OTA Office of Technology Assessment

Newsletter

February 1979 Volume 2, No.2

First Board Meeting of 96th:

Rep. Udall, Sen. Stevens Elected; AGRT Assessment Project Ok'd

In its first meeting of the 96th Congress, the OTA Congressional Board elected Rep. Morris Udall (D-Ariz.) as its new chairman, and Sen. Ted Stevens (R-Alaska) as vice chairman. The two posts alternate between the Senate and House with each Congress.

At the January 31 meeting, both Sen. Edward M. Kennedy (D-Mass.), as out-going chairman, and Rep. Udall commended OTA Director Russell W. Peterson, who had just completed 1 year in that post.

AGRT Task Approved

The Board approved a project to assess Advanced Group Rapid Transit Systems, a public transportation system concept embodying fully automated small vehicles operating at short headways on exclusive guideways.

The assessment is focusing on the cost of the program, proposed by the Urban Mass Transportation Administration, as well as its potential for enhancing urban mobility and relieving problems associated with urban transportation. The analysis was requested by the House Committee on Appropriations.

Gov. Peterson presented a brief overview of OTA's operations. He reported on the work that was being done to complete old projects and to abide by the ruling made by the Director in mid-1978 that all new projects be carried out within the time and cost budget approved upon initiation of the assessment unless approval has been obtained from the Board for revisions.

FY 80 Request Moved

An FY 1980 appropriation request of $11.2 million was approved by the Board for formal submission to the appropriations committees.

Board approval was sought to request that the appropriations committees increase the OTA personnel ceiling from 130 to 150. A motion to request a ceiling of 140 resulted in a tie vote and was lost.

Advisory Council Meeting:

Exploratory Projects Outlined

The Office of Technology Assessment has initiated three exploratory projects on topics originally identified during OTA's priority-setting process. The Technology Assessment Advisory Council was briefed on the status of these at its January 23 meeting.

The three studies involve quality of life indicators, risk assessment, and technology and centralization. All three have broad methodological importance for all OTA assessments, Director Russell W. Peterson said.

OTA Senior Associate William Mills reported to the Council that the Office is seeking to identify and develop, where possible, social and economic indicators relating to the quality of life that go beyond those used to measure gross national product. The study will look at costs and benefits of such intangibles as environmental standards, safety regulations, and health measures.

As most OTA studies would benefit from measurements of the quality of life, so too would they benefit from assessments of risks, both natural and manmade, Senior Associate Joseph Coates said in another presentation to the Council. This project seeks to provide some kind of order to the hundreds of risks that exist, as well as to relate new risks to previous strategies for dealing with risks. It will emphasize what government can do—provide knowledge, widen choices, and supply a process for dealing with risks—rather than search for what levels of risk are acceptable, Coates said.

Coates also discussed the project analyzing technology and centralization. It addresses questions relating to centralization-decentralization trends, costs and benefits of technologies as a function of scale and degree of centralization, and how this information can help other OTA studies and Congress.

All three projects are scheduled for completion during 1979.

Dingell, Mathias Appointed to OTA Board

Rep. John Dingell (D-Mich.) and Sen. Charles Mathias, Jr. (R-Md.),have been appointed to the OTA Board effective February 8, 1979. They succeed Rep. Olin Teague (D-Tex.) and Sen. Clifford Case (R-N.J.), respectively.

Dingell has been a Member of Congress since 1955. He serves on the House Committee on Interstate and Foreign Commerce and chairs its Subcommittee on Energy and Power. He also serves on the House Committees on Merchant Marine and Fisheries and on Small Business.

Mathias was elected to the Senate in 1968 after serving four terms in the House of Representatives. He serves on the Senate Committees on Appropriations, on Governmental Affairs, and on the Judiciary, where he is the second ranking Republican member.

Willis Appointed OTA Assistant Director

Dr. Eric H. Willis, a nuclear physicist, has been appointed Assistant Director for Science, Information, and Transportation, effective February 12. He will head OTA assessments in the use and quality of the oceans, national R&D priorities and policies, telecommunications and information systems, transportation, and space.

Since 1977, Dr. Willis has been Deputy Assistant Secretary for Energy Technology at the U.S. Department of Energy (DOE). That office is responsible for a $3.8 billion research program in solar, geothermal, fission and fusion, and fossil fuel energy, as well as nuclear wastes and electrical energy storage. Prior to joining DOE at its inception in 1977, Willis was Assistant Administrator for Institutional Relations at the Energy Research and Development Administration (ERDA) and, before that, Director for Nuclear Monitoring Research at the Advanced Research Projects Agency (ARPA) at the Department of Defense.

A native of England, Dr. Willis received his Ph. D. in nuclear physics at the University of Cambridge in 1957. From 1964 to 1970, he was vice president and director of research for Teledyne Isotopes, a private firm engaged in research on nuclear test ban monitoring and secondary recovery techniques for oil wells.

Congressional Fellowship Applications Now Being Accepted

OTA is seeking candidates for its Congressional Fellowship Program for 1979-80. Now in its second year, the program gives individuals who have demonstrated outstanding ability an opportunity to gain a better understanding of science and technology issues facing Congress. The program provides participants experience in the policy research and analysis work of OTA.

The OTA Fellowship Program is open to people in all scientific and technical disciplines. Applicants must have completed research and training at the doctoral level, or have equivalent experience. Detailed resumes, three letters of reference, and a 1,000-word statement explaining interest in the program and career goals should be sent to the Personnel Office, Office of Technology Assessment, U.S. Congress, Washington, D.C. 20510. Applications must be received no later than May 1, 1979.

8 Fellows Now Assigned

Eight fellows are now working at OTA. They are: James Beall, technology and world trade; James Cornehls, food; Robert Friedman, oceans; Arlene Maclin, energy; Daniel Panshin, oceans; Leonard Saxe, health; William Scanlon, genetics and population; and Irene Szopo, technology and world trade.

Beall is a Ph. D. physicist who has worked at NASA's Goddard Space Flight Center and taught at the University of Maryland. Cornehls is a Ph. D. economist with expertise in urban economics, planning, and transportation. He has taught at the University of Texas, Columbia University, and in Lima, Peru. A Ph. D. ecologist, Friedman has extensive research experience in wetlands, river basin systems, and recycling wood products.

Maclin is a Ph. D. physicist who has worked to develop higher education policies for the Department of Health, Education, and Welfare. She has research experience in solar energy systems, communication satellites, and computers. Panshin is a Ph. D. oceanographer with research experience in marine radio navigation systems and use of ocean resources. He also monitored services of the Sea Grant program for the National Oceanographic and Atmospheric Administration.

Saxe is a Ph. D. psychologist who has taught at Boston University. Scanlon holds a Ph.D. in physical biochemistry, and a J.D. degree from the University of Michigan. A Ph. D. in economics, Szopo has worked on economic planning, energy and raw materials, and transportation issues for General Motors. She has also worked with the New York Council of Economic Advisers and the Department of Housing and Urban Development.

Jerry Ward Joins Transportation Staff

Jerry Ward has joined OTA as a Senior Associate in the Transportation Group.

Ward comes to OTA from the U.S. Department of Transportation (DOT) where, until last year, he was Director of R&D Policy in the Office of the Secretary. He spent most of last year as a visiting senior lecturer in transportation at MIT. Prior to joining DOT, he spent many years in industry, in aircraft design and manufacture, and as Director of Advanced Planning for North American Aviation.

Energy Technology Conference

Two OTA staff members will chair seminars at the sixth Energy Technology Conference and Exposition to be held February 26-28 at the Sheraton Park Hotel. Dick Rowberg, energy group manager, will chair a discussion of industrial energy conservation concepts. Alan Crane, project leader for the coal use assessment, will lead a discussion of how coal can be burned cleanly. For more information, write Energy Technology, 4733 Bethesda Ave. N.W., Washington, D.C. 20014, or call (301) 656-1090.

The OTA newsletter is published monthly to help keep staff members and congressional personnel informed about matters of interest. It is available to others interested in the Office by writing to:

Public Affairs Office
Office of Technology Assessment
Congress of the United States
Washington, D.C. 20510

OTA Staff Seminar

Medical Technologies Assessed

Can medical technologies achieve their intended benefits at reasonable costs without damaging side effects? That is the crucial question in assessing their efficacy, safety, and policy implications, an OTA staff seminar was told January 15.

The seminar, the second in a new monthly series, was led by David Banta, Clyde Behney, and Jane Willems. Banta is the health group manager and Behney and Willems served as project leaders, respectively, for the efficacy and safety of medical technologies and computed tomography (CT) scanner assessments.

The balance between efficacy and safety, Behney said, depends on how a particular technology works with what chance of success in achieving what benefit and with what side effects. These depend on the patient, the illness being treated, and the conditions under which the technology is used.

Behney reported that little had been done by both Government and the private sector to assess new or existing medical technologies for their safety and efficacy. Programs were ineffective, and there was no overall system for selecting which technologies to study. Since completion of the OTA study, Congress has created a National Center for Health Care Technology as part of the Department of Health, Education, and Welfare. This closely parallels one of the policy options presented in the OTA report.

While CT scanners represent a significant step forward in diagnosing illnesses, Willems said they raise issues and problems for health care planners. She said that the way CT scanners and other medical technologies are paid for encourages their widespread use before their efficacy can be assessed.

Willems suggested that reimbursement for services might be made conditional on a determination of a technology's efficacy by direct studies, as is now being done under medicare. One method that has been adopted requires a minimum number of tests for a machine before more are authorized for a given area. This could, however, create pressure on physicians to order that number of tests without many of them being really needed, she warned.

The OTA studies of the efficacy, safety, and costs of medical technologies stem from the 1976 report on the development of medical technologies. Another study in this series on the cost-effectiveness of medical technologies began last fall.

The next OTA staff seminar will be held February 13 at 4:30 p.m. Nancy Shirk will lead a discussion of the problems of and issues raised by residential energy conservation.

[INSIDE OTA—This part of the newsletter is intended for internal distribution. The front part is designed to be of more general interest.]

PROFILES—who we are

OTA is filled with people who possess not only keen but often multifaceted talents. To help us to know one another better, the newsletter will run brief sketches of people.

CAROL DROHAN (Materials)

Recent Accomplishment: Surviving with a smile through three changes of group managers for materials.

Roots: Philadelphia, Pa.

Education: Attended Pierce Jr. College and Temple University.

Professional Background: Worked for National Commission on Supplies and Shortages, Council on Wage and Price Stability, and for the Navy in Hawaii—"I went to Hawaii on vacation and fell in love with it. Almost didn't leave."

How Came to OTA: Job at National Commission was for only 1 year. Talked to Dick Rowberg who suggested seeing Lynn Davis. "They twisted my arm so I left the Commission before my year was up."

Interests: Ray Hoehle; biking, skiing, jogging—"Anything outdoors."

On Life in Washington: Great, exciting, stimulating—"I came here for 1 year and got hooked."

Recent Book Read: *The Russians* by Hedrick Smith.

Best Recent Experience: Getting Chuck Wixom elected softball coach.

Worst Recent Experience: Running up to the Mall against 50 mph winds—"I wonder if it's worth it."

GRETCHEN KOLSRUD (Genetics & Population)

Recent Accomplishment: Hired project leaders for genetics and population assessments.

Roots: Born in Schenectady, N.Y. Also lived in Montreal, and St. Paul, Minn.

Education: BS, genetics, McGill Univ.; MA, biology, Johns Hopkins Univ.; Ph.D., physiological psychology, Johns Hopkins Univ.

Professional Background: Worked in physiological psychology for Honeywell in St. Paul, Minn.; was program manager for flight management and simulation programs at NASA.

How Came to OTA: First heard about technology assessment in 1960s. Bid on an early NSF TA. Lost bid, but retained interest and joined OTA in May 1974."

Hobbies: Makes clothes, gold and silver jewelry; hikes and jogs. Used to fly airplanes, hang glide, and sky dive—"I'd love to fly again but I don't have the time now. To be safe, you have to do it a lot."

On Life in Washington: "I love it—it's an exciting city. Next to Mill Valley, Calif., its about the best." Particularly likes access to hiking areas, cultural centers, restaurants.

Recent Book Read: *Gift from the Sea* by Anne Morrow Lindbergh.

BOB SMITH (Food)

Characterization: "I'm a true OTA renaissance man. I dabble in a little of this and a little of that for the Food Group."

Recent Accomplishment: Coached OTA football team to winning record.

Roots: Born in Queens, N.Y.; grew up in Westchester.

Education: BA, political science, Colgate Univ. Currently working on MBA in science and technology administration from GWU—"At my own expense."

Professional Background: Summer intern for Senate Select Committee on Nutrition.

How Came to OTA: Sort of fell up to it. Committee was on 5th floor and OTA on the 7th floor of Old Immigration Bldg.

Interest: Sailing, tennis, team sports; collects sea shells.

On Life in Washington: Came to Washington because of interest in politics. Finds it a pleasant city, smaller than New York but with many cultural advantages.

Recent Book: *The Contaminant*—"Shows I'm always doing my work." (Environmental Contaminant Study)

Best Recent Experience: Sailing a 16-foot craft against 25 mph winds on Lake Winnipesaukee, N.H.

Worst Recent Experience: Taking Fortran computer course last fall.

Personals

Burke, Hale to Join OTA

Thomas Burke and Samuel Hale will join the OTA staff February 12 in the Science, Information, and Transportation Division. Burke will head OTA's new program for space technology, while Hale will serve as executive assistant to Eric Willis, the newly appointed assistant director.

A Ph.D. chemist, Burke has extensive experience in the space field. From 1968-74, he worked at the Jet Propulsion Laboratory in Pasadena, Calif. There, he conducted research on infrared and trajectory design. Later, he developed mission operation sequences for the Voyager space project. From 1974-76, Burke managed lunar and planetary programs at NASA. For the past 3 years, he has worked on space research and intelligence for the CIA.

A former Air Force pilot, Hale has worked in both the private and public sectors. He has served as an executive assistant first at ERDA and, since 1977, at the Department of Energy. Before that, Hale worked as an aide to former Rep. Walter Powell and was manager for business practices at the General Electric Company.

Also in the Science, Information, and Transportation Division, Doris Smith will join OTA February 12 as division assistant to Willis.

In January, Ray Crowell, Wladimir Naleszkiewicz, and Zalman Shavell began work for the telecommunications and information systems group. Crowell has worked in oversea cable and satellite facilities, as well as international telecommunications programs, for the Federal Communications Commission (FCC).

Nalesziewicz is a Ph.D. economist who comes to OTA from the White House Office of Telecommunications Policy. Previously he worked at FCC in their international and statellite program. Shavell joins OTA from the Federal Reserve Board, where he designed large data bases. He will work on OTA's analysis of electronic funds transfer.

Opinion

We solicit views and opinions of OTA people for this "forum."

Women, Science, and Technology

by M. J. Breton

Less than 2 percent of the patents issued by the U.S. Patent Office have been granted to women. Why such a poor showing? Are women inherently less creative than men? Less interested in science and technology? Hardly. In a male-dominated culture, women have simply been deprived of opportunities to enter science or to receive recognition for their contributions.

Who invented the cotton gin? Eli Whitney you say? You're wrong. It was a Mrs. General Greene who showed her idea to Mr. Whitney who promptly obtained a patent on it in 1793. Who invented the sewing machine? History books credit Elias Howe. But it was his wife who invented it even though the patent issued in 1846 is in his name. Did Cyrus McCormack invent the mower and reaper? No, according to a confidential communication by Mr. McCormack himself. It was a West Virginia woman who, after McCormack and his father had failed in their efforts and had given up, actually thought up the principle of the mowing machine and made a first crude model. The printer's roller and the printing press were invented by farmers' wives.

These facts are among those chronicled in Dr. Elise Boulding's book, *The Underside of History,* in which she says, "The history of humankind has been written as if it were the history of Western man. An otherwise excellent world history widely used in college courses, McNeill's *The Rise of the West* (1963), contains two mentions of women in a thousand pages."

Currently on display at the Museum of History and Technology in the Smithsonian is a small exhibit on 19th century U.S. women of science. The January 1979 issue of *Science* magazine carries a short piece about it. "Since men's colleges (at that time) were reluctant to grant women advanced degrees in science, and since it was not thought that women could combine a family and a career, the recognized scientists portrayed in the show hardly hint at the numbers of women who were actually doing science in the last century." The astronomy curator at the museum, Deborah Warner, points out that many invisible wives of scientists actually collaborated in the work of their husbands. But few of the men were of the husband-calibre of Pierre Curie. Would today's world be different if women had always had opportunities equal to those of men?

Nancy Abrams, a former trailblazing member of the OTA staff, wrote in a paper 2 years ago, "One of the fundamental characteristics of science and technology today and throughout our history has always been, in the words of Dr. Ruth Hubbard (professor of biology at Harvard), that 'science is the product of university-trained, European-American, white, economically privileged males—a very small fraction of the entire range of humanity.' "

Ms. Abrams developed a proposal for an OTA study that would have assessed the effect on the health of our Nation's scientific enterprise of the lack of women and minorities, and what the effect would be on science of a large influx of these previously excluded groups. Her study would have addressed questions such as: Can the characteristics of male science be identified? Would women and minorities approach the study of science differently than white males do? Would they be more inclined toward a holistic rather than a reductionistic approach? Would they define "progress" differently? Would women have different science priorities? What kinds of institutional changes throughout our society are necessary so that whatever new talents appear can be used in science and technology?

In her paper, Nancy Abrams said, "Science may be losing half the talent that might be available to it if women and minorities, who constitute well over 60 percent of the population, were as free to enter the sciences as anyone else. In purely quantitative terms, failure to exploit this resource should be of serious concern to the scientific community." Ms. Abrams' OTA "Women in Science" task force provided much of the substance for legislation Senator Kennedy introduced about a year ago designed to promote the full use of human resources in science and technology through a comprehensive program to help advance women in scientific, professional, and technical careers. Senators Hathaway, Javits, Pell, Williams, Matsunaga, and Muriel Humphrey co-sponsored the bill. It was referred to the Subcommittee on Health and Scientific Research of the Senate Committee on Human Resources. One hearing was held. But the bill never reached the Senate floor for a vote.

Hazel Henderson, author of *Creating Alternative Futures—The End of Economics,* believes that patriarchal technology is killing us, and that women must assert themselves to assume their rightful roles in making technological choices. The survival of humankind could depend on it.

Dr. Margaret Mead, when asked in 1976 if she thought women would change research priorities, replied, "If you are talking about problems that will benefit humanity rather than destroy it, yes."

Holmes Appointed to Metric Committee

Director Peterson has designated John C. Holmes of the Publishing Office as the OTA representative to the Interagency Committee on Metric Policy (ICMP). ICMP was created by the Metric Board to assist and recommend guidelines and policies regarding metrication to the Board in carrying out its mandate as outlined in the Metric Conversion Act of 1975.

Said About OTA . . .

Jordan Baruch, Assistant Secretary for Science and Technology, Department of Commerce, recently praised OTA for its evenhanded reports. Commenting informally at one of OTA's dinner-seminars for business and government leaders on February 8, Baruch said he felt sure he was speaking "for the executive branch."

At the same meeting, Dr. Arthur Bueche, vice president for R&D, General Electric Co., said he was puzzled why OTA was seeking an appropriation of only $11.2 million for FY '80—the same OTA budget as FY '79. He said h viewed OTA as having the potential to "save the Federal Government millions of dollars in missteps and false starts." Bueche noted that he was reflecting the views of the Industrial Research Institute, an association of executives whose companies are responsible for 85 percent of the private R&D in this country.