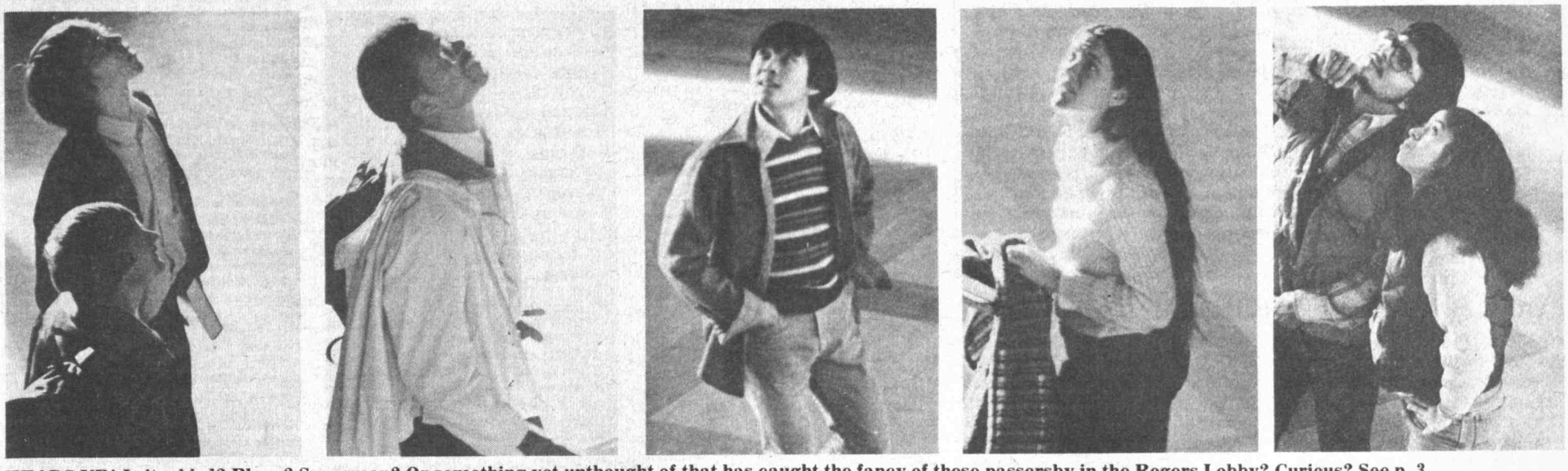
Massachusetts Institute of Technology

TECH TALK

November 4, 1980
Volume 25
Number 14



HEADS UP! Is it a bird? Plane? Superman? Or something yet unthought of that has caught the fancy of these passersby in the Rogers Lobby? Curious? See p. 3.
—Photos by Calvin Campbell

OFFICE OF THE PRESIDENT

To Members of the MIT Community:

Today marks the beginning of the annual 10-day Fall Blood Drive at MIT, which has a goal of 1,900 pints. I encourage all eligible members of the community—faculty, staff and students—to take this opportunity to give of themselves in this vital effort.

Because they are so large, the MIT Blood Drives have assumed great significance in the Northeast Region (Massachusetts-Maine). Much elective surgery, for example, is scheduled during the MIT Drive because of the assurance of adequate blood supplies. Blood donated here also serves as an insurance policy to members of the community and their families who can be certain that blood will be available, should they need it.

Organized by students under the auspices of the Technology Community Association, the Blood Drive will run through Friday, Nov. 14, including the weekend and the Veterans' Day holiday. It will also be open several evenings, to accommodate a wider range of working schedules. As in the past, it is Institute policy to allow time off, where possible, for employees who wish to donate.

With the dedicated participation of the community, we can continue our proud tradition as a major blood donor and reach, or surpass, the 1,900-pint goal.

Paul E. Gray

'Science Spectacular' Coming Saturday

Freshmen will have an opportunity to learn about research in the MIT School of Science in a special "Science Spectacular" to be held at MIT Saturday, Nov. 8.

Dean Robert A. Alberty of the School of Science said the objective of the program is to tell members of the freshman class about research being done in the various departments of the School of Science and in some of the interdepartmental laboratories.

The "Spectacular" will begin with a program from 11am to 1pm in Room 10-250, at which nine faculty members will speak. Afterward, the school will be host at a free lunch in Walker Memorial, where freshmen will have an opportunity to talk with the speakers and other faculty members from departments in the School of Science.

Speakers will be Dr. Harvey F. Lodish, professor of biology; Dr. John M. Deutch, Arthur C. Cope Professor of Chemistry; Dr. Christopher T. Walsh, who holds joint appointments as professor of chemistry and professor of biology, and is associate director of MIT's Whitaker College of Health Sciences, Technology, and Management; Professor John M. Edmond, of the Department of Earth and Planetary Sciences; Professor Gian-Carlo Rota, of the Department of Mathematics; Professor Richard E. Passarelli, of the Department of Meteorology and Physical Oceanography; Professor Daniel I.C. Wang, of the Department of Nutrition and Food Science; Professor Bernard F. Burke, of the Department of Physics; and Dr. Ronald C. Davidson, professor of physics and director of the MIT Plasma Fusion Center.

In Sloan Management Review

Strategic Management Featured

The third and final part in James Brian Quinn's series on strategic management is included in the Summer 1980 issue of the Sloan Management Review, which also features an article by an MIT researcher that challenges the conventional notions about the midlife crisis. In the Review's "SMR Forum," the need for reform of environmental regulation is discussed, and Simon Ramo talks about the decline of American technology.

The article by Professor Quinn of Dartmouth College, "Managing Strategic Change," analyzes in greater detail the process of "logical incrementalism" in strategic planning, delineating the steps that successful managers generally follow in inaugurating and executing strategic change.

He says: "In recent years there has been an increasingly loud chorus of discontent about corporate strategic planning. Many managers are concerned that despite elaborate strategic planning systems, costly staffs for planning, and major commitments of their own time, their most elaborately analyzed strategies never get implemented. These executives and their companies generally have fallen into the trap of thinking about strategy formulation and implementation as separate, sequential processes."

He observes, however, that in the major corporations he has studied, successful managers "acted logically and incrementally to improve the quality of information used in key decisions; to overcome the personal and political pressures resisting change; to deal with the varying lead times and sequencing problems in critical decisions; and to build the organizational awareness, understanding, and psychological com-

(Continued on page 8)

Graduate Student Survey Issued

A housing and transportation survey questionnaire will be mailed by US mail to all MIT graduate students this week, Dr. Shirley M. McBay, dean for student affairs, has announced.

"Results of the survey will be used as a guide to assess present Institute housing policies and assist in planning for future needs," Dean McBay said.

Although response to all questions is optional, Dean McBay urged students to complete the forms as fully as possible. "The greater the response, the more effective the survey will be," she said.

The questionnaire is anonymous and respondents are assured of confidentiality. Questionnaires should be returned to the Planning Office in the envelopes provided, by either Institute or US mail.

Dean McBay, who is the senior Institute officer with responsibility for leadership in this area, is working with a group of MIT administrators on this assessment project.

Gatos Receives Golden Cross Of Polish People's Republic

The Polish People's Republic has awarded the Golden Cross of the Order of Merit to Dr. Harry C. Gatos, professor of electronic materials and molecular engineering, in recognition of his "contribution to the development of scientific cooperation between Poland and the United States."

"I am deeply honored and I accept with deepest appreciation," Professor Gatos said after Wladyslaw Czulno, scientific counselor from the Polish embassy in Washington, pinned the medal to his lapel October 23 during a ceremony in the Chipman Room. Attending were faculty colleagues, graduate students and staff from the Electronic Materials Group, which Professor Gatos established in 1962, and from the Department of Materials Science and Engineer-

(Continued on page 3)

NAE Honors Hoyt C. Hottel With 15th Founders Medal

Professor Hoyt C. Hottel of the Department of Chemical Engineering, widely recognized for his teaching and research on fuels, combustion, radiant heat transmission and industrial furnaces, has received the 15th National Academy of Engineering Founders Award. The honor is the highest the Academy can bestow.

The medal, a certificate and an honorarium were presented to Professor Hottel October 29 in Washington, D.C., during the NAE's annual meeting.

The academy cited Professor Hottel for "outstanding contributions to radiative heat transfer, combustion and energy conversion that have advanced development of practical and efficient systems and processes ranging from fuel-fired boilers, internal combustion engines and solar heating to glass manufacture and firefighting."

Professor Hottel, an emeritus professor since 1968, has been a

(Continued on page 8)

Satterfield, Wei to Receive Distinguished AIChE Awards

Two MIT professors will receive major awards from the American Institute of Chemical Engineers at the organization's annual meeting in Chicago November 16-20.

Dr. James Wei, Warren K. Lewis Professor of Chemical Engineering and head of the Department of Chemical Engineering, will receive the William H. Walker Award for excellent contributions to the chemical engineering literature.

Dr. Charles N. Satterfield, professor of chemical engineering, will receive the R.H. Wilhelm Award in chemical reaction engineering for his numerous contributions in research papers and books.

Both men will receive their awards at the honors luncheon on Monday, Nov. 17, during the first day of the annual meeting of the

(Continued on page 3)

Deadline Change

Because of the upcoming Veterans' Day holiday, November 11, the deadline for submitting Institute Calendar listings, classified ads and notices for the November 12 issue of Tech Talk will be Thursday, Nov. 6, at noon. The earlier deadline is applicable only for the November 12 issue.

LAB COMPLETED—Eric P. and Evelyn E. Newman, left, major benefactors of the Eric P. and Evelyn E. Newman Human Mechanics and Rehabilitation Laboratory in the Department of Mechanical Engineering, are joined by MIT President Paul E. Gray and Dr. Robert W. Mann, Whitaker Professor of Biomedical Engineering, right, on a recent tour of the facility, located in Building 3. The Newmans, of St. Louis (Mr. Newman is MIT '32), celebrated the completion of the lab with faculty members, staff, undergraduate and graduate students whose research is focused on technology to aid human rehabilitation. Current programs include the development of artificial limbs and aids to the blind and basic studies of human mobility including degenerative arthritis.

—Photo by Calvin Campbell

Four Awarded Nuclear Fellowships

Four MIT students are among the first in the nation to receive fellowships from the Institute of Nuclear Power Operations (INPO). They are:

Stephen G. DiPietro of Medford, a candidate for the SM degree in nuclear engineering materials; Andrew B. Dobrzeniecki of Chicago, a senior in physics and graduate student in nuclear engineering; Joseph W. Jackson of Cambridge, who expects to receive SB and SM degrees in nuclear engineering, and Kean Wong of Long Island City, N.Y., a graduate student in nuclear engineering.

The new INPO fellowships carry a stipend for one academic year, plus an educational allowance to help defray costs of tuition and fees.

INPO was formed in 1979 as a nonprofit independent corporation by electric utilities that operate nuclear power plants. It is charged with the responsibility of establishing standards of excellence in plant operations, evaluating the performance of utilities according to such standards and assisting utilities in improving plant safety and reliability.

The INPO Fellowships were established to insure a continued supply of high quality engineering staff needed to achieve the goals of excellence and safety in the nuclear industry.

Echoes

October 30 - November 5

50 Years Ago

Frank Harrison Briggs '81, who died earlier this year, is to have an athletic award established in his honor. Popularly known as "The Father of Technology Athletics," he was dedicated to the advancement of amateur athletics at MIT. The Major Briggs Trophy is for the 40-yard indoor dash, which was originally established by "The Major."

40 Years Ago

Three Nobel prize winners and more than 500 people outstanding in the field of nuclear physics attended a conference on Applied Nuclear Physics at MIT last week, sponsored by the American Institute of Physics. Technical sessions were aimed at the application of nuclear physics in geology, metallurgy, radiology, biology, and chemistry. Of particular interest was the session on application of techniques in nuclear physics to the treatment of disease, especially the use of radiology in the treatment of cancer.

25 Years Ago

Today marks the 55th anniversary of the Annual Field Day. Before the advent of this event, the freshman-sophomore rivalry culminated in the Annual Cane Rush, in which Freshmen were given a cane, possession of which had to be protected against attacking sophomores. At the end of the struggle, which was supposed to last for 15 minutes but usually continued longer, the number of hands from both sides still on the cane, were counted to determine the winner. An unusually vigorous battle took place in 1900, and at the end of it, at the bottom of the pile of students, a freshman who was protecting the cane with his body wrapped around it, was found dead. His death led to the spontaneous and unanimous demand by the student body that the Cane Rush practice cease. In 1901 the first Field Day was held and has taken place every year since then.

Prepared by Jeanne Duperreault, MIT Historical Collections, x4444.

INSTITUTE NOTICES

Announcements

Official Notice Final Examinations**--All students should obtain examination schedule at Information Center, 7-121. Examination not listed or a conflict in the same period must be reported to the schedules office by Wed, Nov. 21, 1980.

Nightline: Open all Night**--A sympathetic ear, a place to relax and talk. We have information of every conceivable kind. Drop by the Campus Room, next to Ashdown or call x3-7840.

Gay Contact Line*--If you are gay, bisexual or just want someone to talk to, open 24 hours, anonymous calls welcome. Call x3-5440.

Attention: International Students**--With the approach of vacations in mind, please arrange for your travel documents with the International Students Office, Rm 5-112, as soon as possible.

Basic Pistol Course**--Stresses safe handling, maintenance and care of firearms as well as develop basic marksmahship skills. Sponsored by the Pistol and Rifle Club. Thurs, Nov 6, five Thurs nights, 6pm, DuPont Pistol Range, $25 fee. For information call Andy Platais x8-1419 Draper.

Since Nov. 21 is the drop date, the Registrar's Office would like to remind students that correction cards will not be accepted without all of the necessary signatures. You are urged to obtain all signatures well before deadlines to avoid having to petition the CAP for approval to make a late change. If your advisor is unavailable, contact your undergraduate office or department headquarters. Freshmen should go to the Undergraduate Academic Support Office, Rm 7-103.

Club Notes

Bridge Club**—Every Thursday night at 7pm, all bridge players invited, come 15 minutes early if you need a partner. Card fee $.50; $.25 for freshmen. For information call x5-7175 Dorm.

MIT/DL Bridge Club**—ACBL Duplicate Bridge, Tuesdays, 6pm, W20-473. Info: Arthur, x8-1414 Draper.

Chess Club**—Meets Saturdays, 1pm, Rm 491, Student Center. Speed chess, bughouse and analysis for all levels of players. Info: Brad, x3-7554 or 494-0263.

Hobby Shop**—Complete facilities for woodworking, metalworking, and darkroom. Mon-Fri, 10am-6pm, and Wed, 10am-9pm, W31-031. Fees, $12/term students, $20/term, community. Info: x3-4343.

Juggling Club**—Juggling practice and get-together. Beginners, advanced and spectators invited, Sundays, 1:30-5:30 pm, good weather, in front of Student Center; bad weather, Lobby of Bldg 13.

Shotokan Karate Club*—Rigorous trtaining for physical well-being and self-defense. Classes meet 6-8pm, Tuesdays and Fridays, Varsity Club Lounge, Thursdays, Dance Room. Info: Jim, x3-8148.

Social Meeting*--Sponsored by the GAMIT, Gays at MIT. Drop by for some free refreshments or just to talk. Every Sunday, 5pm, Rm 50-306. Free. Call x3-5440.

Tae Kwon-Do Club**—Korean Martial art involving rigorous training to develop total-body and mind control meetings. Mon, 6-8pm, Burton Dining Hall; Wed, 6-8pm, T-Club Lounge; Fri, 5:30-7pm, Dance Studio; Sat, 11-1pm, T-Club Lounge. Chung Sun Kang x5-9273 or Byung I. Choi x5-9494 Dorm.

Tiddlywinks Association*—Meetings every Wednesday at 8pm in Rm 473 of the Student Center. Beginners welcome and wanted.

Women's Rugby Football Club**—All women athletes are invited to play the game of games. Fall practices are held MWF, 5-7pm on Briggs Field. Staff, students, all welcome.

Wu-Tang Chinese Martial Arts Club*—Practice, Tues, Thurs, 8-10pm; Sun 6-9pm, T-Club Lounge or Dance Studio. Beginners welcome. Bring shorts, T-shirt and sneakers. Info: Howard 247-8691.

Table Tennis Club**--Meets every Monday, 8-10pm, T-Club Lounge, DuPont.

Equestrian Association**--Riding at Elm Brook Farm, Concord, Thursdays. $10/1 1/2 hrs. Group leaves from 77 Mass Ave., 6:15pm. Info: Karen Hensley, x3-8031, Aline Jones, x5-6413 Dorm, Sue Crowley, x3-4228, or Jose Venegas x3-2627.

Exercise Classes**--Taught by Patricia Murray. Sponsored by the Technology Wives Organization. Weekly exercise session with professional instruction. Mondays, 7:30pm, DuPont Gym, Exercise Room, $1.50/class TWO members and $2 class non-TWO members.

Religious Activities

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

Tech Catholic Community*—Sunday liturgies: 9am, 12noon and 5pm; weekdays, Tuesdays and Thursdays, 5pm; Fridays, noon, MIT Chapel. Prayer Group and Potluck Supper, Mondays, 6:30pm, info: Bob Simon, x3-1858.

Jewish Religious Services*—Friday: Orthodox services at sundown, Kosher Kitchen; Conservative/Reform group, 5pm, basement, 312 Memorial Dr. Saturday: Conservative/Egalitarian services, 9:15am, MIT Chapel; Orthodox services, 9am, Bush Rm, 10-105. Info: x3-2982 or x3-2987.

Lutheran Episcopal Ministries*— Interdenominational service of Holy Communion, Wednesdays, 5:10 pm, MIT Chapel. Supper follows in the basement of 312 Memorial Drive.

Prayer Time*—Friday afternoons, 1-2pm, weekly Bible Class led by Rev. Miriam R. Eccles, founder and director of the Alpha and Omega Missionary Society. Guest speakers, music and refreshments. Rm 20E-207. Welcome!

United Christian Fellowship*—Large group fellowship meeting: prayer, singing, sharing bible teaching. All are welcome to join. Meets on Friday, 7:30pm, Rm 1-236. Info: Fred Hickernell x3-7826.

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

Noon Bible Study**--Every Thursday, 1pm, Rm 3-465, bring your lunch, all welcome. Ralph Burgess x3-8121. (Since 1965)

Islamic Society**--Every Friday prayers will be held at 1pm, Kresge Auditorium, Rehersal Room B.

Student Jobs

Biology Lab Aid, student technician making media, solution, and other bench work. 10 hrs wk, $4-$4.50 hr. Contact: Prof H. Lodish, Rm 16-435, x3-7009.

Help and assist in computer data entry for Graphic Arts. 211 Mass. Ave. from 11:00am on available, 12-15 hrs/wk. $3.75/hr. Phylis Cerrone, x3-4765.

Graduate Studies

Hertz Foundation Fellowships**--The Fannie and John Hertz Foundation awards graduate fellowships to students of outstanding potential in the applied physical sciences. The fellowships may be used at one on 15 institutions, including M.I.T. Applicants must be U.S. citizens, or have documented proof of intent to acquire it. The proposed field of graduate study must be concerned with applications of the physical sciences to human problems, broadly construed. High previous scholastic performance is expected of all applicants, including at least an A- average during the last two years of undergraduate work. Contact the Graduate School Office, Room 3-136, for further information. Application deadline: November 15, 1980.

NSF Graduate Fellowships**--Preapplication forms are now available for the 1981 National Science Foundation Graduate Fellowship competition. NSF plans to award approximately 400 new 3-year fellowships for study leading to master's or doctoral degrees in the mathematical, physical, medical, biological, engineering and social sciences, and in the history and philosophy of science. Eligibility for NSF Graduate Fellowships is limited to individuals who are citizens or nationals of the United States as of the time of application and who have not completed postbaccalaureate study in excess of 12 semester hours. Preapplication forms are available in the Graduate School Office, Room 3-136. Application deadline in November 26, 1980.

Fellowships for Women Graduate Students Sponsored by Wellesley College

Alice Freeman Palmer Fellowship for study or research abroad or in the U.S. Fellow must be 26 or younger at time of appointment, and must remain unmarried throughout her tenure. Stipend: $4000. Must be nominated by undergraduate institution.

Mary McEwen Schimke Scholarship to help financially with child care and household responsibilities. Based on scholarship and need. Candidates must be over 30 and currently pursuing graduate study in literature or history. Stipend: $500-$1000.

M.A. Cartland Shackford Medical Fellowship for the study of medicine with a view to general practice, not psychiatry. Stipend: $3500.

Harriet A. Shaw Fellowship for study and research in music and allied arts in the U.S. or abroad. Candidates must be 26 or younger at time of appointment. Stipend: $2000-$3000. Applications must be postmarked no later than December 1, 1980.

Fellowship Awarded by American Association of University Women

Dissertation Fellowships approximately 70 fellowships are available for women who will have completed all course requirements and examinations for the doctorate except the dissertation by January 2, 1981 and whose degree will be received by the end of the fellowship year. Applicants must be citizens of the United States or hold permanent resident status. Period of Award: 12 months beginning July 1, 1980; stipends $3500-$7000, deadline: December 15, 1980.

Postdoctoral Fellowships or postdoctoral research for women who hold the doctorate at the time of application. Applicants must be United States citizens or hold permanent resident status. Funds may not be used for research equipment, publication costs, travel grants, or tuition for further course work. Awards are made for 12 months beginning July 1, 1981; stipends range from $3500-$9000. Deadline: December 15, 1980.

For American Women in Selected Professions these fellowships assist women in their final year of professional training in the fields of law, dentistry, medicine, veterinary medicine, and architecture or their final year of a 2-year Master's in Business Administration. (M.B.A. program). Stipends range from $3500-$7000 for one academic year beginning in September 1981. Deadline: December 15, 1980. (Feb. 1, 1981 for M.B.A. applicants).

International Fellowships approximately 50 fellowships are awarded for one year's graduate study at a United States institution for women who are citizens of countries other that the United Sates. (Six awards for advanced research in any country other than the Fellow's own for women who are members in their own country of National Associations affiliated with the International Federation of University Women are also available). Stipends to help cover cost of living according to need and place of study average $2500-$5000. Travel and research costs are not covered. Awards are for one year beginning in September 1981 and are not renewable. Deadline for receipt of applications: December 1, 1980.

For further information on all the above, contact Dean Jeanne Richard, Graduate School Office, Rm 3-136, x3-4869.

UROP Listings

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

Radiation, Molecular and Cell Biology - Harvard Medical School Joint Center for Radiation Therapy

Ongoing projects are available in the following areas. a) Genetics and biochemistry of cellular resistance to chemotherapeutic agents. b) Use of mitochondrial mutants to analyze mitochondrial DNA and the role of this set of genes in mitochonodrial biogenesis and energy production. c) Use of virally-transformed cells as a model system to analyze the genetic changes determining tumorigenicity.

Analysis of Antibiotic Resistance in Pseudomonas Aeruginosa Mass. General Hospital

This research involves the study of plasmids in pseudomonas. Projects include analysis of the genes involved in mediating antibiotic resistances, particularly those which make the enzymes which destroy penicillin and similar compounds, and the study of plasmids which carry genes mediating resistance to various aminoglycoside antibiotics.

Geometric Modeling of an I.C. Engine Combustion Chamber

A project is available working for Prof. Heywood in the M.E. Department for a student with Fortran computer background who is familiar with the VAX-11 system. The student will be resposible for developing a computer routine to describe the goemetry of an arbitrary engine combustion chamber. Pay or Credit. Contact Stephen Poulos, Rm 3-339, x3-2411.

Programming and Psycholinguistics

The relationship between spelling and sound based encodings of common English words will be experimentally investigated by measuring subjects' reaction times to various types of picture and work comparisons. Programming and electronics experience desirable. Contact Ninamarie Maragioglia, Rm E10-034, x3-5767.

Classroom Demonstration of Self-Excited Commutator Machines

Assistance is required in the testing and building of a classroom demonstration to illustrate the operation of self-excited machine configurations. This demonstration project will be used in 6.601 and related courses. Contact Prof Markus Zahn, N-10, x3-4688.

Estrogen Biosynthesis in the Hypothalamus and Testis Harvard Medical School

A student who has completed a course in oganic chemistry and preferably one in biochemistry is invited to do research on the biosynthesis and metabolism of female sex hormores. Focus on the implication of such snthesis for the compete sexual development of the animal. 15-20 hrs./week.

Solar Heating System Mass Audubon Society

Assistance is required in the automation of data-collecting instrumentation from the solar heating system at Mass. Audubon Society in Lincoln, as well as the reduction and analysis of data collected over the past three years. Transportation costs reimbursed, credit only.

Placement

Nov. 5: Bell Telephone Labs, Inc.; Bendix Electrodynamics Division; Boise Cascade; Codex Corporation; Computer Corporation of American; FMC Corporation; ILC Data Device Corporation; IPL Systems, Inc.; Microwave Research Corporation; Mobil Oil Corporation; Northwestern Univ./J.L. Kellogg Graduate School of Management.

Nov. 6: Amoco Research Center, R & D Depts.; Ampex Corporation; General Dynamics/Electric Boat Division; Hughes Aircraft Compnay; Hughes Helicopters; Institute for Defense Analyses; The Mitre Corporation; NCR Corporation/Schlumberger Well Services; Watkins Johnson Company.

Nov. 7: Allied Chemical Corporation; Badger America, Inc.; The Bendix Corporation - ATC & EDC; Combustion Engineering, Inc. Power Systems Group; Eastman Kodak Company; Inland Steel Company; Linkabit Corporation; Outboard Marine Corporation; Perkin-Elmer Corporation; Rolm Corporation.

Nov. 10: Babcock & Wilcox; CRN, Inc.; Department of Transportation; GenRad; INTEVEP-Instituto Tecnologico Venzolano del Petroleo; Polaroid Corporation; Western Union Telegraph Company.

CABLE TELEVISION SCHEDULE

November 5 - November 12

WEDNESDAY, NOVEMBER 5
Channel 8

12-12:30pm WCVB NOON NEWS
12:30-2pm IT WAS ONLY A WEEK AGO...THE PRESIDENTIAL DEBATE: ISSUES AND OPINIONS - Last week's Presidential debate is replayed along with the reactions of the MIT community.
2-3pm POLITICS, TELEVISION, AND THE NEWS - Ed Diamond and guests discuss current issues in the media.
3-5pm VIRIDIANA - Directed by Luis Bunuel. Viridiana, a young novitiate, visits her widower uncle who drugs her and tells her he has seduced her.
7:30-8pm MIT WENT TO THE POLLS - Members on the MIT Community give their reactions, comments, and thoughts on yesterday's Presidential Election.
8-9pm THE NORM BRODESSER SHOW - Norm and his guest analysts debate the issues of our time.
9-11pm OH WHAT A WONDERFUL LIFE - Directed by Frank Capra. Starring Jimmy Stewart. A new angel in heaven tries to earn his wings by helping a wayward mortal.

THURSDAY, NOVEMBER 6

12-12:30pm WBZ NOON NEWS
12:30-1pm MIT WENT TO THE POLLS - See Wendesday, November 6, 7:30pm
1-3pm COMPUTERS AND PEOPLE - Professor Daniel Bell, Harvard; Professor Martin Minsky, Electrical Engineering and Computer Science, Professor Michael Rabin, Hebrew University of Jeruselem.
3-4:30pm COMMON SENSE FOR COMPUTATION - John McCarthy, Director, Artificial Intelligence Laboratory, Stanford University.
8-9pm PHYSICS 8.01 LECTURE - Recorded November 6.
9-11pm VIRIDIANA - See Wednesday 3pm.

Channels 10 and 12

7-9pm POLITICS, TELEVISION, AND THE NEWS Ed Diamond and guests discuss current topics in the media. Live from 9-150.
9-10pm VISIBLE LANGUAGE WORKSHOP CLASS PRODUCTION - A live program presented by undergraduate students at VLW.

SUNDAY, NOVEMBER 10
Channel 8

8-9pm PHYSICS 8.01 LECTURE - Recorded November 8.

MONDAY, NOVEMBER 11
Channel 8

8:30-10:30pm UN CHIEN ANDALOU - Directed by Luis Buneuel and Salvador Dali. The motivation of images are as mysterious and inexplicable to the collaborators as to the spectators.

TECH TALK
Volume 25, Number 14
November 5, 1980

Tech Talk is published 39 times a year by the News Office, Massachusetts Institute of Technology. Director: Robert M. Byers; Assistant Directors: Charles H. Ball, Robert C. Di Iorio, Joanne Miller, William T. Struble and Calvin D. Campbell, photojournalist; Reporters: Elizabeth C. Huntington and Marsha G. McMahon (Institute Calendar, Classified Ads, Institute Notices).

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3 Win Minerals Research Awards

Prof. John F. Elliot, director of the MIT Mining and Minerals Resources Research Institute, has announed that grants of $750 each have been awarded by the Institute to three undergraduates for research during the fall term at MIT.

The students are Simon Peacock, a senior in earth and planetary sciences from New York City; Dennis McGrail, a senior in mechanical engineering from Stoneham; and James Heintz, a junior in mechanical engineering from Chatham, N.Y.

Mr. Peacock will work with Professor Frank S. Spear of earth and planetary sciences on a project entitled "The Systematic Behavior of Sulfides in the Regionally Metamorphosed Ammonoosuc Volcanics."

Mr. McGrail's project is "Servocontrol Fluid Supply and Pressure Probe System for Hydraulic Fracturing Experiments." His faculty supervisor is Professor Michael P. Cleary of mechanical engineering.

Mr. Heintz's project is "Measurements of Self-Induced Vapour Pressure and Release of Hydrocarbons from Oil Shale at Elevated Temperatures and Pressures." He too is working with Professor Cleary.

The Mining and Minerals Resources Research Institute was established in 1978 at MIT by the Department of the Interior. Its aim is to support, strengthen and create new minerals-related programs across all of MIT's departments.

Mining Awards of $750 each will also be awarded spring term, and students who have won awards during the academic year will also be eligible to apply for summer grants of up to $2,500 each. The awards are administered through the UROP Office.

UMOC To Benefit Cancer Society

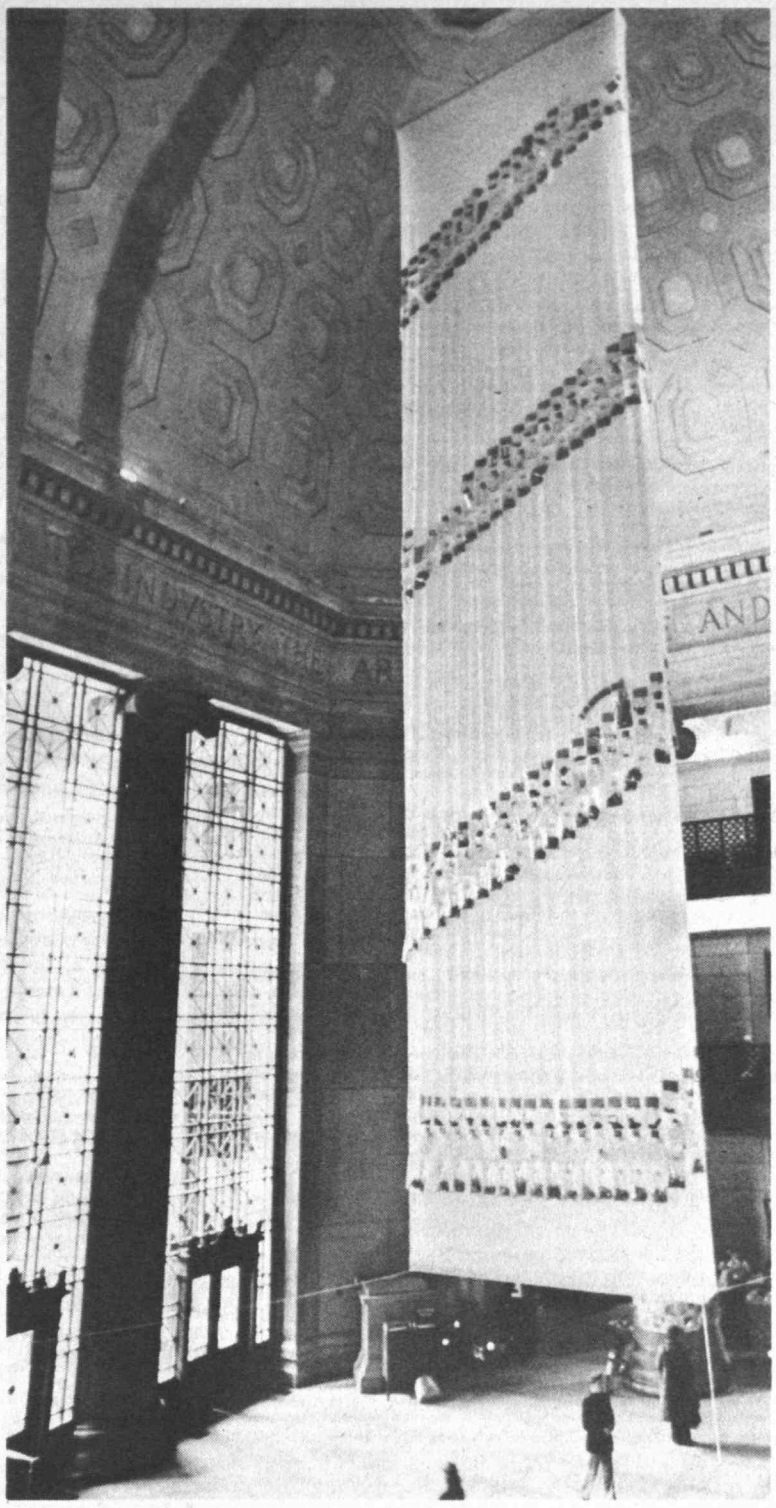
Just over $4,000—proceeds from this year's Ugliest Man on Campus (UMOC) contest—will be donated to the American Cancer Society by Alpha Phi Omega service fraternity, the contest sponsor.

"This year's candidates should be congratulated for their efforts in making this the third highest UMOC total in the contest's long history," said Susan Finne, a senior in economics from Natick and this year's UMOC chairman. "Once again the MIT community has responded with a sense of humor and generosity."

The top three finishers in the field of 14 were: "The Dirtbags" (Michael Colucci '82, and Frank DiTaranto '83)—$717.08; "The Hump" (J. Spencer Love)—$630.94, and "Klinger" (Charles Brown '81)—$324.57.

Ms. Fine said there was also a successful write-in campaign for Steven Piet, a graduate student, who raised $481.

Official candidates will receive prizes by local merchants.



Translocated from Stairwell 7 complete, the "Ornament der Masse"—subject of the gazers on page 1—is now on display in Lobby 7 through November 14. The artist, Center for Advanced Visual Studies graduate student Bernd Kracke, will discuss his work, Thursday, Nov. 6, at 8pm in Lobby 7, as part of the CAVS Series "The Artist Speaks."

—Photo by Calvin Campbell

Satterfield, Wei to Receive Distinguished AIChE Awards

(Continued from page 1)

Institute, the 50,000-member national chemical engineering society.

The Walker Award—named for Professor William H. Walker, head of the Department of Chemical Engineering at MIT from 1911-1920—dates from 1936. It has been won previously by six MIT faculty members: Thomas B. Drew, 1937; T.K. Sherwood, 1941; Hoyt C. Hottel, 1945; Manson Benedict, 1947; William H. McAdams, 1949; and Edwin R. Gilliland, 1954.

The Wilhelm Award, given to recognize significant and new contributions in chemical reaction engineering, was established in 1973. Professor Satterfield is the first chemical engineer from MIT to win it.

The AIChE gives seven major awards each year. It is rare for a university to win two in the same year.

The AIChE citation to Dr. Wei said:

"For his leadership in chemical engineering publications in chemical reaction engineering with particular reference to his recent work on the catalytic muffler, coal gassification, biological transport, and his book, *The Structure of the Chemical Processing Industries.*"

Professor Wei received the ScD from MIT in 1955, and spent the next 15 years with Mobil Oil Co. in a series of research positions up to the highest rank of senior scientist. He also attended the Advanced Management Program of Harvard Business School. He became the Allan P. Colburn Professor of Chemical Engineering at the University of Delaware in 1971, and he returned to MIT in 1977.

He was previously honored for his research in complex kinetic systems by the Petroleum Chemistry Award of the American Chemical Society in 1966, and for his research in applied mathematics and analysis in chemical kinetics by the Professional Progress Award of the American Institute of Chemical Engineers in 1970. He was a visiting professor at Princeton University and at the California Institute of Technology. He was a member of the AIChE Council and chairman of the awards committee. He is consulting editor of the McGraw-Hill Book series on chemical engineering, editor-in-chief of *Advances in Chemical Engineering*, and editorial board member of several other professional journals. He is a member of the National Academy of Engineering, as well as a member of its nominating committee and membership committee.

The citation accompanying the award to Professor Satterfield said: "He has made, and continues to make, significant contributions to chemical reaction engineering. His text, *Mass Transfer in Heterogeneous Catalysis* (1970), has been of tremendous value to those working in the field. His original research contributions represent a sustained and enviable record of accomplishment."

Professor Satterfield is author or co-author of more than 100 technical papers, and of four other books. His most recent, *Heterogeneous Catalysis in Practice*, has received enthusiastic pre-publication reviews and was published by McGraw-Hill in May, 1980. Each of the books has drawn extensively on his research accomplishments while at the same time providing a comprehensive and balanced treatment of the subject.

A Midwesterner by birth, Professor Satterfield received the BS degree in chemistry from Harvard in 1942, where he was one of their first National Scholars. He has been a member of the MIT faculty since 1946, the year he received the ScD in chemical engineering from MIT. Concurrently, from 1948 to 1957 he was visiting lecturer in industrial chemistry at Harvard. He has served on many advisory panels and committees and is a consultant to major companies in the petroleum, chemical, pharmaceutical and glass industries. He was a member of the editorial board of *Industrial and Engineering Chemistry* during 1966-68 and of the *Advances in Chemistry* series during 1971-73. He is a fellow of the American Academy of Arts and Sciences.

He has lectured extensively at other universities and industrial organizations, both in the US and Europe. He was Kelly Lecturer at Purdue in 1971, plenary lecturer at the Third International Symposium on Chemical Reaction Engineering (1974), van Winkle Lecturer at the University of Texas (Austin) in 1979, and keynote speaker at the 7th Canadian Symposium on Catalysis/30th Canadian Chemical Engineering Conference in Alberta in October 1980. In 1977, students in the Department of Chemical Engineering gave him their Outstanding Faculty Award for "outstanding performance in teaching and research."

His current research is concerned with basic problems in synthetic fuels production. These include re-examination from a new experimental approach of Fischer-Tropsch synthesis, a method of converting coal to liquid fuels; and development of improved methods of removing nitrogen and sulfur contaminants from liquid fuels, of vital importance in processing synfuels derived from oil shale and coal.

MIT Participation Is Invited In Wellesley Winter Session

A three-week residential program on Asian Perspectives, a career internship program, a trip to China, and a variety of minicourses on topics ranging from a feminist history of religion to Norwegian weaving will be part of Wellesley College's Winter Session, January 5-25. Members of the MIT community are invited to participate in these activities through the Wellesley-MIT Exchange Program.

Asian Perspectives will focus on understanding Asian cultures and their increasing significance for the West. Through the use of disciplined discourse, faculty and students will study Asian aesthetics, ethics and sex roles. Related activities will include the tea ceremony, I Ching, flower arrangement, folk dance and song, films, and Balinese masked comedy.

Through career internships, students can gain practical experience in business, government agencies, various professions, or the administration of Wellesley College.

The itinerary for the China trip includes several cities of historical and artistic interest, such as Xian, Chengsha, Tianjin, and Beijing which are rarely visited by tourists. The total cost, $2,780.00 covers round-trip airfare, hotels, and all meals except those in Hong Kong. Departure on Japanese Airlines is scheduled for January 4 from New York. For more information contact Priscilla Berman at Wellesley College, x456, or at home, 628-9062.

A complete list of minicourses will be published in December. Plans are already made for a course on "Vienna at the Turn of the Century," a sampler of Medieval life, carillon playing, a dulcimer workshop, and instruction in basic office skills.

A limited number of MIT students may live in Wellesley residence halls during the three-week period. Participants in the Asian Perspectives Program are encouraged to live at Wellesley. Residency, including a 5-day meal plan with Sunday brunch, will cost $150.00. November 15 is the deadline for registration.

For additional information, contact Donna Lee Kennedy, Coordinator, Wellesley-MIT Exchange, Rm 7-108, x3-1668.

Control Council Cites Athans

Dr. Michael Athans, professor of systems science and engineering in the Department of Electrical Engineering and Computer Science and director of the Laboratory for Information and Decision Systems, has received the American Automatic Control Council's Education Award.

The award, in recognition of Professor Athans' "outstanding contributions and distinguished leadership in automatic control education," was presented at the annual meeting of the Joint Automatic Control Conference held in San Francisco in August.

Professor Athans, who came to MIT in 1961 after receiving his PhD at the University of California at Berkeley, was a staff member at Lincoln Laboratory until 1964 when he joined the faculty.

Twenty-four doctoral students and 30 masters students have completed their theses under his supervision.

His research has involved system, control and estimation theory and its applications to defense, aerospace, transportation, power, manufacturing, economic, command, control, and communications systems.

The Control Council has previously honored Dr. Athans with the Donald P. Eckman Award (1964) for his contributions to the field of automatic control. In 1969 he was the first to receive the American Society for Engineering Education's Terman Award as the outstanding young electrical engineering educator.

Gatos Receives Golden Cross Of Polish People's Republic

(Continued from page 1)

ing and the Department of Electrical Engineering and Computer Science. He holds faculty appointments in both departments.

Mr. Czulno recalled how the foundations of the continuing cooperative venture between his country and Professor Gatos' group were laid in 1967. Since then, nearly 900 Polish scientists have come to the United States for a year or longer, supported by a U.S.—Polish fund to which each country has contributed $30 million. The program in which Professor Gatos figures so prominently is the "biggest link" with Eastern Europe, Mr. Czulno said.

"This honor," Professor Gatos said, "I must really share with all of the brilliant Polish scientists with whom I have been privileged to work over the last 12 years...I am proud to say that my Polish friends have contributed substantially in making the Electronic Materials Group the unique group that it is...Our cooperation has led to the discovery of at least six new effects and phenomena in semiconductors, to the development of novel methods for the growth of semiconductor crystals and the development of several spectroscopic methods which have made possible for the first time the determination of the electronic characteristics of semiconductors on a microscale. This work has been documented in more than 50 publications in scientific journals and several patents.

Professor Gatos, an authority on structure-property relations of electronic materials, said that in "today's troubled world it is gratifying and heart-warming to be a member of a group where science is currently pursued jointly by people from Poland, Japan, the People's Republic of China, Taiwan, the USSR, Europe and this country in a friendly atmosphere that transcends both ethnic and political barriers."

THE INSTITUTE CALENDAR X3-3270

November 4 through November 16

MISS THE TECH TALK DEADLINE?

Put your announcement on the MIT Cable System. "Today at the Institute" runs from 9 to 5 daily on Channel 10 and can be viewed in Lobby 7, Lobby 10, and anywhere the cable is connected.

Simply phone x3-7414 and leave your announcement. We prefer a day's warning, but faster action may be possible.

Useful also for correcting errors, notifying about cancellations, and dealing with emergencies.

Note: If you have met the Tech Talk deadline, your announcement is automatically put on the cable (except for exhibits and some multimeetings programs).

Events of Special Interest

MIT-Red Cross Fall Blood Drive*--Sponsored by the Technology Community Association and the American Red Cross. Nov 5 through Nov 14, Sala de Puerto Rico. Those who wish to donate can pick up applications forms at the TCA office, 4th Fl, Student Center. Hours are listed on the appointment form.

205th Marine Corp Birthday Celebration**--The MIT Community is cooridally invited to help the Marines celebrate their birthday. Mon, Nov 10, 4pm, Rm 10-105.

Energy Symposium*--Prof David Rose, Nuclear Engineering Department. Graduate Seminar in Energy Assessment. Fri, Nov 14 through Nov 17, 1-2:30pm, Rm 24-112.

Seminars & Lectures

Wednesday, November 5

Clinical Epidemiology and Pathogenesis of Shigella Infections*--Dr. Gerald T. Keusch, Tufts New England Medical Center. Clinical Research Center Seminar, 9am, Rm E17-415.

Adaptive Optics*--J. Hardy, ITEK. EECS/RLE Seminar Series on Optics and Quantum Electronics, 11am-noon, Rm 36-428.

Technology Adaptation Program: Education Across Cultures*--James McCarthy, Resident Liaison Officer, Cairo Liaison Office, Technology Adaptation Program. DSRE Seminar, noon-2pm, Rm 20C-117, lunch available $1.75.

Fronts near Geostrophic Equilibrim*--Gabe Csanady, WHOI. Oceanography Sack Lunch Seminar, 12:10pm, Rm 54-915. Coffee and tea provided.

Homogenization of BWR Assembly Using Response Matrix*--Seminar in Nuclear Engineering, 2-3pm, Rm NW14-222.

Lie Algebra and Quantum Stochastic Systems*--Robert Hermann, Information and Decision Systems Laboratory, visiting scientist. Lie Theory and Stochastic Systems Seminar, Electrical Engineering and Computer Science, 2pm, Rm 35-338.

Applied Radiation Seminar*--Dalila Bendedouch, Small-angle Neutron Scattering from Proteins in Detergent Solution; Kie L. Soohoo, Isotopic Studies of the Pressure Shift of the CO2 Lamb Dip, 3pm, Rm 24-115. Food served. Everyone welcome.

Light Scattering from Solid Polymers as a Tool for Morphological Investigation*--Prof Richard S. Stein, University of Mass. W.K. Lewis Lecture, Chemical Engineering Seminar, 3pm, Rm 66-110.

On the Analytic Structure of the Kelvin-Helmholtz Instability*--Daniel I. Meiron, mathematics. Seminar on Applied Mathematics and Numerical Analysis, 4pm, Rm 2-338. Refreshments at 3:30pm, Rm 2-343.

Problems in U.S.-Mexican Relationships*--Dr. Edmundo Flores, Science Adviser to President J. Lopez Portillo of Mexico, and Director General of the Consejo Nacional de Ciencia y Tecnologia. Cosponsored by the Center for International Studies and the Department of Urban Studies and Planning, **Prof Eugene B. Skolnikoff** and **Lloyd Rodwin** will co-chair the session, 4-6pm, Rm E38-762, 292 Main St.

About the Future of Particle Physics*--Prof Sheldon Glashow, Undergradute Physics Colloquium, 4:15pm, Rm 6-120. Social hour follows in Rm 4-339.

Walt Whitman and Wallace Stevens*--W. Williams, a lecture series sponsored by the Literature Section, Department of Humanities, Masterpieces of Western Literature, 7pm, Rm 4-149.

Hope is Not a Method*--Dr. Bruce Biller, Medical Department, film and discussion on contraception. Women and Health, a series of lectures and discussions, sponsored by the Office of the Dean for Student Affairs, 7:15pm, East Campus, Talbot Lounge.

US Economics: Solvable or Unsolvable?--Prof Lester C. Thurow,** economics and mangements, Sloan School of Management. Women's League Salon, 8pm, Rm 10-340.

Thursday, November 6

The Politics of Air Transport Economics: A View From ICAO (International Civil Aviation Organization)*--Honorable John Downs, Minister-Representative of the United States to the Council of ICAO. Flight Transportation Laboratory Seminar, 2-3pm, Rm 33-319.

A Case of International Medical Cooperation: Albert Sabin and Live Polio Virus Vaccine and the Soviets*--Prof Saul Benison, History of Medicine, Department of History, University of Cincinnati. Concourse Program Lecture, 3-5pm, Rm 9-150.

Civil Aviation in Africa: Economics and Policy in the '80's*--Gideon H. Kaunda, representative of the United Republic of Tanzania to the International Civil Aviation Organization (ICAO). Flight Transportation Laboratory Seminar, 3:30-5pm, Rm 33-319.

Communication with the Deaf - Blind through the Tadama Method*--Nathaniel Durlach, senior research scientist, and **Charlotte Reed,** research associate, Research Laboratory for Electronics. Seminar on Rehabilitation Engineering Research and Practice, 4-5:30pm, Rm 1-114.

Crystal Growths and Joint Diseases*--Dr. Paul Calvert, Materials Science and Engineering Special Lecture, 4pm, Rm 13-4101.

Least Squares Regression with Censored Survival Data*--John Van Ryzin, Columbia University. MIT/Harvard Joint Statistics Seminar, 4pm, Rm 2-338. Refreshments at 3:30pm, Rm 2-349.

Gravitational Lenses - from Speculation to Reality*--Prof Bernard Burke, Physics Colloquium, 4pm, Rm 26-100. Refreshments served at 3:30pm, Rm 26-110.

Some Recent Developments in Dial-A-Ride Routing Algorithms*--Prof Harilaos N. Psaraftis, Department of Ocean Engineering. Operations Research Center Seminar, 4pm, Rm 24-121. Coffee and cookies served after the seminar.

Women and the Draft*--Karen Lindsey, feminist writer will read her poetry, 4-6pm, Rm 3-310. Refreshments served.

International Arms Sales*--Disarmament Study Group seminar-discussion, 5:30-7pm, Rm 26-217.

Friday, November 7

The Defense Issue in Japanese Politics*--Prof Shumpei Kumon, economics, **Prof Hiroshi Akuto,** social sciences, and **Prof Nagayo Honma,** Director of American Studies, all of Tokyo University, **Prof Richard J. Samuels,** political science, will moderate. Center for International Studies Seminar, noon-2pm, Rm E38-762. Bring your lunch.

Transit Pricing Policy*--Gerald Kraft, President, Charles River Associates. Luncheon/Seminar Series, Center for Transportation Studies, noon-12:45pm, optional lunch; 12:45-2pm, seminar, Mezzanine Lounge, Student Center. Luncheon fee: $1.50 students, $2.50 non-students.

Constraints Upon Development Rates of Non-Fossil Energy Technologies Subject to a C02 Constraint: A Regional Analysis*--Kamal Araj, Nuclear Engineering Department, Graduate Seminar in Energy Assessment, 1-2:30pm, Rm 24-112.

Chemical Engineering Seminars*--Cherng-Chiao Wu, Responses of Polymers to Sudden Temperature and Pressure Changes Around Tg, 2pm. Guest speaker: **Prof Richard S. Stein,** University of Mass., **W.K. Lewis Lecture, Rheo-Optical Studies of Polymer Deformation,** 3pm, Rm 66-110.

Vortex Inhibition by Dilute Polymer Solutions*--Prof R.C. Armstrong, chemical eningeering. Department of Materials Science and Engineering Polymeric Materials Group Seminar, 2-4pm, Rm 8-314.

Anomalous Electronic Transport in Metallic Glasses*--Sidney Nagle, physics, University of Chicago. Center for Materials Science and Engineering Colloquium, 4pm, Rm 9-150. Coffee served at 3:30pm.

Street Work: Libertarian Approaches to Urban Environmental Education*--Prof Myrna Breitburt, political science, Smith College. SACC Lecture, 8pm, Rm 9-150.

Monday, November 10

Vitamin Supplements and Health Foods*--Judith Wurtman, Ph.D., Department of Nutrition and Food Science. Sponsored by the Health Education Service of the Medical Department, noon-1pm, 8-314. Further information call x3-1316.

Responses of International and National Agencies to the in Decade for Women*--Mark King, deputy director, Action, Washington, DC; **Ulla Olin,** Principal Officer, Bureau for Program and Policy and Evaluation, United Nations Development Program, New York. **Gloria Scott,** Women's Program Office, World Bank, Washington, DC; **Sheila Barry,** assistant secretary, UNICEF Executive Board, New York. MIT/Harvard Consortium on Women in International Development, noon-2pm, Rm E38-615. Bring your own lunch. Everyone welcome.

Power Reactor Radioactive Waste System*--P. Littlefield, manager, Radiological Engineering, Yankee Atomic Elect. Co. American Nuclear Society, Students Branch Monday Afternoon Seminar, 3:30pm, Rm NW12-222. Coffee and doughnuts.

Strong Interaction Theory for Low Reynolds Number Flow with Application to Membrane Transport*--Prof Sheldon S. Weinbaum, City College of the City University of New York. Fluid Mechanics Seminar, 4-5pm, Rm 5-234. Coffee at 3:55pm.

Oral Rehydration for Diarrhea: Simple Methods of Treatment*--Dr. Rich A. Cash, International Food of Nutrition Policy Program Seminar, 4pm, Rm 16-310.

Two-Phase Moisture and Heat Transport in Soils*--Chis Milly, Parsons Laboratory. Water Resources and Environmental Engineering Seminar, 4-5pm, Rm 48-316.

Circuit Complexity and Borel Definability*--Michael Sipser, assistant professor, applied mathematic. Applied Mathematics Colloquium, 4pm, Rm 2-338. Refreshments served 3:30pm, Rm 2-349.

Vibrations of Gas-liquid Systems Contained in Flexible Structures*--Michael Joos, research assistant. Fluid Mechanics Seminars, 4-5pm, Rm 5-234. Coffee 3:55pm.

Election '80: Post-mortem and Projection*--Dr. Louis Menand, assistnat provost and popular lecturer, political science. LSC Lecture, 8pm, Rm 10-250. Free.

Tuesday, November 11

The Great Dictator-A Comparison of Dictation and Longhand Production by Managers: A Social-Psychological Perspective*--Prof Lawrence K. Williams, Cornell University/New York State School of Industrial and Labor Relations. Office Automation Seminar, 4-5:30pm, Rm E51-170.

Einstein Observations of Pre-Main-Sequence Stars in the Orion Nebula*--Dr. Gary A. Chanan, Columbia Astrophysics Laboratory, Columbia University. Astrophysics Colloquium, 4:15pm, Rm 37-252. Coffee at 3:45pm.

Wednesday, November 12

Regulation of Carbohydrate Intake in Rats and People*--Dr. Judy Wurtman, postdoctoral fellow, Nutrition and Food Science. Clinical Reserach Center Seminar, 9am, Rm E17-415.

Optical Signal Processing*--R. Williamson, Lincoln Laboratory. EECS/RLE Seminar Series on Optics and Quantum Electronics, 11am-noon, Rm 36-428.

Some Factors Influencing Protein Turnover and Muscle Growth*--Dr. David F. Goldspink, Ph.D., visiting from the Queen's University of Belfast, Northern Ireland. Department of Nutrition and Food Science Seminar, 4pm, Rm 16-142.

Perspectives on the Synfuels Program*--Prof John M. Deutch, chemistry. Program in Science, Technology and Society Colloquium, 4pm, Rm 37-252.

Numerical Simulation of Boundry Layer Transition*--Dr. M.Y. Hussaini, ICASE, NASA-Langley Research Center. Seminar on Applied Mathematics and Numerical Analysis, 4pm, Rm 2-338. Refreshments at 3:30pm, Rm 2-343.

Polyphosphazenes and the Inorganic Approach to the Polymer Chemistry*--Prof H.R. Allcock, The Pennsylvania State University, University Park, PA. Polymer Seminar Series 4pm, Rm 66-110. Coffee served at 3:30pm. For further information contact Prof R.E. Cohen, Rm 66-509, x3-3777.

Glueballs*--Prof Kenneth Johnson, Undergraduate Physics Colloquium, 4:15pm, Rm 4-339. Social hour follows.

Tolstoy's *Anna Karenina*--D. Thorburn, A lecture series sponsored by The Literature Section, Department of Humanities, Masterpieces of Western Literature, 7pm, Rm 4-149.

Growth of Authoritarianism in Indian Politics*--N. Ram, associate editor and Washington Correspondent, The Hindu, Leading Indian Daily. Sponsored by Sangam, 7:30pm, Rm 407, Student Center. Indian food served.

Thursday, November 13

Working for the Government: One Womans Experience*--Dr. Halina Brown, Massachusetts Department of Environmental Quality Engineering (DEQE). Sponsored by the Association of Women Post Docs, noon, Rm 6-321.

Politics of Women's Health*--Discussion on influencing Congress and the courts on women's health issues by **Judy Norsigian** and **Norma Swenson,** co-authors amoung others of *Our Bodies, Ourselves*. 4-5:30pm, Rm 3-310.

MIT/Harvard Joint Statistics Seminar*--John and **Paul Tukey,** Priceton and Bell Laboratories, 4pm, Rm 2-338. Refreshments at 3:30, Rm 2-349.

Are the Electron, Muon and Tau Charged Neutrinos?*--Prof Min Chen, Physics Colloquium, 4pm, Rm 26-100. Refreshments served at 3:30pm, Rm 26-110.

The FRAM II Program in the Eastern Arctic Ocean*--Prof Arthur B. Baggeroer, ocean and electrical engineering departments. Laboratory for Information and Decision Systems Colloquium, 4pm, Rm 39-430.

Feedback '80*--Sponsored by the Undergraduate Association Nominations Committee, undergraduate student representatives report on the activities of the Institute and Faculty committees they serve on, answer questions and solicit input, 7pm, Rm 66-110. Refreshments served, information call x3-2696.

Special Problems in Environmental Art: The Artists Speak**--Presentations by S.M. Vis. S Students, 8pm. Center for Advance Visual Studies, 40 Mass. Ave., Camb, Mass.

Friday, November 14

The Major Issues Facing the US Air Force in the 1980's*--Maj. Gen. Guy Hecker, Arms Control and Defense Policy Luncheon Series, 12:30-2pm, Rm E38-762. Everyone is welcome. Bring your own lunch.

Surface-Confined Electroactive Polymers: Tailoring the Properties of Electrodes*--Prof M.S. Wrighton, chemistry. Materials Science and Engineering Polymer Group Seminar, 2-4pm, Rm 8-314.

Chemical Engineering Seminar*--Michael Klein, A Mechanistic Study of Lignin Pyrolysis Using Model Compounds, 2pm; Guest speaker: **Prof Arthur B. Metzner,** University of Delaware, **Thermodynamic-rheologic Coupled Phenomena in Polymers with Application to Enhanced Oil Recovery,** 3pm, Rm 66-110.

The Evolution of Vortex Flow Analysis*--M.P. Escudier, Group Leader, Fluid Mechanics Research, Brown, Boveri, and Company; Baden, Switzerland. Mechanical Engineering Seminar, 3pm, Rm 3-133. Coffee at 4pm, Rm 1-114.

Community Meetings

BC-BS Counselor to Visit Campus**--Diane Sabatini, Blue Cross-Blue Shield will be on campus on the first Wednesday of every month to see employees who have questions about their BC-BS Master Medical Plan. Retired employees who have BC-BS Medex III through MIT are also welcome to visit. Wed, Nov 5, 11am-1pm, Benefits Office conference room E19-434. Please call Donna Lynn Taylor, x3-4271, to make an appointment.

ACM General Meeting*--Results of programming contest future projects will be discussed. Mon, Nov 10, 3:30pm, Rm 8-314.

Wives' Group**--Wed, Nov 5, "Brittany", presented by Pamela du Penhoat, member of the Wives' Group, 3-5pm, West Lounge, Student Center. Babysitting available in Rm 473, Student Center. All women in the MIT community cordially invited.**

Organize a Fast for World Hunger*--Planning meeting for this year's OXFAM Fast. Wed, Nov 5, 7:15pm, 312 Memorial Dr., 2nd Floor, Library. For information call Jessica Crist x3-2325.

Undergraduate Association General Assembly***--Meeting of undergraduate student government. Guests: Committee on Student Affairs. Thurs, Nov 6, 7pm, sherry hours, 7:30-10pm meeting, Historical Collections. For information call x3-2696.

Career Development for Women in a Non-Traditional Area; Strategies and Challenges-A Personal View*--Dr. Margaret Law, registrar, Faculty of Arts and Sciences, Harvard University. Organizational meeting to form a local chapter of AWIS (Association of Women in Science). Thurs, Nov 6, 7:30pm, Rm 37-252.

Planning Meeting - IAP Washington DC**--Bob Wallace, political science major & Patty Joffee, Public Policy Program Administrator. A meeting for anyone interested in a 3-day trip to DC during IAP to meeting with policy makers and discuss issues. Fri, Nov 7, noon, Rm E53-482.

Comunity Players General Meeting and Pot Luck Dinner**--Fri, Nov 7, 7:30pm, Eastgate 3G.

Alcohol Support Group**--Sponsored by the Personal Assistance Program, Medical Department. A self-help support group for persons concerned about the effects of excessive alcohol use on their lives. For place, time and day of the week, contact Ron Fleming x3-4911. Coffee and doughnuts served.

GA PLanning Workshop***--Sponsored by the Undergraduate Association. Opportunity for GA reps to study their current operations and develop improvements. Sat, Nov 8, 10am-3pm, Mezzanine Lounge, Student Center. Continental breakfast and light lunch will be served.

Social Events

Muddy Charles Pub*--Open Monday through Friday, 11:30am-2pm and 4-8pm. Located on the first floor of Walker, facing the Charles. Beer, wine and snacks served.

Faculty Club***--Open Monday through Friday. Luncheon served noon-2pm; dinner served 5:30-8pm. Happy hour: Monday through Thursday, 4:30-6:30pm, wide variety of drinks $1.25.

Movies

The Flight of the Gossamer Albatross**--Environmental Planning and Design Program. Thurs, Nov 6, 5:15pm, Rm 3-133. Free.

Le Bonheur**--Department of Humanities Film Series. Wed, Nov 5, 7pm, Rm 66-110. Free.

Camille**--LSC Classic Film. Fri, Nov 7, 7:30pm, Rm 10-150. Admission: $1.

Ali-Angst Essen Seele Auf*--(Fassbinder) German Films, sponsoed by the Foreign Languages and Literatures Secton. Thurs, Nov 6, 7pm, Rm 6-120.

A Little Romance**--LSC Movie. Fri, Nov 7, 7 & 10pm, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

The Seduction of Joe Tynan**--LSC Movie. Sat, Nov 8, 7 & 9:30pm, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

Straw Dogs**--LSC Movie. Sun, Nov 9, 6:30 & 9:30pm, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

Throne of Blood**--Department of Humanities Film Series. Mon, Nov 10, 6pm, Rm 66-144. Free.

Garlic is As Good as 10 Mothers, Werner Herzog Eats His Shoe, and Chicken Reel*--Les Blank, documentarian of folk culture who transforms anthropology into Art, will be present. Mon, Nov 10, 7pm, Rm N51-100.

Claires Knee**--Department of Humanities Film Series. Wed, Nov 12, 7pm, Rm 66-110. Free.

Crime and Punishment**--Department of Humanities Film Series. Thurs, Nov 13, 7pm, Rm 6-120. Free.

Some Like it Hot**--Department of Humanities Film Series. Thurs, Nov 13, 7pm, Rm 4-231. Free.

La Cage aux Folles**--LSC Movie. Fri, Nov 14, 7 & 9:30pm, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

All That Jazz**--LSC Movie. Sat, Nov 15, 7 & 10pm, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

1984**--LSC Movie. Sun, Nov 16, 6:30 & 9pm, Rm 26-100. Admission: $1 w/MIT or Wellesley ID.

Battleship Potemkin**--LSC CLassic Film. Fri, Nov 14, 7:30pm, Rm 10-250. Admission: $1 w/MIT or Wellesley ID.**

Music

Noon Hour Chapel Concert*--Carol Lieberman, baroque violin, Mark Kroll, harpsichord, music by Mondonville, Couperin, Senallie and Balbastre. Thurs, Nov 6. Free.

Noon Hour Chapel Concert*--Bernard Brauchli, clavichord. XVIIIth century Iberian keyboard music. Thurs, Nov 13. Free.

Theater

Cabaret*--By Kander and Ebb. Presented by the Musical Theatre Guild. Nov 7,8,13,14,15, 8pm; Nov 9, 3:30pm, Kresge Auditorium. Tickets Fri & Sat, $4.50/$3, students; other performances, $4/$2.50 for students. Information and reservations x3-6294.

Dance

Tango II Workshop*--Sponsored by the Ballroom Dance Club. Learn new and different tango steps. Sun, Nov 9, 3-5pm, Burton Dining Hall. Admission: $.75 nonmember/$.50 member. Information: I-Wen 225-8586 or Tony 225-8176.

Hatha Yoga - Japanese Yoga*--A special class for those interested in improving concentration, awareness and effectivity. Work will include, posture, relaxation travelling, projection and attunement. Begins week of Nov 10, Wed, 6-7:30pm or Sat, 10-11:30am, location to be announced. For information call Cynthia Friedman x3-4981 M-Th, 1-4pm. There will be 5 sessions and enrollment is limited.

Fall Semiformal Dance*--Ballroom Dance Club. Featuring the Artie Barsamian Band - 17 live musicians play music for dancing, Sat, Nov 15, 8-12pm, Sala de Puerto Rico, Student Center. Admission: $4 per person. Information: I-Wen 225-8586 or Tony 225-8176.

Dance Workshop**--Directed by Beth Soll. Regular classes meet Mon and Wed, 3-5pm and Thurs, 1-3pm, T-Club Lounge, duPont Center.

Beginning Yoga*--Thurs, noon, 12:05-12:55pm; Mon, 7:15-8:15pm, Rm 10-340. Call I. Turchinetz 862-2613.

Exhibits

Three Projects*--By Fernando Domeyko, visiting Chilean architect. On view through Nov 7, 8:30-6pm, Rm 7-304, Rotch Visual Collections.

Paintings by Carolyn Jundzilo-Comer*--On view daily, Mon-Fri, Faculty Club, through November.

Historical Collections Permanent Collections*--A unique collection of scientific instruments, architectural drawings, portraits, photographs and memorabilia that illustrates M.I.T.'s history and development in 19th century technology. On view Mon-Fri, 9am-5pm, 265 Mass. Ave., 2nd floor, Cambridge. Information call x3-4444.

Historical Collections*--Solar Energy, Bldg 8, main corridor. Samuel Cate Prescott, main corridor, Bldg 4. Rogers Building Exhibit, Bldg 4. Norbert Wiener, and Karl Taylor Compton, Bldg 4. Laboratory for Physical Chemistry, Bldg 6. Community Service Fund, main corridor Bldg 4. Ellen Swallow Richards, Bldg 4. Society Sigma XI, main corridor Bldg 8.

MIT 1846-1980*--On view Mon-Fri, 9am-5pm, outside corridor, Margaret Hutchinson Compton Gallery. Information call Historical Collections x3-4444.

Sea Grant: Ten Years of Ocean Development*--On view through December. A pictorial and narrative history of marine-related research, education and advisory services. Mounted by Historial Collections and the Sea Grant Program. On view Mon-Fri, 9am-5pm, Rm 10-150, Margaret Hutchinson Compton Gallery. For information call x3-4444.

City Spectrum*--Group showing by photographers Christopher Barnes, Harry Callahan, Benno Friedman, Brian Hagiwara, Arthur Ollman, Michael Skott and Charles Traub. On view Mon-Fri, 9am-10pm; Sat., 10am-6pm; Sun. noon-6pm, through Nov 16. Creative Photography Laboratory, 120 Mass Ave, 3rd Fl, Camb, Mass.

Aaron Fink: Works on Paper*--Sponsored by the Committee on the Visual Arts. On view through Nov 16, 10am-4pm; Wed evenings, 6-9pm, Hayden Corridor Gallery, 160 Memorial Drv, Camb, Mass. Free.

The Material Object*--Group show will include works by Roni Horn, John Duff, Tom Bills, John Gibbons and other to be annouced. Sponsored by the Committee on the Visual Arts. On view through Nov 16, 10am-4pm; Wed evening, 6-9pm, Hayden Gallery, 160 Memorial Drv, Camb, Mass. Free.

Cardinal and Gray*--Institute Archives and Special Collections, Rm 14N-118. Exhibit on choice and standardization of MIT colors.

New Records*--Music Library, Rm 14E-109. Exhibit of record jackets of recent Library purchases.

The Outdoor Collection*--There are many fine pieces of contemporary sculpture displayed on the MIT campus, including works by Alexander Calder, Louise Nevelson, Pablo Picasso, Henry Moore, Tony Smith, Jacques Lipschitz, Isaac Witkin, and Michael Heizer. For information and guides to the campus, call the Information Center x3-4795.

Science Fiction Society*--Come and visit the world's largest leading science fiction library. Hours posted on door, Rm W20-421.

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

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.

Sports

Home Schedule**--Sat, Nov 1: M Sailing, Schell Trophy, 9:30am; Soccer vs Coast Guard, 1pm. Sun, Nov 2, Club Football vs Buffalo State, 1pm; M Sailing, Schell Trophy, 9:30am.

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 Wednesday, November 12 through Sunday, November 23 to Calendar Editor Rm 5-113, before noon, Friday, November 7.

Stop Smoking Program Planned

The Health Education Service of the MIT Medical Department will sponsor a seven session smoking cessation program at noon beginning Wednesday, Nov. 12th.

This program offers a variety of techniques, including group support, to help those who want to quit smoking. The program is open to the entire MIT community. The fee is $15 or $10 for students and MIT Health Plan members.

An orientation session to the program will be held without charge on Friday, Nov. 7, from 12-12:45pm in Room 491 of the Student Center to acquaint prospective participants with the program format. Those planning to attend the orientation or seeking additional information should call the Health Education Service, x3-1316.

Photography Show to Open In Burton House Gallery

A show of photographic works by four MIT students and one Harvard student will open at Burton Gallery, Friday, Nov. 7, with a reception at 5pm in the Gallery.

The five students—all of whom are studying in MIT's Creative Photography Laboratory, directed by Starr Okenga—are Kevin Pykkonen, Ronald Reed, Charles Swenson and John Wendell of MIT, and Jean Riesman of Harvard, who is cross registered at the Creative Photography Laboratory.

The photographs include landscapes, interiors and street scenes.

Kevin Pykonnen is a senior in aeronautics and astronautics from Boulder, Colo. Ronald Reed is a graduate student in environmental design in the Department of Architecture from Somerville, Mass. Charles Swenson is a graduate student in civil engineering from Hicksville, NY. John Wendell is a graduate student in aeronautics and astronautics from Omaha, Neb.

Burton Gallery opened last spring, largely through the efforts of two students, David Kazdan, a senior in humanities and in biomedical engineering from Cleveland, Ohio, and Joseph E. Pingree, a senior in physics and in earth and planetary sciences from Massapequa, N.Y.

The gallery had been planned as exhibition space when Burton House was remodeled, but had never been used. Mr. Kazdan first had the idea to hang prints in the space, which grew into the more ambitious plan to use it as a gallery for changing exhibitions. The first exhibit was hung in May, 1980. Mr. Kazdan and Mr. Pingree hope to organize a Gallery Committe in Burton House to carry on their work in the future.

Electrographics Exhibit At VLW

An exhibition of electrographics by students and staff of the Visible Language Workshop will open with a reception at 5pm Friday, Nov. 7, at the Workshop's Gallery in the Lobby of Bldg. N51 (275 Massachusetts Ave.).

Electrographics, also called copy art, uses the same method of reproduction used in copying machines, such as Xerox. The exhibit is the first in a series showing the different techniques practiced at the Visible Language Workshop. These include the traditional print media and computer graphics.

The exhibit will be open to the public until Friday, Nov. 21.

Condor Wins 2.70 Skinny Dip Contest

By ROBERT C. DI IORIO
Staff Writer

Its name was The Condor, it worked like a Tasmanian wombat and it won the MIT engineering design contest—this year called A Skinny Dip—without getting anything more than its tail wet.

The winner was Kenneth A. Pasch, a senior in mechanical engineering from Verona, N.J.

For Pasch and the nearly 150 other students in Course 2.70, Introduction to Design, A Skinny Dip was a serious exercise in engineering education. But as usual (this is the 10th year that the contest has been held) all hands managed to have fun.

Professor Woodie C. Flowers of the Department of Mechanical Engineering, who is in charge of the course, presided at the single-elimination competition that was held before an enthusiastic audience that filled Rm. 26-100 October 23.

The competing machines were fashioned from identical kits of parts distributed to students during the first week of class. Each kit included a spring-driven music box, a spring attached to a plastic drum and an 18-inch piece of rubber tubing. The skinny dippers had to use these as sources for power. Pasch chose only the rubber tubing.

Opposing skinny dippers faced each other from eight-by-18-inch diving boards at opposite ends of the water hole—a 10-foot-long, one-foot-wide transparent trough holding three inches of water. At the midpoint of the water hole was a "swing," consisting of a pair of two-feet-long rectangular aluminum rods. The winning skinny dipper was the one that was tilting the top of the swing toward the opposite end of the water hole at the end of the 10-second contest.

Pasch designed his skinny dipper so that, like a Tasmanian wombat, it launched itself head-first at its target—a tree for the wombat, the swing for the MIT student's machine. Just before impact, the wombat uses its tail to alter its attitude and avoid a head-on collison. It contacts the tree chest first and grasps the limb with its legs. So it was with Pasch's Condor. He used a piece of the rubber tubing for the initial thrust through the air at the swing. The impact with the swing released a second stretched piece of rubber tubing which deployed the two claw-like protuberances that grasped the swing. At the same time the tail end of The Condor was tilted toward the water hole and dug in for leverage.

Runner-up was Michael Kelly G. Kelly, a junior from Gardner, Mass.

The winner's prize: a raft complete with a small fan that fluttered a tiny flag. The power source was a music box spring.

Other instructors involved in the course are Peter Griffith, David Gordon Wilson, David C. Gossard, Neville Hogan, Michael G. O'Callaghan, Warren P. Seering, William C. Unkel and Ernesto E. Blanco.

CHAMP OF THE SKINNY DIPPERS is Kenneth A. Pasch, right, winner of this year's 2.70 design contest in the Department of Mechanical Engineering. Michael Kelly, who finished second, offers congratulations as Pasch holds aloft the first prize—a model raft equipped with a fan driven by a music-box spring, one of the power sources students could use in building their devices for the contest.

—Photo by Bill Hoffman

NEW PROGRAM PLANNED—The Manufacturing Resources Program, a new cooperative program proposed by the Laboratory for Manufacturing and Productivity, is enlisting corporate sponsors. More than 25 high-ranking representatives of major American firms met at MIT recently to discuss the new program, which will be funded by a consortium of companies interested in productivity analysis and improvement. Dr. Michael B. Packer, right, program director, discusses the program's focus with, from the left, S.R. Locke, Martin Marietta Aerospace, program manager, producibility, for the space shuttle external tank; Kenneth J. Brondyke, director of Aluminum Company of America's Alcoa Laboratories, and Professor Kent F. Hansen, associate dean of the School of Engineering. Dr. Packer proposed that the program focus on productivity analysis and improvement at the firm, division and plant levels. Other speakers were Professor Robert C. Seamans Jr., dean of engineering; Professor Nam P. Suh, director of the Laboratory for Manufacturing and Productivity; Dr. Lewis Erwin, DuPont Assistant Professor of Mechanical Engineering; Dr. Eli J. Aronoff of International Telephone and Telegraph Co., and Harley Shaiken of MIT's Program in Science, Technology and Society.

Charities Drive Extended

The closing date for the combined Massachusetts Bay United Way Massachusetts Black United Fund annual campaign has been extended to Wednesday, Nov. 26, John A. Currie, chairman of the campaign, has announced.

As of Tuesday, Nov. 4, a combined total of $68,219 from 1,074 donors has been recorded toward goals of $150,000 from 4,200 contributors.

"The totals have more than doubled since last week," said Ann M. Perkins, coordinator of the campaign, "yet we're less than half way to the dollar goal and only a quarter of the way to the donor goal."

Ms. Perkins noted that no reports had been received from 33 of the 104 organizational units within the Institute, as of October 31.

"We encourage chief solicitors to report regularly," she said, "but some wait to report until their area solicitation is complete, or nearly so."

Star of the campaign so far this year, she said, is the MIT Press which has improved its participation by 400 per cent and its contribution by 600 per cent to the United Way while also registering great gains for Mass-BUF. Chief solicitor there is Susanne DiGregorio.

Other areas where United Way participation is notably up this year include the Lincoln Fiscal Office, the Audit Division, the Center for Advanced Engineering Study, the Center for Transportation Studies, the Department of Psychology, the Program in Science, Technology and Society and the Clinical Research Center.

Areas where Mass-BUF shows marked participation improvement include the President's Office, the Office of the Dean for Student Affairs, the Energy Laboratory, the Center for Advanced Engineering Study, the Center for Transportation Studies, the Department of Political Science, the Department of Psychology, the Program in Science, Technology and Society, the Clinical Research Center and the Department of Mathematics.

CLASSIFIED ADS X3-3270

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. Persons who have no extensions or who wish to list only home telephones may submit ads by coming in person to the Tech Talk office, Rm 5-113, and presenting Institute identification. Ads may be telephoned to x3-3270 or mailed to Rm 5-113. **Deadline is noon Friday before publication.**

For Sale, Etc.

Ski boots Le Trappeur, sz 6 1/2, $25, used once. Call x3-4493.

G Columbia 26" 10 spd silver bike, $35; xtras lg silver fiberglas motorcycle helmet, $35; Sears chain saw 14" cutter bar, man oiler, 4.4 cu inc disp, $50; Sears port csstt player-recdr AC/DC monaural nw $10, all exc cond. Call x8262 Lincl.

Ski boots, Hanson, M sz 9-10, exc cond, $75; also wanted: gas range & refrig, gd cond. Call x3-7857.

Wurlitzer spinet piano & bench, exc cond, $700. Leonard x5484 Lincl.

Desk, 42x34" glass top, $30. Call 864-4257 eves.

5 Saab rims w/mntd and balanced rad Semperit 155-SR15 tires, $50 for lot; also pr BR60 13" snows on Mustang rims, nw, $20 ea. Call Arthur x3-7136.

Sealed, unopened box of 10 Verbatim the best soft sectored mini-desks, #MD 525-01, $35. Bob x5-6660 Dorm or 494-8705 eves.

Kenwood KD2070 direct drive, trntble lk nw, $80; TI SR52 calculator, $15; florescent desk lamp, $10, $ nego. Paul x3-2843.

Bike, E European 10 spd racer, 27" frme, all equip campy comparable but made in E Europe, E German sewups, ask, $300. Call Jack x8-2676 Draper.

Round trip to anywhere TWA flies, including 2 stopovers, won in TWA "Win the World" contest, poss destinations Europe, Middle East, Continental US, mst be usd by Dec 15, which is why I'm selling it, $300 or best, pls respond soon as it takes a few days to get the ticket. Call x5-6549 Dorm.

Telephones wall type; simulated diamond ring; port type stereo phonograph; wrought iron magazine stand; garden hose; 14 incl Ford rims w/snows, best. Call Bob L. x8-2583 Draper.

Refrig, Kenmore, 19.2 cf yr old, lk nw, yr wrrnty, $500 firm. Call x3-4315 or 247-4767.

3 tires G70-15 Gillette Spring raised white lettering, gd tread, $20 ea. Bill x7235 Lincl.

Single bed w/frame for sale, $30. Barbara x3-7993.

K 2 Riva R skis sz 170, gd cond, best; Nordica Alpine ski boots, gd cond, sz 11M, best; Scott poles, 48cm, best. Mrs. Mamon 469-0079.

6 stringed acoustic guitar, not steel strings. x3-2916 or 734-3229.

Two H78-15 tires on rims, '71 Buick service man, nrly nw, Buick bttry. Call eves 275-0996 or x342 Lincl.

Pioneer PL-1120 belt drive man trntble, $75. Call Helen x3-2334.

Pr Sears small tires w/rims E78-14 $30; add FM to your AM car radio w/Sears FM converter, $15. Ricky x3-7370 or 483-4294 eves.

Auto Dual instant heater, nw, usd 2X, bought 9/29, guaranteed w/receipt 1 yr, pay $30, save $10. John x8-3517 Draper, 4 to 12pm.

File Cab, 4 drawers, $50; KLH 32 spkrs, $30 ea; rug 6x9 orange/rust brown, $10; Sears humidifier, $5. Call x3-3138 or 738-1264.

GE frost-free refrig-frzr, exc cond, 13.7 cf, pink exterior, slide out shelves, $70; also alum storm dr w/screen inserts, complete w/frme for installation, 36x80", $10. Call 484-0802 from 1-9pm.

CD ign, Heath CP-1060 in unopened carton, sold car before installation, $40. Ralph x3-8121.

4 file drawers for 3x5 cards, 2 rows in ea drawer. Sue x3-2691 or 661-4692.

Nrly nw platform dbl bed, oak veneer, 4 drws, hdboard, covered foam matt, $300. Pat x3-6648.

Combo alum storm & screen dr, $5. Call 729-0009 eves.

Coffee maker, brnd nw Norelco, 10 cup, auto-drip filter, $25 org prc, $37. Alice x3-4897.

Sears glass dr frpl screen, antique brass finish, measures 42"wx 31" high, $50 or best. Call Jean x5315 Lincl.

ICOM IC-211 2 meter all mode transceiver, mint cond, $450. Bob x7040 Lincl.

Storm drs, alum w/glass, screens and fittings, 1 bare & one white, ea $25. Chuck x3-7902.

2 completely recond, 24" boy's bikes, 1 3spd $40; sngle spd, $25. Call 646-8681 or x8-1200 Draper.

Cash register, elect, tax key, $100. Call Judy x3-3906 or 661-8304 eves.

Onkyo 1500 mk II recvr, 17 watts/channel just lk nw, $230 nw, ask $170; incl homemade 3 freq 9,12,15 KHZ, high filter. Calvin x3-2256 or 720-0932 eves.

2 Harvard football tickets, 40 yd line, Nov 8, William & Mary, at cost. Ken x3-5561.

W clogs sz 8-9 br, Olaf Daughters, almost nw, $10. Holly x3-7786.

Rear window defroster/defogger, fits any car, brnd nw, $8 or best. Call 924-1766.

Bike lock, absolutely theft proof, experimental model made at MIT, $15. Call x3-7644 or 436-3537.

Refrig, $45 or best. Call Charlie x3-3204

Biological chemistry, 2nd ed, H.R. Mahler, E. H. Cordes, $25. Pls call Irene at 661-0578 aft 5pm.

Pr snows on Ford rims, H78-15, steel bltd, $35. Call x3-2837.

Set of 13" non rad studded snows mtd on Datsun rims lk nw, $75 or best; 1 nw 13" reg tire, $25 or best. Murray x3-7239.

2 girls bikes, exc cond, Cricket 12", Ross 14" also gumwood mantel. Alan x3-4284.

Accordion, Borsini from Italy, $125; Realistic stereo amp 15 watts per channel 2 spkrs, $30; Zenith tble radio tube AM/FM, wd cab, $20; Toshiba AM/FM stereo phono $50; Smith Corona port typewrter, $20; Kay acoustic guitar, $25. Wayne x304 Lincl.

Reclining lounge chr, naugahyde uphol, lk nw, $50. Henry x8-3424 Draper.

Beckett oil burner, under 2 yrs old, 9" stem, mst sell, $75 or best. David 924-8083 aft 5pm.

Custom made sofa and chr, $350 or best, 4 poster dble bed & bureau, hard rock maple, antiqued yellow, $100. Pat x8-3964 Draper.

Marantz integrated amp, 30 watts/channel, yr old, exc cond, $170. John x5-7571 Dorm.

SAE 3100 stereo power amp, mint cond, 5 yr wrrnty. Bruce x5-7585 Dorm.

Pr Marantz Imperial 7 spkrs, vy gd cond, $100 or best; love seat, nw cond, $100, $200 nw; Edison 20" fan, $15; nw lg used. Roy x3-2722 9-5pm or 536-5229 aft 6pm.

Metal desk, big and gd cond, barely used, ask $100; loud spkrs, verit 3 way, 55 w, only $200. Call 492-3107 or 494-8397.

Pr Hyde F toddler ice skates, sz 10, white single runner, lk nw, $20; tennis racket Borge personal strung w/blue star 4 1/2 light, $25. Call Tony x8-3200 Draper.

Kodak polycontrast filters, 3" sq complete set, $15; reading chr, $30; Ferrotype plates, $12. Wanted: simple old slide projector, no trays, carousels, etc. Martha x3-1564, Rm 6-128.

It's a steal! TI-59 programmable calculator w/2 library modules, 40 extras cards, full documentation, and much powerful and fun software, $175; also PL100-A printer w/extra thermal paper, $95 or everything for $250! Call 491-6222.

Whirlpool no frost dble dr copper, $395. Carol x3-4765.

Pr rad snows, BR78-13, $35. Call x3-5778.

Gorham sterling silver flatware, 8 - 4 pc place setting, 4 serving pcs, incl chest, pattern Classique, $2300. Diane x3-6102.

Vehicles

'66 VW Bug, 85K mi, run cond, gd parts car, best. Jane x3-4733 or 862-5009.

'72 Ford Country Squire sta wg, gd cond, gd tires, snows mtd, $450. Hank x7285 Lincl.

'72 Ford Maverick, gd cond, auto, has snows, $800 or best. Call Mark 494-8561 aft 5pm.

'72 Toyota 4 dr, fine cond, 16K actual mi, serv records available, $1500. Call 862-2271.

'72 VW 411 auto 15K on reblt eng, exc bdy, no rust, AM/FM stereo 8 track, $1400. Larry x3-6186.

'72 VW Squareback, gd cond recently reblt eng, $600 or best. Call Rick x3-6258.

'72 Volvo wg, 145 std, rf rack, A/C, AM/FM, 8 track stereo, Mich rads, nw bttry, nw trans, snows, dk grn, gd cond, 112K mi, 20-28 mpg, reg gas, $1850 firm. Call 235-4133 or 484-4201.

'73 Audi Fox, superior mech cond, exc bdy, no dents, 4 dr, auto trans, nw tires, recently aligned, tuned & reblt eng w/only 17K, mst see to appreciate, $1900. Tasos x8-4119 Draper or 232-6868.

'73 Olds Cutlass, 4 dr, auto, PS & PB, vy gd cond, reg gas, 28K. Call 547-1637.

'73 240Z, A/C, AM/FM stereo, nw tires, no rot, int lk nw, nw exh. Bob 623-0071.

'74 Chevy, 60K, Malibu, gd cond in and outside, snows, $2000 or best. Call 494-8397 or 492-3107.

'74 Must II Ghia V-6, 100K mi exc mech cond, A-1 appearance, mny extras, $1600. Call x3-7240.

'75 Olds Custom Cruiser, station wg, exc cond, $1800. Call 232-6523.

'78 Toyota Celico GT, liftback, AM/FM radio, tape deck, Ziebart, snows, 28,600 mi, $4800 or best. Call Dan Gladkowski x8-2885 Draper.

'79 Honda CB650, showrm cond, low mlg, incl national cycle plexifairing; K&G, backrest & mini-eng guards, continental RB2 front tire; performance bars and stock bars; gd lock, cover, and VHOE1 V-25 helmet, mst see, ask, $2450, lv msg. Call 484-6310.

'79 Puch Moped, only 1100 mi, perf cond, dir sigs, air horn, sp mirror, saddlebag, other extras, paid $600, ask $425. Margie x7516 Lincl or 861-0027 eves.

'80 Honda 750, 2100mi, still under wrrnty, $2000 or best. Call 926-4745 aft 5pm.

Honda 50 motorcycle incl helmet, $200. Carla x3-5696 or 395-8375.

Housing

Arl, mod apt, lux duplex ww, d&d, 3 BR, 2 B, mod K, wash/dryer, conv loc nr T, $200/mo per person incl util. Call 646-8230 or 644-0300.

Arl mod 2 BR condo hdwd fl, air cond, pool, $48K. Ron x3-1694.

House for rent, furn brick country Normandy hse in Brookline, nr H.S. & Maimonides in Runkle sch district, 3 BR, 1 1/2 B, frpl, gar, 3 min walk to T; no pets, non-smokers, fam desired, avail 12/1-8/15, $850/mo unhtd. Call Margaret x3-2916.

Camb, furn studio apt for sublet from Dec 1 for at least 9 mos, $300/mo, all incl. Donna 491-7754 eves.

Carlisle Ma, hse for rent, 3 BR colonial, wood burning stove, 2-1 acres, boardering conservation land; lg area for garden, gar, 1 1/2 B, w/d; nr commuter rail; Dec '80 to Jan '82, $725/mo. John 369-8415 or 726-3770.

Animals

Cats, kittens and sm dog from untenable shelter, desperately nd moving people to give them permanent homes, neutered, shots, donations requested to support others. Susan Ary x3-2285.

Kittens! free! 1 F, 3 M, 7 wks old. Call 894-7218 eves.

Lost and Found

Reward! for return of W Zenith watch, lost early Oct. Call Chris x3-4825.

Suitcoat lost at semi-formal-I have your suitcoat; blue, brnd name Jodphurs, with a metal comb inside pocket, you have my suitcoat, blue, brnd name Harmony, reward offered for return. Call 494-8683.

Found: Rm 39-233 a cassette, owner may claim by identifying. Call 3-4105.

Found: anyone lose a yellow plastic pouch. Ken x5-7305 Dorm or x5-7115 Dorm.

Wanted

Heated garage in Camb or Boston for storing auto to be driven about once a wk. Prof Williams x3-2221.

Riders wntd to shr expenses, NY City or Northern NJ (Chester), lv early Friday afternoon 11/14, return late Sunday 11/16. David Carlson x3-1401 or 625-6774 eves.

Ride Mass Ave Beacon St to Eastgate or Sloan 8-9am. Call x3-1833.

Projection lens for 19" TV. Bob x5-6660 Dorm or 494-8705 eves.

Dulcimer lessons for intermediate/advanced student. Aline x5-6413 Dorm.

Bald healthy M needed as subjects for MIT research project on brain waves EEG, mst be totally bald, Alopecia totalis or shaving acceptable, $35/3 hrs. Call x3-7697.

Seeking math tutor in algebra, trig & calculus for period of 6 mos, 2 hr/wk hrly rate open. Call N. Toscano x3-4347.

ECFMG Jan '81 candidates to study together. Appa x5818 Lincl or Nalnin 263-1343.

Persons from the High Plains area of Neb, Kan, Okl, Tex, & Colo, needed to participate in a survey concerning water use and conservation, MIT Civil Eng Project, $40, 4 hrs. Call B. Arntzen x3-1691.

Full lenght mirror. Lynn x5-6638 Dorm.

Donate your unused canning equipment, especially jars and caps, to a worthy cause, for pickup in the Camb area call x3-7240.

Temp home for dogs, 2 calm, well behaved dogs, during X-Mass holidays 18 days, $5/day plus food. Call x3-1961.

Roommates

2 rmmates nd for hse in Waltham, $135 plus util, no drinking, drugs. Joe 894-8400.

Arl, F wnt to shr 2 BR apt w/F MIT employee, $150/mo plus utils, nr T, park avail Dec 1. Call Laurel x3-3718 aft 2pm or 646-7302 eves.

Concord couple to shr 3 BR hse, 2 BR & bath, prv, $375/mo; 1 BR, $200; quiet, convenient to 2 and 128. Call 369-3046.

Miscellaneous

Flute lessons, 8 yrs teaching, exper in schools and w/prv students, trained at Indiana U., Tanglewood & in Vienna, perf pro w/Austrian Radio Orch, MIT location. Call 369-4865.

Enjoy your piano! tuning and repair by certified piano technician, free evaluation w/tuning. Chris 864-8166.

Printed Curcuit Bd Design Services. Dan x3-3939.

Guitar and bass lessons, from Berklee grad, performer, all levels beginners-advanced, all styles, rock, pop, jazz, etc, also harmony, arranging ear training, your home or mine. Bill x7088 Lincl.

Park spc available for rent in Camb, 1 min walk to City Hall, pls call aft 7pm wkdays or all wkend 661-7849.

Foreign students: having trouble writing your dissertation, MS, thesis in clear, concise English? let me help, editorial assistance, pro typing, no topics too esoteric. Lois x3-6681.

Check bounce? prevent expensive and embarrassing overdrafts, catch costly bank errors, utilize excess funds to your advantage w/pro bank statement reconciliations, accuracy guaranteed, all this & peace of mind for $9.95/mo. For further info call 491-8651.

Expert typing, thesis term papers, etc. Call x3-7303.

Parking Stickers

Swap W gar for Sloan or Eastgate. Call x3-1849.

Wl switch N10 Albany sticker for Albany Gar or Sloan lot. Mary Ann x3-5263.

POSITIONS AVAILABLE

This list includes all nonacademic 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).

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

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

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

Pat Williams	**3-1594**
Susan Lester	**3-1593**
Philip Robinson	**3-4261**
Appointments: Janet Moore	**3-4270**
Virginia Bishop	**3-1591**
Richard Cerrato	**3-4266**
Ken Hewitt	**3-4267**
Appointments: Marsha Gens	**3-4268**
Sally Hansen	**3-4275**
Vera Ballard	**3-4277**
Kathleen Rick	**3-4269**
Appointments: Etsuko Kumai	**3-4274**
Dick Higham	**3-4278**
Anne Whitman	**3-6510**
Ann Perkins	**3-6511**
Appointments: Tertia Perkins	**3-6513**

High school teaching positions, in Computer Science, Electronics, and Aviation. The Umana Harbor School for Science and Technology, Boston Public Schools, has one full-time teaching position for each of the above areas. Teachers will instruct students in grades 9-12. Umana has excellent lab facilities in these technical areas. Applicants should contact Mr. Alvin Shiggs, Personnel Management, Boston Public Schools, 26 Court St., Boston, MA 02108, telephone 726-6394; or Robert C. Hayden, MIT-Umana Coordinator, Room 20B0129, telephone 253-7063.

Administrative and Academic Staff

Assistant Director, MIT Associates Program, will plan and perform activities involved in servicing a number of companies in the Associates Program including visits to company locations, group presentations, meetings with company officials. Will assist member company representatives with technical questions by arranging appropriate faculty contact or by providing relevant references and information. Arrange meetings on campus or telephone conversations with MIT faculty and staff for clients. Solicit new company members. Consult with faculty and staff regarding other services provided member companies. Requires an engineering or science degree, preferably in mechanical engineering or materials science and engineering. MS degree desirable. Two years' experience and excellent interpersonal skills also required. A80-72

Nurse Practitioner/Physician Assistant, will work in the Ambulatory Clinic of the Medical Department and be responsible for the delivery of primary care and treatment including physical assessment and evaluation of patients. Must be a graduate of either an Adult Nurse Practitioner or Physician Assistant Program. Previous work experience in primary care, emergency room and Medical/Surgical desirable. Schedule: full time days with flexibility to rotate to evenings, weekends and holidays in OHC. C80-27

Admin. Staff, Assistant Contract Administrator, Office of Sponsored Programs, will work for an assistant director in the administration of sponsored projects, including proposals review, grant and contract negotiations, and post award administration. A bachelor's degree in business administration or a related field, or the equivalent of formal education and experience is necessary. Experience in one or more aspects of sponsored program administration in a university environment is desirable. A80-71

Sponsored Research Staff

Research Associate, Center for Transportation Studies, will organize, conduct and coordinate research on automobile usage strategies as part of a new three-year multi-funded program to assess the future of the automobile in Europe, Japan and the U.S. Work involves direct responsibility for both the U.S. research effort and for coordinating the European and Japanese effort with academic research teams in France, Germany, Sweden, U.K. and Japan as member of this international research team. Major responsibilities for summarizing research progress and results for senior policy forum participants and other nontechnical audiences on frequent basis. Requires Master's degree in transportation, urban planning or related field and 3-5 years' experience in auto usage research. Prior international research experience desirable. R80-338

Postdocotral Research Associate, in the Department of Materials Science and Engineering, to work on the development of a mathematical model describing heat transfer, fluid flow and solidification phenomena in the electroslag-refining process. A doctorate is required in chemical engineering and/or metallurgy-materials science, with extensive experience in the areas of magnetohydrodynamics, process metallurgy, turbulent flow phenomena and the numerical solution of parabolic differential equations. R80-337

Research Electronic Engineer, will maintain and develop equipment for radio astronomy and geodetic applications at Haystack Observatory. Equipment includes receivers, R.F. systems using mixers, and low noise amplifiers. Work involves I.F. systems, frequency multipliers, phase-lock loops, synchronous detectors, magnetic recording electronics and their digital interfaces. Will supervise construction, benchtest, and system integration of above equipment. BS or MS in EE or physics required. Familiarity with design of analog and digital circuits required. Travel to other radio observatories which participate in joint radio astronomy (VLBI) experiments may be required to test and maintain electronics built at Haystack. R80-327

Spons. Res. Staff, Business Manager, Energy Laboratory, will develop and implement a management information system covering all Laboratory operations. Responsible for financial, contract, information center, facility management and other administrative activities and will supervise people involved in those activities in Headquarters and other Laboratory locations. Requires extensive experience in MIT's financial and contract procedures, experience in supervision of support personnel, ability to work effectively with faculty, staff, and administrators having diverse needs and interests, and must have demonstrated skill in planning computerized systems and procedures. R80-324

Spons. Res. Staff, Principal Research Scientist, Spectroscopy Laboratory, will carry out independent research programs in laser spectroscopy of atoms and molecules. Will supervise and work with graduate and undergraduate students; organize and supervise laboratory meetings and seminars; and initiate and participate in new research programs. Requires PhD in physics with extensive experience in high resolution electronic and vibrational/rotational spectroscopy of small molecules and of atoms and ions. Candidates must possess experience in: (1) c.w. infrared, far infrared, and dye lasers; (2) wavelength and frequency measurements; and (3) analysis of spectral lineshapes. R80-323

Spons. Res. Staff, Programmer/Analyst, Plasma Fusion Center, for the Alcator Project. Will support applications on a VAX-11/780 computer for a controlled nuclear fusion research project. Will be responsible for designing and writing applications programs for data acquisition and analysis, writing systems support utilities such as graphics routines, consulting with users of the VAX-11/780 and PDP-11/55 computers, and documenting the use of applications programs. Requires Bachelor's degree in mathematics or an applied science, at least 2 years' experience with DEC computers, experience with DEC's VMS and/or RSX operating systems, experience with macro assemblers and FORTRAN, a background in numerical analysis applications, an understanding of the laboratory data acquisition environment, organizational abilities and communication skills. R80-321

Spons. Res. Staff, Systems Programmer/Analyst, Plasma Fusion Center, Alcator project, for its new VAX-11/780 computer facility. This facility is dedicated to data acquisition and analysis for a controlled nuclear fusion research project. Will provide systems support of the installation and maintenance of VAX/VMS and RSX-11M system software, hardware and software troubleshooting, specification and selection of software packages, writing device drivers for custom data acquisition interfaces, design and implementation of systems software utilities, support of small user-community of about 40 scientists and graduate students, and documentation of system features and procedures. Requires Bachelor's degree in computer science or an applied science, at least 3 years' experience with DEC computers, considerable knowledge of the internal workings of VMS and/or RSX operating systems, lab data acquisition systems and device drivers experience. R80-320

Spons. Res. Staff, Computer System Manager, Plasma Fusion Center, Alcator Project, for its new VAX-11/780 computer facility. This facility is dedicated to data acquisition and analysis for a controlled nuclear fusion research project. Will be responsible for operation and maintenance of the computer and the front-end PDP-11/55 computer, installation and maintenance of VAX/VMS and RSX-11M system software, specification and acquisition of new hardware, evaluation and acquisition of software packages, support of custom hardware interfaces via hardware specifications and device driver specifications, acquisition of materials and supplies, design and implementation of system software utilities, support of a small user-community and documentation of all aspects of system operation and use. Requires Bachelor's degree in EE, computer science, or an applied science, several years of hands-on experience with DEC computers, and experience in above. R80-319

Spons. Res. Staff, Research Associate, Laboratory for Computer Science, to work with Education Computing Group on design and implementation of a graphics-based programming environment for non-expert users. Initial development will be done using the LISP programming language. This work is at the forefront of current research in user interface and computer language design. Requires sensitivity to needs of non-expert users, extensive programming experience in LISP, familiarity with sophisticated graphics-oriented programming environments. PhD preferred but not required. R80-318

Exempt

Metal Shop Supervisor (Exempt). Physical Plant, supervises the work of metal workers, sheet metal mechanics, shademen, and glaziers. Plans, estimates and schedules the work to maximize the utilization of employees, materials and equipment to meet budgets and produce a project of high standards. Maintains a concise inventory of standard items. Must have considerable experience in operation, layout and estimates of related work including welding, brazing, soldering and joining of all metals and sheet working. Must have good working knowledge of blueprint reading, layout, and scheduling of work. Must have at least 3 years' supervisory experience. A knowledge of glazing is desirable, as is knowledge of window coverings. E80-49

Library Support Staff

Library Assistant II, Collections. Dewey Library, assists in all aspects of acquiring research level materials in the social sciences and management. Performs bibliographic searching, prepares orders for material selected for purchase, handles correspondence relating to exchange and gift materials, maintains correspondence files, and limited accounting records for material purchased under various subject accounts; may also assist in processing new material. Will be expected to assist in other areas of the library, including work at the main Reference Desk. Also, occasional evening or weekend work will be expected, based on a prearranged schedule. 2.5 years' direct/related experience and some college work, preferably in the social sciences, needed. Previous library experience, accurate typing essential. B80-707

Secretary/Staff Assistant

Administrative Staff Assistant (Technical). Research Laboratory of Electronics, will provide administrative support for one faculty member and two senior research staff members. Will prepare manuscripts, proposals and reports using computer text editing; prepare notes and other course work; maintain library of books and reports for research group; maintain students records; schedule meetings, make travel arrangements; assist in administering research accounts, type correspondence, and perform other general duties. Should have experience with text-editing on computer system or be willing to learn. Requires 4.5 years' direct/related experience or combination of education and experience. B80-712

Administrative Assistant. Department of Earth and Planetary Sciences, will work with a group of geology faculty members and their staff and students. Duties will include research proposal preparation and submission; budget preparation and monitoring; overseeing contract compliance; acting as liaison with OSP on contract and accounting matters. Will have responsibility for overseeing roughly 8 research accounts. In addition, will be responsible for all administrative details connected with running of annual geology field camp. Will act as liaison between research group and department headquarters on such matters as personnel and space allocations. Minimum typing skills required, although some typing ability is necessary. Prior MIT experience very helpful. Accounting background is not necessary. Non-smoking office. B80-708

Administrative Secretary, to the Dean for Student Affairs, will provide a variety of secretarial and administrative support services. Will have considerable interaction with students, parents, faculty and staff. Excellent secretarial, communication, and organizational skills necessary; knowledge of word processors highly desirable. Ability to work both independently and as part of a team important. Position requires good judgment, patience, tact and understanding. Thorough knowledge of MIT desirable. Some overtime work may be necessary. Non-smoking office. B80-695

Sr. Secretary, Joint Program in the Management of Technology, a new position providing secretarial support to program run jointly by Sloan and Engineering schools. Will handle typing of correspondence, reports, promotional material, class material; answer phones; handle mail; schedule meetings; arrange travel; maintain files; receive visitors. Will also handle secretarial duties for one Sloan School faculty member, including preparation of manuscripts and library searches. Requires good secretarial skills and a minimum of 2.5 years' direct/related experience or combination of education and experience. B80-717

Sr. Secretary, will work with faculty members and research scientist in Dept. of Earth and Planetary Sciences. Will work in close cooperation with two other support staff members handling needs of large group, including varied duties such as typing, library research, some telephone coverage, checking monthly accounting statements, etc. Much of the typing will be done on a word processor (Digital WS 82) and training will be provided if necessary. Typing includes correspondence, manuscripts and research proposals, some of which is technical in nature. Prior experience in using word processor is desirable, but training will be provided. Must be excellent typist with regard to both speed and accuracy. Work requires good grammatical skills, extreme care with details, strong organizational skill and ability to work occasional overtime and meet deadlines. B80-716

Sr. Secretary, will provide secretarial support for three faculty members and one research scientist in Dept. of Earth and Planetary Sciences. Job includes large volume of typing (correspondence, manuscripts, research proposals) some of which is technical in nature. Typing will be shared primarily with one other secretary and much of this typing will be done on a word processor. In cooperation with two other office personnel, will share general office responsibilities such as handling phones, maintaining files and supplies. Prior experience using word processor (Digital WS 82) is desirable, but training will be provided if necessary. Must be excellent typist with regard to both speed and accuracy. Good grammatical skills, attention to detail, strong organizational skill and ability to work independently necessary. Must be able to meet deadlines and work occasional overtime. B80-715

Sr. Secretary (part-time), to faculty member in the Biology Department. Primary responsibility is administration of research funds, which involves day-to-day bookkeeping and record-keeping, order processing and short- and long-term forecasting. Other responsibilities include typing and editing manuscripts; composing and typing correspondence; preparing grant applications, i.e., computing salary and supply requirements and typing; making travel arrangements; answering phones; filing; typing and coordinating course materials; general coordination of laboratory of about 10 people. Organizational and priority setting ability important. Accurate, fast typing and ability to transcribe from dictaphone also necessary. 20 hours/week (mornings). B80-714

Sr. Secretary, Technology Adaptation Program (TAP). The TAP is concerned with developing an understanding of the characteristics of technologies that can be appropriately used in developing countries. MIT/Cairo University Technical Planning Program was initiated to assist Cairo University in developing capabilities which contribute to formulation and implementation of science and technology-related policies to the end of aiding in realization of Egyptian development goals. Position includes secretarial support for research associates and administrative assistant. Will type reports and occasional correspondence, answer telephones, make appointments and maintain project material files. Requires excellent typing with some technical typing experience preferred. Good interpersonal skills important. 2.5 years' combination of education and experience required. B80-711

Sr. Secretary, Ocean Engineering, will work with three faculty members and their research assistants. Secretarial duties include typing correspondence, class notes, technical reports, manuscripts, etc.; monitoring monthly expenditures on OSP accounts and reconciling statements. Will also keep appointment calendar, arrange travel, maintain files, etc. Requires ability to meet deadlines and work independently. Good typing skills required; technical typing experience preferred. Knowledge of MIT and its accounting system helpful, but not necessary. Also requires a minimum of 2.5 years' experience or combination of education and experience. B80-703

Sr. Secretary-Technical, is primarily responsible for some fiscal and all non-fiscal communication of one faculty member and research group involved in genetic toxicology research in the Department of Nutrition and Food Science. Requires orderly approach to preparing and filing correspondence; ability to coordinate activities of temporary typists and graphic art services in manuscripts and proposal preparation; mature nature for dealing with deadline-crazed scientific personnel. Secondary duties include keeping appointment calendar and making travel arrangements. Requires organizational ability and willingness to contribute to group productivity, and technical typing skill. Will be trained to use word processor. Job sharing is available. B80-698

Sr. Secretary, Education Council, to handle a variety of duties in a busy alumni-related office, including providing secretarial support, maintaining Director's calendar and arranging lunch and dinner meetings, answering and handling phone calls, supervising filing system, maintaining logs and records with extreme accuracy, assisting with other office responsibilities as necessary, and working closely with Director and Office Administrator in a congenial, informal, non-smoking office. Excellent secretarial and organizational skills with 2-3 years' experience required. Ability to work in a team and with attention to detail and to act with good judgment important. B80-697

Sr. Secretary, Harvard-MIT Div. of Health Sciences and Technology, will perform general secretarial duties: type, file, arrange travel and meetings, edit and proofread reports, write and/or suggest replies to office correspondence. Excellent typing skills plus solid secretarial experience required. Shorthand/speedwriting, familiarity with MIT procedures desirable. B80-694

Sr. Secretary, will work with three faculty members in the Department of Nutrition and Food science who are involved in study of vitamin A and protein metabolism. Varied duties include typing, reproducing and distributing correspondence, class materials, manuscripts, reprints and grant applications, reports and files. Will also answer phones, schedule appointments and meetings, and handle routine office procedures. Congenial, non-smoking office. Requires excellent typing and organizational skills, plus 2.5 years' direct/related experience or combination of education and experience. B80-691

Sr. Secretary - Technical, Dept. of Mathematics, will provide secretarial support for several faculty members. Duties will include typing correspondence, class materials and manuscripts, maintaining records and files; arranging travel; answering telephones and dealing with routine inquiries. May help with departmental overload if time permits. Requires good typing skills, including technical experience. Ability to establish priorities and work independently important. B80-690

Editorial Assistant, MIT Press (*Cell*), will work as part of an editorial team concerned with publication of the monthly biology journal *Cell.* Principal activity will be preparation of manuscripts for publication; this involves editing manuscripts for style and clarity, overseeing proof corrections, liaising with author and printer. Must be able to type own correspondence and also handle some administrative duties. Bachelor's degree in English or biology or equivalent required. Qualifications in both would be advantageous. Editing experience preferred. B80-686

Sr. Secretary, will provide secretarial, liaison and general office management support for the Joint Computer Facility in the Dept. of Mechanical Engineering. Will act as liaison between the user community and the operations staff at the facility; prepare written documentation; prepare monthly statements for clients; prepare the Facility Newsletter; arrange meetings and travel; and perform additional miscellaneous duties that may be assigned by the Operations Manager or the Director. Good typing skills and the ability to format and prepare easy-to-read documents required. Good interpersonal skills and the desire to interact with and assist users is also mandatory. Some experience with computers and/or word processing is desirable. The successful candidate will be trained in all necessary uses of the computer. Minimum of 2.5 years' direct/related experience necessary. B80-684

Sr. Secretary, will provide secretarial and administrative support for one faculty member in the Department of Mechanical Engineering. Varied duties in this challenging position include preparation of technical manuscripts and reports, updating mailing lists and distributing materials, answering telephone inquiries and correspondence, preparation of teaching materials. There is much interaction with students and international companies funding research. Excellent technical typing preferred. Requires good organizational skills, accuracy and attention to detail. Good interpersonal skills valuable. Requires a minimum of 2.5 years' experience or combination of education and experience. B80-683

Sr. Secretary, Economics Dept., will work with several faculty members. Responsibilities include: typing correspondence, course materials, manuscripts (with some technical content); answering telephones; making travel arrangements; filing; helping with departmental overload when time allows. Requires excellent typing skills; experience with technical typing (or willingness to learn); good interpersonal skills; ability to work with interruptions; some college preferred. B80-659

Sr. Staff Assistant, Man Vehicle Laboratory, Center for Space Research. Will be responsible for usual secretarial and administrative duties for research group studying space motion sickness, pilot aircraft interactions, human perception, and biomedical engineering. Duties include typing from dictaphone or hand-written material, responding to inquiries, answering telephones, scheduling appointments and meetings, arranging travel. Additional responsibilities possible depending upon aptitudes. Ability to work independently, carry through with a minimum of follow-up, set priorities and work under occasional deadlines essential, as are good typing and spelling skills. MIT experience helpful, but not required. 2.5 years' direct/related experience also necessary. B80-463

Secretary, will provide secretarial and clerical support to administrators and several research fellows in the Program in Science, Technology and Society. Duties include typing correspondence, memos, manuscripts, forms, vouchers, etc.; assisting with academic and student-related business; answering phones; filing; processing requisition orders; assisting in financial statement checking; and fulfilling other duties as required. Minimum of one year experience necessary. Should be able to set priorities and work with minimum of supervision. Good typing and organizational skills, aptitude for figures and attention to detail also important. B80-706

Secretary, will assist in general secretarial and clerical work of the Lab of Architecture and Planning and provide basic secretarial support to a LAP-based research project. Involves a good deal of typing, filing and reception work. Accurate typing, basic secretarial skills and good communication and interpersonal skills important. Prior secretarial experience and/or training necessary. This is a non-smoking office. B80-705

Secretary/Receptionist, will serve as the first point of contact for visitors to the Sea Grant College Program and perform secretarial duties for the Marine Liaison Advisory and Extension Service Staff. The Marine Liaison Advisory provides liaison between faculty, researchers, industry and government in marine research projects. Will type material from rough draft to final form; help coordinate agenda for meetings; help arrange luncheons, dinners and other program activities; maintain xerox machine supplies, postage meter, guest book and conference room schedule; process requests for MIT Sea Grant publications; provide backup phone coverage. Very good typing and communication skills required. Should be able to meet deadlines and work independently. Minimum of one year direct/related experience also necessary. B80-700

Office Assistant

Word Processing Operator (part-time, 20 hours/week), in the School of Engineering's Word Processing Center. Will operate the Optical Character Reader (OCR), printers and text editors. Enter through keyboard technical expression and equations that cannot be read by the OCR. Instruct new users of the word processing facility in preparation of the text materials for the OCR and in entering proofreading marks on the copy. Enter mathematical equations and technical material containing symbols and Greek letters not readable through the OCR. Must be able to routinely meet deadlines on several jobs during the course of a working day. Must have 6 months experience using CPT text editor; 2 years experience at Sr. Secretary level or equivalent also necessary. Should have ability to organize quickly the elements of equations, for rapid keyboard entry into text editor. Knowledge of Greek alphabet and mathematical symbols, good grammar skills required. B80-699

Sr. Office Assistant, will work in the Medical Department Business Office and be responsible for billing and answering patient inquiries for students and their families, postdoctoral fellows, visiting scientists, and other affiliates of MIT who are not eligible for employee benefits. Individual will also be responsible for identifying and investigating billing errors and will make necessary corrections to the Medical Department Computer Data Base. Will also explain and sell student prenatal package, prepare journal vouchers, file health insurance claims, and perform related tasks as required. Requires light typing, excellent communication and interpersonal skills; ability to work with figures. Familiarity with medical terminology helpful. High school graduation or equivalent and 2.5 years' of education and/or experience necessary; accounting experience particularly desirable. This is a non-smoking office. B80-713

Office Assistant (part-time, 20 hours/week), performing general clerical duties in the Energy Lab. Will file, answer telephone, type memos and budgets, and photocopy. Requires accurate typing; willingness to accept unchallenging work assignments from others in the Headquarters support group. One year of experience or combination of education and experience also necessary. Hours: 10 a.m.-2 p.m., M-F (Exact hours negotiable). B80-704

Office Assistant, Registrar, will work in graduation section preparing diplomas and graduation booklets. Will type lists in final form from handwritten applications, check accuracy of typing, perform light editing duties, and use terminal and copying machine. Attention to detail important. Individual must have ability to work independently and as part of a team. Should be flexible enough to change from scheduled work to other jobs as situations arise. Must be well organized and able to handle numerous telephone inquiries during commencement preparations. Office experience, good grammar and spelling skills required. Some college background desirable. Should be able to work overtime during April and May. B80-688

Receptionist/Office Assistant, responsible for providing visitors (employees and students) with information regarding the MIT Health Plans in the Medical Department. Will assist visitors with claims and billing questions, direct visitors to appropriate invidiuals for complex insurance matters and handle and triage telephone inquiries. Will also perform clerical and typing duties relating to these functions. Ability to interact effectively with a wide variety of Community people, to communicate clearly and concisely, sensitivity to confidential matters, excellent telephone manner important. Also good organizational skills with the ability to work with interruptions necessary. Good typing is required. A minimum of one year's direct/related experience also necessary. 37.5 hours/week. B80-687

Clerical Assistant, will work primarily in the Laboratory for Nuclear Science Purchasing Office. Duties will include filing, messenger services, clerical duties such as bursting of purchase orders and mailing copies; sorting packing slips and invoices and matching them to appropriate orders. May, on occasion, provide assistance to other administrative areas. Will also be required to use photocopy machines. Average typing skills, reliability and puntuality required. High school graduation or equivalent required. B80-710

Service Staff

Service Staff, Cook's Helper. Food Service, as directed, prepares food products for all meal periods; provides general assistance to the kitchen staff; maintains clean and sanitary work area; performs other related duties as assigned. Must speak English; have ability to compute variations in standard recipes; understand fundamentals of grill, saute, roast and steam preparation. 40 hours/week, M-F. Hours to be determined by needs of operation. H80-236

The following positions were still available at *Tech Talk* deadline. Complete descriptions of these jobs and other available positions are posted in the Personnel Office (E19-239), and at locations listed at the beginning of Positions Available section.

ADMINISTRATIVE STAFF:
A79-81, Applicatons Programmer, Information Processing Services Office
A80-4, Sr. Systems Programmer, IPSO
A80-25, Director, Technology-Based Educational Marketing, Ctr. for Adv. Engineering Study
A80-35, Systems Programmer, IPSO
A80-37, Director of the MIT Educational Council, Admissions Office
A80-45, Telecommunications Analyst, Physical Plant
A80-47, Systems Analyst, IPSO
A80-48, Coordinator, Alumni Assoc.
A80-58, Applications Programmer, IPSO/ACS
A80-60, Systems Analyst, IPS/BSD
A80-63, Technical Writer, IPSO
A80-64, Safety Officer, Safety Office
A80-65, Regional Director, New York, Alumni Assn.
A80-66, Manager, Text Sales, MIT Press
A80-68, Director, Conferences & Seminars, CAES
A80-69, Asst. Dean, Student Affairs/Residence Program
A80-70, Interior Designer, Temp., Physical Plant

RESEARCH STAFF:
R79-225, Research Associate, Materials Science and Engineering
R79-250, Sr. Shift Supervisor, Nuclear Reactor Laboratory
R79-336, Research Scientist, Lab for Computer Science
R79-342, Res. Associate, Center for Trans. Studies in Freight Demand Analysis
R79-363, Res. Associate, Mechanical Engineering
R80-6, Res. Scientist, Plasma Fusion Ctr.
R80-9, Res. Engineer, Elec. Power Systems Lab
R80-11, Res. Associate, Res. Lab of Electronics
R80-23, Postdoctoral Associate, Lab for Nuclear Science
R80-39, Res. Associate, Mechanical Engineering
R80-43, Postdoctoral Associate, Lab for Nuclear Science
R80-57, Software Engineer, Laboratory for Computer Science
R80-69, Design Engineer-Superconducting Magnets, Plasma Fusion Center
R80-74, Research Associate, Materials Science & Engineering
R80-88, Magnet Design Engineer, National Magnet Lab.
R80-93, Research Associate, Sloan School of Management's CISR
R80-97, Logic Designer (temp.), Plasma Fusion Center
R80-105, NMR Spectroscopist, National Magnet Lab
R80-122, Research Scientist/ Engineer, Nuclear Reactor Lab
R80-126, Electronic Engineer, NEROC Haystack
R80-128, Postdoctoral Associate, Lab for Nuclear Science
R80-129, Research Associate, Physics Dept.
R80-134, Electrical/Digital Design Engineer, Lab for Computer Science
R80-137, Research Associate, Materials Science and Engineering
R80-169, Postdoctoral Res. Assoc., Physics
R80-172, Research Scientist/ Engineer, NRL
R80-186, Res. Associate, Dept. of Aero & Astro.
R80-193, 194, Postdoctoral Res. Associate, Space Plasma Group
R80-200, Cell Culture Center
R80-222, Prog. Analyst, Mech. Eng.
R80-223, Prog. Analyst, Mech. Eng.
R80-225, Experimental Condensed Matter Physicist, NML
R80-229, Scientist, Center for Space Research
R80-231, Engineer, Energy Lab's Sloan Automotive Energy Lab
R80-234, Research Associate, Center for Policy Alternatives
R80-236, Research Specialist, Dept. of Earth and Planetary Sciences

Two Participate In Michigan Inaugural

Two MIT faculty members were among eight distinguished scientists taking part in a colloquium on science and public policy at the inauguration of Harold T. Shapiro as tenth president of the University of Michigan in Ann Arbor, Nov. 1. Stephan T. Chorover, professor of psychology, spoke on "The University and the Rest of the World," and Henry W. Kendall, professor of physics, spoke on "Controlling the Impacts of Dangerous Technologies."

R80-241, Research Associate, Biology Dept.
R80-242, Research Metallurgist or Materials Scientist, National Magnet Lab
R80-243, Programmer/Engineer, Div. for Study and Research in Education
R80-254, Research Scientist, Energy Lab
R80-261, Tech. Assistant, Ctr. for Cancer Res.
R80-262, Tech. Assistant, Ctr. for Cancer Res.
R80-263, Tech. Assistant, Ctr. for Cancer Res.
R80-265, Tech. Assistant, Center for Cancer Res.
R80-266, Programmer, Psychology
R80-268, Research Associate, Earth and Planetary Sciences
R80-271, Tech. Assistant, Biology
R80-281, Res. Specialist, AI Lab
R80-283, Technical Assistant, Nuclear Engineering
R80-284, Res. Associate, Material Processing Ctr.
R80-289, E-M Applied Physicist, NML
R80-290, Mech. Engineer, NML
R80-292, Technical Assistant, Biology
R80-294, Tech. Assistant, Nut. & Food Sci.
R80-295, Postdoctoral Assoc., LNS
R80-296, Postdoctoral Assoc., LNS
R80-297, Postdoctoral Assoc., LNS
R80-300, Statistical Programmer, Psychology
R80-302, Res. Associate, Center for Transportation Studies
R80-303, Res. Associate, Center for Trans. Studies
R80-307, Technical Assistant, Biology
R80-308, Res. Specialist, Energy Lab
R80-309, Systems Programmer, LCS
R80-311, Res. Associate, Math
R80-313, Tech. Asst., N & FS
R80-315, Res. Engineer, HST

ACADEMIC:
C80-9, Sr. Clinical Veterinarian, DLAM
C80-15, Postdoctoral, Meteorology
C80-20, Assistant Director for Collection Management, Libraries
C80-21, Postdoctoral Researcher, Dept. of Meteorology and Physical Oceanography

EXEMPT:
E80-28, Supervisor, Food Service
E80-31, Inventory Auditor, Off. Facil. Mgmt.
E80-33, Data Analyst, NEROC Haystack Observatory
E80-37, Pediatric Staff Nurse, Clinical Research Center
E80-44, HVAC Shift Supv., Physical Plant
E80-48, Registered Nurse, Clin. Res. Ctr.

SUPPORT STAFF:
B80-197, Sr. Staff Assistant, RLE
B80-318, Secretary/Staff Assistant, Graduate School Office
B80-327, Sr. Sec., Technical, Math
B80-368, Sr. Staff Assistant, RLE
B80-452, Sr. Secretary, Mech. Eng.
B80-456, Secretary, Energy Lab
B80-467, Staff Assistant, Center for Policy Alternatives
B80-483, Sr. Secretary, Physical Plant
B80-539, Computer Operator, IPSO
B80-544, Office Assistant, Registrar's Office
B80-556, Sr. Secretary, Science Library
B80-564, Data Clerk, CSR
B80-567, Secretary, Sloan School
B80-581, Admin. Secretary, Chem. Eng.
B80-586, Sr. Secretary, LCS
B80-591, Office Assistant, Registrar's Office
B80-596, Secretary, Materials Science
B80-597, Sr. Staff Assistant, Nuc. Engineering
B80-604, Sr. Secretary, Medical
B80-609, Secretary, Sloan School
B80-610, Secretary, Sloan School
B80-623, Library Assistant, Libraries
B80-625, Office Assistant, Office of Lab Supplies
B80-636, Secretary, Office of Vice President
B80-637, Secretary, Purchasing & Stores
B80-644, Secretary, Athletic
B80-646, Office Assistant, CAO
B80-647, Sr. Secretary, Ctr. for International Studies
B80-651, Secretary, Civil Eng.
B80-652, Library Assistant III, Rotch
B80-654, Sr. Office Assistant, NML
B80-656, Sr. Secretary, Sloan
B80-659, Sr. Secretary, Economics
B80-660, Sr. Staff Assistant, RLE
B80-661, Sr. Secretary, Alumni Assn.
B80-663, Admin. Secretary, Math
B80-665, Output Processing Asst., IPSO/ACS
B80-666, Office Assistant, Naval Science
B80-668, Secretary, Lab of Arch. & Plan.
B80-669, Admin. Assistant, Resource Planning
B80-670, Admin. Secretary, School of Humanities
B80-671, Secretary, Urban Studies & Plan
B80-672, Sr. Office Assistant, IPSO Publications
B80-676, Secretary, Chemical Engineering
B80-677, Sr. Secretary, Chemical Engineering
B80-678, Secretary, EE & CS
B80-680, Sr. Secretary, Plasma Fusion Center
B80-681, Sr. Secretary, Dept. Mat. Sci. & Eng.

SERVICE STAFF:
H79-33, Technician A (Electronic), Chemistry
H79-126, Technician A, National Magnet Lab
H79-200, Technician A (Electro-Mechanical), RLE
H80-60, H80-61, H80-62: Design Drafters, Plasma Fusion
H80-165, Heat & Vent Mechanic, Physical Plant
H80-175, Machinist A, Nuclear Reactor Lab
H80-176, Machinist A, Nuclear Reactor Lab
H80-195, Technician (E-M), Energy Lab
H80-206, Technician A (Electro-Optical), Spectroscopy Lab
H80-209, Engineer, 3rd Class, Physical Plant
H80-211, Machinist A, Nuclear Reactor Lab

NAE Honors Hoyt C. Hottel With 15th Founders Medal

(Continued from page 1)

member of the NAE since 1974 and of the National Academy of Sciences since 1963.

His entire professional career has been spent at MIT. A graduate of Indiana University, he received the SM degree from MIT in 1924. His first assignment was as assistant director of the Buffalo Station of MIT's School of Chemical Engineering Practice. From 1925 to 1927 he was an Institute Fellow in fuel and gas engineering. He was named assistant professor in 1928, associate professor in 1931 and professor in 1941. In 1965 he was named Carbon P. Dubbs Professor of Chemical Engineering.

Professor Hottel was one of the original members and acting director of the MIT Fuels Research Laboratory from 1929 until 1934 when he was named director. He continued to serve in that capacity until 1968 when he was named director. He continued to serve in that capacity until 1968 when he retired officially. He also was chairman of MIT's Research Committee on Solar Energy from 1938 to 1964.

Professor Hottel is the senior author of three books and has contributed to many others. He is the author of more than 140 articles and holds seven patents. He has served on many committees of the National Research Council and has frequently been an adviser to the federal government.

In 1945 the American Institute of Chemical Engineers, of which he is a fellow, awarded Professor Hottel the William H. Walker Medal for distinctive contributions to chemical engineering literature. His work during World War II on fire warfare resulted in his receiving in 1948 the Medal for Merit, a civilian award for "exceptionally meritorious conduct in the performance of outstanding services to the United States." In the same year, the British government awarded him the King's Medal for Service in the Cause of Freedom.

Professor Hottel has received numerous other distinguished awards. In 1960 he received the Sir Alfred Egerton Gold Medal from the Combustion Institute and the Melchett Medal from the Institute of Fuel in Great Britain. The American Institute of Chemical Engineers and the American Society of Mechanical Engineers jointly awarded him the Max Jakob Award in 1966. He received the Founders' Award in 1967 from the American Institute of Chemical Engineers. In 1975 he received the Farrington Daniels Award of the International Solar Energy Society, and the Royal Society Esso Energy Award (Great Britain), which he shared with Dr. H. Tabor.

The NAE Founders Award was established in 1965. Previous recipients include Vannevar Bush (1966), James S. McDonnell (1967), Vladimir K. Zworykin (1968), Harry Hyquist (1969), Charles S. Draper (1970), Clarence L. Johnson (1971), Edwin H. Land (1972), Warren K. Lewis (1973), J. Erik Jonsson (1974), James B. Fisk (1975), Manson Benedict (1976), John R. Pierce (1977), George M. Low (1978), and David Packard (1979).

Strategic Management

(Continued from page 1)

mitment essential to effective strategies. By the time these strategies began to crystallize, pieces of them were already being implemented."

Professor Quinn examines in some detail these patterns that are "clearly dominant in the successful management of strategic change in large corporations."

The author is the William and Josephine Buchanan Professor of Management at the Amos Tuck School of Business Administration, Dartmouth College.

(Previous articles in this series were "Strategic Goals: Process and Politics," published in the Fall 1977 issue, and "Strategic Change: Logical Incrementalism," in the Fall 1978 issue of the Review.)

Barbara S. Lawrence, a doctoral candidate at MIT's Sloan School of Management, in "The Myth of the Midlife Crisis," argues that the conventional concept of the midlife crisis is limited in several ways:

"First, its existence is dependent on social environments, which change over time. Second, the evidence obtained from (a) small sample of individuals studied shows that the midlife crisis is not as prevalent an experience as one might expect. Third, the crisis approach, with its links to life stage assumptions, is too simple a concept to explain the complex antecedents of adult behavior."

Organizations, she continues, may be led astray by the notion of the midlife crisis. "Instead of designing special programs for managers reaching midlife, work organizations should be sensitive to the stress created by normal psychological experiences faced by employees through their lives."

The Review also features the following articles:

"Structured Systems Analysis: A Technique to Define Business Requirements" by computer scientist Kathleen S. Mendes of the Exxon Corporation. This technique, developed at Exxon to improve software methods, can be used jointly by users and analysts to model the business environment. It can help improve the quality of analysis and the productivity of analysts and users in building systems.

In "The Effects of Warehouse Configuration Design on Inventory Levels and Holding Costs," Donald B. Rosenfield and Mark E. Pendrock discuss the importance of inventory effects in a company's distribution strategy, and they show how to select an appropriate inventory control system. The authors are both consultants for Arthur D. Little, Inc.

In this issue's "SMR Forum," J. Robert Gerguson, Jr., of the US Steel Corporation describes how his company addressed the problem of meeting National Environmental Policy Act regulations in planning the construction of a major steel plant. Gustave Speth and Nicholas C. Yost of the Council on Environmental Quality describe a new set of regulations that can streamline the preparation of environmental impact statements.

Also in the Forum, Simon Ramo discusses the decline of American technology. His piece, "America's Technology Slip—A New Political Issue," describes this decline, discusses its causes, and recommends corrective policies. Dr. Ramo, a cofounder of TRW, Inc., was recently awarded the National Medal of Science.

MTG Cabaret

The MIT Musical Theatre Guild will give six performances of its fall production, Kander and Ebb's *Cabaret*, Friday, Saturday and Sunday, Nov. 7-9, and Thursday, Friday and Saturday, Nov. 13-15, in MIT's Kresge Auditorium.

All performances are at 8pm, except for a 3:30pm matinee Sunday, Nov. 9.

Cabaret, set in Germany in 1929, is derived from Christopher Isherwood's *I am a Camera*. The plot revolves around a romance between a young American novelist, Clifford Bradshaw, played by Marucs Filipovich, a senior in electrical engineering and computer science from Golden Valley, Minn., and Sally Bowles, a cabaret singer, played by Theresa Muller.

Reservations may be made at the ticket booth in the Maclaurin Lobby at MIT, or by calling x3-6294. Tickets are $4.50 for Friday and Saturday evening performances and $4 for all others. There is a discount of $1.50 for students with an MIT ID.

Blindness Is No Foil to Fencing

The Other Life of Coach Eric Sollee

(Rita Tehan is a freelance feature writer living in Washington, D.C. She has dealt with the emotional and psychological problems of the handicapped as a result of her father's gradual loss of sight because of diabetes. As part of his rehabilitation program, Ms. Tehan's father was enrolled in Eric Sollée's fencing class at the Carroll Center for the Blind. This story appeared in the August/September issue of the Journal of Rehabilitation and is reprinted here with the author's permission.)

By RITA TEHAN

While riding on a Boston subway recently, a woman suddenly yelled, "Stop! Somebody snatched my purse!" Before the would-be thief could flee, she instinctively tripped him with her cane. When he fell, she pinned its tip to his chest and demanded, "Don't you move!" The thief, a young boy, squirmed with discomfort, and then threw the purse at her feet. "What's that?" the woman snapped. He squeaked, "Your purse! Can I go now?" She released him, and the boy fled.

This true story is remarkable not only for the fact that the hoodlum became the victim, but because the woman who foiled him is blind. She was able to detain her mugger because of the training she received from Eric T. Sollée, her fencing instructor at the Carroll Center for the Blind in Newton, Massachusetts.

Fencing is a sport which requires dexterity, mobility and balance. One might assume that a basic prerequisite for a fencer would be sight. This is not necessarily so.

The Carroll Center was the first civilian center to develop rehabilitation programs for people who become blind, as opposed to those who are born blind. Before a client enrolls in a training program, he or she undergoes extensive evaluative tests. If the tests show that the client has the physical capabilities for fencing—balance, stamina and pacing—then he or she is encouraged to study it as an important part of his rehabilitation program.

Sollée has two classes of fencing students at the Carroll Center—beginning and advanced. His students have ranged in age from 18 to 70, and have been equally divided between men and women. Currently, he has seven students, and meets with them for two-hour lessons twice a week. Each student is expected to practice two hours per week outside of class. Since the average length of a client's stay at the Carroll Center is four to five months, the lessons generally last three or four months.

In the beginner's class, the students do not fence with one another. Instead, they are taught the basic positions and movements, with emphasis placed on orientation and balance. Sollée teaches them to go forward in a manner that is "aggressively cautious." When taught to advance and retreat, the students learn to pay special attention to what their body is telling them—are they off-balance, are they tilting their foil, are they sliding their feet? Beginners spend most of their time learning and practicing parries, ripostes and lunges.

To enter the advanced class, a student must first show that he is capable of navigating a maze-like route from his residential building to the fencing class, without assistance. Thus, advanced fencing becomes its own reward. As his students become better fencers, Sollée says they often dare him: "Hey, coach, I wanna score some touches on you!" Sollée is only too willing to accept their challenges.

Eric Sollée and his students have accepted a challenge. They are practicing their avocation against mighty odds. The benefit of sight for one player in a fencing bout gives that player an almost insurmountable advantage. And yet,

in their biannual matches against Sollée's fencing team at MIT, his blind students have won an average of 50% of their bouts against blindfolded opponents.

Mr. Sollée has taught fencing to the blind for almost ten years. The founder of the Center, Father Thomas Carroll, believed that there might be a relationship between a blind person's need to develop mobility skills, and the mobility requirements of fencing. He asked Sollée's former teacher and fencing master, Larry Dargie, to fence blindfolded, with a blind man. To Dargie's surprise, the blind man won. Dargie discussed this match with Sollée, and his curiosity, provoked by the conversation, prompted Sollée to agree to begin a fencing program at the Carroll Center.

The newly-blinded adult often faces a terrifying, sometimes immobilizing, fear of walking. Furniture, walls and stairs are obstacles as well as guideposts. He believes that every step poises him on the brink of oblivion, and the dread which he feels often causes a blind person to withdraw, to minimize his risks. Fencing demonstrates to the blind person that his remaining senses can lead him to safety and self-assurance.

Fencing provides concentrated physical exercise at high speed, and the precision of timing and movement are invaluable in their application to mobility training. Newly-blinded adults often believe that their athletic lives are over, or severely limited. Fencing provides them with a recreational outlet which disproves this.

Sollée notes the similiarities between the goals and techniques of teaching blind people to handle a cane, and his instructions to them for handling their swords. The theories and purposes for each are alike: to "see" what is ahead of them. "Using a foil is similar to using a cane to get around," Sollée says, "only the foil is up and out in space." With a cane, a blind person learns to find the safest, clearest path. "In the same way, in fencing, a blind person learns to recognize that things are safe where they were before, that they won't fall off a cliff."

The important thing for the fencer to learn is how to visualize what should be happening with his own blade, as well as what is happening with his opponent's. This he learns by scrutinizing the various clues provided through hearing and touch. Since the students are newly-blinded, and not blind-from-birth, they can imagine what is happening in a situation if it is adequately described to them. This, of course, places greater demands on Sollée to describe precisely each action and position for his players; clear directions are lifelines for the fencers.

Sollée explains the sightless fencer's technique in this way: the blind students can hear and feel motion. He teaches them to feel from the "attitude" of the blade what should be happening. In other words, from the feel of his opponent's blade against his own, a fencer can visualize where that blade is, and attack or defend accordingly. He teaches the students to play it safe, to retreat and get out of striking range when necessary, until they can analyze their opponent's weaknesses and develop a strategy to counteract them. Like sighted players, blind players must learn to "think on their feet," and act upon information that their senses absorb. Obviously, the advantage of sight is enormous, but it is not essential, as Sollée and his students are proving.

In addition to the physical advantages offered by fencing, there are numerous psychological ones as well. As Mr. Sollée said, "Life becomes a succession of small frustrations for the blind person. Resentment, anger and disappointment face him at every turn, as he tries to adjust to his life without sight." Almost every task becomes a struggle for the newly-blinded adult. Even something as essential as eating, or as ordinary as walking downstairs pose constant frustration and danger.

"How will I get from the car to the door? How will I know if there's anyone else in the room? How many people are looking at me? "Fencing can help alleviate these worries. When a student is able to score a touch on Sollée (who is usually blindfolded when matched against his students), Sollée grins, "They know they've accomplished something!" Each such victory sends a student's confidence sky-high. Sollée also has a battery-operated practice device which provides immediate gratification: when the fencer scores a touch on the target, it responds with an audible cry of distress: "OUCH!"

Since the clients at the Carroll Center are in residence for only short periods of time, it is not possible to have a regular team. Twice a year, however, Sollée takes his students to MIT, where he is head fencing coach. He places blindfolds on his sighted students and matches them with his blind students. Since he first tried this in 1976, he has discovered to his amazement and delight, as well as to his credit, that his blind students win an average of 50% of their bouts. A few of his blind students have played sighted students who were not blindfolded. One fencer won 10% of his bouts, another 25%.

Sollée says that his graduated students often go on to purchase their own equipment and continue to take lessons. After they have left the Carroll Center, many return and practice with Sollée's new students.

Fencing is not a "natural" sport. The body positions and the fencing movements are strange enough that fencing is awkward to most novices. In that sense, sighted and blind students start out with the same "handicap." As every student of fencing becomes more adept, the blind fencer needs to make a greater effort and develop different senses in order to become as competent a player as a sighted person. Sollée and his students have proven, however, that they have the ability to be more than competent: they can be equal, or better, than their sighted counterparts.

Victories in life are rare and fleeting. Blind persons, in the darkness of defeat, can lose the will to conquer life's obstacles. Eric Sollée's fencing classes, however, offer many small triumphs and the sunshine of victory to his blind students.