



SCIENCE & TECHNOLOGY IN CONGRESS

MEDICINE ■ TRANSPORTATION ■ BIOTECHNOLOGY ■ SCIENCE EDUCATION ■ NATIONAL SECURITY ■ COMMUNICATION

MAY
2000

Ehlers Introduces Science Education Bills

As Congress engages in a rancorous debate on reauthorization of the Elementary and Secondary Education Act (ESEA), Rep. Vernon J. Ehlers (R-MI) is promoting a trio of science education bills of his own. The package would establish several new programs designed to improve science, math, engineering, and technology education in grades K-12. It would place a renewed emphasis on teacher mentoring and professional development, and create a tax credit for science teachers.

The proposal also comes just as debate begins to escalate on increasing the number of immigration visas granted to foreign high-tech workers (H-1B visas). The high-tech industry has argued that such an increase is necessary to overcome a severe shortage of American workers. Ehlers, the vice chairman of the House Science Committee, argues that while this may be the only short-term solution to the labor shortage, the best long-term solution is to improve education in the sciences, thus better preparing students for careers in technical fields. Ehlers believes that in 15 years, "it will be impossi-

ble to get meaningful employment" without some understanding of science and technology. Already, he says, industry spends more money retraining high school graduates than the federal government spends on education.

The centerpiece of the three bills is the National Science Education Act (H.R. 4271), which would establish several programs within the National Science Foundation (NSF). The most important is a "master teacher" proposal which would give grants to elementary and middle schools to hire educators who would have the specific responsibility of mentoring young teachers and providing laboratory support. Having an individual responsible for these two key roles would help schools to retain young teachers and encourage better use of hands-on educational materials. H.R. 4271 would also set up programs to train teachers in the use of technology in the classroom, award scholarships to teachers who pursue scientific research, commission a National Academy of Sciences study on the

SCIENCE EDUCATION, continued page 5

White House to Tighten Oversight of GMOs

The growing wave of concern over genetically modified organisms (GMOs), especially in agricultural crops, has led the White House to release a series of steps to increase regulatory oversight. The statement released on May 3 calls for the Council of Environmental Quality (CEQ) and the Office of Science and Technology Policy (OSTP) to conduct a six-month study to assess the interagency regulatory system that provides oversight of these agricultural products. In addition, the Administration is requiring that appropriate agencies develop voluntary labeling guidelines, prepare reliable testing procedures, expand scientific research, and conduct risk assessments of agricultural biotechnology.

The 1986 "Coordinated Framework for Regulation of Biotechnology" requires new biotechnology products to be regulated via existing federal statutes. Hence, three federal agencies are responsible for the regulation of plants and foods created through agricultural biotechnology: the United States Department of Agriculture (USDA), the

Food and Drug Administration (FDA), and the Environmental Protection Agency (EPA). Each agency acts independently and is responsible for a specific aspect of the process, although they are to coordinate activities. The CEQ/OSTP study is to provide an assessment of whether this existing regulatory framework is indeed providing the nec-

GMOs, continued page 4

Also In This Issue *Page*

<i>Stem Cell Research</i>	<i>2</i>
<i>Medical Privacy</i>	<i>3</i>
<i>Status of Major Legislation</i>	<i>6</i>
<i>Reports and Publications</i>	<i>7</i>
<i>Heard Off the Hill</i>	<i>8</i>



Specter, Brownback Clash at Stem Cell Hearing

In the latest chapter of a debate over the controversial issue of human embryonic stem cell research, Senators Arlen Specter (R-PA) and Sam Brownback (R-KS) squared off at an often-emotional hearing on April 26. The hearing, which also featured actor Christopher Reeve, was held by the Labor-HHS Subcommittee of the Senate Appropriations Committee, chaired by Specter.

Research on stem cells derived from human embryos is a relatively new area of biomedical science that offers significant potential for curing disease. However, obtaining such stem cells necessitates the destruction of human embryos, raising serious ethical questions. The National Institutes of Health (NIH), which is funded by the Labor-HHS panel, has proposed guidelines that would allow federal funding of this research, but they are not expected to take effect until later this year. Specter has introduced the Stem Cell Research Act of 2000 (S. 2015), which would give NIH legislative authority to move forward.

Drs. Allan M. Spiegel and Gerald D. Fischbach, both scientists at NIH, opened the hearing with testimony on the science behind embryonic stem cell research. They described the field as holding great potential for major breakthroughs in the treatment of many diseases, from juvenile diabetes to rheumatoid arthritis. However, Dr. Frank E. Young, a former commissioner of the Food and Drug Administration, advocated restricting research to adult stem cells only, which are obtained without the destruction of an embryo. His testimony was echoed by Brownback and Mary Jane Owen, executive director of the National Catholic Office for Persons with Disabilities.

According to written testimony submitted by Spiegel and Fischbach, however, adult cells have not shown as much promise as embryonic cells. “[Embryonic] and adult stem cells are not qualitatively alike,” they wrote. “[Embryonic] stem cells have truly amazing abilities to self-renew and to form many different cell types, even complex tissues, but in contrast the full potential of adult stem cells is uncertain, and, in fact, there is evidence to suggest they may be more limited.” Outlawing research on embryonic cells, Spiegel said, “would be tying one hand behind our back.”

Specter emphasized that the embryos scientists propose using are excess embryos discarded by fertility clinics that have long been routinely destroyed. His bill requires that only these embryos be used and only if the parents who produced the embryos give their consent. However, this argument did not sway his critics, and the debate at times seemed to boil down to the definition of human life. Owen, who is blind and confined to a

wheelchair, described the current pursuit of medical treatments as “frenzied.” She said, “I am deeply opposed to any gain in my sight, mobility, or even my hearing if it was purchased at the cost of a single human life.” In response, Sen. Tom Harkin (D-IA) emphasized that an embryo is no larger than a pencil dot and is not a sentient being.

In the most dramatic exchange of the morning, Brownback likened embryonic stem cell research to experiments the Nazis performed on prisoners in concentration camps during World War II. “You are taking live human embryos in this case, and ... stem cells [will be extracted] from them. You had the Nazis in World War II saying, now these people are going to be killed. Why don’t we experiment on them and find out what happens ...? They’re going to die anyway.”

“They were living people,” Specter interjected.

“These are living embryos,” replied Brownback.

Though the debate had similarities to the abortion debate, the two issues are not entirely parallel. Sen. Harry Reid (D-NV), who describes himself as pro-life, strongly supports embryonic stem cell research, saying we should go “no holds barred.” And Specter argued that unlike a fetus, a discarded embryo such as one that could be donated for research is not “on its way to life.”

S. 2015 also prohibits the sale of such embryos for profit. This is analogous to a ban on the for-profit sale of fetal tissue used in federally funded research. Specter and his supporters contend that profiteering from the sale of human embryos would be less likely to occur in private sector research if the federal government enters the field. If federal funding is approved, they argue, the resulting NIH guidelines will be followed voluntarily by many private organizations.

Also testifying at the hearing, were Reeve, who was paralyzed in a horse-riding accident, and Jennifer Estess, an actress who suffers from Lou Gehrig’s Disease. Both hailed embryonic stem cell research and the potential it shows for treatments of their diseases. “Is it more ethical for a woman to donate unused embryos that will never become human beings,” Reeve asked, “or to let them be tossed away as so much garbage when they could help save thousands of lives?”

Specter plans to hold more hearings on embryonic stem cell research in the coming months as he works to pass S. 2015. Although Senate Majority Leader Trent Lott (R-MS) pledged as part of a compromise to bring the bill to the floor during the current session, he and several key senators signed a letter to NIH opposing this research and will likely work to defeat the bill. Should the bill pass the Senate, its prospects in the House are unknown. ■

Update on Medical Privacy

In the past, an individual would see the same family doctor throughout his or her lifetime with all supporting medical information in one file. In today's world of health care an individual will see numerous practitioners, specialists, and institutions to obtain the same health coverage. This delivery of service is maintained by medical records filed in a decentralized fashion. While the necessity for medical practitioners to share information in order to provide optimal health care is not generally disputed, public concern over the confidentiality of personal information in such a complex web is growing.

With the advent of information technology, medical information is now compiled in both old-fashioned print as well as electronic form. The ease with which personal medical records can be compiled, distributed, and analyzed is increasing. However, this ease is a double-edged sword. On one hand, it can help to forge the necessary links between medical providers in the maze of health care delivery. Unfortunately, it also allows easy access to private and confidential information without the consent of each patient.

Congress wisely recognized that the subject of medical privacy is of mounting importance and included a provision in the Health Insurance Portability and Accountability Act of 1996 (HIPAA) to direct the Secretary for Health and Human Services (HHS) to develop regulations by February 21, 2000 if Congress failed to pass privacy legislation by August 21, 1999. Unfortunately, the making of public policy is just as complex as the delivery of health care, and Congress failed to meet its statutory deadline although a total of five bills had been introduced in the House and Senate. While all interested parties agree that comprehensive medical privacy legislation is necessary, the proverbial devil is in the details. Issues such as federal preemption of state laws, whether legislation should cover both electronic and paper records, covered entities, law enforcement access to medical records, definition of necessary versus confidential identifiers, and a citizen's right to sue all contributed to a legislative stalemate.

With the August deadline past, HHS Secretary Donna Shalala was free to begin promulgation of federal regulations governing medical records and issued a first draft on November 3 for public comment. The draft regulation drew 52,000 comments (of which 45,000 were form letters), and the comments received reflect the continued conflicts that stalled Congress. The Senate Committee on Health, Education, Labor and Pensions conducted a hearing in April on the subject of the HHS proposed rules highlighting the diversity of opinion.

A hindrance to the process of developing standards for medical privacy is that HIPAA limits HHS authority. However, the agency worked within the language to extend its regulatory reach. For example, only three types of entities are required to follow the new rules: health plans, health care providers, and health care clearinghouses that transmit medical information. The HHS draft regulation does require that these entities secure contractual assurance from their downstream business partners and users of data to safeguard the information. Insurance groups contend that HHS is overextending its authority and that such requirements would only add a cumbersome layer of bureaucracy.

An important limitation to the scope of HHS jurisdiction was preemption of state laws. Though no federal law exists to provide a national standard, many states have passed privacy legislation—some strong, some lenient. The proposed HHS regulation as written would essentially set a floor for the minimal protection required at the national level, leaving states to create stricter legislation if they desire. Most groups almost across the board agree that the federal government should set a ceiling and preempt state laws. Patient groups note that in today's health care system a patient can go across state lines for service. Uniform privacy protection is therefore vital. Insurance groups also note that determining if a single state law is below or above federal compliance would be a logistical nightmare. They recommend that if the "floor" standard remains, HHS should provide an overview and comparison of current state laws.

Another controversial issue is the means in which data are stored. HHS was limited to setting privacy standards for electronic and not paper information. A dilemma that faced the agency was how to consider data that is in electronic form and then printed. HHS expanded its coverage to include all electronic data, as well as printed information that had been distributed at some point through electronic means. Patient rights and privacy groups expressed concern that an individual's file could then be comprised of a mixture of protected and unprotected information and thereby have no true security. They also counter that such restrictions would discourage institutions from converting data from paper files to computer databases. The groups hold the opinion that Congress should extend legislative authority to HHS to include both electronic and printed information in the final privacy standards.

HHS expects to finalize the regulations by late summer. ■





essary oversight and make recommendations to improve the system where appropriate.

At the same time the FDA announced that it would initiate requirements that it be informed at least 120 days before any firm introduces a new biotechnology product. Currently, companies may voluntarily consult with the FDA before introducing a new food item into the market. Now these same firms must allow the FDA sufficient time to review these products for safety before the items can be commercially sold.

The FDA also plans to develop a set of guidelines that will allow companies to voluntarily label food that contains biotechnology ingredients. This voluntary standard is to ensure that labels are truthful, not misleading, and easy to interpret by the average consumer. The FDA will publish draft guidelines for public comment before formally promulgating them.

Other details of the Administration initiatives include USDA plans to work with farmers and industry to create testing procedures for distinguishing non-transgenic crops from genetically altered ones. Currently the USDA allows crops to be mixed together before and after harvesting. This practice has caused some foreign nations that fear GMOs to restrict importation of U.S. crops, since it cannot be easily determined if they are free of genetic alteration. By establishing testing procedures, farmers will be able to separate their crops to improve marketability. In addition, the USDA will provide farmers with up to date information on market restrictions around the world in order that they can determine whether they should continue to plant genetically altered seeds, whether to introduce new varieties, and where to market their crops after harvest.

The good news for the scientific research community is that the USDA, in cooperation with the FDA and EPA, plans to launch a program of competitive, peer-reviewed awards to provide more information behind public health and environmental safety issues. No actual dollar amounts were included in the Administration's initiative, so it will fall to the legislative branch to appropriate funding.

Though the White House focuses mainly on domestic issues, the plan does include some activities designed to reach out to other nations. The State Department, USDA, FDA, and EPA plan to develop a series of projects to educate the public, both within the United States as well as abroad, on the existing mechanisms for regulating agricultural biotechnology crops and foods. In addition, the interagency initiative will focus on how existing U.S. regulations protect public health and the environment.

Congress is also weighing in on this controversial subject. Rep. Dennis Kucinich (D-OH) introduced two bills designed to improve consumer awareness of and ensure public safety against GMOs. The Genetically Engineered Food Right to Know Act (H.R. 3377) would require that all foods that contain genetically altered materials bear labels. The bill states that consumers have a right to know whether the food they consume contains potential allergens or could compromise dietary restrictions. H.R. 3377 would impose civil penalties up to \$100,000 for violating the labeling requirements. A second bill introduced by Kucinich, the Genetically Engineered Food Safety Act (H.R. 3883) would regulate food containing GMOs as a food additive and require testing for allergenicity, toxicity, and other side effects. Sen. Barbara Boxer (D-CA) introduced a Senate version of H.R. 3377 (S. 2080) and Sen. Patrick Moynihan (D-NY) introduced a companion of H.R. 3883 (S. 2315). Neither of the bills in either chamber has been voted on by any of the referral committees.

Also stepping into the fray is the Basic Research Subcommittee of the House Science Committee, which released a report last month supporting continued use of agricultural biotechnology. *Seeds of Opportunity: An Assessment of the Benefits, Safety, and Oversight of Plant Genomics and Agricultural Biotechnology* was prepared by subcommittee Chairman Nick Smith (R-MI) and is based on a series of hearings held on the subject. The report takes the position that there is no scientific justification for labeling food products that contain GMOs, and that federal regulatory oversight should focus primarily on the characteristics of the plant rather than the method used to produce it. It notes that the risks associated with genetically altered plants such as exposure to allergens, increasing toxicity levels, and creating "superweeds" are the same for plants bred through traditional techniques.

The backlash against genetically altered plants took Europe by storm and is now slowly creeping into the United States. Fear of consumer recoil has even prompted some U.S. companies to cease incorporating GMOs into their food products altogether. The White House initiative is just a first step in trying to stem the tide that swept through Europe. ■

For timely and detailed updates on appropriations, visit the AAAS R&D Budget and Policy Program website at www.aaas.org/spp/R&D.

use of technology in the classroom, and create a working group to identify and publicize strong curricula nationwide.

The second bill (H.R. 4272) addresses programs in the Department of Education. It would amend ESEA to place new emphasis on mentoring of young teachers, authorize peer-reviewed professional development institutes, and establish science after-school programs. The third bill (H.R. 4273) takes on tax issues, creating a 10-year, \$1,000-a-year tax credit for teachers who attend rigorous, content-based preparation programs, and several tax incentives to encourage partnerships between schools and industry.

While Ehlers hopes to move H.R.4271 quickly through the Science Committee, the other two bills face additional hurdles in the Education and the Workforce, and Ways and Means Committees. A tight legislative calendar, meanwhile, presents a challenge for all three bills.

Despite these obstacles, Ehlers is optimistic and has won support from several key members on both sides of the aisle. Rep. Sherwood L. Boehlert (R-NY) appeared alongside Ehlers to introduce the bills and predicted that the "leadership will be very receptive." Among the 41 members who have signed on to H.R. 4271 are Rep. Tom Davis (R-VA), chairman of the National Republican Congressional Committee, and Rep. Martin Frost (D-TX), chairman of the House Democratic Caucus. Sen. Pat Roberts (R-KS) recently introduced companion bills (S. 2622, 2623, and 2624) on the Senate side.

Also expressing support for the package is a broad array of organizations representing scientists, educators, and industry, including Dr. Leon Lederman, a Nobel prize-winning physicist. Said Lederman, "The formula for safe passage into the 21st century is science education."

At a May 17 hearing held by the House Science Committee, two educators and an industry representative expressed strong support for H.R. 4271 and described an urgent need to attract more students into science and engineering as well as more scientists and engineers into teaching. John

Boidock, the vice president of government relations at Texas Instruments, described a severe shortage of electrical engineers hampering his company and showed that the number of students entering this field is declining. He testified that many students do not appreciate the relevance of technical fields to their everyday lives. Jeffrey I. Leaf, a high school technology instructor representing the American Society of Mechanical Engineers, echoed this concern. It is "exciting to do science but not necessarily to have it taught to you," he explained in support of the bill's efforts to aid teachers and encourage development of good curricula. He also expressed concern about the misconception that only students who receive straight-A's in science and math can be successful engineers.

NSF, meanwhile, has been noncommittal about the bill so far. Dr. Judith S. Sunley, Assistant Director (Interim) of Education and Human Resources at NSF, was scheduled to testify at the Science Committee hearing, but Chairman F. James Sensenbrenner, Jr., (R-WI) excused her from the panel for failure to submit advance copies of her testimony as required by committee rules. In the statement she planned to deliver, she strongly praised the goals of the bill, but wrote that "both the spirit underlying the bill and the types of actions suggested are implemented in extant NSF activities."

Ehlers argues that science education is not only critical to our high tech economy but is also becoming more important in day-to-day life. In the introduction to his bills, he writes, "Our society is now based upon technology and information, and in this new century the most valuable commodity is knowledge. ... [T]he key to success is no longer acquiring information but rather analyzing and processing that information. To be wise consumers, intelligent voters, and coveted employees our citizens will need to know the skills of science—collecting data, evaluating evidence, finding trends, designing experiments."

The Science Committee plans to hold oversight hearings in the near future on H.R. 4272 and H.R. 4273. ■



Science & Technology in Congress (ISSN# 1096-0406) is published by the Center for Science, Technology, and Congress at the American Association for the Advancement of Science (AAAS). It is distributed eight times per year: February through August and October. Issue Updates are published periodically to supplement the bulletin.

AAAS is a non-profit, non-partisan organization. Since it was founded in 1848, AAAS has been dedicated to the advancement of scientific knowledge for the good of society as a whole. Comments and suggestions on the bulletin and information on upcoming congressional science and technology activities are welcome. This bulletin has not been reviewed or endorsed by the AAAS Board or Council.

To subscribe, contact the Center for Science, Technology, and Congress at 202/326-6600. Subscriptions are free for congressional staff; \$40 for others. Please send address changes to: *Science & Technology in Congress*, AAAS, 1200 New York Avenue, NW, Washington, DC 20005; telephone: 202/326-6600; fax: 202/289-4950; e-mail: congress_center@aaas.org. Information about the Center is also available on the Internet at www.aaas.org/spp/cstc.

Albert H. Teich, Director
Science and Policy Programs

Joanne Padrón Carney, Assistant Director
David G. Cooper, Project Coordinator



Status of Major Legislation

EDUCATION

NATIONAL SCIENCE EDUCATION ACT

H.R. 4271

Introduced by Rep. Vernon J. Ehlers (R-MI). A bill to establish and expand programs relating to science, mathematics, engineering, and technology education, and for other purposes. 4/13/00 Referred to the Committee on Science, and in addition to the Committee on Education and the Workforce. 5/17/00 Science Committee Hearings Held. *See also the companion bill S. 2624.*

NATIONAL SCIENCE EDUCATION ENHANCEMENT ACT

H.R. 4272

Introduced by Rep. Vernon J. Ehlers (R-MI). A bill to amend the Elementary and Secondary Education Act of 1965 to establish and expand programs relating to science, mathematics, engineering, and technology education, and for other purposes. 4/13/00 Referred to the House Committee on Education and the Workforce. *See also the companion bill S. 2623.*

NATIONAL SCIENCE EDUCATION INCENTIVE ACT OF 2000

H.R. 4273

Introduced by Rep. Vernon J. Ehlers (R-MI). A bill to amend the Internal Revenue Code of 1986 to encourage stronger math and science programs at elementary and secondary schools. 4/13/00 Referred to the House Committee on Ways and Means. *See also the companion bill S. 2622.*

S. 2545

Introduced by Sen. Pat Roberts (R-KS). A bill to provide for the enhancement of study, research, and other activities in the United States relating to information technology and information protection technology. 5/11/00 Read twice and referred to the Committee on Health, Education, Labor, and Pensions.

DEFENSE

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2001

H.R. 4205

Introduced by Rep. Floyd Spence (R-SC). To authorize appropriations for fiscal year 2001 for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe personnel strengths for such fiscal year for the Armed Forces, and for other purposes. 5/18/00 Passed House by recorded vote: 353-63. *See also companion bills S. 2549 and S. 2550.*

CYBER SECURITY

CONTINUED REPORTING OF INTERCEPTED WIRE, ORAL, AND ELECTRONIC COMMUNICATIONS ACT

S. 1769

Introduced by Sen. Patrick J. Leahy (D-VT). A bill to continue reporting requirements of section 2519 of title 18, United States Code, beyond December 21, 1999, and for other purposes. 5/2/00 Signed by President. Became Public Law No: 106-197.

E-COMMERCE

INTERNET NONDISCRIMINATION ACT OF 2000

H.R. 3709

Introduced by Rep. Christopher Cox (R-CA). To extend for 5 years the moratorium enacted by the Internet Tax Freedom Act, and for other purposes. 5/10/00 Passed House by recorded vote: 352 - 75. 5/18/00 Placed on Senate Legislative Calendar under General Orders. Calendar No. 556.

PRIVACY

PRIVACY COMMISSION ACT

H.R. 4049

Introduced by Rep. Asa Hutchinson (R-AR). To establish the Commission for the Comprehensive Study of Privacy Protection. 3/21/00 Referred to the House Committee on Government Reform. 3/29/00 Referred to the Subcommittee on Government Management, Information and Technology. 5/16/00 Subcommittee Hearings Held.

CONSUMER FINANCIAL PRIVACY ACT

H.R. 4380

Introduced by Rep. John J. Lafalce (D-NY). A bill to strengthen consumers' control over the use and disclosure of their personal financial and health information by financial institutions, and for other purposes. 5/4/00 Referred to House Banking and Financial Services Subcommittee on Financial Institutions and Consumer Credit. 5/4/00 Referred to House Commerce Subcommittee on Finance and Hazardous Materials.

METRIC SYSTEM

H.R. 4414

Introduced by Rep. Vernon J. Ehlers (R-MI). To amend the Metric Conversion Act of 1975 to require Federal agencies to impose certain requirements on recipients of awards for scientific and engineering research. 5/10/00 Referred to the House Committee on Science. 5/15/00 Referred to the Subcommittee on Technology.

Reports and Publications

CONGRESSIONAL RESEARCH SERVICE

Copies of CRS reports for congressional use are available by calling 202/707-7132.

Global Climate Change: A Survey of Scientific Research and Policy Projects (RL30522). This report is a guide to U.S. global climate change policy since 1978. It includes a summary of scientific research on global climate change and related U.S. policy and identifies important milestones in the international policy debate. The paper includes a listing of reports that have underpinned the debates.

The National Aeronautics and Space Administration's FY2000 Budget: Description and Analysis (RL30154). This report provides an overview of the NASA budget request by major program area. It includes a discussion of the general functions of each of those programs and highlights of activities planned for FY 2000. It also discusses key issues that could be considered by Congress as it reviews the FY 2001 budget request.

GENERAL ACCOUNTING OFFICE

Copies of GAO Publications are available by calling 202/512-6000 or via the Internet at <http://www.gao.gov>.

Managing for Results: EPA Faces Challenges in Developing Results-Oriented Performance Goals and Measures (RCED-00-77). This report determines the extent to which EPA's performance goals and measures focus on end outcomes, intermediate outcomes, or outputs; identifies any challenges the agency faces in developing additional performance goals and measures; and describes the initiatives the agency is taking to address any identified challenges.

Privacy Standards: Issues in HHS' Proposed Rule on Confidentiality of Personal Health Information (T-HEHS-00-106). This testimony examines HHS' proposed regulation in terms of its legal authority to act, as well as assesses the reaction from interested parties. The statement provides an assessment of the overall pattern of public responses to the rule among a selected group of 40 organizations representing different constituencies affected by the rule, and identifies concerns that would require legislative action to address.

Advanced Technology Program: Inherent Factors in Selection Process Could Limit Identification of Similar Research (RCED-00-114). This report examines whether ATP had funded projects with research goals that were similar to projects funded by the private sector, and whether the award selection process ensures that such research would not be funded in the future. Of the three completed ATP-funded projects, which were approved for funding in 1990 and 1992, the report found that they addressed similar research goals to those already funded by the private sector.

Joint Strike Fighter Acquisition: Development Schedule Should Be Changed to Reduce Risks (NSIAD-00-74). This report reviews the acquisition strategy of the JSF program, and analyzes whether the strategy is being implemented in a manner that will ensure that the acquisition strategy objectives will be achieved. The report recommends that the JSF program office adjust its currently planned engineering and manufacturing development decision date of March 2001 to allow adequate time to mature critical technologies to acceptable levels before awarding the contract.

NATIONAL ACADEMY OF SCIENCES, NATIONAL ACADEMY OF ENGINEERING, INSTITUTE OF MEDICINE, NATIONAL RESEARCH COUNCIL

Government offices may obtain single complimentary copies by calling the Office of Congressional and Government Affairs at 202/334-1513. Others may order copies from the National Academy Press by calling 800/624-6242 or via the Internet at <http://www.nap.edu>.

Inquiry and the National Science Education Standards: A Guide for Teaching and Learning (ISBN: 0-309-06476-7). This book is a practical guide to teaching through inquiry, as recommended by the National Science Education Standards. "Inquiry" refers to the diverse ways in which scientists study the natural world and in which students grasp science knowledge and the methods by which that knowledge is produced. This book explains and illustrates how inquiry helps students learn science content, master how to do science, and understand the nature of science.

Commercial Aviation Security: Integrating People and Equipment to Improve Threat Detection (ISBN: 0-309-07153-4). This report examines technologies for detecting explosives and weapons and offers recommendations to assist decision-makers as they tackle the critical problem of preventing terrorist attacks against commercial aviation. It also addresses integrating human operators into total security systems, and the balance between encouraging technology innovation and ensuring the peak performance of deployed equipment.

Clearing the Air: Asthma and Indoor Air Exposures (ISBN: 0-309-06496-1). This book examines how indoor pollutants contribute to asthma – its causation, prevalence, triggering, and severity. It discusses asthma among the general population, including children, low-income individuals, and urban residents. The book also evaluates the scientific basis for mitigating the effects of indoor air pollutants, and identifies priorities for public health policy, public education outreach, preventive intervention, and further research.



HEARD OFF THE HILL



Mischievous Felines. Cat got your keyboard? Not to worry—"PawSense" is just the solution. This new program is designed to detect those signature keystrokes caused by your cat waltzing over your computer. In such an event, the software immediately disables your keyboard and emits a hissing noise designed to scare the cat away. If you have a particularly stubborn cat, you can install your own specialized audio—like the neighbor's dog, perhaps? And just because you don't have a cat, that doesn't mean you should rest easy—another pressing societal need will be met with the forthcoming "BabySense." *Science* May 19, 2000

Lefty Materials. Scientists have found many ways to affect the passage of light through different materials, bringing us such devices as the telescope and polarized sunglasses. Now, two physicists at U.C. San Diego have developed a medium in which light behaves backwards. A ray of light consists of electric and magnetic fields oscillating in concert. The orientation of the two fields determines the direction in which the light travels—a relationship physicists call the "right hand rule." In a "left-handed" material, however,

the light moves backwards, and all kinds of strange effects arise. For example, light refracts in the wrong direction; so if water were a left-handed material, and one were to dip a pencil in it, instead of magnifying the pencil, the water would make it look smaller. Particularly remarkable is the fact that this new material is made entirely of ordinary copper arranged in a carefully calibrated array of tiny rings and wires. The researchers hope to find applications for their discovery in the telecommunications industry. *American Institute of Physics* March 24, 2000

Stickers. New protection for sunbathers has been developed at the Technion-Israel Institute of Technology in the form of the "Sticker." A dime-sized patch worn on the skin or clothing, this device changes color when the wearer has had too much sun. Excessive exposure to ultraviolet (UV) radiation from the sun has been shown to cause skin cancer and premature wrinkling. While instruments exist that measure the intensity of UV radiation, the Sticker is designed to measure the accumulation of radiation over time. There are versions of the Sticker for use with and without sun screen, and for six different skin types. *EurekAlert!* May 24, 2000

 AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE
Center for Science, Technology, and Congress
1200 New York Avenue, NW
Washington, DC 20005
Address Change Requested