

# MIT Press Issues 'Sputnik, Scientists, and Eisenhower'

On October 4, 1977, twenty years after the launching of Sputnik—the world's first successful space satellite—the MIT Press will publish *Sputnik, Scientists, and Eisenhower: A Memoir of the First Special Assistant to the President for Science and Technology*, by James R. Killian, Jr. (\$14.95).

Dr. Killian, a former president of MIT and now honorary chairman of the Corporation, was appointed to the position of Special Assistant by President Eisenhower. *Sputnik, Scientists, and Eisenhower* is his story of how those at the highest levels of American government

## Dr. Killian's Memoir as First Science Advisor

responded to the challenge from Sputnik and their own countrymen and initiated a new era in American science and technology.

Drawn from Dr. Killian's recollections and from recently declassified materials in the Eisenhower Library, *Sputnik, Scientists, and Eisenhower* takes the reader behind the scenes and shows what it was like to shape national policy in those crucial days between McCarthyism and the '60s. At a time when many feared that the Cold War might be heating up on a space

launching pad, Eisenhower and "his" scientists worked hard to establish a sane, realistic program for the development of America's science and technology—a program that would lead not to war, but to the peaceful expansion of humans into space.

At the request of President Eisenhower, Dr. Killian became chairman of the newly-formed Science Advisory Committee (PSAC). The committee's task was to provide the best scientific and technological advice to the Presi-

dent himself. PSAC had been organized in part to reassure alarmed Americans that the Soviets had not acquired technological supremacy, as implied by the Sputnik feat.

The Committee was to play a crucial part in American history. Dr. Killian reveals how PSAC, supported by President Eisenhower, resisted heavy pressure to make the "space race" a totally military program. At a time when the nation was not long removed from the "vapors of McCarthyism," PSAC

refused to be drawn into a satellite-for-satellite, missile-for-missile competition with the Soviets—a competition that could have proved as deadly as it was unnecessary.

This is PSAC's story, the story of scientists in a unique collaboration with an American President. Written in a thoughtful, witty style, *Sputnik, Scientists, and Eisenhower* will be of interest to all those who want to understand how policy is shaped and, to some extent, why our world is as it is. *Sputnik, Scientists, and Eisenhower* is an American contribution to the twentieth celebration of humankind's space adventure.

## Flat Tires, Worn Shoes Plague Visiting Cyclist



**WORLD TRAVELER "Sammy" Kawano, above, chats with scientists from the research laboratory of Dr. Arnold Demain, professor of industrial microbiology and graduate admissions officer. Masaru Yoshida, left, with the Fujisawa Pharmaceutical Co., of Japan and Professor Atsuhiko Shinmyo, back, professor at Osaka University are research associates in the Department of Nutrition and Food Science. Sammy stayed at the home of Dr. Shinmyo.**

By CATHRYN M. CHADWICK  
Staff Writer

After seven flat tires, four pairs of worn out shoes, two pairs of sandals and with 9,800 miles behind him, world traveler, Masami Kawano of Osaka, Japan, arrived at MIT last week to visit friends he met at Niagara Falls last summer.

"Sammy" began his trip on July 26, 1976, and has thus far travelled through Australia, New Zealand, Samoa, Hawaii, from Los Angeles, California, to Alaska, across five Canadian provinces and down the East Coast to Massachusetts.

The 27-year-old judo and karate expert was a trainer in a sports center in Japan and had never been out of the country before. He picked up English in Australia where by chance he met a former president of Rotary International. The upshot of that meeting is that Sammy has letters of introduction to Rotary clubs around the world. Between the hospitality of the Rotary clubs and local police stations, Sammy has had few

problems with accommodations. The former economics student tries to keep his food and lodgings down to \$5 a day and stops when necessary to do odd jobs for support.

He rides a 15-speed Panasonic bike, specially designed by his boss, the first Japanese to make the trip. The bike weighs 100 pounds loaded, 125 pounds wet, and is equipped to carry five canvas bags, a sleeping bag and pup tent. He averages between 80 and 100 miles per day at about 20 miles per hour but the bike is capable of travelling 60 mph on downhill grades. The longest Sammy has travelled is 140 miles in one day.

The cyclist travels with a camera and takes pictures of children everywhere he goes. He loves children and thinks they provide the most accurate image of a country. He plans to exhibit his work upon his return to Japan.

Why did he do it?  
"I wanted to make friends,

(Continued on page 8)

## Change Urged in Food Policies

The federal government is inconsistent in making decisions on food safety, and the government's role in resolving these issues is arousing "Major public discontent," says a national expert on food and drug laws.

Therefore, the US must reshape its basic policy on food safety, according to Peter Barton Hutt, former chief counsel of the federal Food and Drug Administration (FDA) and now a partner in the Washington, D.C. law firm of Covington & Burling.

To build such a policy, he told a symposium at MIT, it is necessary to understand "the true dimensions" of

food safety and to separate this problem from other environmental safety issues.

"The first rule of a new policy," Mr. Hutt said, "must be that there is no such thing as absolute safety," and a second rule "must be that safety will be viewed as a relative concept among the competing alternatives."

The changes were urged by Mr. Hutt in the 15th Underwood-Prescott Memorial Award lecture which he presented Tuesday, Sept. 27, at MIT. Mr. Hutt, who served the FDA from 1971 to 1975, received the 1977 Underwood-Prescott Award at a luncheon and award ceremony in the Sala de

Puerto Rico in the MIT Student Center.

### Proliferation of Chemicals

Following the luncheon, a symposium on "Government Regulation: How Much is Enough?" was presented in Kresge Auditorium by Mr. Hutt, Dr. Ogden C. Johnson, and Dr. Gordon F. Bloom. Dr. Johnson is Corporate Vice President of Scientific Affairs, Hershey Foods Corporation. Dr. Bloom is senior lecturer in MIT's Alfred P. Sloan School of Management and a specialist on productivity, marketing and distribution, and labor management in the food retailing industry.

(Continued on page 8)

## Rose, Lovins to Discuss Energy Futures

Professor David J. Rose of the Department of Nuclear Engineering and Amory Lovins, author of the recently published book *Soft Energy Paths*, will discuss Energy Futures for the World on Monday, Oct. 17, at MIT.

The debate will begin at 1pm in Rm 9-150 and continue, possibly, until 3pm, Professor Rose said. "We hope to entice the audience into an interactive debate," he said.

There is no formal agenda for the debate. Professor Rose said the debaters will assume that the audi-

ence is familiar with the general views of Lovins and his parent organization, Friends of the Earth. The announcement said Friends of the Earth promotes a future with maximum energy conservation, small distributed power sources run as much as possible by renewable resources and no nuclear power.

Professor Rose pointed out that other groups have different views. The World Council of Churches, for example, with which Rose has been working for some time,

agrees with the Friends of the Earth on the desirability of conservation in more developed countries and on the use of renewable resources. However, it maintains it is not possible at this time to close out the nuclear energy option.

## Parking Notice

Campus Patrol parking personnel wish to remind all members of the community that, effective Monday, October 3, 1977, proper display of a 1977-78 MIT parking permit will be required for use of all MIT parking locations (between 7:30am and 5:30pm weekdays).

Offices planning for seminars, conferences, etc. at MIT are cautioned that present parking resources make it impossible to accommodate any large groups. Publications should indicate parking difficulties to those attending.

Persons having questions relating to these topics may call parking personnel at Campus Patrol, x3-2997, during regular business hours.

## MIT United Way Campaign Plans Kick-Off Reception on Thursday

A special reception to kick off the 1977 United Way Drive at MIT will be held for coordinators and chief solicitors on Thursday, Sept. 29, from 4-6pm in the Mezzanine Lounge at the Student Center.

Co-chairpersons Lucian Pye, Ford International Professor of Political Science and Philip Stoddard, vice president for operations will be in attendance along with Paul Gray, MIT chancellor, John Wynne, vice president for administration and personnel and chairperson of the MIT Advisory Committee on Greater Boston Charities, John Newcomb, key-person for the MIT campaign and several United Way of Mass Bay representatives.

"We want to review the campaign and its goals and express our thanks for your efforts on behalf of this most worthwhile endeavor," Professor Pye said.

The MIT drive will begin with distribution of pledge cards in the staff and hourly payroll on Friday, Sept. 30, followed by biweekly payroll on Wednesday, Oct. 5, and the exempt on Friday, Oct. 14. Closing date is Friday, Nov. 18.

The overall goal for the 1977 United Way of Mass Bay Campaign is \$18.6 million. The slogan "The One Out of Four We Help Could be You," refers to the fact that one out of four people

in the Mass Bay area benefits in some way from the services of a United Way agency.

Area coordinators for the MIT campaign were appointed for the second time this year. Their names were listed in *Tech Talk* on August 10, 1977. The names of this year's chief solicitors will be available in next week's issue. For further information about the drive contact Michelle Whitlow. x3-7914.

## No Papers

Tech Talk will not be published October 12 and November 23.

October 12 is a Monday holiday week when classes are suspended for both Monday and Tuesday. November 23 is Thanksgiving week. Both are weeks of lowered activity at MIT.

The Institute Calendar in the October 5 issue of *Tech Talk* will cover the period of October 5 through October 23. Deadline for calendar listings, notices and classified ads is noon Friday, Sept. 30.

Appropriate notice will be given before the suspended November 23 issue.

## League to Sponsor Fall Foliage Tour

The MIT Women's League will sponsor a foliage tour of the Mystic Seaport Museum, Mystic, Conn., on Friday, October 15.

The tour will leave from the Sloan School parking lot at 9:30 am and return at approximately 5:30 pm. Tickets, \$6.50 for adults and \$3.50 for children, include transportation, admission to Seaport and an afternoon snack. Participants should bring a picnic lunch.

Tickets may be purchased all day, Mon-Fri, Oct 3-15, in the Foreign Student Office (Rm 3-107) or from 11am-1pm in the Lobby of Building 10.



# It's Still September But IAP Planning Is Underway

Distribution of the IAP Announcement this week and the kick-off luncheon for IAP coordinators today (September 28) herald the beginning of the 1978 Independent Activities Period.

The Announcement, a guide for those who want to organize an IAP project, is being mailed to faculty and staff along with Policies and Procedures, a handbook detailing policies governing IAP. The Announcement is also being distributed in bulk at key locations throughout the Institute.

The kick-off luncheon, to be held at noon in the Student Center Mezzanine Lounge, will acquaint IAP coordinators with their roles during IAP. Presentations will be given by members of the faculty, the IAP Policy Committee, IAP Administrative Committee, and IAP Office, as well as by several former coordinators.

IAP, initiated in January, 1971, as a time of more flexibility and freedom for students and faculty, provides a chance for everyone at MIT—students, faculty, employees and their families—to take advantage of the educational resources at the Institute. More than 500 activities, ranging from one-time-only events to intensive minicourses, were offered in IAP 77, and an equal

or greater number is anticipated for IAP 78.

For the first time the Announcement has a form for suggesting activities, a place where people may list activities they would like to have offered during IAP. All suggestions will be printed in the first *Guide to IAP*.

The Announcement also has an activity listing form. Listings should be submitted to the IAP Office, Rm. 7-108 (x3-1668), staffed by office manager Jane Sauer and guide editor Mary Enterline. Together they distribute information and answer inquiries about IAP.

Activities are described in two IAP Guides, newspaper-like catalogues scheduled for publication in November and December. Deadline for submitting entries to the first *Guide to IAP* is Wednesday, Oct. 19; to the final *Guide to IAP*, Monday, Nov. 21. Activities organized too late for inclusion in the Guides will be advertised on the cable TV network, in the IAP section of the Institute Calendar in *Tech Talk* and on the IAP bulletin board in Lobby 7.

In keeping with the innovative and imaginative nature of IAP, few constraints are imposed on activities. Major limitations are the normal safety, legal and health codes in

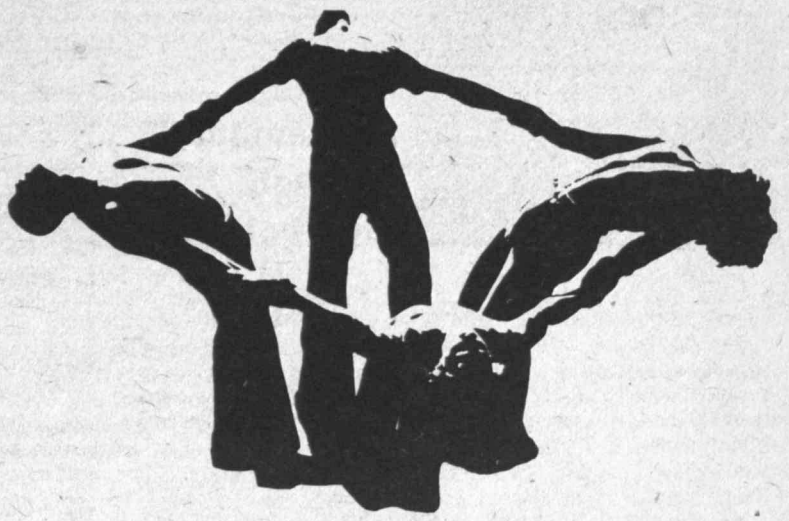
effect at MIT. Since the emphasis is on learning rather than grades, few offerings carry credit and those that do must be able to have the credit recorded under an existing departmental subject number listed in the *General Catalogue*; usually a "special problem" subject number is used.

Some financial support is available for IAP activities ineligible for departmental or laboratory funding. The IAP Activities Fund Committee has \$15,000 to allocate to deserving activities. Priority is given to activities offered for the first time and to those initiated by students. The committee is chaired by William Westcott, administrative officer of the Department of Mechanical Engineering.

Regulations governing IAP were established by the faculty and are supervised by the IAP Policy Committee chaired by Dr. Michael S. Feld, associate professor of physics and director of the Spectroscopy Laboratory.

Operational details of IAP are carried out by the IAP Administrative Committee chaired by Richard Caloggero, administrative officer of the Department of Electrical Engineering and Computer Science.

Those organizing IAP activities



CIRCLE OF DANCERS who performed in Lobby 7 during IAP 77 forms an interesting pattern in a live-conversion photograph used as a motif for IAP 78.

are responsible for arranging and scheduling their own meeting places through the Schedules Office (Rm. E19-338, Ext. 3-4788).

At the end of IAP a questionnaire

will be sent to all activity leaders and to a random cross-sampling of students and professors to gauge their participation in the response to IAP 78.

## Wilson Decries WSJ Energy Editorials

The following letter from Carroll L. Wilson, Mitsui Professor in Problems of Contemporary Society, *Emeritus*, at the Sloan School of Management, was printed in the *Wall Street Journal* of Sept. 19.

Professor Wilson directed the Workshop on Alternative Energy Strategies (WAES) which recently published its report after a two and one half year study of the oil situation.

The Oil Horse Editor, *The Wall Street Journal*:

Recent editorials in this paper have added unpardonable confusion to the already confused debate on energy policy.

When they have implied that no one should talk about scarcities until we have deregulated energy prices, junked President Carter's "bankrupt" energy program and seen what the resulting incentives will produce in new reserves, they have failed to look at the clock. And when these writers insist "it has become increasingly difficult for any serious person to believe we face the imminent exhaustion of energy resources" (the *Journal* of Aug. 11), they state a truism, but they obfuscate the point.

The point is that the enormous and growing demand for oil, on which the world depends for more than half its energy, is likely to outrun global production before the end of the next decade. This will happen even if we move massively into coal and nuclear power, cut the growth rate of oil by half and raise the real price of oil 50 percent. Since it takes 5 to 15 years to design and build the vast alternative energy systems that must be in operation in time to replace oil as it becomes increasingly unavailable, what is "imminent" is the deadline for action.

These are the major conclusions unanimously reached by 35 leaders from industry, government and universities in 15 countries, who spent two and one half years as participants in the MIT-sponsored Workshop on Alternative Energy Strategies (WAES) making the first global analysis of demand and supply of energy out to the end of the century. Their report, "Energy: Global Prospects, 1985-2000," was published recently.

The vital timing of the deadline for action, WAES concluded, is mainly in the hands of the "swing producers" of the Arabian peninsula, which have half the non-Communist world's oil reserves. Led by Saudi Arabia, they can stave off the prospective energy shortage until the late 1990s, WAES concluded, provided they are willing to triple their current oil production over the next two decades. But will they be willing?

At a net receipt per barrel of \$10, they now receive \$130 million a day for their 13 MBD output. With great effort they may be able to

spend \$30 million per day domestically, leaving \$100 million per day or \$36.5 billion a year, to invest abroad. Tripling that production—even if they did not increase the real price of oil—is clearly out of the question.

An obvious alternative for them is to hold to present production levels in order to stretch out the life of their increasingly valuable natural resource on the reasonable assumption that oil in the ground is worth more than dollars they cannot prudently use. But such a course would pitch the world into an acute crisis only four to five years from now—much too short a time to allow us to adjust.

Since this would undermine their own economies as well as ours, they might agree to boost their production enough over the next decade to ease our transition away from oil. As a *quid pro quo* they are likely to require solid proof during that decade that the industrialized consumer nations are taking vigorous steps to conserve energy and develop alternative sources.

So far as the "swing consumer"—the United States—is concerned, neither President Carter's nor the *Journal's* proposals will produce this proof. Faulty as some of the President's recommendations may be, he is moving in the right direction. But the US projections in the WAES analysis indicate clearly that his energy plan is too timid to do the necessary job in the time that will probably be available.

Though I believe that allowing the price of new domestic oil to rise to the world price would modestly reduce demand and increase supply, I don't share the *Journal's* faith that a free market alone will produce an energy balance sufficient for a prosperous and growing future. The WAES analysis indicates it is too late for the price mechanism alone to rescue us. The mammoth Middle East oil fields discovered after World War II kept the price of oil too low for too long. Escalating consumption has depleted global reserves beyond the point where higher prices now can produce enough new oil reserves and production to do the job, even if the growth rate of demand is cut in half. We no longer have enough leverage. We are in the same spot as Shakespeare's Richard III at Bosworth Field, when he tried to buy a horse with his kingdom.

It will take cooperative action by both private and public sectors to achieve a transition to other energy systems soon enough to avoid an acute global crisis. Neither the market nor the government, acting alone, can do it.

—Carroll L. Wilson  
Cambridge, Mass.

## Seminar to Probe Nature of Matter

The search for the ultimate nature of matter could shift in the coming years from the accelerator to the telescope. This, at least, is a hope shared by many astrophysicists.

Professor Kenneth Brecher of the Department of Physics, who will speak at the Physics Colloquium Thursday, Sept. 29, at 4:15pm in Rm. 26-100, will examine ways in which astronomical observations of neutron stars can be used to test the fundamental laws of physics can be tested under more extreme conditions and often with greater

precision than is possible in Earth-bound laboratories.

His lecture is entitled "Do Neutron Stars Obey the Laws of Physics?"

As an example of the way in which astronomical observations can be used to probe the foundations of physics, Professor Brecher will discuss how recent measurements of the arrival times of pulses emitted by neutron stars in binary X-ray sources require that the speed of light to be independent of the velocity of its source to an accuracy of better than a part in a

billion. This is the most sensitive and direct test of the second postulate of the special theory of relativity to date, Professor Brecher said.

"The limit set by these measurements is about a million times better than has been achieved in laboratory experiments on Earth," he said.

## Seminar Series Begins Sept. 28

The first seminar in the Fall '77 Technology Studies Seminar Series will take place in Rm 20D-205 at 4pm on Wednesday, Sept 28.

"The Home Efficiency Movement in America, 1900-1930," will be presented by Professor Carroll Pursell, professor of history at the University of California at Santa Barbara. Author of numerous publications and an expert on the history of technology, Professor Pursell will discuss the attempt to bring modern science and technology into the American home and to define the woman's role in the home as "household engineer."

The Technology Studies Seminar Series, offered each term by the Technology Studies Program, is open to the public, free of charge. This year for the first time, the series will revolve around a major theme: Perspectives on the Social History of Technology. Seminars are held in Rm 20D-205 at 4pm preceded by coffee served in the same room at 3:30pm.

The next scheduled seminar, to be held on Wednesday, Oct. 12, will feature Dolores Hayden, associate professor of architecture and history in the MIT Department of Architecture, speaking on "Regions of Delight: The Architecture of American Utopian Communities."

## Forum to Hear Panel Discussion

"Opportunities for Working women," a panel discussion of programs at local universities for working women, will be sponsored by the MIT Women's Forum at noon on Monday, Oct 3, in the Emma Rogers Room (10-340).

Dorothy Bowe, associate director of the Financial Aid Office, will chair the panel discussion. Participants will include Mary Rowe, special assistant to the president and chancellor for women and work, and women in similar positions at Northeastern, Tufts and Boston University.

Forum meetings are held on the first and third Mondays of each month. The format is an informal, bring-your-own lunch lecture or discussion meeting and is open to all women and men in the MIT community.

## Two Exhibits Featured In Photo Gallery Opening

By KATHARINE S.C. JONES  
Staff Writer

MIT's Creative Photography Gallery has opened its 1977-78 season with two shows—one is devoted to projects by people who teach in the Creative Photography Laboratory (CPL) and Visible Language Workshop (VLW), both of the MIT Department of Architecture; the second is a photo-documentary of last spring's Cambridge River Festival by eight Boston-area photographers.

Both shows continue through Tuesday, Oct. 4, when a public closing will be held from 5-7pm. Most of the artists will attend, and Jim Metzner, publisher of "Sound Image," will play stereo field recordings of the festival.

Those represented in the show hung in the outer gallery, all affiliated with the MIT Department of Architecture, are Muriel Cooper, lecturer and special projects director at the MIT Press; Charles Harbutt, visiting professor for the spring term; Ron MacNeil, instructor; Arno Rafael Minkinen and Starr Ockenga, both assistant professors of photography.

Images of the festival, hung in the inner gallery, are the result of an invitation, extended by CPL to area photographers, to document last spring's Cambridge River Festival sponsored by the Cambridge Arts Council. Photographs in this show are by John Benson, Donald Dietz, Stephen Elston, Stephen Frank, Peter Laytin, Tom Norton, Rosamond Wolff Purcell and Cary Wasserman.

Projects exhibited in the outer gallery show the range of talents of the professional staffs at CPL and VLW. Harbutt's photographs, characterized by sharp blacks and whites, reveal a fascination with light, reflected images and diagonals. Often an image is framed by a mirror, window or doorway. Reflected images lead to unusual juxtapositions of people, animals

and objects.

Minkinen's photographs of the human body are noted for their delicate gray tones. Each shows a portion of the human anatomy, often so as to accentuate its symmetry—a torso is cradled by a canoe, a gaping mouth and shoulders appear over a boardwalk's edge, disembodied arms and shoulders fold compactly into a corner.

Ockenga's photographs focus mainly on facial expressions of young people. They are characterized by a sense of repose and timelessness. Often the people photographed are compared to a work of art—a woman lounges on a sofa mirroring the pose in a painting, a person balances on an ornately carved pillar, a young woman poses on a pedestal.

The projects by MacNeil and Cooper show some of the experimental work they do at VLW. Prints MacNeil made on an offset printer show enlarged, everyday objects—a salt cellar, bottle of ketchup, the contents of someone's pocket. The enlargements serve to accentuate detail and lend an aura of importance.

In addition to some color prints, Cooper has on exhibit five books she designed and edited for the MIT Press. The books reveal the number of ways a book's design—its style of type, paper and presentation—contributes to the subject matter. The books range from the handsome and imposing *The Bauhaus* to an informal, corrugated-cardboard-bound volume, *File Under Architecture*.

The photographs of Cambridge River Festival show people at play in the spring. The images of balloons, parades, crew races and families at leisure all have a festive air.

The Creative Photography Gallery, at 120 Massachusetts Avenue in Cambridge, is open to the public free of charge from 9am to 10pm on weekdays; from 10am to 6pm on Saturdays; and from noon to 8pm on Sundays.



# Solar Energy Seen Best Means of Achieving Goals

A paper proposing that the United States choose solar energy over nuclear fusion as the best means of achieving traditional social and political goals has won a \$10,000 prize for a staff member at MIT.

Charles J. Ryan of Brookline, executive director of the System Dynamics Group at MIT's Alfred P. Sloan School of Management, is one of five winners this year of the \$50,000 George and Cynthia Mitchell Prize. The prize competition is part of "Alternatives to Growth," a 10-year international program on the nature of growth in equitable and sustainable societies sponsored by the Club of Rome, the University of Houston in Texas and the Mitchell Energy and Development Corp. of Houston, Texas.

In his paper, "The Choices in the Next Energy and Social Revolution," Ryan argues that the uses and availability of energy sources have been a major determinant of social structure and the growth, stability and decline of nations throughout history.

"Past civilizations have collapsed either through loss of their energy source or through high energy costs of maintaining their social structure," he writes.

The two ultimate energy alternatives, Ryan believes, are conventional solar energy and possibly nuclear fusion if it is technically and economically feasible in a social setting.

## Fossil Fuels Depleting

With fossil fuels rapidly depleting, he says, the choice of an energy system to replace them will determine whether the United States and other industrial nations ultimately have an Orwellian "large-scale centrally controlled society striving to maintain growth, a Malthusian-type decline due to resource scarcity, or a sustainable, small-scale Jeffersonian-type decentralized society with reduced energy needs."

The history of the United States has been marked by continuous physical and economic growth, but a social discontinuity was caused by the shift from a solar to a fossil fuel based economy, Ryan believes.

What has occurred, he suggests, has been a tradeoff between wealth (expanding economic growth and per capita income) and tradition.

"The introduction of fossil fuels destroyed the institutions, customs and values of early solar-based America," he writes. "A stable set of new institutions, customs and values were never able to replace

the old because constantly increasing energy production and consumption endlessly rearranged the social fabric."

Past events, he continues, suggest that future reliance on nuclear fusion and the large-scale transition technologies associated with it will tend to exacerbate this situation and produce the American version of Orwell's 1984.

"The lesson of history seems to say that attempts to increase the energy budget and the introduction

"The anticipation of the next new product or service breeds discontent for what is currently in use and increases expectations that what will be tomorrow will be better than today."

—Charles J. Ryan

of larger scale technologies increase centralized control and increasingly subjugate individual needs to those of larger institutions," Ryan writes.

On the other hand, he adds, solar alternatives and small-scale transition technologies may produce less energy, but they also require less energy because of the smaller institutional structure involved.

## Jeffersonian Scale

"By comparison with today, communities would be smaller. There would be less need for mobility. Smaller technologies would tend toward more generalized ownership of capital and therefore more distributional equity... The focal point of social organization would necessarily return to a Jeffersonian scale centering on the individual, the family and local communities."

Ryan concludes that ultimate nuclear fusion and the large-scale transitional alternatives (nuclear power) are undesirable because of the risks and costs attached to them and because of the hostile social environment they will tend to create.

Solar energy, he continues, "should be pursued as the energy source to replace fossil fuels. Dependence on solar energy sources can create a future that is harmonious with the institutions, traditions and values that have brought humanity down a million-year path."

The paper relates many problems of national concern to the social consequences of energy expansion and rapid growth.

On the individual: "As more and more of the work input to the economy was provided by fossil fuels, the role of the individual in serving the economy increasingly

shifted from that of producer to consumer."

## Family Survival Threatened

On the family: "The survival of the family as the basic unit of society is threatened because the functions which created it and held it together—the necessity of production, the transfer of knowledge, attitudes and values, and the shared experience of time passing together in many functional ways which form the bonds of affective relations—are spun off little by lit-

tle to other institutions."

On local autonomy: "The influences on neighborhood life, values and activities were increasingly determined by distant corporate headquarters and government agencies than by local institutions."

On government: "Government activities that, on the one hand stimulate growth, create the need on the other hand for more government services to tend to the social dislocations created by growth. In this self-reinforcing process, political constituencies increase on both sides of government activities, and government itself becomes a growth industry."

On values: "With increasing abundance and personal income, 'more' became a permanent part of social values, and expectations were fixed to expanding possibilities provided by large institutions. The operational belief in 'more' was a necessary element for the continuous expansion of the production/consumption system."

On consumption: "The anticipation of the next new product or service breeds discontent for what is currently in use and increases expectations that what will be tomorrow will be better than today."

On the industrialized nations: "If the advanced nations hold true to historical performance, as they approach their limits to growth, they will push to expand their energy budgets, overextend the physical and/or social base of their nations and consequently decline."

## Human Scale

Ryan sees the next century as the second chance of achieving the social and political goals on which the nation was founded. "The coming century offers the opportunity to realize a Jeffersonian design, not because it is traditional or

American, but because its scale is human, focusing on local communities where the life of the individual and the family are, of necessity, rooted."

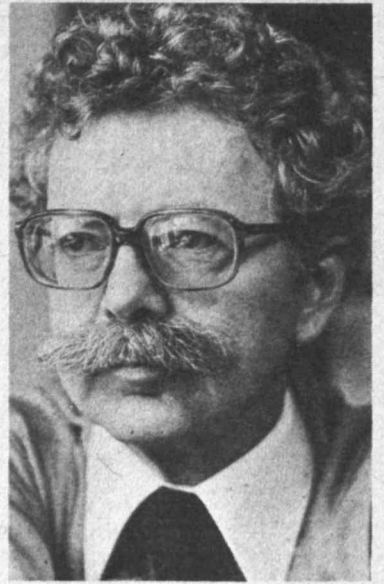
Among his specific recommendations are these:

"The technical, economic and regulatory incentives that have favored growth for more than a century should be gradually withdrawn as government's role in seeking long-term social and economic stability. An increasingly high tax rate should be placed on fossil fuels reflecting the value of their depletion to society. All forms of subsidies for the development of future energy systems should also be withdrawn. This will tend to bring about an equilibrium between energy sources, technologies, and social structure that can otherwise be skewed by the political power of dominant institutions that place self-interest before that of society at large."

The money for the Mitchell Prize is donated by George and Cynthia Mitchell of Houston. The awards will be made at the second of five biennial "Alternatives to Growth" conferences in Woodlands, Texas, October 2-4. The winning papers will be published next year by Ballinger Books.

The System Dynamics Group at MIT of which Ryan is executive director conducts research into the causes and consequences of change in social systems. The program is headed by Dr. Jay W. Forrester, the Germeshausen Professor at MIT.

Before joining MIT in 1975, Ryan was a Washington-based private consultant in energy and resources. From 1968 to 1974 Mr. Ry-



Mr. Ryan

an was a senior policy analyst in Washington with the National Commission on Materials Policy, the National Science Foundation, the Secretaries of the Department of Commerce and the Department of Health Education and Welfare. As secretary general of the Atlantic Institute in Paris from 1963 to 1968, he managed this private international think tank and conference center working in the areas of Atlantic political, economic and cultural affairs.

He received his BS in business administration from Fordham University in 1955 and his MA in American Literature from New York University in 1960. He worked for two years at the Sorbonne on his doctorate. He holds the honorary awards of French Government Scholar and Fulbright Lecturer.

## Dramashop to Present One-Act Productions of Inge, Beckett Plays

Two one-act plays by contemporary playwrights—*Bus Riley's Back in Town* by William Inge and *Theatre II* by Samuel Beckett—will be produced by MIT Dramashop on Friday, Sept. 30, and Saturday, Oct. 1, at 8pm in Kresge Little Theatre.

The two plays span the full range of contemporary theatrical styles, from the stark middle-American, mid-50s realism of the Inge play to the haunting, stylized theater-poetry of the Beckett play. Mark de Lemos, a senior in mathematics from Palo Alto, Calif., will direct *Bus Riley's Back in Town*, and David Dreyfuss, a graduate student in aeronautics and astronautics from Akron, Ohio, will direct *Theatre II*.

*Bus Riley's Back in Town* was written in the early fifties when Inge's best plays—*Come Back, Little Sheba*, *Picnic* and *Bus Stop*—were being acclaimed on Broadway. The play is set in the Fiesta Bar of a

small hotel in the mid-Texas town where a local man, who has returned after several years' absence, meets his old girlfriend. A study of small-town American life by an important, realist playwright, the play is reminiscent of O'Neill and early Tennessee Williams.

Curtis Fennell, a senior in aeronautics and astronautics from Miami, Fla., plays the title role, and Ellen Sullivan is the former girlfriend.

Beckett's *Theatre II*, published in 1976 and his newest play, is striking for its lucid conventionalism when compared to his other recent work.

The play depicts two characters as they discuss and sum up the life of a third. *Theatre II* is a new version of Beckett's particular vision of baffled despair.

Coffee and critique will follow the productions. The public is invited to attend free of charge.

## Johnson, Rosales Promoted In Industrial Liaison Office

Eric C. Johnson and Arturo A. Rosales, senior industrial liaison officers, have assumed additional responsibilities as assistant directors of the Industrial Liaison Program.

Announcement of the promotions, effective July 1, was made by Dr. Samuel A. Goldblith, director of Industrial Liaison.

"The experience of Mr. Johnson and Mr. Rosales, both of whom have been associated with the program for several years, will bring added strength to its direction as it continues to grow," Dr. Goldblith said.

Mr. Johnson is a 1967 graduate of MIT with the SB degree in metallurgy and a master's degree in operations research from Case Western Reserve University. From 1967-70 he was manager of administration and operations research in the casting laboratory at Chase Brass and Copper Co., of Cleveland, and from 1970-72 he

was associate planning engineer at Kennecott Copper Corporation in Salt Lake City, Utah.

Mr. Johnson returned to MIT as an industrial liaison officer in 1972. He lives in Stoughton with his wife and three children.

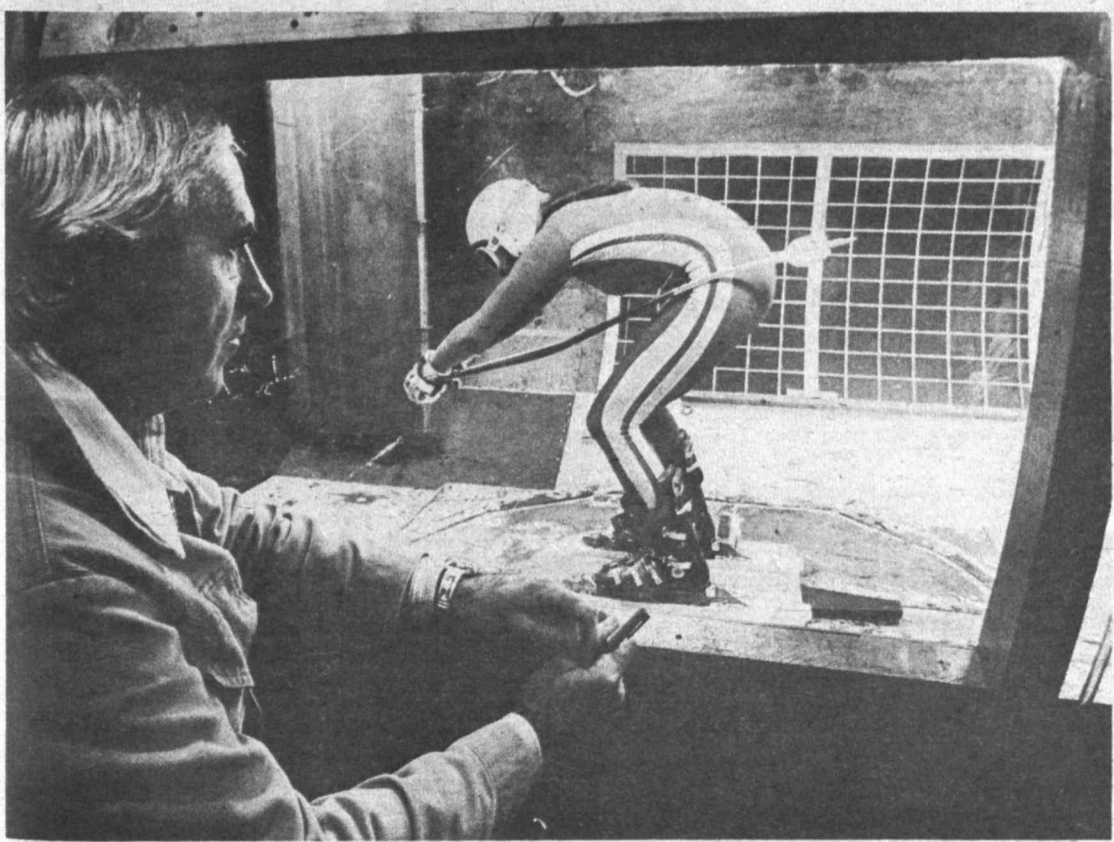
Mr. Rosales received the SB and SM degrees in aeronautics and astronautics in 1969

and 1970 respectively from MIT. Before returning to MIT as industrial liaison officer in 1973, Mr. Rosales was employed by McDonnell Douglas Astronautics Co., St. Louis. As an aerodynamicist in the advanced design group he worked on the space shuttle program and several naval missile projects.

Mr. Rosales, his wife and three children live in Natick.



Mr. Johnson



**WIND TUNNEL SKIER**—Holly Flanders of Manchester, N.H., a member of the U.S. Ski Team, assumes the tuck position in the MIT Wright Brothers Wind Tunnel as Robert Quinn of Yamaha International Corp.'s ski racing division, watches through a window. Flanders and three other team members used the wind tunnel last week in an effort to discover which body position and which uniform design presents the least aerodynamic drag. Yamaha is equipping the skiers. The skiers faced a 50-mile-an-hour wind while standing in regular boots and bindings on a delicate balance that

measures changes in drag as body position changes. The bindings were bolted to a plywood panel to prevent the skiers from unknowingly shifting their feet from a normal skiing position. To provide instant information to the skier an indicator, not visible in the picture, was mounted a few feet in front of the skier. Flanders and the other skiers—David Currier, John Lingelbach and Ron Biedermann—could then see how slight changes in their positions increased or decreased drag. The tests were contracted for by Yamaha.

—Photo by Calvin Campbell

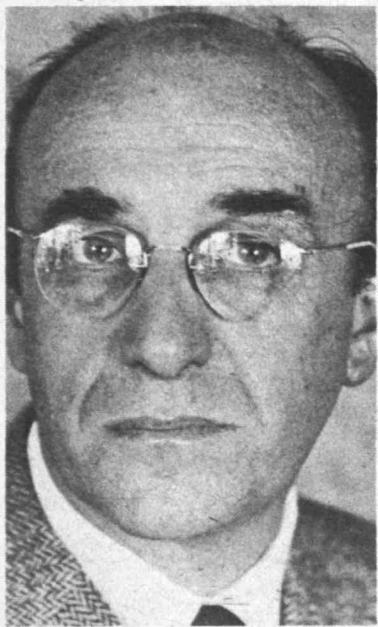




# Guillemin to Present F.O. Schmitt Lecture

Dr. Roger Guillemin, a research fellow at the Salk Institute for Biological Studies and a distinguished leader in physiology and neuroendocrinology, will receive the 1977 F.O. Schmitt Lectureship Medal and Award of the MIT Neurosciences Research Program.

Dr. Guillemin will present his lecture, "The Hypophysiotropic Peptides of the Hypothalamus," at 4:30pm, October 20 in MIT's Huntington Hall, Rm 10-250. Dr. Walter A. Rosenblith, MIT provost, will offer welcoming remarks and Dr. Richard J. Wurtman, professor of endocrinology and metabolism in the MIT Department of Nutrition and Food Science, will introduce Dr. Guillemin. The lecture is open to the public.



Dr. Guillemin

The F.O. Schmitt Lectureship and Award, which this year is a prize of \$2,500, was established in 1973 in honor of F.O. Schmitt, who helped establish the field of biophysics in the 1950s and who founded the Neurosciences Research Program in 1962. Dr. Schmitt is Institute Professor Emeritus and professor of biology emeritus at MIT.

Dr. Guillemin is the sixth neuroscientist to receive the F.O. Schmitt Award, which will be presented to him at the Stated Meeting of the NRP Associates on Sunday, Oct. 2, at the Neurosciences Research Program center at the house of the American Academy of Arts and Sciences.

The citation accompanying the award to Dr. Guillemin said, in part: "For his synthesis of biochemistry and neuroendocrinology which led to the demonstration that three hypothalamic factors which control secretion from the pituitary gland are, in fact, low molecular weight peptides with unusual chemical properties.

"For his invention of methods for isolating the tiny quantities of such peptides present in individual brains; for his proposal, and later demonstration, that synthetic structural analogues of these peptides can mimic or block the actions of the endogenous compounds; for his major contributions to the growing body of evidence that these brain peptides . . . and others, including the endogenous or natural agonists for opiate receptors—may function as neurotransmitters as well as hypothalamic hormones. . . ."

Dr. Guillemin was born in France and studied at the University of Dijon, where he received the MD degree in 1949. He was a

## Luce Scholars Candidates Sought

Candidates are being sought among MIT students and young faculty members for the 1978-79 Luce Scholars Program. The program provides funds for 15 men and women to spend 10 months in Asia as a way of developing better understanding of Asia among future American leaders.

French government fellow in 1950-51 at the University of Montreal from which he received the PhD degree in 1952 and where he was a faculty member of the university's Institute of Experimental Medicine and Surgery.

He joined the faculty of the Baylor University college of medicine in 1953. From 1960 to 1963 he was director of the department of experimental endocrinology at the College de France in Paris, and has taught and served as consultant at other universities and institutions. He joined the Salk Institute in 1970.

Dr. Guillemin's many honors and awards include the Louis Bonneau Award of the French Academy of Sciences in 1957 and International Congress of Pharmacology gold medal in 1961. His memberships include the American Physiological Society, The Endocrine Society, the Society for Experimental Biology and Medicine, and the International Brain Research Organization.

The Neurosciences Research Program, a research center at MIT, serves as a worldwide communications center for research on the nervous system. The NRP's 34 associates represent many fields, including medicine, psychiatry, physics, biochemistry, biology, neurology and psychology. The present associates include three Nobel laureates.

## Henneberry Appointed To Planned Giving Staff

The appointment of Thomas R. Henneberry as assistant director of the Office of Planned Giving and Legal Affairs/Resource Development has been announced by D. Hugh Darden, director.

Mr. Henneberry formerly was director of the MIT Associates Program.

In his new position, Mr. Henneberry will assist Mr. Darden in matters between MIT and potential individual donors, including outright gifts, gifts to life income plans and bequests. He will prepare and review documents relating to gift arrangements and as-



Mr. Henneberry

## Ringers Seek New Members

The MIT Guild of Bell Ringers is extending an invitation to ring to the MIT community.

An introductory lecture on change ringing, an art form that evolved in England during the Renaissance, will be given at 6:30pm on Wednesday, Oct. 5, in Rm. 9-150, and all are invited to attend. The lecture will include a handbell demonstration, recording of tower bells, filmstrip, and introduction to the principles of change ringing. Those interested may arrange at the lecture for tower and handbell lessons.

The MIT Guild of Bell Ringers rings at Old North Church in Boston on the oldest set of change ringing bells in North America; cast in 1744, they were once rung by Paul Revere. The Guild rings at the church two Sundays a month and on special occasions and feast days.

MIT is one of 60 universities invited to submit three nominations each to the Henry Luce Foundation. The Institute has had successful candidates in each of the first three years of the program.

Those wishing to be considered should inquire at the office of Dr. Eugene B. Skolnikoff, director of the Center for International Studies (Rm. E53-470, x3-3140) by October 1. The deadline for applications is October 10.



PAST AND PRESENT—Peter Barton Hutt (right), recipient of the 1977 Underwood-Prescott award at MIT, chats with George C. Seybolt, president of the Wm. Underwood Co., at a reception Tuesday, Sept. 27, for Mr. Hutt. Between them is a turn-of-the-century photograph of Dr. Samuel C. Prescott, left, first dean of science at MIT and William Lyman Underwood, grandson of the founder of the Underwood

company, who worked together, beginning in the 1890s, to establish the scientific basis of the canning industry. The Underwood-Prescott Lectureships and Awards have been held for the last 15 years in memory of the two pioneering scientists. Mr. Hutt, former chief counsel of the federal Food and Drug Administration, later spoke at a symposium on "Government Regulation: How Much is Enough?"

Photo by Calvin Campbell

## Change Urged in Food Policies

(Continued from page 1)

Preventing hazards to human health is the basis of government regulation of the food supply—"... regulation that one would expect to be least subject to challenge, particularly in an era of increasing concern about the proliferation of chemicals in our daily lives and the role they may play in human injury and disease," Dr. Hutt said in his lecture.

Yet there is "major public discontent" against government control, based on several factors," he said.

"Individuals are demanding an opportunity to participate in these decisions, and indeed to make their own free choice whether to accept whatever risks of harm may exist."

The public also finds some risks, such as threats of mutagenicity and carcinogenicity, "ephemeral and distant" and also fails to take seriously the warnings that hazards—including mycotoxins, asbestos, nitrosamines, lead, pesticides and animal drugs—pervade the entire food supply, he said.

Such warnings "do not fit with the public perception of our modern life," Mr. Hutt noted. "It is simply inexplicable to the average citizen that our longevity is increasing and that the latest government public health statistics demonstrate a significant decline in the national age-adjusted death rate, when at the same time the government is also contending that these hazards are mounting at a rapid rate."

Furthermore, the concepts of testing with laboratory animals to predict toxicity in humans are not understood by the public, which also is not prepared to accept the idea that "government regulation is merely an exercise in managing uncertainty, and that finite answers to these questions may never be found."

### Foods Under Suspicion

"Perhaps most unacceptable" to the public, Mr. Hutt said, "some of the foods that are now falling under suspicion are those that give us economic benefit, or simply pleasure, or just plain hope."

"Even the most unsophisticated citizen can readily determine that the risks from some of the dangers charged to the food supply are far smaller than the risks that we willingly accept without question as we go about our daily business," he said. "One need not be either a biostatistician or an epidemiologist to figure out that the chances of being hit by an automobile are far greater than the chances of being harmed by mercury in fish or saccharin in diet foods."

In addition, "There is no apparent consistency or rationale in the government's present approach to food safety decisions," Mr. Hutt said.

"Restaurants may serve charcoal-broiled steak and peanuts may contain aflatoxin, but cyclamate and saccharin are banned from diet

foods. But," he added, "scientists contend that the former substantially exceeds the level of risk represented by the latter."

Such inconsistencies, which evolved over time and are not entirely the fault of government officials, require that "we must all begin to rethink basic food safety policy in this country and to reeducate the public about the goals that realistically can be set and achieved," Mr. Hutt said.

### Safety Problem

A valid public policy for food safety, he said, must include "the true dimensions of the food safety problem apart from other environmental safety issues," and would establish, for example, the incidence of cancer attributable to toxic foods, as opposed to other sources.

"Priorities, emphasis, and indeed the very nature of future regulatory control mechanisms should to a large extent depend on the outcome of this initial determination," he said.

Rational planning will establish public priorities on the broad basis, he said, and eliminate the present piecemeal approach.

The next step, he said, is to rank the sources of danger in the food supply in order of importance, and establish a priority list for toxicity testing.

"It has been estimated," he said, "that there are now at least 13,000 components of the food supply—about 1,000 agricultural products, about 2,000 natural and synthetic chemicals added directly to the food supply, and more than 10,000 substances added indirectly in the production, processing, and packaging of food."

### Levels of Risks

Different components pose varying levels of risks, some of which can be eliminated only by removing entire food categories from the diet, Mr. Hutt said.

Mr. Hutt suggested some other general rules and exceptions for a new food policy:

For food components that present special safety problems and for which there are no alternatives, Mr. Hutt suggested a benefit-risk analysis "involving a much broader sensitivity to the wishes of the general public..."

Among exceptions to such special analysis might be the use of nitrates (to prevent botulism) and preservatives that "permit our extraordinary food distribution system." Mr. Hutt said.

## Toys Needed

The MIT Women's League is urgently seeking outgrown tricycles, books, blocks, dolls, trucks, tinker toys and other children's toys for use in the child care room during English lessons for foreign wives.

English classes have been offered every term for more than a dozen years, providing major support for the wives of foreign visiting faculty, students and guests. Child care has become an increasingly important facet of the program.

The toys needed are for toddlers to school-age children. Donations will be picked up. Persons with toys to donate may call Betty Dyer at 527-7059, or Mary Pinson in the Women's League office, x3-3656.

## Flat Tires, Worn Shoes Plague Visiting Cyclist

(Continued from page 1)

see the world and store up some memories for old age," Sammy says.

Sammy can use only one bicycle for the entire tour. His tires are supplied by Panasonic and the bike's derailleur, gears and chains by the Shimano Company. The supplies are a must. He can replace all the parts ne-

cessary but must keep the same bike for the trip if the venture is to be a success.

From here, Sammy plans to visit New York and Washington, D.C. He will then head for the West Coast via the Arizona Desert. His five-year, 35,000 mile trip will take him through 70 countries. He expects to return to Japan in 1982.