239, Sec. III, Sloan School (6/22) B77-246, Sec. IV, Economics (6/22) B77-249, Sec. IV, Civil Eng. (6/22)

B77-252, Sr. Clerk III, Acctg. Office (6/22)
B77-261, Sec. IV, Medical Dept. (7/6)
B77-262, Sec. IV, Nutrition & Food Sci. (7/6)
B77-263, Sr. Clerk III, Registrar's Off. (7/6)
B77-265, Sr. Clerk III, Registrar's Off. (7/6)

B77-266, Sec. III, Ctr. for Space Res. (7/6)

ACADEMIC STAFF: C77-4, Tech. Asst., Biology (4/6) C77-18, Asst. Radiation Protection Off., Medical C77-23, Mngr. of Financial Serv., Medical Dept.

77-25, Staff Asst., Libraries (6/1) 77-28, Asst. Coordinator, Medical Dept. (6/22)

SPONS. RES. STAFF:

D76-17, Biochemist, Res. Lab. of Elec. (2/25) D76-121, Res. Engineer, Energy Lab. (7/28) D76-188, Postdoc. Sci. Ctr. for Space Res

(Continued on page 8)

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(Continued from page 7) D76-225, Sci. Applications Prog., Lab. for

Nuclear Sci. (5/4)
D76-232, High Energy Physics Res., Bates
Linear Accelerator (1/5)
D76-233, High Energy Physics Res., Bates
Linear Accelerator (1/5)
D76-243, Metallurgist, National Magnet Lab.

R77-16, Prog. Mngr., Energy Lab. (2/9) R77-17, Systems Theory Res., Elec. Syst. Lab.

R77-22, Astro Physics Res., Ctr. for Space Res. (2/16) R77-33, postdoc. res., Physics, Ctr. for Theoretical Physics (3/9)

Theoretical Physics (3/9)
R77-34, postdoc res., Physics, Ctr. for Theoretical Physics (3/9)
R77-35, postdoc res., Physics, Ctr. for Theoretical Physics (3/9)
R77-36, postdoc res., Physics, Ctr. for Theoretical Physics (3/9)
R77-37, High Energy Physics res., Bates Linear Accelerator (3/9)

R77-49, Res. Eng., Energy Lab. (3/23) R77-51, Sr. Res. Eng., Energy Lab. (3/23) R77-53, postdoc. res., Physics, Res. Lab. of Elec.

R77-67, Sr. Design Eng., National Magnet Lab.

R77-73. Plasma Physicist, National Magnet Lab. (4/27) R77-74, Plasma Physicist, National Magnet Lab. (4/27)

Nuclear Magnetic Resonance Res., National Magnet Lab. (4/27) R77-79, Postdoc. Res., Physics, Lab. for Nuclear

Sci. (5/4) R77-80, Postdoc. Res., Physics, Lab. for Nuclear Sci. (5/4) Sci. (5/4) R77-82, Applications Analyst, Energy Lab. (5/4) R77-85, Comp. Specialist, Energy Lab. (5/11) R77-91, Sr. Accelerator Physicist, Lab. for

Nuclear Sci. (5/18) R77-93, Biophysicist or Medical Physicist, National Magnet Lab. (5/25) R77-94, Design Eng., National Magnet Lab.

R77-95, Biophysicist, Biology (5/25) R77-97, Chemical Eng., Energy Lab. (6/1) R77-98, Elec. Eng., Hlth. Sci. & Tech. (6/1) R77-104, Staff Dir., Urban Studies & Planning

(6/22) R77-105, Managing Dir., Energy Lab. (6/22) R77-106, Asst. for Oral History, Library (6/22) R77-109, Syst. Prog., Har/MIT Div. of Hlth. Sci.

& Tech. (7/6) R77-110, Postdoc. Res., Physics, Lab. for Nuclear Sci. (7/6) R77-112, Magnet Designer, National Magnet Postdoc. Res., Physics, Lab. for

R77-113, Experimental Physicist, National R77-144, Tech. Asst., Ctr. for Cancer Res. (7/6)

EXEMPT: E77-3, Mech. Shop Super., Physical Plant (1/26) E77-19, Circulation Mngr., Alumni Assoc. (5/4) E77-23, Inpatient Nurse, Medical Dept. (6/8) E77-24, Admin. Asst., Campus Housing (6/8)

H77-29, 2nd. Class Engineer, Physical Plant

H77-58, Tech. A, Bates Linear Accelerator (6/8) H77-76, Tech A, National Magnet Lab. (6/22) H77-83, Reprod. Worker A, Graphic Arts (6/15) H77-89, HVAC Designer/Draftsperson, Physical

Plant (6/22) H77-90, Arch. Designer/Draftsperson, Physical H77-91, Arch, Designer/Draftsperson, Physical lant (6/22) Plant (6/22) H77-92, Arch. Designer/Draftsperson, Physical Plant (6/22)

The following positions have been FILLED since the last issue of TECH TALK:

B77-247 A77-23 B77-273 Sec. V Admin. Staff Sec. IV Admin. Staff B77-217 Lib. Asst. IV Tech. Asst. Sec. III Sec. III Sec. III Spons. Res. Staff Machinist A Sec. IV B77-229 Sec. IV
House Mngr.
Glassware Washer
Lib. Asst. IV
Sec. IV
Heat & Vent Mech. B77-102 Sec. III Sec, IV Sr. Clerk III Spons. Res. Staff Lib. Asst. IV Tech A Cashier Sec. IV Sec. III-IV Lab. Asst. Lib. Asst. V Sec. IV Section Head V Sec. IV Asst. Dir. Admin. Staff Admin. Staff Spons. Res. Staff Tech. Asst. IV Admin. Staff Admin. Staff Admin. Staff Sec. IV Staff Acctg. Sec. IV Sec. III Custodian Audio Visual Oper.

The following positions are on HOLD pending final

decision:	
A77-37	Admin. Staff
B77-256	Sec. IV
B77-276	Sr. Lib. Asst. IV
B77-294	Lib. Asst. III
R77-115	Spons. Res.
B77-281	Lib. Asst. III
A77-42	Admin. Staff
A77-35	Admin. Staff
H77-99	Custodian
H77-100	Custodian
H77-102	Custodian
H77-103	Custodian
H77-104	Custodian

MIT, Alumni Association Win 14 CASE Awards

MIT and its Alumni Association have won 14 awards in the annual Council for Advancement and Support of Education (CASE) national competition.

The MIT Alumni association won 10 awards in a variety of categories and the designs of Nancy Pokross, graphic designer in Design Services and the Alumni Association, received four awards.

Top winner was the 1976-77 Alumni Fund direct mail campaign, which received a Grand Award, including an honorarium of \$500 sponsored by Time Incorpor-

The Alumni Association also received an exceptional achievement award for general excellence in programs, a distinction reserved for organizations that have demonstrated superior strength in three or more divisions of the CASE recognition program. In doing so, MIT placed second in the competition for overall alumni pro-

The Challenge Gift Program and the 1976 Technology Day mailings won exceptional achievement awards for the Alumni Association, while Ms. Pokross received one for the School of Science solicitation package, a part of MIT's on going \$225 million Leadership Campaign.

The Alumni Association also received citations for special constituency giving programs recognizing the MIT Sailing Program and the Challenge Gift Program. Citations for individual publications were given to the Sailing Pavilion dedication brochure and the Building 10 brochure. The 1976 Technology Day and Alumni Officers Conference received a citation for on- and off-campus alumni programs.

Technology Review, the national journal of science and technology published at MIT, was cited as exceptional among the top ten magazines entered in the publications program. This award represents third place in the national competi-

Ms. Pokross received citations for design work on the folder for the Building 10 Fund, the flyer for Women's Work, a movie made by the Center for Advanced Engineering Study, and the cover for the January issue of Technology Re-

The Office of Design Services provides professional graphic design to the entire MIT communi-

Gail Zimmermann is Promoted

Gail Zimmermann of North Reading, who has worked at MIT since 1970, has become a production manager in MIT Design Ser-

In her new position Ms. Zimmermann will work with graphic designer Nancy Pokross and be responsible for all facets of producing projects for the Alumni Association. She began working at Design Services as production assistant last March when she transferred from Graphic Arts Service where she had worked since 1970, most recently as administrative assistant in the Offset Office.

Ms. Zimmermann received the

BA degree in political science from the University of New Hampshire in 1970. She will begin studies in September for the MBA degree in the graduate program in management at Simmons College.



Cambridge Youngsters Learn to Sail

Cambridge youths age 17 and younger are learning to sail this summer at the MIT Sailing Pavilion in a program sponsored by the Cambridge Recreation Depart-

Lessons are given in rigging, basics of sailing and escorted sailing with a final test given to ensure that each participant is able to handle the boat alone. Those completing one of three, two-week sessions can sail Tech dinghies at their leisure, 9am-4pm, Monday-Friday, through the end of August.

Twenty Cambridge youths completed a similar program last summer when it was offered for the first time. This summer 15 youths completed the first session; more are now enrolled in the second session which will end July 29. The final session will be held August

"The program is part of our commitment to Cambridge," said Hatch Brown, sailing master in the Department of Athletics. "The lessons stress on-the-water experience. That's what they like and what they benefit most by.'

Other young people using the Sailing Pavilion this summer include those enrolled in the MIT summer day camp and the children of MIT employees and students. In order to qualify for lessons, individuals must pass a swim test consisting of swimming 100 yards and treading water for 10 minutes.

Lessons are given by Mr. Brown, the Sailing Pavilion staff and several MIT student volunteers.

The summer sailing program for Cambridge youths costs \$5. Those preferring to help the Sailing Pavilion staff with routine maintenance tasks, may arrange to have the payment waived on the first day of class. For more information, call the Cambridge Recreation Department at 876-6800, ext.

Five From MIT Are Nominated As Astronauts

One MIT graduate student and four alumni have been nominated by a United States Army selection board to compete for astronaut positions in the space shuttle pro-

A total of 33 commissioned officers were chosen by the Military Personnnel Center in Alexandria, Virginia, to participate in a twoyear training and evaluation period, at the end of which NASA will make its final selections for the space shuttle team.

Those nominated from MIT were: 1st Lt. Andrew J. Green, a graduate student in the Department of Aeronautics and Astronautics from Waterville, N.Y.; Capt. Charles A. Vehlow, '77, of Boxboro, Mass.; Maj. Lawrence L. Izzo, '71, of Greenlawn, N.Y.; Maj. Stephen A. May, '74, of Berkeley, Calif., and Capt. Michael K. Sheaffer, '70,

SAA Announces Oriental Art Sale

An exhibit and sale of original Oriental art will be held in the Student Center West Lounge on Monday, July 25, and Tuesday, July 26, from 10am to 5pm.

Art from Japan, China, India, Tibet, Nepal and Thailand will be included in the exhibit and sale arranged by Marson Ltd. of Baltimore, Maryland, and spon-sored by the MIT Student Art Association. The oldest prints date to the 18th and 19th centuries and include Chinese woodcuts, Indian miniature paintings, and manuscripts. Modern pieces include original woodcuts, etchings, lithographs, serigraphs, and mezzotints.

Browsers are welcome. A representativae of Marson Ltd. will be there to answer questions about the work, artists, and graphic tech-

Obituaries

Memorial Service Friday For Professor J.H. Keenan

(Continued from page 1) fields of gas turbines and jet propulsion. He completed a revision of the Gas Tables shortly before his death and publication plans are be-

The pioneering adventuresomeness of his research was recognized in 1966 when the American Society of Mechanical Engineers elected him an Honorary Member, citing his "lasting contributions to the understanding of thermodynamic concepts and to the formulation of a rigorous exposition of thermodynamic principles."

The recognition came a year after the publication of his major work, Principles of General Thermodynamics, which resolved the conceptual conflicts that had marked the study of thermodynamics for many years.

His latest honor came in April 1976 when the National Academy of Engineering announced that he had been elected to membership for his "contributions to engineering thermodynamics and engineering education."

Professor Keenan, who was born Aug. 24, 1900, in Wilkes-Barre, Penn., and who lost both parents when he was nine, received the bachelor of science degree from MIT in naval architecture and marine engineering in 1922. Until 1928 he was a turbine design engineer with General Electric Co. in Schenectady, N.Y.

For six years, from 1928-1934, he was an assistant professor of mechanical engineering at Stevens Institute of Technology in Hoboken, New Jersey. In 1934 he came to MIT as an associate professor of mechanical engineering and became a full professor in 1939.

In 1951 he was Fulbright Lecturer at Cambridge University and Imperial College of Science and Technology in England.

For three years, from 1958-1961, he headed the Department of Mechanical Engineering at MIT.

Professor Keenan was adjudged a magnificent teacher by the most critical of juries-his students. His peers considered him a teaching

In 1966, on the occasion of the award of an honorary doctor of laws degree to Professor Keenan by the University of Glasgow, Scotland. James B. Killian, Jr., then chairman of the MIT Corporation,

"To my mind he is one of the finest examples I know of a scholar of the first order who is also unremittingly interested in and concerned with the art of teaching. Not only has he made important contributions to the body of knowledge and understanding in the field of thermodynamics, but he has been able with great success to transmit his understanding to his students and associates.'

Outside MIT he was a leading figure in the International Conferences on the Properties of Steam, to which he was a delegate six times. His contributions to the permanent engineering literature brought him the Worcester Reed Warner Medal of the American Society of Mechanical Engineers in 1955.

Professor Keenan was a director of Thermo Electron Corp., Wal-

Professor Keenan is survived by his wife, the former Isabel Morrison, and two children, Mrs. John W. Carr III of Bryn Mawr, Pa., a research associate at the Philadelphia Child Guidance Clinic, and Matthew A. Keenan of 4 Dana Rd., Belmont, an investment counselor.

Professor and Mrs. Keenan were summer residents of Nantucket for 45 years. For the last 10 years they lived in the Shimmo section of the

An avid sailor and tennis player, he was a member of the Siasconset Casino, the Belmont Hill Club, the Harvard Musical Association, and the Nantucket Yacht Club.

Memorial Service Held For Allan J. Urquhart, 55

A memorial service for Allan J. Urguhart of North Andover, MIT Benefits officer, was held Tuesday, July 12, in the MIT Chapel. Mr. Urquhart, who was 55, died on July 5 following a heart attack.

Speakers at the memorial service were Robert J. Davis, director

of personnel relations, John vice president for administration and personnel, and the Rev. Robert J. Holden, associate dean for student affairs. spoke of Mr.



Urquhart's compassion in dealing with individual benefits problems and his courage in living with heart disease.

A native of Montreal, Mr. Urquhart played on the Canadian Junior Davis Cup Team. He attended McGill University and served with the Royal Canadian Air Force during World War II. He was a 1948 graduate of Springfield College.

Mr. Urquhart was associated with the Acacia Mutual Insurance Co. of Boston and the Travelers Insurance Co. before joining MIT in 1969. At MIT he was responsible for a wide-ranging benefits program including pension plans, tax-sheltered annuities, health plans, scholarships and pre-retirement

A memorial fund has been established at MIT in his name.

Mr. Urguhart is survived by his widow, Nancy (Woodman); his mother, Mrs. Margaret Urquhart of St. Catherines, Ont.; a daughter, Janet E. Urquhart of Westfield; three sons, Gary A. Urquhart of Los Angeles, Brian A. Urquhart of Dracut and Ross E. Urquhart of

Brighton; a sister, Mrs. Jean Wright of Indianapolis; and two brothers, Ronald Urquhart of St. Catherines, Ont., and Robert Urquhart of Edmunton, Alta.

J. O'Callaghan

Word has been received of the death of Jeremiah O'Callaghan, 77, of Somerville, who died Friday, July 8, while on vacation in Cork City, Ireland

Mr. O'Callaghan was a machinist in the Department of Mechanical Engineering from 1953 until his retirement in 1969.

Survivors include his widow, Bridget O'Brien O'Callaghan; a son, William D. of Belmont; five daughters, Kathleen Andrews of Sandwich, Maureen Helie of Malden Patricia LaColla of Norton. Eileen Clark of Medford and Barbara McDonald of Quincy; a sister, Catherine Fitzgerald of Cork City and a brother, Sean, of London.

V. J. Scrima

Vincent J. Scrima of Somerville, purchasing agent for the Laboratory for Nuclear Science, died suddenly Saturday, July 9, following a heart attack. He was 50.

Mr. Scrima came to MIT in 1944 and was a member of the Quarter Century Club.

He is survived by his widow, Mary Pappalardo Scrima; four children, Vincent, Joseph, Daniel and Maria Scrima; his father, Pasquale Scrima, all of Somerville, one brother and six sisters.

Lester Smith

Lester Smith, 87, of St. Petersburg, Fla., died Friday, June 17. Mr. Smith was a guard at the Draper Laboratory from 1948 until his retirement in 1959.