

TECH TALK
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November 14, 1984
Volume 29, Number 15

Fair schedule

The Office Automation Fair, organized by the Working Group on Support Staff Issues will begin at 10am today (Wednesday, Nov. 14) in the Sala de Puerto Rico. Fair hours are 10am-3pm today and Thursday. A number of special events have been planned in conjunction with the fair. The schedule is:

Wednesday, Nov. 14, noon—Professor James D. Bruce, director of Information Systems, will speak on "Office Automation: MIT's Present and Future," in Kresge Auditorium.

Thursday, Nov. 15, noon—Christine Bullen, assistant director of the Center for Information Systems Research, will discuss "The Challenge of New Office Technology," in Kresge Auditorium.

Thursday, Nov. 15, 1:15pm—Panel Discussion, "Office Automation: On-Line Issues at MIT," with panelists Cecelia D'Oliveira, Project Athena; Ann Finn, Laboratory for Computer Science; Jeffrey Meldman, Sloan School of Management; Linda Suter, Department of Nuclear Engineering, and Susan Warshauer, Personnel Office, as moderator, in the Student Center Mezzanine Lounge.

Thursday, Nov. 15, 2:45pm—Announcement of door prize winners in the Sala de Puerto Rico.

No Tech Talk

Tech Talk will not be published November 21 because of Thanksgiving vacation. Publication will resume Wednesday, Nov. 28. The deadline for inclusion of listings in that issue will be noon Friday, Nov. 23.

Management talk

"Managing toward Excellence" will be the topic of the next Perspectives talk. It will be given by Professor David G. Anderson of the Sloan School on Tuesday, Nov. 27, at noon in Rm 9-150.

For several years Professor Anderson was associated with McKinsey & Co., a major consulting firm, where he managed a research project on industrial innovation which became known as McKinsey's "Excellent Companies" study and became the basis of the best-selling book, *In Search of Excellence*, written by two of his colleagues. In his Perspectives talk, Dr. Anderson will describe subsequent research on how mediocre or poor companies can be turned into top performers in their industries.

Perspectives talks are open to all members of the community and are sponsored jointly by the Office of the Provost, the Sloan School of Management and the Personnel Office.

Skating classes

The Department of Athletics again will offer a series of eight Saturday morning skating lessons for children (ages 6 to 14) of members of the MIT community. The lessons begin December 8, running for three consecutive Saturdays, with a Thursday lesson on December 27. Saturday lessons resume January 5 for another three weeks. Beginners will meet at 10am; advanced skaters at 11am.

Skates must be single blade hockey or figure skates. Parents are urged to make sure that skates are properly fitted to the child. Hockey helmets are encouraged for beginning skaters.

Classes will be limited to 30 children. A current athletic card is required and there is a \$20 fee for the lessons. Registration forms must be filed at the du Pont Equipment Desk (W32-004) by Wednesday, November 28.

MIT Press posts surplus and looks to future

By CHARLES H. BALL
Staff Writer

Frank Urbanowski sat in his third-floor office in the MIT Press building on Carleton Street, facing a floor-to-ceiling bookcase crammed with Press-published volumes in their colorful jackets.

Looking at the wall of books seemed to lift his spirits. So did last year's financial results.

The MIT Press, one of the nation's largest university presses, is running in the black once again.

"We had some very good years back to back in the late seventies," he said, "and in '79 and '80 we produced surpluses. It seemed reasonable at the time to expand our operation and to launch some new projects."

Then some problems arose, largely triggered by "perturbations in the economy, inflation, higher interest rates and the weakness of the pound and the yen. We met our targets in fiscal '81," Urbanowski recalled, "but as fiscal '82 began to unfold

we became less optimistic about our expectation for the coming year. We did some reforecasting, but many of our major expense commitments were in place."

"What happened to us," Urbanowski said, "was a reflection of what was happening to the economy. The recession hurt all aspects of the publishing world and affected MIT as well." Even before the end of fiscal 1982, Urbanowski said, "we began to make significant cuts to consolidate our operations in our areas of strength and to focus our resources."

This coincided with the planned three-year reduction in staff at the Institute as a whole. "While our problems were not directly related," Urbanowski said, "the same factors influencing the Institute's decisions influenced ours. The only difference was we felt the need to make a turnaround in short order rather than the three-year schedule the Institute had. Since we rely on sales to support our operation rather than Institute funding, the Press

could not afford another year of serious deficits—which, incidentally, are not funded but are retained on our balance sheet to be cleared by future earnings."

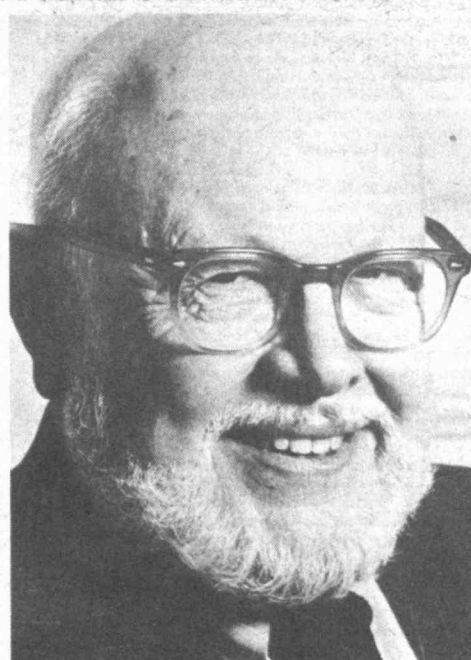
"Fiscal '83 and '84 were good years," he said, "and the credit for it goes to the MIT Press staff. Last year, fiscal 1984, the Press produced a modest surplus of \$50,000, and expects to continue to produce surpluses. The staff turned the Press's operation around in two years," Urbanowski said, "while publishing the best and biggest list in a decade. A remarkable group of people."

Summing up the turnaround, Urbanowski said: "We set out to accomplish a difficult task in the summer of 1982 and we believe we have stabilized our operation at a new level. Our list is growing and improved in depth and in sales. For the current fiscal year we are expecting total sales of approximately \$8.4 million which is made up of \$5.6 million for books and (continued on page 7)

Fowler to give Feshbach Lectures on nuclear processes in physics

By ROBERT M. BYERS
Staff Writer

Dr. William A. Fowler, Institute Professor Emeritus at the California Institute of Technology and corecipient of the 1983 Nobel Prize

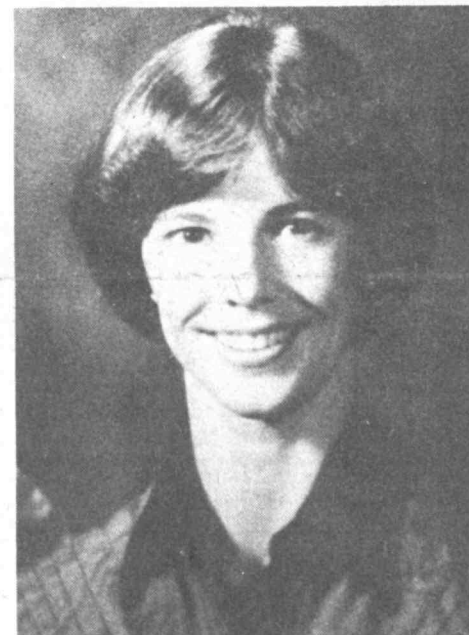


Nobel laureate William A. Fowler

in Physics for his work on the origin of the elements that make up the universe, will present the first Herman Feshbach Lectures in Physics during the first full week of December.

Professor Fowler's first lecture will be at 4pm Monday, Dec. 3, in Huntington Hall (Rm 10-250) and will deal with 50 years of experimental and theoretical work at Caltech and elsewhere on the nuclear processes which generate energy in the sun and in the other stars and which have brought about the synthesis of the chemical elements that make up the universe. Dr. Fowler has described these as "years of great excitement" in the development of nuclear astrophysics—the designation he gives for the application of nuclear physics to astronomy. Moreover, Professor Fowler says, excitement remains in the field since several key basic problems have not yet been resolved.

The second lecture in Professor Fowler's Feshbach series will be at 4pm Wednesday, Dec. 5, in Huntington Hall and will deal with the age of the universe and the use of radioactive elements as nuclear chronometers. While earlier work using the red shift and luminosity observations have placed the age of the universe—in other words, the time of the original "big bang" that brought the universe into being—as anywhere from 10 to 20 billion years ago, more recent nuclear studies analyzing elements have narrowed (continued on page 7)



Astronaut Bonnie J. Dunbar

Astronaut to discuss materials tests in space flights

Astronaut Bonnie J. Dunbar, a materials scientist scheduled to go into space as a mission specialist aboard the National Aeronautics and Space Administration's Space Shuttle flight in October of next year, will present a lecture Monday, Nov. 26, on the processing of materials in space.

Dr. Dunbar's lecture will begin at 4pm in Huntington Hall (Rm 10-250) and is being sponsored by the Department of Materials Science and Engineering.

Professor Merton C. Flemings, head of the Department, said the lecture will have particular interest for MIT faculty, graduate students and undergraduate students. Research sponsored by NASA and aggregating more than \$1 million a year is presently underway in the Department and several of the experiments that Dr. Dunbar and others are scheduled to conduct in space are being designed in the Department.

"In reviewing the field of materials processing in the environment of space, Dr. Dunbar will touch on many of the projects underway here," Professor Flemings said.

Dr. Dunbar received the SB degree in 1971 in ceramic engineering from the University of Washington and spent two years with Boeing Computer Services before returning to UW for graduate studies, receiving the SM degree there in 1975. Her thesis research dealt with mechanisms and kinetics of ionic diffusion in sodium beta-alumina.

In 1975, Dr. Dunbar was a visiting scientist at Harwell Laboratories, Oxford, England, where she worked on wetting behavior of liquids on solid substrates. Following that, she joined Rockwell International's Space Division where she worked on NASA Space (continued on page 7)

Travel Committee announces hotel, car rental discounts

The MIT ad hoc Travel Committee has recently completed negotiations with two major car rental firms and more than a dozen local hotels to provide discounts to members of the community.

Avis and Hertz, with whom MIT has had discount agreements for many years, have posted their rates for 1984-85. The Avis rates are \$31-34/day; the Hertz rates are \$31.50-\$35.50/day, both depending on the size of the

car rented. The rates apply nationwide to cars rented and returned to the same location. When the two companies offer lower promotional rates, those rates will apply. The rates are \$3/day higher in the New York area and not available on weekends and holidays.

A sticker from the MIT Travel Office may be affixed to any credit card and will guarantee the discount and assure that the car rental is (continued on page 7)

Choral Society to sing 'Messiah'

A record-breaking 170 voices from the MIT Choral Society, conducted by John Oliver, will perform an uncut version of Handel's *Messiah*, on Friday, Nov. 30, at 8pm in Sacred Heart Church at the corner of Sixth and Otis Streets in East Cambridge.

Tickets are \$7 general admission and \$3 for MIT/Wellesley College students. Information: 3-2906.

Mr. Oliver, a senior lecturer in music at MIT, said he decided to present the complete *Messiah* as a celebration of the tercentenary of the composer's birth.

He explained that the oratorio was written as a drama around a religious theme rather than as sacred music. It is concerned not only

with the birth of Christ but also with his death and resurrection and the redemption of mankind, Mr. Oliver said.

There will be four professional soloists and a 29-piece professional orchestra assembled by concertmaster Maynard Goldman, who also serves as concertmaster for the Opera Company of Boston and the Boston Ballet.

Soloists will be: baritone James Kleyla, a soloist with the Boston Symphony Orchestra at Tanglewood last summer; mezzo-soprano Gloria Raymond who recently made her operatic debut with the Boston Lyric Opera Company; and tenor Mark Fularz and soprano Martha Elliott, both soloists with the John Oliver Chorale.

Vibration control means developed

By ROBERT C. DI IORIO
Staff Writer

Both people and machinery can quiver with excitement in outer space. Humans have an elaborate self-regulating mechanism built in, but mechanical systems have to rely on the skill of their designers to control potentially damaging vibrations.

An MIT engineer has proposed a unique solution which can be applied both in outer space and on earth.

Dr. James E. Hubbard Jr., assistant professor of mechanical engineering, has developed a way to control vibrations in a mechanical system by using an active distributed-parameter damper. The active element is piezoelectric film.

Piezoelectric material has the ability to generate a voltage when mechanical force is applied or to produce a mechanical force when voltage is applied. The material Professor Hubbard is using in his experiments is commercially available, but he is the first to use the film to control vibrations.

Professor Hubbard and his students have designed a feedback loop that allows them to monitor and control the voltage and the mechanical vibrations along the entire length of a beam. Conventional methods of damping vibrations sense vibrations at the point where they are attached to the structure and do not control all of the significant vibrational modes of which the structure is capable. In principle, Professor Hubbard's control mechanism can sense and control all the significant vibrations.

MIT has applied for a patent on the application.

Dr. Hubbard says that the piezoelectric film becomes, in his application, "a distributed

parameter structure in the sense that it is an extended flexible structure theoretically capable of damping an infinite number of vibrational modes."

Vibration control is critical in aircraft, robotics and satellites. In space, there are special problems because there is no natural damping effect other than that which the internal structure presents.

Dr. Hubbard illustrated the problem by describing a communications satellite that must deploy arms bearing solar panels to obtain power.

"When the arms lock into position there is a slight jar," he said. "That jar sets up a vibration in the arms. On earth, a vibration of that magnitude would damp itself out quickly due to air damping and gravity effects, but in space there is nothing to keep the arms from vibrating. Vibrations have caused some satellites to destroy themselves," he said.

A scale model of a satellite with flexible arms is being used in Professor Hubbard's experiment. Accelerometers at the tip of the arms monitor the vibrations of the structure and the damping effect is applied to the flexible arms.

A smaller bench model developed by Professor Hubbard and graduate student Thomas Bailey was used in initial testing. It consists of a flexible piece of metal about the size of a hacksaw blade which is fastened at one end to a support frame. When the flexible piece of metal is deflected two centimeters and released it vibrates back and forth for about 90 seconds. However, when a current is passed through the piezoelectric film bonded to one side of the strip of metal, the vibrations are damped out in 1/20th of that time.

Entrepreneurial workshop set

More than 500 entrepreneurs and other business executives will attend the MIT Enterprise Forum's fifth annual Entrepreneurial Workshop in Cambridge on Saturday, Nov. 17, at MIT.

The all-day workshop, entitled "Excellence in Entrepreneurship: Building a Quality Company," will feature an opening discussion by several business executives and an MIT management professor, and a keynote luncheon address by William H. Hewlett, vice chairman of Hewlett-Packard Company.

Later, presidents and senior officers from well-known companies will lead 12 small group discussions focusing on a series of topics related to developing successful companies. The topics include: Analyzing Strategic Decisions; Finding and Keeping Talented Employees; Financial Controls; Selecting and Using Outside Professional Support; Effective Use of Directors; Transition from Entrepreneur to Business Manager; Market-Place Strategies; and Moving from R&D to Profitable Sales.

The participants in the opening discussion will include David G. Anderson, professor of management at the Sloan School of Management and chief researcher for the book, *In Search of Excellence*; Amar G. Bose, chairman of the Bose Corporation of Framingham, Mass.; William P. Murphy, Jr., chairman of Cordis Corporation of Miami; Philippe Vilers, chairman of Automatix, Inc., of Billerica, Mass.; and Milton D. Stewart, president of the

Small Business High Technology Institute of Washington, D.C.

Among the senior executives serving as panelists for the small group sessions will be: Gordon B. Baty, president, Wormser Engineering Corp.; J.P. Barger, president, Dynatech Corp.; John P. Bowen, president, Geographic Systems, Inc.; Alexander V. D'Arbeloff, president, Teradyne, Inc.; Bernard M. Gordon, chairman and chief executive officer, Analogic Corp.; Lawrence Gould, former chairman, MA/COM; George N. Hatsopoulos, chairman, Thermo Electron Corp.; Winston R. Hindle, Jr., vice president, Digital Equipment Corp.; Stephen Levy, chairman, Bolt, Beranek and Newman; James N. Little, senior vice president, Zymark Corp.; and Douglas T. Ross, chairman, SofTech, Inc.

The MIT Enterprise Forum is an entrepreneurial business analysis clinic organized under the auspices of the MIT Alumni Association. It offers businesses at a critical stage of development an opportunity to obtain counsel from experienced experts on possible steps to take to achieve their goals.

In addition to the annual workshop, the Forum holds monthly clinics at which chief executive officers present their business cases to panels of selected professionals (MIT alumni and others), who donate their time and expertise. Each presentation is open to the public free of charge. The Forum also conducts counselling sessions for start-up ventures and publishes a monthly newsletter.

Vanmarcke receives ASCE's Huber Award

Dr. Erik H. Vanmarcke of the Department of Civil Engineering, who is ranked among the leaders of the movement to apply formal probabilistic methods to civil engineering practice, has won the Walter L. Huber Civil Engineering Research Prize given by the American Society of Civil Engineers.

Professor Vanmarcke was cited for his "...research on the application of probabilistic techniques in geotechnical, structural and seismic problems in civil engineering."

The research recognized by the award in-

cluded stochastic modeling of earthquake and wind loads and their effects on structures, on reliability analysis and design, and on the use of risk management in engineering for protection against natural hazards.

In geotechnical engineering, Professor Vanmarcke developed practical methods to describe the spatial variability of soil properties and to handle important probabilistic aspects of site exploration and soil behavior.

He has published widely on random vibration, earthquake engineering and risk analysis, and is the author of *Random Fields: Analysis and Synthesis* (MIT Press). He is also editor-in-chief of the international journal *Structural Safety*.

Professor Vanmarcke, who joined the faculty in 1969, holds the engineer degree from Catholic University of Louvain, Belgium (1965), the MS from the University of Delaware (1967) and the PhD from MIT (1970). He is on sabbatical leave at Harvard University this academic year.

League plans seminar

The MIT Women's League Fall Luncheon Seminar will be held Friday, Nov. 16, noon-2pm in the Emma Rogers Room (10-340). Speakers will be Institute Archivist Helen Samuels and Reference Archivist Kathy Marquis whose talk is entitled "On the Record: Documenting the History of Women at MIT."

They will describe the Archives, its functions and collections, with special emphasis on the sources about women. Correspondence and documents of Ellen Swallow Richards, the first woman to graduate from MIT (in 1873), and Eleanor Manning of the architectural firm of Howe, Manning and Almy, and other alumnae and faculty will be displayed and discussed.

Luncheon will follow the seminar. Reservations (\$3.50/person) are required and must be made by today (Wednesday, Nov. 14), at x3-3656 (leave message).



The sneakers above are red, in honor of two firsts: the first concert ever to be given at MIT this Friday, Nov. 16, at 8pm by the Composers in Red Sneakers and the first "guest sneaker" appearance by Professor of Music John Harbison, who will perform a new composition.

Harbison plans two appearances

Professor of music John Harbison will be "Guest Sneaker" in the first performance ever given at MIT by the Composers in Red Sneakers, Friday, Nov. 16, at 8pm in Kresge Auditorium.

Admission is \$3; MIT students and faculty and anyone wearing red sneakers admitted free. Information: 864-4911.

In addition to a new work by Professor Harbison, the concert will feature six world premiere compositions, including one by Michael Carnes, former research specialist with MIT's Experimental Music Studio. The other five are: Thomas Oboe Lee, Herman Weiss, Christopher Stowens, Robert Aldridge and Richard Cornell.

Violinist Melissa Howe, lecturer in music at MIT, and the MIT Brass Ensemble, Richard Given, conductor, will be among the featured performers. Others will be Virginia Eskin, Leslie Amper, Your Neighborhood Saxophone Quartet, Nancy Zeltsman and Jeff Fischer.

This is Concert XV for Composers in Red Sneakers, a consortium of composers who

organize and produce their own concerts. A Christian Science Monitor reviewer wrote that their "success has been a step toward demystifying the image of composers."

The group will be releasing a first record album soon from Northeastern Records.

Their appearance here is cosponsored by the Music Section of the Department of Humanities and the Council for the Arts at MIT.

Professor Harbison will appear for the first time in his new position as co-artistic director of COLLAGE, Boston's new music ensemble, when he conducts the first of three concerts at Harvard's Sanders Theatre Monday, Nov. 19, at 8pm. Featured will be the world premiere of Frederick Rzewski's *Mary's Dream*, which deals with the Frankenstein legend. The program also will include works by Harbison, Alvin Singleton, Robert Helps and Donald Sur.

Tickets are \$7 or \$5 for students and seniors. Information: 437-0231.

Vinge to speak in scifi series

Writer Joan Vinge will present the third reading in the Science Fiction series, "1984 and Counting. . ." on Thursday, Nov. 15 at 8pm in Huntington Hall (10-250). Admission is free.

Ms. Vinge is considered one of the most popular of the generation of female writers who came to science fiction in the late 60s and early 70s, according to Visiting Associate Professor Joe Haldeman, chairman of the fall reading series presented by the writing program.

Professor Haldeman said she is considered



unusual for having invaded the male-dominated preserve defined as "hard science fiction," meaning that which leans toward highly technological themes.

Her novel, *The Snow Queen*, and short story "Eyes of Amber," both won Hugo Awards for excellence in science fiction.

Her latest novel, *World's End*, was just released from Bluejay Books which next month will publish *Phoenix in the Ashes*, a collection of short stories.

Vinge also writes for younger readers. Her novel, *Psion*, was named a "Best Book for Young Adults" by the American Library Association. Her movie tie-in, *The Return of the Jedi Storybook* was on The New York Times best-seller list for two months, and was the first movie tie-in ever to reach number one on the list.

Nierman works on view at Museum

Mexican artist/sculptor Leonardo Nierman will come to MIT for the opening reception of his one-man exhibit at the MIT Museum tomorrow (November 15) from 5-7 pm.

'Orient Express' due

A concert of drama, music and poetry designed to celebrate the variety, history and depth of Asian/Pacific people in this country will be presented in Huntington Hall (Rm 10-250) Saturday, Nov. 17, at 2 pm.

Coordinator Robert Chu '85 said the program, entitled "On The Orient Express," will be the first Asian/Pacific American performance at MIT. It also occurs during the first East Coast tour for the artists, Glen Chin, Saachiko and Dom Magwili, all based in Los Angeles.

All three have appeared on network television shows such as General Hospital, Little House on the Prairie and Streets of San Francisco. Ms. Saachiko was cofounder of the Los Angeles Chinatown Teenpost Theatre Arts Program.

Dr. Nobuya Tschida of the University of Minnesota described "On The Orient Express" as having "comic observations, ballads, blues, poetry and a touch of drama against the backdrop of Asian Pacific immigrants, inventors, soldiers and pioneers. It touches life as contemporary as a teenager's first date and history as old as America itself," he said.

Admission is free for this event, sponsored by the MIT Chinese Student Club and supported in part by the Council for the Arts at MIT.

Cook to give lecture

Professor Nathan H. Cook of the Department of Mechanical Engineering will deliver the 1984 Ralph E. Cross Sr. Lecture in Manufacturing Sciences on Tuesday, November 20, in Rm 9-150.

He will discuss "Manufacturing at MIT: An Historical Perspective."

In his lecture, Dr. Cook will trace the history of manufacturing-related research at MIT. He will discuss his own manufacturing research and the activities at the Laboratory for Manufacturing and Productivity.

His remarks will include the roles teaching, research and consulting play. Dr. Cook will also point out some of the problems relating to manufacturing in the future.

Kepes photos to be shown

An exhibition of several kinds of photographs by Gyorgy Kepes, Institute Professor Emeritus and director Emeritus of the Center for Advanced Visual Studies, will open at the MIT Museum with a reception next Monday, Nov. 19, from 5-7 pm.

Professor Kepes will attend the opening for this exhibit, which will present early photographs and recent large-format Polaroids as well as color and black-and-white photographs. The exhibit will continue view through June 29, 1985.

Fowler to discuss physics

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that estimate to 12 to 18 billion years and work planned for the future promises to bring the two methods into closer concordance.

The final lecture in Professor Fowler's Feshbach series will be at 4pm Thursday, Dec. 6, in the Karl Taylor Compton Lecture Hall (Rm 26-100) and will be devoted to the search for neutrinos from the sun and the scientific mystery produced by experiments thus far, what Professor Fowler has called the Case of the Missing Solar Neutrinos. Fundamental to man's knowledge of the sun is the belief—based on terrestrial experiments—that the conversion of hydrogen into helium—the fusion process at work in the sun—should cause the sun to emit neutrinos as well as light. But experiments at the bottom of the one-mile deep Homestake Gold Mine at Lead, S.D., where the national Brookhaven Neutrino Laboratory is located, have determined that the flow of neutrinos from the sun is only one-third of what calculations show it should

be. Where are the missing neutrinos, Professor Fowler asks.

The Herman Feshbach Lectures in Physics were established earlier this year by the faculty in the Department of Physics to honor one of the department's most respected members—Institute Professor Herman Feshbach, a former director of the MIT Center for Theoretical Physics and a former head of the Department of Physics. Professor Feshbach came to MIT in the late 1930s as a graduate student, received his PhD in physics from MIT in 1942 and has been a member of the teaching staff ever since. He is a former president of the American Physical Society and presently is president of the American Academy of Arts and Sciences. He was awarded the rank of Institute Professor—the highest academic rank MIT confers—in 1983.

Professor Fowler, also a former president of the American Physical Society, has been an Institute Professor at Caltech since 1970 and has been Institute Professor Emeritus since 1982.

Travel discounts announced

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credited to the volume of use by MIT people. The discount rates are available for personal as well as business use of rental cars.

The discounted hotel rates are also arranged on the basis of the volume of MIT use and are available for visitors to the Institute as well as for community members themselves. Persons making hotel reservations are urged to request the MIT discount at the hotels listed below. Students are also encouraged to request the MIT rate when making arrangements for visiting family and friends.

Additional discounts also may be available for meetings or conferences for which a commitment for a specific number of rooms for a given period of time can be made.

Participating local hotels and their discounted rates (in most cases the lower rate applies to a single room, the higher rate to a double) are:

Boston Marriott Hotel, Copley Place,
236-5800—\$95-105.

Boston Park Plaza Hotel, Back Bay,
426-2000—\$55-67.

Colonade Hotel, Back Bay,
424-7000—\$60-68.

Astronaut to talk

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Shuttle thermal protection system and represented Rockwell on a NASA/industry committee evaluating prospective space industrialization concepts.

Dr. Dunbar joined NASA's Johnson Space Center in 1978 as a ground-based flight controller and served in mission control as a guidance and navigation officer for the 1979 Spacelab flight.

She was selected as an astronaut candidate in 1980 and, upon completion of a year of training, she was designated a mission specialist and ultimately was assigned to the Space Shuttle flight 61-A scheduled for launch in October of 1985. That flight will be conducted in cooperation with the Federal Republic of Germany and has been titled the German Spacelab Mission.

Dr. Dunbar, while serving with the astronaut corps, continued graduate studies at the University of Houston, receiving the PhD degree in biomedical engineering there in 1983.

Dr. Dunbar is a private pilot with more than 200 hours in single engine aircraft and has logged more than 300 hours flying time in T-38 jets as copilot.

Edgerton to speak

Institute Professor Emeritus Harold E. (Doc) Edgerton will be the next speaker in the lecture series devoted to the past 50 years in the Department of Electrical Engineering and Computer Science. The talk, entitled "The History of the Strobe," will be given Tuesday, Nov. 27, 7-9pm in Edgerton Hall (Rm 34-101).

Man's Control over Time, a 12-minute film on the use of strobes, will precede Doc's talk. The talk itself will be illustrated with early strobe equipment and slides of equipment that is no longer in existence. There will be a question and answer period and refreshments following the lecture.

Institute Notices

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UROF

For more detailed information on UROF opportunities listed, MIT undergraduates should call or visit the Undergraduate Research Opportunities Program Office, Rm 20B-141, x3-5049 unless specified in the listing. Undergraduates are also urged to check the bulletin board in the main corridor of the Institute.

Writing and Computers; Humanities and Computers. Students needed to do library research and possibly to visit other colleges to examine and evaluate existing uses of computers in teaching writing and humanities. Good writing skills essential. Contact Dr. Janet H. Murray, 20B-231, x3-2094. Credit or PAY. Open to FRESHMEN.

systems and interface with building facilities system. Requires graduation from 2 year day technical school or equivalent and at least 5 years applicable experience. H84-050

deposition systems such as multi-gun sputtering systems, E-beam evaporators, leak detectors, reactive-ion-etchers; wafer processing equipment, and more. Maintain ancillary process support

microelectronics semiconductor devices such as Ion-Implanter; diffusion and oxidation furnaces; LPCVD systems; photolithography equipment, vacuum

MTG to present 'A Funny Thing...'

The MIT Musical Theatre Guild will present *A Funny Thing Happened on the Way to the Forum*, November 29-December 2 in the Sala de Puerto Rico. All performances are at 8pm except for Sunday, at 7pm.

Tickets are \$5, \$4 for students and seniors, and \$3 for MIT students.

This production of the Stephen Soldheim musical is directed by Michael Martineau and produced by John Port '86. The musical offers a modern interpretation of a style of comedy which goes back through Shakespeare to Roman times, where the show is set. Interspersed with the musical numbers is a mesh of mistaken identities, conniving slaves and slapstick.

The production staff includes music director Steve Kaminski, choreographer Maura O'Connell '88, technical director Stephen Berczuk '87, set designer Barry Berenberg '88, lighting designer Matt Giamporcaro '85, costume designer Lisa Kroh '87, and stage manager Maren Kay Johnson '87.

The cast is made up of senior Warren Madden; juniors Rina Cerulli, Allen Meisler and Lauren Singer; sophomores Carl Dashfield, Hollie Mahaney and Stephen Hoenig; freshmen Michael Elkins, Mutsumi Mizuno, Ernest Prabhakar and Abon Ruiz; graduate student Robert Fonacier; Wellesley College junior Cynthia Millington and Jennifer Hogue; Lynn Heinemann of the MIT News Office, Kathleen Ahearn and Mr. Martineau.

Benefit concert planned

A benefit concert by several exceptional student musicians is planned for Sunday, Nov. 18, at 4pm in Kresge Little Theatre to raise money for renovation of the piano at Senior House.

Concert coordinator Susan Lee '88, piano commission chairman at the house, has announced that there will be no admission fee but donations will be requested. The program includes works by Chopin, Debussy, Beethoven, Gershwin and Bartok. For more information call Dorm x5-6650.

Student Jobs

There are more job listings available at the Student Employment Office, Rm 5-119.

General Aide Technician openings to assist in the construction of superconducting magnets for the magnetic resonance imaging program. Positions require good mechanical skills and the desire to work on a fast project. If interested, contact Ron DeRoche, x3-7847 or Bob Schwall, x3-3254, NW14-3219.

Person needed to do light bookkeeping and errands. Interested persons should call Peggy Huddleston, 523-2232. Hours are flexible and pay is \$6 hr.

B&R Services Inc. needs students for house-sitting, party services, or special errands. Hours: 4 wk minimum; pay: \$5 hr. If interested, call Mrs. Kaye, 527-4896, 196 Mouton St., Newton, MA.



MIT Press staff members attend weekly "launch" meeting, so named because it launches manuscripts into the editorial and production process. Frank Urbanowski is at far end of table in shirt and tie.

MIT Press looks to future

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\$2.8 million for journals. We have plans to grow while keeping the lessons of the last few years in front of us."

MIT supports the activities of the Press in a number of ways, most importantly with capitalization and faculty support.

The Institute provides less than 50 per cent of the working capitalization of the Press, the balance being made up of various publishing funds, reserves and trade financing by vendors. The Press relies entirely on its sales revenues to finance its year-to-year operations, unlike its sister presses which have access to endowed sources of revenue to take the edge off expenses.

MIT's faculty provides invaluable intellectual support of the Press's publishing program through its Editorial Board and Management Board, and through individual faculty members who serve as authors, readers, advisors and series editors.

"About 20 per cent of the books the Press publishes each year are written by MIT faculty," Urbanowski said, but about 80 per cent of the Press's publishing effort, both in the books and journals departments, has serious faculty commitment and participation."

The Press has had a very successful experience with its four-year-old MIT Press bookstore. "It has," he said, "exceeded all expectations. We did \$160,000 in business there last year and we think it could approach \$200,000 this year, even though they're erecting fences around us because of the construction on Main Street. The reasons are good books and ambience."

Urbanowski thinks that, in the long term, the MIT Press should develop an endowment "both to support the publication of the strictly scholarly component of our list, which is now supported by text and trade books; and to give us a cushion to fall back on in case of a bad year." Endowment prospects depend on the number of alumni, their love of books, and their consciousness of the Press.

Last year the MIT Press published 147 books, 109 of them originals and the others quality paperback reprints of hardcover books published in previous years. "We sell twice as many paperbacks as hardcovers," Urbanowski said, "most of them slated for text sales. They're a growing part of our business." Urbanowski explained that export sales are critical to the MIT Press, which has the highest percentage of these sales among university presses. "Foreign sales are rising," he said. "Our books travel well given the character of our list."

Another growth activity is the publication of journals. "It's our fastest growing activity," Urbanowski said. "We now publish 14 quarterly journals and one monthly, and we plan to add more each year." The MIT Press is now second only to the Uni-

versity of Chicago Press in publishing journals, which Urbanowski said "accounts for a third of our revenues."

Another, nonfinancial reason for publishing journals, Urbanowski said, is that "they represent the best way to publish in some of the areas we're interested in, such as the biological sciences, because they are changing so fast. In this sense the journals complement our book publishing efforts."

In addition to publishing in clearly defined subject areas, the Press has long been committed to publishing serious interdisciplinary work, such as Barbara Stafford's new book *Voyage into Substance: Art, Science, Nature, and the Illustrated Travel Account, 1760-1840*, which the New York Times Book Review characterized as "enthraling... a book that has a permanent effect on one's way of looking at things," and which garnered a lead review in *The New Yorker*. The Press will recommend it for several major awards and fully expects it to win. Tilman Buddensieg's study, *Industriekultur: Peter Behrens and the AEG* and the two-volume study by Martin Shubik, *Game Theory in the Social Sciences*, Hal Abelson and Andrea diSessa's *Turtle Geometry: The Computer as a Medium for Exploring Mathematics* and Peter Reuter's *Disorganized Crime: The Economics of the Visible Hand*, are other recent examples of the Press's interdisciplinary offerings. In the future, the Press plans to publish an interdisciplinary study of the Georges Bank, an ambitious project considered by many to be the largest scale interdisciplinary study ever made of a single ecological system. A new edition of *The Encyclopedic Dictionary of Mathematics* is also underway.

Another area in which the Press will continue to publish is that of the serious "university press trade book," books written by high-level experts discussing and explaining matters of current concern to the educated layman. Recent examples of this area of the Press's list are Herbert Scoville's *MX: Prescription for Disaster*, Philip Kitcher's *Abusing Science: The Case Against Creationism*, Nicholas Steneck's *The Microwave Debate*, MIT's International Automobile Program's *The Future of the Automobile*, Richard Meehan's *The Atom and the Fault*, and Patrick Winston and Karen Prendergast's *The AI Business: Commercial Uses of Artificial Intelligence*.

While about 85 per cent of what the MIT Press publishes falls within defined programs, it manages to reserve about 15 per cent of its list for what Urbanowski calls "off-beat but worthy" projects. For example, it is preparing to publish—at a rate of about one a year—the collected works of philosopher George Santayana. "This is a definitive edition of his work, and the project probably will go through the year 2000," Urbanowski said.

The MIT Press, it appears, is definitely looking ahead.

Golf posts 6-1-1 victorious season

MIT's golf team continued its winning ways this fall by posting a 6-1-1 record. Since 1972, the Engineers have won 48 of 76 matches in fall competition under the direction of Coach Jack Barry.

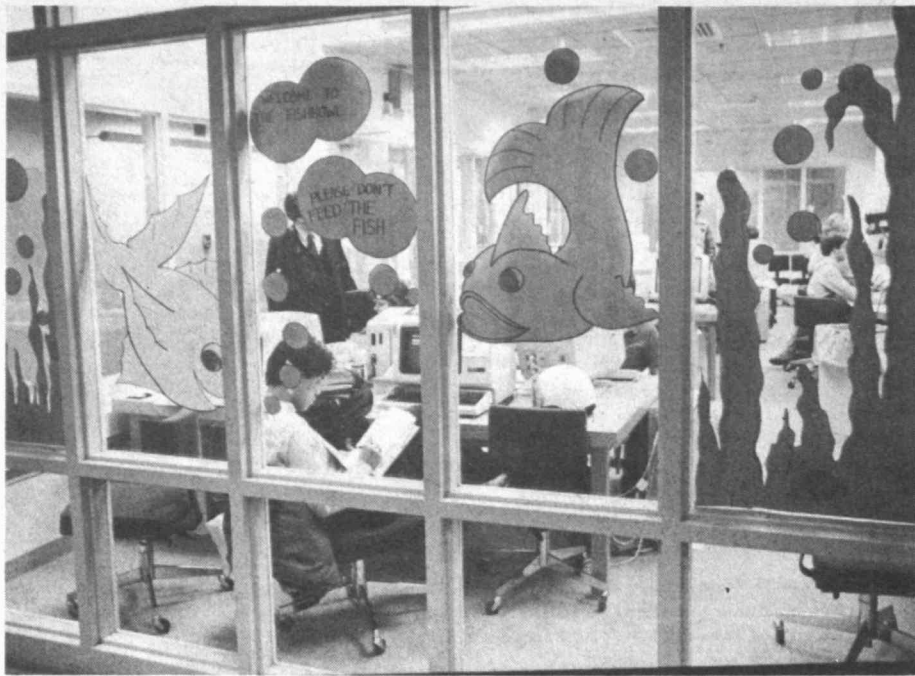
After losing to Merrimack by nine strokes and tying Northeastern in the season opener, MIT posted consecutive wins over Massachusetts Maritime, Bentley, Boston College, Assumption, Springfield and Bowdoin. The Engineers then fared well in tournament play finishing 17th among 42 schools at the New England Championships (held at New Seabury Country Club) and tying for eighth among 16 teams at the Eastern College Athletic Conference Northern Regional Qualifier (held at Hanover Country Club, N.H.).

MIT's top player this fall was sophomore Eric Asel (Brookville, Penn.), a NCAA Division III honorable mention All-American last season. The 19-year-old Asel compiled a 78.9

average for 10 rounds, finished eighth among 210 players at the New England, and participated in the ECAC Tournament at the Essex Country Club (Manchester, Mass.).

"Eric has been the key performer for us the past two years," says Barry. "He's a very steady, dependable player. As he matures, he has an excellent chance to become an outstanding college player."

Other top players for MIT were seniors Brent Foy (Muncie, Ind.), Rob Irion (N. Ferrisburg, Vt.), Dave Lineman (Sterling Heights, Mich.), juniors Alex Romeo (Old Lyme, Conn.), Mike Ungureit (Tunkhannock, Penn.), and sophomores Rich Chleboski (Gibsonia, Penn.), and Gary Zentner (Montreal, Quebec, Canada).



Interested passersby, taking advantage of window walls at the Building 11 Athena complex, gave students the feeling of living in a fishbowl, moving some of them to do a little decorating.

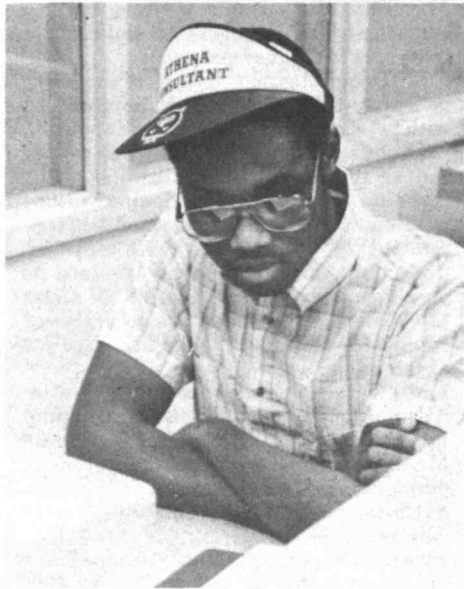
Athena at work

Project Athena, taking its first steps toward operational reality, is receiving close attention from all segments of the Institute community. An especially visible component is the Building 11 cluster where these photos were made recently.

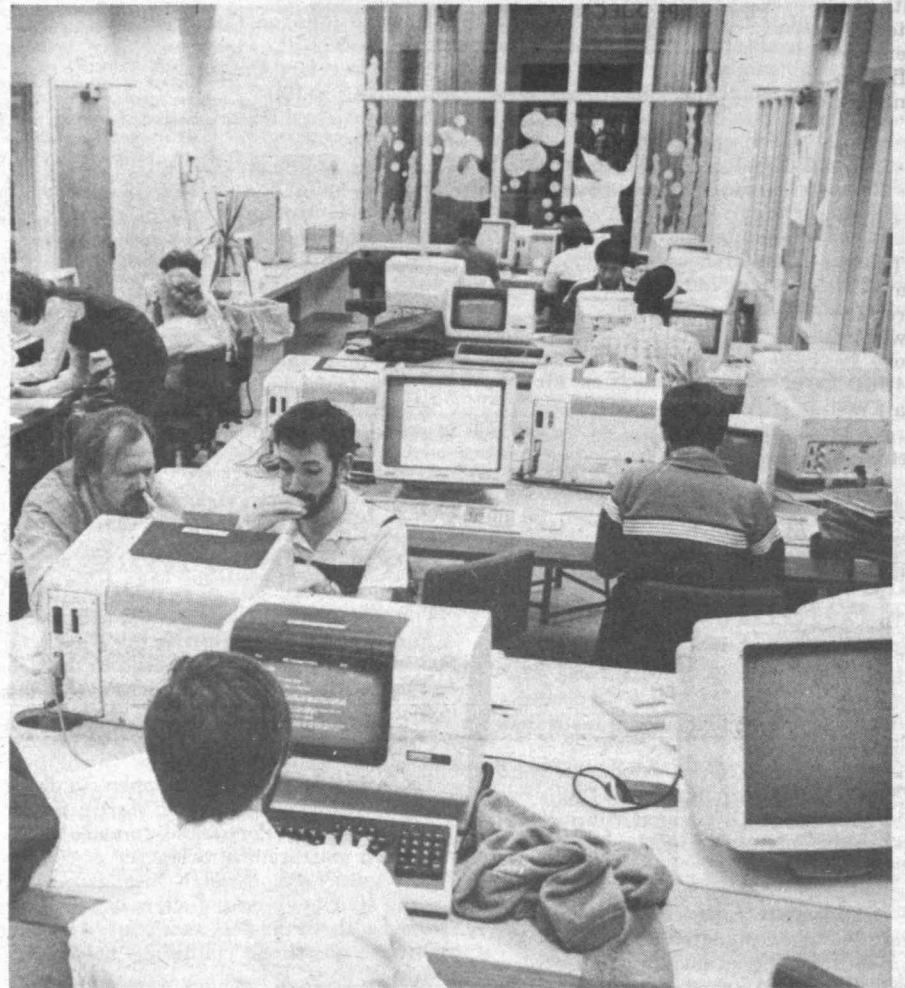
A status report on Project Athena, a five-year experiment in the use of computer technologies to improve the education of students at MIT, will be presented starting at 3:30 on Thursday, Nov. 29, in Rm 34-101. Professor Steven R. Lerman of the Department of Civil Engineering, director of Project Athena, will present the report and then answer questions from the audience. All members of the MIT community are invited.



Jeffrey B. Flaster, senior in mathematics from Rockville Centre, N.Y., is up to his eyes in work.



Got a problem? See an Athena consultant. On duty is Dexter M. Sealy, a junior in electrical engineering and computer science from Laurelton, N.Y., who is deep into a textbook.

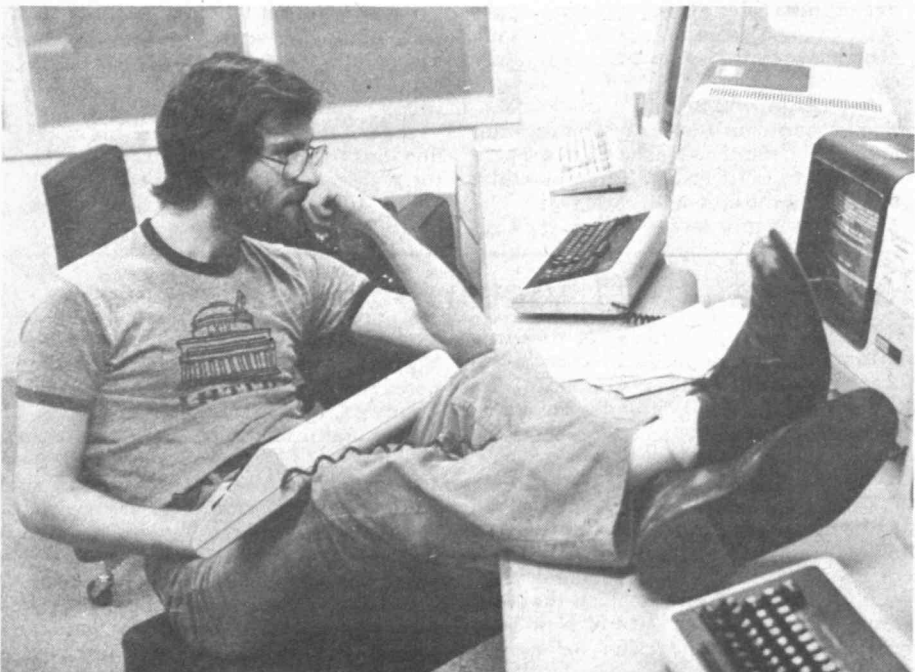


Athena terminals are put to work.



Annette M. Rahm, a junior in biology from Walden, N.Y., and Michael R. Candan, a senior in electrical engineering and computer science from Bayside, N.Y., team up on a problem.

Photos by Calvin Campbell



Kenneth J. Meltsner, a graduate student in materials science and engineering from Brighton, finds the relaxed approach helps.



John W.R. Lepingwell, foreground, graduate student in political science from Regina, Saskatchewan, Canada, works side-by-side with David F. Cheung, a sophomore in electrical engineering and computer science from Rockville, Md.