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Congressional Research Service

Report for Congress

Science and Technology Issues: 105th Congress, First Session

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97-125 SPR
January 17, 1997

SUMMARY

Major issues may include review of goals and operations of the Food and Drug Administration, implementation of the Telecommunications Act of 1996 including the "V-chip" to assist parental control of television access by children, data encryption and its potential effects on law enforcement and national security activities, the effects of potential changes in the Department of Energy on its R&D program, technical aspects of restructuring of the electric utility industry, public health implications of reauthorization of the 1990 Clean Air Act, the controversy over the Persian Gulf syndrome, transportation safety and technology aspects of re-authorization of the Intermodal Surface Transportation Efficiency Act, and the future of the space station in view of continued problems with Russian participation.

The impact of budget balancing on federal research and development (R&D) funding is likely to remain an issue of note. Projections call for a substantial decline in total federal R&D funding by FY2002. Whether this happens, and, if so, how it will be apportioned among the various R&D funding agencies and their programs likely will be major foci of debate. Closely intertwined will be continued examination of the proper federal role in supporting the national R&D effort. While Congress appears supportive of a strong national program, there is considerable disagreement about the limits of the federal contribution.

ISSUES<1>

Biomedical Research

Biomedical research, supported principally by the National Institutes of Health (NIH), consumes about a third of federal civilian R&D dollars. Congress provided NIH with a 6.9% increase in funding for FY1997 above FY1996, by far the largest for any R&D funding agency (**IB96014**). With continuing pressure to balance the budget by 2002, however, it seems very questionable whether such increases can

continue. This coming session may see a flat or declining NIH appropriation. If so, priority setting among the NIH units, between laboratory and clinical research, and between intramural and extramural programs, may be particularly difficult and contentious. A related issue is the decline of resources for

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programs, may be particularly difficult and contentious. A related issue is the decline of resources for clinical research available to academic medical facilities as a result of the growth of managed care programs. Proposals to make up some of these lost resources through NIH may be introduced.

For FY1998, the Congress will again be faced with balancing the needs of medical research funding with those of other discretionary programs. In addition, Congress will consider reauthorization legislation for NIH. A bill passed the Senate in 1996 (Kassebaum, "NIH Revitalization Act of 1996," S. 1897, S.Rept. 104-364) but was not considered in the House. The Senate bill extended various authorizations through FY1997, added focus on several disease research areas, and had provisions for encouraging clinical research, converting the Human Genome Center to an Institute, reducing NIH administrative structure, and establishing a trust fund for biomedical research (**95-96 SPR**). Potentially contentious issues related to the use of human fetal tissue or human embryos in research were not covered in the Senate bill but may be debated in the 105th Congress (**95-910 SPR**).

Public and Environmental Health

Efforts to reform the Food and Drug Administration (FDA) were a significant legislative priority of the 104th Congress (**IB96004**). Senate and House committees considered major initiatives to reform the agency, but legislation was not enacted before adjournment. Some elements of these proposals were incorporated in other legislative measures that were enacted (such as export of unapproved drugs, biologics and devices in P.L. 104-134; streamlining animal drug regulation in P.L. 104-250; and delaying FDA's voluntary patient information "MedGuide" proposal in P.L. 104-180). Controversial FDA reform issues not acted on, such as third-party review, drug information dissemination, and clinical research requirements, may be introduced in the 105th Congress. The Prescription Drug User Act of 1992, whose authorization expires in 1997, may be a legislative vehicle for reform proposals.

In environmental health, issues associated with undiagnosed diseases in Persian Gulf Veterans will likely be a topic of legislative activity. Moreover, the Environmental Protection Agency recently published a proposal to tighten the clean air standards related to ozone and particulates. Public health implications of that proposal probably will be the subject of congressional oversight and scrutiny as will public health issues related to Superfund reauthorization. The Occupational Health and Safety Administration is investigating ergonomic risks in the workplace that may be subject to oversight attention from the 105th Congress.

The 104th Congress passed the "Partial-Birth Abortion Ban Act of 1995 (H.R. 1833), but it was vetoed by President Clinton. The bill would have made it a crime to perform a so-called "partial-birth" abortion, unless it is necessary to save the life of a mother (**95-1101 SPR**). President Clinton's stated he would sign a bill amended to add an exception for "serious health consequences." This legislation will likely be debated again in the 105th Congress.

Global Change

Members of Congress, particularly those from farm states, are interested in the possible repercussions of regulating the use of methyl bromide in planting and post-harvest applications. The chemical is suspected of contributing to stratospheric ozone depletion. The 1990 Clean Air Act requirements about use and phase-out of methyl bromide may be reviewed, and Congress may consider whether the Environmental Protection Agency should permit special allowances for essential uses after the January 2001 phaseout (**96-959 SPR**).

Climate change is also a topic of continuing congressional interest (**IB89005**). While many argue that policy action to reduce emissions should be taken now, others argue for delay citing scientific uncertainty and the need to expand future options. Federal agency programs that fund global change research have been reduced in the past two years, and reductions are expected to continue in the 105th Congress. Congressional review of these programs to ensure that they contribute usable information on which policy choices about potential global change can be made is likely to be an important activity in the coming session. In December 1997, a Protocol to the Framework Convention that would set binding limits and deadlines on emissions of greenhouse gases past 2000 is scheduled for completion.

Transportation

Legislation passed during the 104th Congress increases security at the Nation's largest airports (**96-872 SPR**). Congress may further consider the level of security needed, the impact of new security devices and procedures on passengers' health and privacy, and public acceptance issues. In addition, the relatively large number of commercial aircraft fatalities last year may result in congressional efforts to review the safety of the Nation's airlines.

The surface transportation focus for the 105th Congress is likely to be on reauthorization of the Intermodal Surface Transportation Efficiency Act (ISTEA). Several provisions of the Act are designed to improve highway safety, and Congress may examine the efficacy and costs of these programs. In addition, funding levels and goals of the Intelligent Transportation Systems program, also an ISTEA provision, are likely to be important issues. Recent events have shown that under certain conditions air bags can be lethal. The 105th Congress is likely to investigate this situation and may consider corrective legislation (**96-901 SPR**).

Energy

A major energy issue facing the 105th Congress most likely will be restructuring of the electric utility industry (**IB96003**). While the debate is focused primarily on economic aspects, there are serious questions about the potential effect of restructuring on power supply reliability and the technical feasibility of open transmission access. In addition, many are concerned about the impacts of a more competitive market on renewable energy development and energy conservation (**IB93063 and IB95085**). Another potential issue is the effectiveness of federal programs to enhance energy conservation and renewable energy development, particularly the joint government/auto industry Partnership for a New Generation of Vehicles. At issue is how best to reduce oil import dependency and the environmental effects of energy production.

There may be renewed attempts to eliminate or dramatically reconfigure the Department of Energy (**IB96020**). Such actions could have significant impact on the DOE's R&D programs. Much of that research is carried out at the DOE laboratories which could be closed or sharply cutback in any move to change DOE (**IB95110**). In addition, many in Congress would like to reduce funding for DOE energy conservation and supply R&D, while maintaining its basic research efforts, regardless of its fate as a cabinet agency. Of particular interest is the DOE fusion program which has recently been scaled back substantially (**IB91039**).

Space

NASA's declining budget and resulting restructuring, progress on the space station program, and space commercialization are framing the debate over the FY1998 civilian space budget (**95-336 SPR**). Whether Congress can continue to rein in NASA funding and still permit the diverse set of programs it has in human spaceflight, science, technology and aeronautics continues to be a question. The space station program continues to be controversial, especially the role of Russia (**IB93017**). Turning some NASA activities (such as space shuttle operations) over to the private sector, and creating incentives for private companies to invest in space-based research, are among options being debated (**IB93062**).

Military space programs are enjoying a relatively stable budget and congressional and administration support (**IB92011**). The most controversial issues involve the National Reconnaissance Office (NRO), an agency within DOD that builds reconnaissance satellites. One debate concerns the potential for reducing the size (and hence the cost) of reconnaissance satellites, while another focuses on management of NRO itself which, in 1995 and 1996, was discovered to have amassed almost \$4 billion in unspent funds. Other issues include continuing efforts to integrate planning for military and intelligence space activities better, and whether to resume development of an anti-satellite capability.

Telecommunications and Computers

Oversight of Federal Communications Commission (FCC) by the 105th Congress may include FCC efforts to implement the provisions of the 1996 Telecommunications Act, including universal service and related proposals to connect schools and libraries to the Internet, and interconnection to the local telephone network (**IB95067**). Congress may also debate federal funding to support the development of the National Information Infrastructure (NII) (**IB95051**) and is likely to consider intellectual property issues related to digital transmission and database protection. Congress may establish a commission to investigate and suggest remedies for the "year 2000" computer problem (**96-533 SPR**).

The Telecommunications Act requires installation of a device called a "V-chip" in most future television sets to block the display of television shows with ratings that parents consider unacceptable for their children. By February 8, 1997 the television industry is required by the Act to develop a "voluntary" ratings system acceptable to the FCC. The industry developed such a ratings system, and in accordance with the Act, the FCC must decide whether to approve it or create its own. Congressional views are split on the industry proposal (**97-43 SPR**).

Increased interest in the use of data encryption to ensure privacy and security has resulted in sharp debate over what access the government should have to encrypted information for law enforcement or national security purposes. The debate in the upcoming session is expected to focus on export policies for strong encryption products, and the use of "key recovery" to allow court-ordered government access to the key required for decryption (**IB96039**).

The management of the radio spectrum is another topic likely to receive legislative attention in the 105th Congress either through budget proposals or in separate bills (**95-923 SPR**). Concerns about revenue goals driving spectrum policy and potential inequities in issuing free advanced television spectrum licenses without the use of auctions are likely to dominate the debate (**96-74 SPR**).

Research and Development Budget

Given fiscal restraints and because reductions were smaller than anticipated for FY1997, R&D funding for FY1998 may face significant challenges in the 105th Congress. Total federal civilian R&D spending in constant dollars is less for FY1997 than in FY1965 (**IB96014**). The Clinton Administration may argue for increased federal expenditures for civilian technology development and continued support for civilian basic research. The Congress, however, may be interested in reducing or eliminating funding of many applied research and technology-development programs, while continuing support of basic and mission-oriented research. In addition, all sides will be looking for greater efficiencies in spending federal R&D dollars (**IB94009**).

Budget pressures are also intensifying concern about the health of the nation's research infrastructure -- its laboratories, equipment and facilities. Part of the reason that universities are seeking new sources of funding, including more private sector support, is to make up for reduction in federal funds used to maintain their research equipment and laboratories. In addition, the federal laboratories are finding that a greater share of R&D budgets are used just to support their major research facilities. Some argue that the solution to this problem is more efficient use of R&D funds, including closure of some laboratories.

Closely related to R&D budget concerns is implementation of the Government Performance and Results Act (GPRA), P.L. 103-62, which requires that federal agencies move toward performance budgeting by the year 2001. During the 105th Congress, committees may seek more oversight of R&D agencies as they continue to implement GPRA (**97-70 SPR**).

Technology Development

The 105th Congress is expected to continue the debate over the role of the federal government in technology development (**IB91132**). Many in Congress argue that federal support of these programs should be halted and replaced by incentives such as tax credits, to provide the additional capital resources necessary for expanded private sector investment in R&D. Also being explored are the benefits and costs of alternative and/or complementary efforts to facilitate technological progress,

including cooperative R&D activities, joint manufacturing ventures, industry-university collaboration, and expanded use of intellectual property rights (IB89056). Of growing interest is the role of states in supporting technology development and R&D in general.

Defense Research and Technology

Currently, R&D funding makes up 15% of the entire defense budget, up from a 20-year average of around 12%. Some Members contend that this is too high, while others believe that additional funds are needed (IB96014). A major point of contention is the ballistic missile defense (BMD) program. With current funding 23% higher than what the Administration had requested for FY1997, BMD is the largest (\$3.4 billion) R&D program in the federal government. Specific issues within this debate include the problems in testing of the Theater High Altitude Air Defense (THAAD) missile system and the costs of a National Missile Defense system.

This year DOD will reassess its basic military strategy and required force structure. There is likely to be continued pressure both from Congress and the Administration to increase funding for modernization. Such actions could result in increases in the development portion of the R&D budget and a concomitant decline in the science and technology portion. Other issues that may be revisited include dual-use programs -- technologies with both civilian and defense applications, and the Joint Strike Fighter program. Finally, DOD's basic research program may also receive congressional attention about its relevance to DOD's overall mission.

A related defense issue concerns the Department of Energy's nuclear weapons stockpile stewardship and management program. The program is based on science and technology to maintain the stockpile, and some in Congress believe it is not being adequately developed by DOE. Others believe that DOE is building a more elaborate scientific infrastructure than is needed to maintain a credible nuclear deterrent. This issue is likely to be debated during consideration of defense authorization and DOE appropriations (IB97002 and IB92099).

Endnotes

<1> Relevant CRS reports and issue briefs are cited by number in the text. These documents can either be viewed in their entirety on the CRS Home Page, <http://www.loc.gov/crs>, or ordered from CRS by calling 7-7132.