

## Wind Razes Cains



Remnants of the Cain's sign littered Vassar Street yesterday after it crashed during Monday's windstorm. The landmark—shown as it was below—was far too familiar to West Campus residents who celebrated its demise.

Winds gusting up to 90 miles an hour Monday night accomplished what generations of MIT students could not.

It blew over the neon "Cain's Mayonnaise" sign at 275 Vassar St. across from MIT's west campus.

William Adams, a vice president of John E. Cain Co. of Ayer, makers of prepared foods including a popular brand of mayonnaise, and himself a 1933 graduate of MIT, said the firm is as yet undecided about re-erecting the large sign. Cain, he said, has centralized its operations in Ayer and the Vassar St. building is presently leased to H.A. Hovey Co., suppliers of dairy products for Boston area restaurants.

The sign tumbled forward onto Vassar St. Mr. Adams said he understood it was a total loss. In addition, when the sign and the steel frame to which it was attached fell, it caused damage to the building roof.

The sign has been there almost

longer than anyone can remember. Mr. Adams said it was originally placed there before MIT's west



campus was built on and, in fact, before Boston University's main buildings on Commonwealth Ave. in Bos-

ton were erected. Mr. Adams said he understood the sign was originally erected on the building in order to be seen by travellers along Boston's Commonwealth Ave.

For MIT students whose dormitory rooms face the sign, the Cain's landmark has long been a source of irritation because its light shone through their windows. For years, students have made bitter jokes about the sign and last year students organized an IAP project to explore what might be done about it. Other neighbors, primarily those on the other side of Vassar St., also have complained and Mr. Adams noted that for the past several years the company has not operated the sign after 11pm.

The sign, however, was there before the dormitories. Mr. Adams, for example, recalled that when he was a student Vassar St. itself in that area was nothing more than a dirt road.

## Media Cover Wallace, Reagan Most

Ronald Reagan and George Wallace have received more attention from the media than all the rest of the presidential candidates combined, with the exception of President Gerald Ford, according to the MIT News Study Group.

In an interim report on its monitoring of press coverage of the 1976 presidential campaign, the research team said that Democratic candi-

dates, aside from Wallace and Jimmy Carter, tend to be lumped together as the "Democratic pack" by news outlets. "Carter," the group said, "has managed to move away from the 'pack' and get distinctive attention."

The "pack" finding was one of four patterns that have so far emerged in the study, the report said.

The report cited these other pre-

liminary findings:

—Candidates are often "labeled" by the press early in the campaign. While this labeling may only be a kind of journalistic shorthand for headline purposes—some examples, "The Populist Candidate" (Harris) and "The Kennedy Connection" (Shriver)—frequently the label takes and tends to shape deeper per-

(Continued on page 8)

## Ingenuity Nets Millions in Electronic Games Market

By PATRICIA M. MARONI  
Staff Writer

Student inventors at MIT who this winter parlayed electronics expertise and merchandising genius into a design for a low-price home TV Tennis game, have scored a major business success on their first try.

More than 12,000 sets were actually produced during the Christmas shopping season, amounting to half a million dollars in wholesale volume for Executive Games, Inc., of Dorchester, Mass., manufacturer of the product and original patron of the MIT inventors. A backlog of 400,000 orders from retailers around the country could result in another \$16 million in coming months. There are

some predictions that the games project will gross hundreds of millions of dollars over the next few years, since a TV hockey game is now in the works.

Another benefit of the innovative agreement between students and investors has been the creation of 100 additional factory worker jobs for the manufacturer in three different New England industrial locations.

The students' version of the familiar electronics net game, once found only in game rooms of nightclubs and bars, retails for \$69.95. Competitor prices for the adaptable home model are still over the \$100 mark, according to Glen Dash (MIT '75) of Chicago, Ill., who devised the

circuitry for TV Tennis.

Dash's transformation from a young graduate engineer working for a calculator company to an entrepreneur *excellente* began when he accepted a challenge from Peter Stepanek, president of Executive Games, Inc.

After reading an article in the *Wall Street Journal* on the MIT Innovation Center—multi-faceted laboratory for inventors like Dash—Stepanek wondered whether a marketable games package could be brought into economic reality. Although nearly retired from the home entertainment business, he approached the director of the innovation center, Professor Y.T. Li, with a description of his idea

and offered \$20,000 to get the project started.

Dash discovered he could put the idea into practical use by combining the engineering knowledge of four Delta Tau Delta fraternity brothers: David Agans of Middlesex, N.J., Michael Shields of Fairfax, Va., Gabor Szakacs of Tampa, Fla., and Joseph Corkery of Moline, Ill., all now seniors in electrical engineering.

As participants in the MIT Innovation Center, which was established two years ago with support from the National Science Foundation, the students, besides inventing the product, were required to submit a business plan outlining the product's

essential concepts and desirable specifications, a study of the competitive and patent positions, a market survey, and an estimate of its potential sales volume and estimated cost.

Dash, who is now employed as chief electrical engineer for Executive Games, Inc., predicts that production levels will soon reach 3,000 sets a day as plans are made to extend distribution into Canada and abroad. To satisfy the demands of the consumer market during the Christmas season, Executive Games added approximately 40 employees to their Dorchester operation with plans to expand that number by at

(Continued on page 8)

## X-ray Burst Pattern Puzzles Physicists

By BARBARA BURKE  
Staff Writer

Brief intense bursts of x-rays from space, recently reported from observations by the Dutch astronomy satellite (ANS), recur in a pattern unlike anything ever before detected, MIT physicists reported Wednesday (Jan. 28).

The bursts flare up in less than half a second, die down in 10 seconds—and recur every 15,718 seconds, or about once every four and a half hours.

Such a big discrepancy between the duration of an x-ray burst, and the interval between bursts, is unheard of in x-ray astronomy.

"But the strangest thing, the thing which has us so intrigued, is that although they recur on an average every 15,718 seconds, they don't come on schedule," said Professor George W. Clark of MIT.

"There's a 'phase jitter' of about 500 seconds one way or the other; the

longest has been 1,000 seconds."

The finding was reported Wednesday afternoon by graduate student Jesse G. Jernigan, Jr., at the x-ray astronomy meeting of the American Astronomical Society, High Energy Astrophysics Division, held at MIT Jan. 27-29. Notice of the discovery has been sent to astronomers by an International Astronomical Union Circular.

The strange periodicity of the x-ray bursts was discovered by analyzing data from SAS-3, the x-ray astronomy satellite of the National Aeronautics and Space Administration. The satellite, launched last May, is operated by MIT researchers under the direction of Dr. Clark, professor of physics, and member of the MIT Center for Space Research.

Working with Professor Clark and Jernigan have been Dr. Claude R. Canizares, assistant professor of physics at MIT; Professor Satio Hayakawa, visiting professor from

(Continued on page 3)

## Arthur C. Clarke to Speak At Telephone Symposium

Arthur C. Clarke, who conceived the idea of the communications satellite, will speak on the future of communications at a March symposium at MIT co-sponsored by MIT and the American Telephone and Telegraph Company.

The symposium, which will take place March 9-10 as part of the 100th anniversary of the telephone's invention, will bring together international leaders in education, science, engineering, communications, business and government to assess various aspects of the future impact of communications on society.

Several hundred seats are expected to be available to the MIT community for Clarke's speech in Kresge Auditorium. Arrangements also are being made to have the speech shown on closed circuit television in Room 26-100. Procedures for distributing tickets will be announced at a later date.

Clarke, an authority on space travel and a noted science writer, is the co-author of the book and the movie, *2001: A Space Odyssey*.

In accepting the invitation to speak at MIT, he wrote to President Jerome B. Wiesner that he first

thought of the communications satellite while working at MIT's Radiation Laboratory during World War II on problems associated with the ground control approach system by which military aircraft were guided to landings in bad weather.

Clarke won the Franklin Institute's Gold Medal in 1963 for having originated the communications satellite in a technical paper published in 1945.

He has won a number of other awards for science writing and he is

(Continued on page 8)



## Wiesner Elected OTA Chairman

MIT President Jerome B. Wiesner has been elected chairman of the Advisory Council of the Office of Technology Assessment (OTA), a branch of Congress established in 1974 to assess the potential uses and effects of technology.

President Wiesner, who served as White House Science Advisor from 1961-64, has been active as a member of the OTA advisory council since its inception.

Announcement of the appointment was made by US Representative Olin E. Teague of Texas, chairman of OTA's governing Technology Assessment Board. Representative Teague is also chairman of the House Committee on Science and Technology.



# Expert Warns Climbing Food Costs Could Bring Controls

By CHARLES H. BALL  
Staff Writer

An MIT food management expert has warned against a "growing cry for government regulation of food prices" unless ways can be found to hold the line on food prices through reduced distribution costs.

Dr. Gordon F. Bloom said that while automation has reduced the labor content of processed foods by 17 percent since 1967, more labor per unit actually was required in distribution.

He said that technology holds the answer to the high costs of distribution, which he calls the "last frontier" of the food industry, but that a communications gap between food industry executives and the technological community has blunted efforts to apply technological innovations to the problems of distribution.

Nevertheless, he said, "if we can fly a man to the moon, we ought to be able to find a way to get a can of peas on the supermarket shelf without human labor."

Dr. Bloom, senior lecturer in MIT's Alfred P. Sloan School of Management and former chairman of the National Association of Food Chains, told a recent symposium that "distribution expense represents a large and growing part of the cost of food to the American public."

"Food has replaced housing as the largest single expenditure in the budget of the average American," he said. "There is a great danger that the American consumer will react to rising food prices as he reacted to rising rental costs—by demanding government intervention in the form of controls over prices. In the long run, this would only discourage production and improvement in efficiency while producing all sorts of distortions in the distribution system."

Because the food industry is a high volume business, where operations are repetitive and labor costs are high, one might expect to find substantial utilization of machinery and automation, Dr. Bloom said. Instead, there has been relatively little technological utilization in the retail food industry, he said.

"Our stores today are larger and more elaborate than they were 30 years ago, but where is the technology? What we have done is to substitute the unpaid labor of the shopper for the paid labor of the clerk, but manual labor still is required to price and place products on the shelves."

Distribution, he said, is "a vast wasteland where gross inefficiencies sap productivity" and is "highly labor intensive."

The rising costs of distribution—which involves packaging, transporting, warehousing and making food available at retail—are already making certain kinds of products economically obsolete, Dr. Bloom said.

One example, he said, is carbonated beverages. "How long will consumers pay the price for a system of distribution," he asked, "which

ships syrup to a bottler, has the bottler mix it with water and then ship it by Teamster labor to a store where it has to be put on the shelf by high priced labor?"

Within five years, he predicted, "there will be a major market for syrups and powders which can be carbonated at home."

Dr. Bloom said that the recent appearance of canned potato chips was an example of how new products can be developed to replace foods which are fragile, perishable and difficult to handle.

Another class of products requiring reexamination, he said, is frozen foods. Tremendous rises in electrical costs almost certainly will stunt the growth of frozen foods and may price many items out of the reach of the average consumer, he said.

"Development of analog protein foods capable of storage in refrigerated cases or at shelf temperatures would represent a significant technical breakthrough which could open up a wide market for products which might otherwise be substantially restricted by the impact of high energy costs," Dr. Bloom said.

A problem with developing foods that can save distribution costs is that many of these new products may require some sort of additive, he said.

"The growth of this class of product—which seems inevitable—will undoubtedly meet with resistance from the Food and Drug Agency and from consumer activists," he said. The possibility of unfavorable FDA review is a risk which may deter many companies from attempting to innovate in this area in order to lower distribution costs, he added.

Dr. Bloom served as chairman of a task force of MIT scientists who assisted the food industry in selecting the symbol now displayed on labels of most grocery products. This symbol incorporates the universal product code for automatic checkout systems now coming into use in the food industry. Dr. Bloom told the symposium the automatic checkout was "the first significant technological innovation to be introduced in the food industry in many years."

He also is one of the originators of an experimental MIT program called TAFI, which stands for Technology Applied to the Food Industry and which is attempting to bring together food industry executives with engineers who have an interest in developing technology for the industry.

Dr. Bloom spoke at a symposium sponsored by MIT's Industrial Liaison Program. The program enables member companies, through a variety of services, to utilize the resources of the Institute.

## Blood Drive Help Needed

Volunteers are needed to help prepare for the Spring Blood Drive, MIT's largest drive each year.

The Spring Drive is scheduled March 3-5 and 8-12, according to Vinay Reddy, a sophomore in electrical engineering and computer science who is chairman of the Drive. Especially needed, Mr. Reddy said, are people to work on publicity, and solicitors.

"Even though the Drive is organized by students," he said, "faculty, staff and employees are most welcome as volunteers. We need them particularly as solicitors because they represent a large percentage of the donors."

Those interested in volunteering may sign up in the TCA office, Rm W20-450, x3-4885, or x3-7911.

## Choir to Sing

The MIT Gospel Choir will participate in a celebration marking the opening of the community rooms at the housing complex at 808 Memorial Drive, Thursday, (Feb. 5). The Gospel Choir, with a repertoire of modern gospel and popular music, most recently sang at MIT for the Martin Luther King, Jr., memorial observance.

## Three Receive AMITA Scholarship Awards



Congratulations are extended to three outstanding women seniors, recipients of Alumnae Senior Academic Awards for 1976 from the Association of MIT Alumnae, by Professor ChoKyun Rha, (right) chairman, AMITA Award Committee, and associate professor of food process engineering in the MIT Department of Nutrition and Food Science. Award winners are (from left) Laurel A. Fisher of Phoenix, Ariz., a senior

in life sciences, nutrition; Ellen Scotti of Walpole, Mass., a fourth year student working for an SB in mechanical engineering and an SM in management, and Koon G. Neoh of Penang, Malaysia, a senior in chemical engineering. The awards, given on the basis of academic excellence, include a cash prize and will be formally presented at a brunch Sunday (Feb. 8).

## MIT 'Expands' Libraries, Joins Consortium

Without adding so much as one brick or a scintilla of cement, the MIT Libraries have vastly enhanced the resources available to graduate students, faculty members and research staff.

MIT is now a member of the Boston Library Consortium, an association of academic and research libraries founded in 1970 to promote cooperation among members in building research resources and in making collections more readily available.

The official affiliation of MIT with the consortium, which occurred Jan. 14, makes possible several immediate and long-term benefits to the Institute, said Jay K. Lucker, director of the MIT libraries.

The immediate benefits include quick access by MIT graduate students, faculty members and research staff to extensive research collections in areas where MIT does not have a traditional academic interest. Law, elementary and second-

dary education and Judaica were cited as examples by Mr. Lucker.

Other members of the consortium are Boston College, Boston Public Library, Boston University, Brandeis University, Northeastern University, Tufts University, University of Massachusetts-Amherst, and Wellesley College. The State Library of Massachusetts and the University of Massachusetts-Worcester are affiliate members.

Consortium membership will, in the long run, Mr. Lucker said, permit MIT to concentrate its acquisitions in its main areas of interest.

Mr. Lucker, who is a member of the Directors Committee which administers the affairs of the consortium, said the cooperative venture was born in the realization that self-sufficiency had become impossible because of increasing costs and the expansion of knowledge.

The cooperative venture also was a move at heading off what may become a trend among other large

university libraries—charging for interlibrary loans, Mr. Lucker said. Yale, the University of Toronto and the University of British Columbia have instituted such charges and other universities are considering them, he said.

Consortium members will realize significant savings by engaging in joint purchasing of valuable research materials, Mr. Lucker said. For example, a collection of recently declassified World War II government documents will soon be acquired and will be housed at the Boston Public Library, he said.

Being able to rely on other consortium members for research materials in those areas which are not in the mainstream of the Institute's academic interests will make it possible for MIT to devote more space and funds to its core collections, Mr. Lucker said. In addition, future cooperation may involve having each consortium member assume responsibility for maintaining retrospective material in a specific area, thus relieving other members of the necessity of continuing to house that material.

MIT faculty members and graduate students can obtain a consortium card which entitles them to borrow from other institutions through the interlibrary borrowing office at the Humanities Library, 14S-200. In addition to direct borrowing, interlibrary loans and photocopies are available on an expedited basis, often within two or three days.

## Mexican Alumni Hold Conference

Chancellor Paul E. Gray and four MIT professors at the Alfred P. Sloan School of Management were recently in Mexico City where they participated in a two-day regional conference on management in a developing technology co-sponsored by the MIT Club of Mexico and Bancos de Comercio S.A. of Mexico.

Participating with Dr. Gray were Dr. Arnoldo C. Hax, associate professor of management science; Dr. Edgar H. Schein, professor of organizational psychology and management; Dr. Donald R. Lessard, assistant professor of management, and Dr. Henry D. Jacoby, professor of management.

Dr. Gray delivered the keynote address. Professor Hax discussed planning and control systems to support management decisions. Professor Schein addressed behavioral science and organization. Professor Lessard spoke on capital budgeting and investment decision, and Professor Jacoby discussed the world oil market.

## Physicists Puzzle Over Patterns in X-ray Bursts

(Continued from page 1)

the University of Nagoya; and graduate student Fuk Kwok Li.

During the past week, the team has been working around the clock in the SAS-3 control room at MIT, in an effort to locate and study the source of the bursts, which is somewhere in the constellation Sagittarius, close to the center of our galaxy.

Jernigan had first noticed what appeared to be an x-ray burst in the SAS-3 data last May, soon after the satellite was launched.

"But because the detector has a big field of view, there was no way to sort it out immediately," Professor Canizares said. "We knew we had seen something, but we didn't know what, or where it came from."

Then in September astronomers J. Grindlay and J. Heise, working with the Dutch astronomy satellite, reported intense bursts of x-rays coming from a "globular cluster" in the constellation Sagittarius.

(Globular clusters are clusters of about a million billion stars; four such globular clusters are known to emit x-rays. Some physicists believe the x-rays may be evidence of a "black hole" in the center of the cluster.)

After the September announcement, MIT physicists looked back over their data and detected the strange repeating character of the bursts. They have also pointed SAS-3 at the apparent source of the bursts, to study them further.

If the source is in the globular cluster, Professor Clark said, the intensity of the x-ray burst is a million

times the intensity of all radiation from the sun.

Regularly repeating bursts of x-rays are normally thought to be produced either by a pulsing object or by a rotating object (like a beacon emitted by a rotating lighthouse).

But the "phase jitter" and the big difference between the duration of the bursts and the interval between bursts puzzle physicists. Professor Clark said that it is hard to understand how the bursts could be produced either by a rotating or a pulsating object.

"Our position is just that we do see regularly recurrent bursts from this region of the sky, and that we are not certain what the origin is," he said.

The first nonsolar source of x-rays (waves like radio waves or light waves, but with a shorter wavelength) was discovered only about 13 years ago. Since then progress in x-ray astronomy has been rapid, despite the necessity of using rockets, satellites or balloons to lift x-ray detectors above the curtain of the earth's atmosphere.

Scores of students, technicians, and researchers at MIT have contributed to the construction and operation of SAS-3, as well as to the analysis of the data radioed back to earth from its detectors.

The co-investigators on the project are Professors Hale Bradt, Walter H.G. Lewin and Saul A. Rappaport, of the Department of Physics and Center for Space Research, and Dr. Herbert H. Schnopper, formerly at MIT, and now at the Center for Astrophysics at Harvard University.

## Correction

The MIT News Office got its MIT history slightly garbled in the caption to a photograph in last week's *Tech Talk* (Jan. 28).

Haryosh Mori, Class of 1877, was not the first Japanese national to enroll, nor did he graduate. The distinction on both counts belongs to Aechirau Hongma, Class of 1874. Mr. Mori attended from 1874-1877.

The abacus Mr. Mori used is now in the MIT Historical Collections and, in a photo last week, was being examined by Howard W. Johnson, MIT Corporation chairman, and Akira Harada, president, Matsushita Electric Corp. of America, on the occasion of the announcement by the Matsushita parent firm in Japan of a \$1 million gift to MIT to establish the Matsushita Professorship of Electrical Engineering in Medicine.

# THE INSTITUTE CALENDAR

February 4  
through  
February 15

## Seminars and Lectures

### Wednesday, February 4

**Integrational Malnutrition and Behavior\*** – Janina Galler, research associate, nutrition & food science. Nutrition & Food Science Seminar. 9am, Rm E18-408.

**Coastal Upwelling and Coastally Trapped Waves\*** – Allan Clarke, earth & planetary sciences. Oceanography Sack Lunch Seminar. 12n, Rm 54-311. Bring lunch, coffee available.

**The Kibbutz – An Alternative Way of Living\*** – Yosef Yassour, coordinator of kibbutz affairs, HBS student. Israeli-American Forum. 8:30pm, Stu Ctr West Lge. Refreshments.

### Thursday, February 5

**Introduction to Seminar: Materials Resource Policy\*** – Michael B. Bever, materials science & engineering, and Joel P. Clark, materials systems. First in a series of seminars. 3pm, Rm 13-5101.

**Informal Discussion About Current Developments in Congress\*** – Michael Pertschuk, chief counsel for Senate Commerce Committee. Political Science Seminar. 3:30pm, Rm E53-482.

**Organizational Meeting\*** – Nuclear Engineering Energy Assessment Group Seminar. 4pm, Rm 24-115.

**Flame Quenching in Internal Combustion Engines\*** – Colin Ferguson, G. Thermal-Fluids Seminar. 4pm, Rm 3-343.

**Romantic Ideas and the Revolution in European Consciousness\*\*** – Sir Isaiah Berlin, Fellow of All Souls College, Oxford; president, British Academy of Arts and Sciences. Humanitas: An Evolving Perspective Seminar on Technology and Culture. 4pm, Rm 9-150.

**The MIT Model for Nucleon Structure\*** – Kenneth A. Johnson, physics. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

**Giant Mind Users Group\*\*** – Meeting 7pm, Rm 36-155.

### Friday, February 6

**Child Care and Social Services On and Off Campus\*\*** – Margaret Sand, Child Care Office; Myra Rodriguez, social worker, medical. Being a Minority Employee and Student at MIT (361b). 12n, Rm 10-105. Note change in topic and room.

**Mathematical Modeling of Photochemical Air Pollution** – John H. Seinfeld, chairman, of chemical engineering, California Institute of Technology. Chemical Engineering Seminar. 2pm, Rm 10-105.

**Charge Density Waves\*** – T. M. Rice, Bell Labs, Murray Hill, NJ. Materials Science Colloquium. 4pm, Rm 9-150. Tea 3:30pm.

### Monday, February 9

**Migration, Economic Growth and National Planning\*** – Michael Caramanis, G. Harvard University. Migration & Development Study Group Seminar. CIS. 1pm, Rm E53-482.

**A Legislator's View of the Nuclear Power Issue\*** – State Representative Carol Amick. Nuclear Engineering Seminar. 4pm, Rm NW12-222. Refreshments 3:30pm.

**Diel Rythms in Phytoplankton Populations\*** – Sallie Chisholm, Scripps Institution of Oceanography. Water Resources and Environmental Engineering Seminar. 4pm, Rm 48-316. Coffee 3:45pm, Rm 48-410.

**White Noise vs. Wiener Process Models in Filtering and Control\*** – A. V. Balakrishnan, electrical engineering, UCLA. EE & CS Control Communications Seminar. 4pm, Rm 39-500.

**Material-Process Interaction, During High Speed Twist Texturing of Thermo-Plastic Yarns\*** – Stanley Backer, mechanical engineering. Mechanical Engineering Seminar on Mechanics of Materials. 4pm, Rm 3-133. Coffee 3:30pm, Rm 1-114.

**A Numerical Scheme to Solve Unstable Boundary Value Problems** – Eugenia Rivas, meteorology. Applied Mathematics Seminar. 4pm, Rm 2-338. Coffee 3:30pm, Rm 2-349.

### Tuesday, February 10

**The Case of US Steel\*\*** – Kathy Stone, labor historian, editor of *The People's Voice* newspaper, Somerville. Seminar on Technology, Merit & Equality. 12n, Stu Ctr Mezzanine Lge.

**Nothing is Ever the Way it Appears to Be (Angola)\*** – Clyde Ferguson, Harvard Law School. MIT-Harvard Joint Africa Luncheon Seminar. 12:30pm, Rm I, HCFIA, 6 Divinity Ave.

**VI-A Orientation Lecture** – For sophomores interested in entering EE&CS VI-A program. Students currently in program and faculty advisors available for discussion. 3pm, Rm 10-250.

**Some Recent Applications of Digital Guidance and Control on Aerospace Vehicles\*** – B. M. Hall, branch chief, guidance & control, McDonnell Douglas Astronautics Co. Aero/Astro General Seminar. 4pm, Rm 35-225. Coffee 3:30pm, Rm 33-222.

**The Newspaper Systems Development Group's (NSDG) Full Page Composition System\*** – Robert M. Elkin, Minneapolis Star and

Tribune. Gannett Newspaper Technology Seminar. 4pm, Rm 10-105.

### Wednesday, February 11

**Computations of Surface Energy Flux and Annual Air-Sea Interaction Cycles of the North Atlantic Ocean\*** – Andrew Bunker, WHOI. Oceanography Sack Lunch Seminar. 12n, Rm 54-311. Bring lunch, coffee available.

**Amino Acid Compartmentation and the Diurnal Changes of Protein Turnover in Rat Liver\*** – E. A. Khairallah, biochemistry, University of Connecticut. Nutrition & Food Science Seminar. 3pm, Rm 16-139.

**Ten Years of SALT\*\*** – Paul Nitze, former member of US SALT delegation. MIT-Harvard Arms Control Seminar. 4pm, Rm I, HCFIA, 6 Divinity Ave.

**Genetic Screening Technology and Legislation\*** – P. Reilly, M.D., postdoctoral fellow in medical genetics, Texas Medical Center. Technology Studies Seminar. 4pm, Rm 20D-205. Coffee 3:30pm.

**Utilization of the Instrumented Impact Test for Evaluating Dynamic Fracture Instability\*** – Ben Z. Weiss, materials engineering, Technion-Israel Institute of Technology, Haifa, Israel. Materials Science & Engineering Seminar. 4pm, Rm 4-145. Tea 3:30pm, Rm 8-314.

**The Middle East Conflict: Additional Point of View\*** – Ben Nitay, G. Israeli-American Forum. 8:30pm, Stu Ctr Mezzanine Lge. Refreshments.

### Thursday, February 12

**Opportunities for Process Optimization in the Steel Industry\*** – Julian Szekely, materials engineering. Materials Resource Policy Seminar. 8pm, Rm 13-5101.

**Formation of an Omega-Phase from Alpha-Titanium (Fe) During Aging\*** – Ben Z. Weiss, materials engineering, Technion-Israel Institute of Technology, Haifa, Israel. Materials Science & Engineering Seminar. 4pm, Rm 4-145. Tea 3:30pm, Rm 8-314.

**STOIC: SStack Oriented Interactive Compiler – A Programming System for Microprocessors\*** – Jonathan M. Sachs, Biomedical Engineering Center, HST. Biomedical Engineering Center for Clinical Instrumentation Seminar. 4pm, Rm 36-428.

**Heat Pumps\*** – Leon Glicksman, lecturer, mechanical engineering. Nuclear Engineering Energy Assessment Group Seminar. 4pm, Rm 24-115.

**Metal Working Application of High Power CO<sub>2</sub> Lasers\*** – Richard Patrick, vice president for advanced products, AVCO Everett Research Laboratory. Thermal-Fluids Seminar. 4pm, Rm 3-343.

**Measuring the Charge of the Quark\*** – Louis J. Osborne, physics. Physics Colloquium. 4:15pm, Rm 26-100. Refreshments 3:45pm, Rm 26-110.

### Friday, February 13

**Migrant Workers and the Development of Yugoslavia\*** – Ivo Baucic, Center for Migration Studies, University of Zagreb. CIS Migration & Development Study Group Seminar. 1pm, Rm E53-482.

**The Pathophysiological and Biochemical Effects of the Very Long Monoenoic Fatty Acids: A Difficult Nutritional Problem and a Tool for Studying Fat Metabolism\*** – Dr. A. J. Vergroesen, Unilever Research, Vlaardingen, the Netherlands. Nutrition & Food Science Special Seminar. 2pm, Rm 26-168.

**The American Productivity System, Who's in Charge Here?\*** – Frederick Haynes, assistant director of logistics & communication, General Accounting Office, Washington, DC. Mechanical Engineering Seminar. 3pm, Rm 3-133.

## Community Meetings

**MIT Space Habitat Study Group\*** – First meeting of spring semester will be an informal get-together with discussion of workshops & papers to be presented at May conference. Anyone interested invited. Wed, Feb 4, 7:30pm, Rm 24-407.

**Campaign '76\*** – Morris K. Udall, Democratic presidential candidate, will speak and answer questions. Sponsored by Lecture Series Committee. Wed, Feb 4, 8pm, Sala. Organizational meeting will follow.

**Women and Minorities Open House\*\*** – Sponsored by Department of Ocean Engineering. Organized by Wesley Harris, ocean engineering, aero/astro; Judith Kildow, ocean policy; & Norman Jones, ocean engineering. Thurs, Feb 5, 3pm, Rm 5-314. Refreshments.

**MIT Students' Federal Credit Union** – Short meeting of students interested in forming a credit union. Thurs, Feb 5, 5pm, Rm 8-105. A Federal Credit Union is similar to a savings bank that makes loans to students and alumni, and has depository accounts insured to \$40,000 by FDIC. Call David Hoicka, x5-9649 Dorm for info or if can't attend.

**The Vegetarian Community Dinner** – Bring your own dinner to the Community's first meeting. Tues, Feb 10, 5-6:30pm, Stu Ctr West Lge. Info: x5-7403 Dorm, or x3-4170.

**International Cooking** – Sponsored by TWO. Toni Alva, from Peru, will be cooking for us Wed, Feb 11, 8pm, Rm 10-340. Members \$.50, non-members \$.75. Info: Judy Cooper, 625-1062 or Jenny Gordon, 547-6471.

**MIT Women's Forum\*\*** – Meetings Mon, 12n Rm 10-105 (Tues in case of holiday.) **Mon, Feb 9:** Mary P. Rowe, special assistant to president & chancellor for women and work, will speak on "Women in Russia".

**The Wives' Discussion Group\*\*** – Led by Myra Rodrigues, social worker; Charlotte Schwartz, sociologist; & Carol Hulsizer, faculty family in residence, Ashdown. Wed, 2:15pm, Stu Ctr West Lge. Babysitting Stu Ctr Rm 473.

**MIT Diet Workshop\*\*** – Thurs, 12n-1pm, Stu Ctr Rm 491.

## Social Events

**Coffee House Revival\*** – Sponsored by MIT Hillel. Sun, Feb 8, 7pm, Hillel bsmt. Refreshments.



The two women above seem to be enjoying a following wind—heading into it wasn't such fun for the one below.



MIT Buddhist Association\* – Informal discussion and refreshments. Sun, Feb 8, 3pm, Stu Ctr West Lge. All are welcome. Info: x5-7265 Dorm.

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

## Movies

**Monty Python and the Holy Grail\*\*** – LSC. Fri, Feb 6, 7 & 9:30pm, Kresge. Admission \$.75. ID required.

**Saturday Night and Sunday Morning\*** – MIT Film Society. Fri, Feb 6, 7:30 & 9:35pm, Rm 6-120. Admission \$1.

**Films on New China: Seven Chinese Festivals; This Land, This People\*** – MIT Chinese Students' Club. Sat, Feb 7, 2pm, Rm 10-250. Free.

**French Connection II\*\*** – LSC. Sat, Feb 7, 7 & 10pm, Kresge. Admission \$.75, ID required.

**Mahal (Kamal Amrohi)\*** – Sangam. Indian movie with English subtitles. Sun, Feb 8, 2:30pm, Rm 26-100. Admission \$.50 with ID. Indian refreshments. Info: x5-7469 Dorm.

**Gunga Din\*\*** – LSC. Sun, Feb 8, 6:30 & 9pm, Rm 26-100. Admission \$.75, ID required.

**Operation Sail '76\*\*** – MIT Nautical Association. Color film on gathering of "Tall Ships" to observe Bicentennial. Fri, Feb 13, 7pm, Rm 4-270. Free.

**Red Psalm (Jancso)\*** – MIT Film Society. Fri, Feb 13, 7:30 & 9:30pm; Rm 6-120. Admission \$1.

## Lobby 7 Events

**Ken Quat Trio\*** – Medieval and Renaissance consort. Wed, Feb 4, 12n, Bldg 7 Lobby. Free.

**Impulse Dance Group\*** – Wed, Feb 11, 12n, Bldg 7 Lobby. Free.

**MIT Shakespeare Ensemble\*** – Scenes from *Richard III*, *Julius Caesar*, *Romeo & Juliet*, *Henry IV part 1*, and *Love's Labors Lost*. Thurs, Feb 12, 12n, Bldg 7 Lobby. Free.

## Music

**Chamber Music Society concerts\*** – Wed, 5:15pm, music library Bldg 14E. Free. Info: x3-4892.

## Theater and Shows

**Musical Theatre Guild Auditions\*** – Auditions for spring production of *Fiddler on the Roof* will be Sat, Feb 7, 12n-4pm; Sun & Mon, Feb 8 & 9, 7-10pm; all Stu Ctr Mezzanine Lge.

**The Alchemist\*** – MIT Dramashop production. Fri & Sat, Feb 6-7

and Thurs-Sat, Feb 12-14, 8pm, Kresge Little Theatre. Admission \$2.50.

## Dance

**Beginning Waltz Workshop\*** - MIT Ballroom Dance Club. Sun, Feb 8, 2-5pm, Sala. All are welcome. Info: Sharon, x5-8667 Dorm.

**Hatha Yoga\*** - Mon, Feb 9: intermediate 5:45pm, beginners 7:05pm; Tues, Feb 10: beginner-intermediate 5:45pm; Fri, Feb 6 & 13: over 40, 10:30am; all Rm 10-340. Ilene Turchinetz, 862-2613.

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

## Exhibitions

**A Summer House\*** - Results of the 2 week IAP architectural design studio course taught to employees by Jan Wampler. Models and plans on display in Rotch Library, Rm 7-238, thru Fri, Feb 13.

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

**Amenoff Exhibition\*** - Drawings and paintings on paper, by Gregory Amenoff. Thru Wed, Feb 25, Hayden Corridor Gallery.

**Photographs of the Ozarks\*** - Works by Roger Minick. Thru Fri, Feb 27, 10am-10pm, Creative Photography Gallery.

**Oil Paintings by Marsha Blakemore\*** - Faculty Club Exhibit. During Feb, Faculty Club.

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

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

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

## Athletics

**Home Schedule\*** - Wednesday, February 4 - V Hockey. Tufts, 7pm, rink. V Rifle. Tabor Academy, 4pm, duPont Rifle Range. Thursday, February 5 - JV/F Wrestling. Emerson, 7:30pm, duPont

Wrestling Rm. Saturday, February 7 - JV/F, V Basketball. Clark, 6:15 & 8:15pm, Rockwell Cage. JV/F Hockey. Graham (host), 2pm, rink. V Squash. Fordham, 2pm, duPont Squash Courts. JV/F Squash. Colby, 2pm, duPont Squash Courts. Tuesday, February 10 - V Basketball. Nichols, 8pm, Rockwell Cage. W (JV) & W Basketball. Radcliffe, 4 & 6pm, Rockwell Cage. V Squash. Williams, 4pm, Bowdoin, 7pm, duPont Squash Courts. Wednesday, February 11 - V Hockey. Bunker Hill CC (host), 7pm, rink. Thursday, February 12 - W. Fencing. Radcliffe, 7pm, duPont Fencing Rm. JV/F Hockey. Emerson, 7pm, rink. V Rifle. Northeastern, 4pm, duPont Rifle Range. Friday, February 13 - V Basketball. Bowdoin, 7:30pm, Rockwell Cage. V Hockey. Clark, 7pm, rink. Saturday, February 14 - W Gymnastics. Mt Holyoke, Radcliffe, 2pm, duPont Gym. V Swimming. Babson, 2pm, Alumni Pool. V Wrestling. Tufts, Boston State, 2pm, duPont Wrestling Rm.

Freshmen are encouraged to attend departmental lectures and seminars. Even when these are highly technical they provide students one means to learn more about professional work in a department and field.

\*Open to the public  
\*\*Open to the MIT community only  
\*\*\*Open to members only

Send notices for February 11 through February 22 to the Calendar Editor, Room 5-111, Ext. 3-3279, before noon Friday, February 6.

# AAAS to Devote Session To Women in Science

A 200-year history of educational changes for women in science and engineering will be the theme of a special women's session of the American Association for the Advancement of Science (AAAS) meeting Monday, Feb. 23, in the Sheraton-Boston Hotel.

Of the nine scheduled panelists at "Bicentennial Retrospectives and Prospectives: Opportunities for Women in Science and Engineering," three will be MIT professors: Mildred Dresselhaus of the Department of Electrical Engineering and Computer Science; Vera Kistiakowsky of the Department of Physics; and Phyllis Wallace of the Sloan School of Management. Mary Bunting, president emerita of Radcliffe College, will preside at the all-day symposium, which was arranged by Professor Miriam Schweber of Simmons College.

The dates for other AAAS symposia are Feb. 18-24.

Professor Dresselhaus, who will also be participating in a session on "Great Women in Science," will offer "Views on Undergraduate Education for Women in Science and Engineering" during the morning part of the February 23 symposium.

She will discuss some of the psychological barriers women students face in the male-dominated worlds of science and engineering. Dr. Dresselhaus believes that because of the greater demands on the average woman professional with a family, university administrations should provide women students with the best possible professional training so that they can continue their research in later life and still meet domestic responsibilities.

Professor Kistiakowsky, speaking in a session beginning at 3pm, will focus on historical changes in the status quo of women over the past 200 years. Comparing the percentages of women scientists in various fields from the 1920s to today, she contends that we are in the midst of a feminist wave that will signal more women doctoral scientists.

In the "Prospectives" part of the program, focusing on the problems still to be faced by women trained in science and engineering, Professor Wallace of the Sloan School of Management will discuss "Future Employment Opportunities for Women in Science and Engineering."

Other women who will be speaking at the special session are: Patricia Graham, dean of the Radcliffe Institute and a professor of education at Harvard; Mary Verheyden-Hilliard, director of the Sex Equality in Guidance Project of the American Guidance and Personnel Association in Washington, D.C.; Elizabeth Baranger, director of graduate programs and professor of physics at the University of Pittsburgh; Virginia Trotter, Assistant Secretary for Educa-

tion in the US Department of Health, Education and Welfare; Joan B. Berkowitz, senior staff scientist for Arthur D. Little, Inc., and Betty Vetter, executive director of the Scientific Manpower Commission in Washington.

## 2 Promoted In Resource Planning

Two staff members of Resource Planning, Joseph G. Carr, senior staff writer, and Deborah J. Cohen, assistant staff writer, have had their responsibilities expanded, according to an announcement this week by Nelson C. Lees, director.

Mr. Carr, while continuing his writing duties, has been named manager of the Proposals and Publications Group and will assume full administrative responsibility for it. The group is responsible for preparing all written material in support of MIT's overall development operation, and one of its major tasks is preparation of publications related to MIT's \$225-million Leadership Campaign.

Mr. Carr came to MIT in the fall of 1972 as a staff writer for Resource Development. His background is in teaching and journalism with experience as staff editor in the Office of Foundation and Government Relations at Boston University. He received the BA degree in 1967 from Manhattan College and the MA in 1969 from the University of Wisconsin.

Ms. Cohen, who has been promoted from assistant to associate staff writer, will add to her regular writing assignments editing the MIT Leadership Campaign Newsletter. Before joining the Resource Development staff in 1974 she was a research assistant for the Education Development Center in Newton, and for Mayor Kevin White's Committee on the Urban University. From 1971-72 she was a high school teacher in Western Galilee, Israel. She holds an AB degree ('69) from Cornell University and an MA (1971) from Tufts University.



Ready to swing into action on the basketball court are (left to right) Beverly Herbert, Diane Ozelius, Lynne Richardson, Sheila Luster and Patricia Schettig, five members of the MIT Women's Varsity Basketball Team who will compete in the University of Chicago Invitational Basketball Tournament Feb. 6-7.

## Women Hoopsters to Vie in Chicago

The MIT Women's Varsity Basketball Team departs Thursday (Feb. 5) for Chicago, where it will compete in the University of Chicago Invitational Basketball Round-Robin Tournament on Feb. 6-7.

The MIT team will play the women's basketball teams of Oberlin College, the University of Chicago, Northwestern University and Brown University.

While in Chicago team members will meet with Chicago area alumni at a luncheon to which prospective women students have been invited. Team members plan to use this opportunity to inform potential students about the Institute and, in particular, about women's sports.

Team members raised \$900 to defray expenses by selling T-shirts and buttons promoting women's athletics. Gifts were also received from the MIT Alumni Association, Women's League and Athletic Department.

A year ago MIT initiated its first Women's Invitational Basketball Tournament won by Brown over Radcliffe, MIT and the University of Chicago.

"The publicity and excitement of last year's tournament generated a lot of enthusiasm for women's sports at MIT," Professor Mary Lou Sayles, director of women's athletics, said. "Nationally, people are more aware of women at MIT because of women's sports."

Professor Sayles will accompany

the team to Chicago and will be a participant in a WGN radio talk show program discussing women in sports.

The team, one of five women's varsity sports at MIT, enters the tournament with a record of 5-3. Leading scorer is Diane Ozelius, averaging 16.6 points per game.

Team members participating in the tournament are captain Beverly Herbert, a senior in urban studies and planning from Dorchester, Mass.; Lisa Jablonski, a junior in humanities and science from Lowell, Mass.; Debra Luehrs, a junior in life sciences from Jackson, N.J.; Sheila Luster, a sophomore in civil engineering from Camp Springs, Md.;

Jenny McFarland, a sophomore in aeronautics and astronautics from Hubbard, Ore.; Diane Ozelius, a freshman from Brockton, Mass.; Lynne Richardson, a senior in life sciences from New York, N.Y.; Patricia Schettig, a senior in life sciences from Nyack, N.Y.; Ellen Scotti, a senior in mechanical engineering and management from E. Greenwich, R.I.; Christine Tracey, a senior in electrical engineering from Seattle, Wash., and Linda Yester, a senior in mathematics from Mt. Prospect, Ill.

Team manager is Caren Penso, a junior in economics from Marlboro, N.J., and the coach is Ross Hunter (MIT '69) of Brookline, Mass.

## Full-page Composition To Be Seminar Subject

The Newspaper Systems Development Group's full-page composition system will be the subject of the Gannett Newspaper Seminar Tuesday, Feb. 10, at 4pm in the Bush Room, 10-105. The seminar speaker will be Robert M. Elkin, a staff member at the *Minneapolis Star and Tribune* and graduate of MIT in 1974 with SB degrees in electrical engineering and management.

The Newspaper Systems Development Group (NSDG) is a consortium of eight newspaper companies that have been working together for over four years to develop a full-page composition system capable of processing classified advertising, display advertising and editorial matter, and electronically assembling these components, including graphics, into complete newspaper pages ready for publication.

The NSDG concept is that the most effective way to produce full newspaper pages is to assemble all of the elements through use of a single interactive, integrated system.

The NSDG system consists of a host computer, a number of special-

ized intelligent terminals and other minicomputer-driven electronic devices. These include optical character readers, data entry and text-edit terminals, composition-and-make-up terminals, graphic scanners, and on-line high-speed photocomposers. The software includes a powerful data-base/data-communications system. The applications software is structured into four functionally oriented subsystems: news, classified, display, and layout and composition. A production-control "subsystem" provides facilities to monitor and control work in progress.

In the seminar, which is open to the public, Elkin will explain details of the various subsystems and the operating system as a whole. The seminar is the seventh in a series of 12 being offered over a three-year period through a grant from the Frank E. Gannett Newspaper Foundation.

## AAAS Concert Tickets on Sale

Tickets for two concerts to be held during the annual meeting of the American Association for the Advancement of Science, Feb. 18-24, are available at the TCA Student Center Office, Rm 450, x3-4885.

-Boston Pops Concert, Arthur Fiedler conducting, Friday, Feb. 20, 8:30pm, Symphony Hall. Floor and first balcony, \$6.50; second balcony, \$4.50.

-New England Conservatory Ragtime Ensemble, playing music of Scott Joplin, Sunday, Feb. 22, 2:15pm, John Hancock Hall. All seats \$3. Free parking.

There is a 25-cent handling charge for TCA ticket orders.

## Flierl Appointed In Meteorology

Glenn R. Flierl has been appointed an assistant professor in the MIT Department of Meteorology for three years beginning July 1, 1976.

Professor Flierl received his BA with highest honors in physics from Oberlin College in 1970 and his PhD in physics from Harvard University in 1975. He has co-authored several articles that have appeared in professional journals.





# IAP Project Taught Students How to Lobby Congress

Six MIT undergraduates have returned to their classes after the winter break with some unusual insights—gained at first hand—into what it means to be a Congressional lobbyist.

The students researched the subject by going to Washington with a professor to lobby for a specific cause—a change in the way the United States deals with the Spanish government for the use of military bases in that country.

The project was the idea of Dr. William B. Watson, associate professor of history in the Department of Humanities and an expert on US-Spanish relations.

Professor Watson has been urging for some time that the agreement with Spain for the use of military bases should be a treaty requiring a two-thirds vote of the Senate rather than an executive agreement. For the past 22 years, the agreement has been renewed every five years with no approval at all by Congress.

He had gone to Washington on several occasions in the past six months to talk to various members of Congress. "One day in November I realized it might be interesting to teach students how to lobby Congress on a foreign policy issue by having them go to Washington to do just that."

Professor Watson and Dr. Jeffrey L. Pressman, associate professor of political science, scheduled the trip as an IAP project—and soon had recruited the six students.

The students and Professor Watson were in Washington for three days, Jan. 20-23, and started off each day with breakfast in the Supreme Court cafeteria, a "pleasant, quiet place to discuss strategy."

The first day was marked by a series of special briefings arranged by Professor Watson—by the Senate Foreign Relations Committee (on the committee's function and the legislative process), the State Department (on its point of view of what the relationship between the United States and Spain should be), the New York Times (on how foreign

policy news is made) and the Coalition on National Priorities and Military Policy (on how Congress is lobbied on public interest matters by public interest lobbying groups).

The MIT students had been given reading assignments and background information before going to Washington.

"At the state department briefing," Professor Watson said, "they assumed we knew little or nothing, but it became quickly apparent from comments by the students that they knew quite a bit and had done their homework quite carefully. The level of discussion had to be raised considerably higher than the briefers had anticipated."

The students set out to do their lobbying the next day, having made some appointments beforehand by telephone and by visiting offices.

Specifically, they were lobbying in behalf of Senate Resolution 295, which had been introduced the previous month by two senators and which said any agreement involving military bases in Spain must be submitted to the Senate for its approval as a treaty.

"We tried to convince the Senators, Representatives and their legislative aides that this was an important issue, not just for our relations with Spain," Professor Watson said, "but also for the Constitutional processes by which foreign policy is conducted. It involved the question of whether the Senate was going to play a more active role in the conduct of foreign policy. We felt this was a good time to lobby on this issue because the Senate in the past few years has become much more actively engaged in this area."

There was a surprise, and some excitement, waiting for Professor Watson and the students at the end of their second day in Washington.

The lead story in the *Washington Star* that night was headlined: "US, Spain Agree on Treaty for 4 Military Bases."

"What that meant," Professor Watson said, "was that the administration had agreed to do what the

panel programs have emerged as one of the few ways that the 1976 candidate can counter his media 'label' and perhaps break out of any pigeon-hole into which he has been consigned."

"Until real blocks of time are found by the networks for serious, full-scale debates among candidates," the report said, "the panel shows remain the principal means to watch the candidates in live, direct, uncontrolled appearances."

The News Study Group has been videotape-recording appearances by major declared and undeclared candidates on television. It also has been analyzing coverage of the candidates in selected national newspapers and weekly news magazines. In addition, more than 20 interviews have been conducted with candidates, campaign workers, press secretaries, editors, news executives, reporters, columnists and political analysts.

The research team began its work in the MIT Department of Political Science last summer. The project, which is directed by Edwin Diamond, a lecturer in the department and a journalist, has 11 months to run.

The researchers stressed that the interim findings could change significantly as the campaign goes on.

The News Study Group research is supported by the MIT Political Science Department and outside foundation funds. In previous years, the News Study Group has analyzed press coverage of the 1972 presidential campaign, the televised Watergate hearings in 1973, the impeachment hearings in 1974 and both print and broadcast coverage of school desegregation in Boston during 1974 and 1975. Some of this research has been published in Diamond's book, *The Tin Kazoo: Television, Politics and the News* (MIT Press, 1975). Portions of the analysis thus far of the 1976 presidential campaign will be published in the *Columbia Journalism Review* next month.



Recently returned from Washington, D.C., where they participated in an IAP activity on Congressional lobbying are (left to right) Christopher Donnelly, Aristides Papadopoulos, Carl Baranowski, Steven Kaplan (below), Dr. William Watson and James Leo. Not present when the picture was taken was Richard Fleischer.

Senate resolution wanted it to do. We couldn't take credit for the move, of course, but we think that the pressure we and others exerted was a factor in leading the administration into submitting the agreement as a treaty for the first time."

The development created a "minor crisis" for the MIT contingent, because it had made Senate Resolution 295 moot.

## Ingenuity Nets Millions in Electronic Games Market

least another 40 in the next few months.

Sub-assembly factory operations in Billerica, Mass. and Nashua, N.H., were forced to create about another 50 new jobs to keep up with TV Tennis orders. At Universal Instruments, Inc., in Binghamton, N.Y., another supplier of equipment to Executive Games, ten employees were added.

Recent articles in *Electronic Engineering Times* and other electronics design periodicals have brought more than 500 written inquiries to the MIT Innovation Center about further commercialization of the games project and the possibility of engaging other MIT students in new product development.

Dr. Li explains that students are guided through the development and commercialization of their inventions by the Innovation Center Co-op, a branch of the Center that is to the inventor what the teaching hospital is to the medical student. Projects are overseen by Co-op general manager Lamar Washington, Jr., a nine-member advisory board including presidents of several corporations,

## Clarke to Speak

(Continued from page 1)  
the author of 45 books. His non-fiction works include *Interplanetary Flight*, *The Exploration of Space*, *Going Into Space*, *Profiles of the Future* and *The Promise of Space*.

At the MIT-AT&T symposium, he will be the speaker March 10 at a plenary session in Kresge Auditorium at which the results of workshop sessions on several topics will be summarized.

Scholars from a number of universities have been commissioned to prepare papers for the workshops, which will explore the social effects of the telephone during its first 100 years, the future impact of computers and information processing, and the interaction of language and understanding, the mainstays of human communications.

The two-day symposium will include several special events, among them an opening address by President Wiesner and a closing dinner at which AT&T Chairman John deButts will speak. William C. Mercer, president of New England Telephone, will preside at the dinner.

"We had our usual breakfast in the Supreme Court cafeteria," he said, "and decided to lobby Senators our last day in Washington on how they should respond to the treaty agreement."

"Given the uncertain political conditions in Spain," he continued, "we agreed the United States would be wise to act prudently and to wait a while before it makes a treaty with a

and MIT faculty advisors.

Under licensing arrangements established with MIT's Office of Sponsored Programs (OSP), the Innovation Center and the inventors of TV Tennis will share between three and five percent of the revenue received by Executive Games.

In other Center projects that are funded by the original NSF grant, the US Government is given the right to a royalty free license on any patents that are generated.

While TV Tennis has been one of the Center's most successful experiments in entrepreneurship, almost 200 other inventions have been processed with much less yield. Negotiations for a broad-based collaborative product development program with Wing Archery, Inc., have begun as a result of the company's interest in a new high efficiency bow devised by an Innovation Center faculty member and his students. The company had originally sent the Center one of its bows to be used in an invention class as an example of a profit-making innovation on a centuries-old device.

MIT ingenuity intervened and the class designed an improved bow that maximizes energy transmitted to the arrow by the archer. This project, like the games effort, Dr. Li says, emphasizes technological innovation as one of the basic human instincts.

"The new challenge to technology represented in projects like TV Tennis must be considered a healthy one," he said. "It signals a shift in goals from that of pure engineering excellence to that of social relevancy. As service and leisure time-related occupations exceed those aimed at industrial production, engineering as a profession will be confronted with a far wider horizon and far more fluidity than it was in years past."

"The university provides the logical place for such technological expertise because there are students with inquisitive minds, boundless energy and few social obligations to deter them from exercising those minds to all kinds of activity from acquiring knowledge to marketing new products. If this student contribution is combined with the needed peripheral support from professionals, then there is a chance of a business success that could be invaluable to all parties involved."

government that might not have much hope of surviving.

"So we went around on Friday, the last day, asking out of curiosity whether Senators would have supported Senate Resolution 295, but primarily lobbying for a slowdown in the approval process and for caution in committing ourselves."

Altogether in three days the students lobbied 26 members of Congress, including 22 Senators and four Representatives. Usually they talked to legislative assistants for foreign affairs, but they saw two Senators and four Representatives personally. Professor Watson estimated that they must have made more than 100 telephone calls, walked collectively more than 100 miles of Congressional Corridors and altogether spent more than \$500."

The students paid for the trip themselves, but stayed in private homes with friends of Professor Watson.

Professor Watson said he was certain the trip was a valuable experience for the students. He remembers overhearing one of the students comment, "I don't think I've been bored for one minute during the entire three days."

The participating students were: Carl Baranowski, a freshman from Rome, N.Y.; T. Christopher Donnelly, a junior in economics from Pittsburgh, Pa.; Richard C. Fleischer, a freshman from Canton, O.; Steven F. Kaplan, a sophomore in management from Jericho, N.Y.; James D. Leo, a sophomore in life sciences from Los Angeles, Calif.; and Aristides J. Papadopoulos, a sophomore from Greece.

## Alumni to Hear Susan Schur

Susan E. Schur, owner and president of an advertising agency specializing in technical and industrial accounts, will speak Thursday, Feb. 12, at a luncheon meeting of the MIT Club of Boston in the Aquarium Restaurant, 100 Atlantic Ave., Boston.

A 1960 graduate of MIT, Schur will discuss "There's Nothing New Under the Sun (Or, What's Happening Now Happened Then)."

She is a past president of the MIT Club of Boston and has been vice president of the MIT Alumni Association and president of the Association of MIT Alumnae.

Reservations can be made through Leena Kiirats, x3-3878.

## Faverman Exhibit

An exhibit of works by Mark Faverman entitled "The Arch and Other Sun Dials" is on view in MIT's Center for Advanced Visual Studies through Feb. 20.

Faverman, an environmental artist, sculptor, and urban designer and a fellow at CAVS, will show both events and sculpture in the exhibit. He is former director of visual and environmental arts of the Mayor's Office of Cultural Affairs, Boston.

## Obituaries

### Judith E. Montfort

Judith E. Montfort, 21, a senior in physics from Fishkill, N.Y., whose term address was 8 Fainwood Circle, Cambridge, died at Massachusetts General Hospital Monday evening after she was found unconscious in a restroom off the Given Room, a faculty-student lounge on the fifth floor of Building 35.

Funeral services will be held Thursday at 10am at St. Eulalia Church, Ridge St., Winchester. Visiting hours will be Wednesday 7-9pm at Lane Funeral Home, 760 Main St., Winchester.

### Frederick J. Butcher

Frederick J. Butcher, 55, head custodian for NW12 and NW13 in Physical Plant, died Saturday, Jan. 31.

An employee of the Institute since 1959, Mr. Butcher is survived by his mother, Marion, and a sister, Frances. He lived at 1 Cleveland St., Cambridge.

A memorial service will be held Thursday, Feb. 5, at 9am in St. Paul's Church, Cambridge.

## Child Care Reminder

DOES YOUR YOUNG CHILD NEED LOVING CARE WHILE YOU WORK OR STUDY?

Family Day Care offers an opportunity for your infant, toddler or pre-schooler to share experiences with other children while under the care of a warm and loving adult in a home environment.

The Child Care Office provides screening, placement and counseling services, as well as some equipment and materials. For information, call x3-1592 or stop by the Child Care Office, Rm. 4-144.