

## Research for "Precompetitive Generic Technologies" to be Funded

The Commerce Department's Technology Administration, through its Advanced Technology Program, is ironing out rules which will allow it to offer funds for new "precompetitive generic technologies." It breaks this buzzword phrase down by defining "generic technology" as any concept, component or process, or the further investigation of scientific phenomena, that is potentially applicable to a broad range of products or processes across many industries. It characterizes "precompetitive technology" as R&D activities "up to the stage" where technical uncertainties are identified enough to permit assessment of commercial potential.

A key component of the strategy is the grouping together of various businesses, government agencies and universities.

This is consistent with the consortium-building strategy that has been the recommendation of a variety of national policy studies and the topic of Congressional hearings. The Bush administration is very sensitive to the fact that U.S. concerns are not cooperating as well as they could be in key technology areas.

According to proposed rules, grants will be based on five factors: (1) scientific and technical merit of the proposal (30%); (2) commercial benefit of the proposal (15%); (3) technology transfer benefits of the proposal (15%); (4) experience and qualifications of the proposing organization (20%); and (5) proposer's level of commitment and organizational structure (20%).

The program attempts to incorporate an enlightened view of intellectual property rights, creating a balance between the expected societal good and the need to provide realistic incentives to companies willing to channel their energies into such

a program. The emphasis is on "preserving the right" of the awardee to obtain patents and copyrights while the government becomes a licensing arm.

Authorized near the end of the Reagan administration, the Advanced Technology Program has suffered a series of fits and starts since then. Ernest Ambler, former director of the National Institute of Standards and Technology, was director of the Technology Administration only briefly prior to his retirement. The resulting job opening was hard to fill, many believe, because the salary was not competitive with that of private industry. Severe ethics regulations also dimmed the ardor of some potential candidates. The position was recently filled with the Senate confirmation of Robert White.

White, who has a distinguished career involved with high technology issues both in industry and government, has argued for a stronger role for government in dealing with industry in generic technology areas. Optimistically, he is finding that U.S. companies are beginning to act responsibly in evolving a "global production system." Still, he does not believe the United States is moving fast enough on competitiveness issues. Nor does he believe technology has moved as rapidly as it should from government laboratory to industry.

The original intent of the Advanced Technology Program as contained in the Omnibus Trade and Competitiveness Act of 1988 was to: (1) aid U.S. joint research and development ventures; (2) enter into contracts and cooperative agreements with U.S. businesses, especially small businesses, and independent research organizations; (3) involve the national laboratories where appropriate; and (4) carry out other cooperative research activities with joint ventures as authorized by law.

Announcements will periodically appear in the *Federal Register* inviting organizations to participate. These forthcoming announcements will include information about the amount of funds available, the approximate number of awardees, closing dates, contact persons, etc. Applications will be considered only if they result directly from a specific funding notice.

For further information, contact the Advanced Technology Program, Technology Administration, U.S. Department of Commerce, Room B110 Technology, Gaithersburg, MD 20899; telephone (301) 975-5187.



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## House Science Committee Supports American Technology Preeminence Act

The House Science, Space and Technology Committee passed what it called "landmark" legislation to provide federal funds to civilian industrial research ventures. The proposed American Technology Preeminence Act of 1990 (HR 4329) is designed to strengthen American industrial competitiveness and to "establish a comprehensive technology policy." It provides funding for joint industrial R&D ventures, limits antitrust liability on joint production ventures, and provides funding for the National Institute of Standards and Technology. HR 4329 was passed with unanimous support of the committee members and will go to the House floor for debate.

The bill authorizes \$100 million in FY 1991 and \$250 million in FY 1992 for the Advanced Technology Program (ATP) in the Commerce Department's National Institute of Standards and Technology (NIST). The program was established by the 1988 omnibus trade bill to promote joint ventures in such areas as advanced manufacturing, superconductivity and HDTV, but never received funding. President Bush's FY 1991 budget requests \$10 million for the ATP.

The ATP competitively awards grants to

puter Technology Act, but provides no authorization for the program. [The Senate Commerce, Science & Transportation Committee passed the Gore bill, which now goes to the Senate.]

## Federal Materials Budget Shows Modest Growth in FY91

Funds for materials science and engineering within the United States government will increase very slightly in fiscal 1991 above current year levels, according to a budgetary analysis performed by the American Association for the Advancement of Science (AAAS). Funds are anticipated to reach \$1.175 billion compared to \$1.162 billion appropriated in the current fiscal year. (See table below.)

Consistent with the overall aggressive growth proposal made by the Bush administration, the National Aeronautics and Space Administration is expected to show the biggest gain in materials science and engineering, with a budget growing to

\$257.7 million from about \$198 million in the current year.

Fueling the growth are appropriations for materials-oriented programs for the national aerospace plane and the space station—which together received an increase of 102%. The materials processing in space program is to receive a proposed \$97.3 million. Other programs receiving slight increases included NASA programs in space science and applications, space research, and aeronautics and technology.

Suffering the largest setback is the Department of Energy, going from \$522.3 million in the current year to a projected \$465.3 million next year.

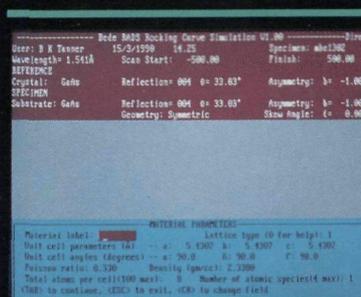
The only DOE programs showing significant increases were the materials sciences subprogram of the Division of Basic Energy Sciences (to almost \$222 million, up from \$198.7 million) and the electric energy systems subprogram of the Conservation and Renewable Energy Division (to almost \$34 million from \$22.1 million). The magnetic fusion program is to register a slight increase from \$14.54 million to \$14.9 million.

# Rocking Curve Analysis by Dynamical Simulation

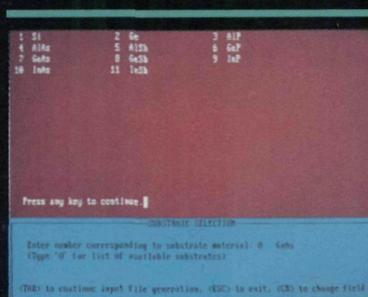
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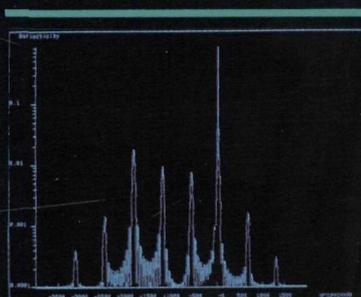
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	<u>FY 89</u>	<u>FY 90</u>	<u>FY 91</u>
Department of Energy	461,692	522,326	465,299
National Science Foundation	175,020	176,210	187,490
NIST	23,544	23,157	27,295
Bureau of Mines	24,440	26,440	24,485
Department of Defense	196,387	215,892	213,323
NASA	184,158	197,969	257,700
	<u>1,065,241</u>	<u>1,162,044</u>	<u>1,175,592</u>

Source: AAAS

national facilities and instrumentation (from \$16.3 million to \$17.4 million.) In NSF's Engineering Directorate, subgroup funds are broken out as follows: chemical and thermal systems (from \$30.7 million to \$33.1 million), electrical and communications systems (from \$21.6 million to \$23.4 million), and mechanical and structural systems (from \$7 million to \$7.5 million).

Funding for the National Institute of Standards and Technology, all of which is contained in the materials science and engineering group, increased from \$23.66 million to \$27.3 million.

The budget for the Bureau of Mines is expected to decrease. It is estimated to go from \$26.44 million to \$24.49 million. □

In DOE's materials sciences subprogram, there is a reduction of effort relating to understanding processing-structure-property relationships in ceramic superconductors, but a strong emphasis on organic synthesis for synthetic metals, polymer electrolytes, high strength polymer systems, enzymatic synthesis, and the materials chemistry of high temperature superconductors.

Programs suffering decreases in DOE include the superconducting super collider program in General Sciences (down from \$54.5 million to \$48 million), the solar program (from \$39.97 million to \$39.6 million), the fuels and materials program in Nuclear Energy (from \$35.4 million to \$20.5 million), coal (from \$67.8 million to \$20.6 million), and energy conservation (from \$91.25 million to \$65.87 million).

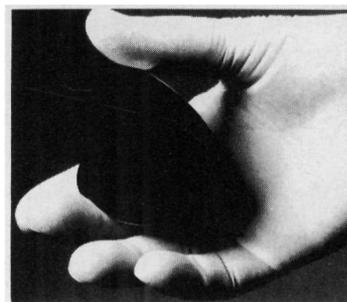
The Department of Defense is expected to register a slight decrease—from \$215.89 million to \$213.33 million. Materials science and engineering funding is anticipated to increase in the Army (from \$55.7 million to \$61.2 million) and in the Air Force (from \$66.3 million to \$75.9 million). It should decrease in the Navy (from \$26.9 million to \$22.0 million) and DARPA (from about \$67 million to \$54.2 million.)

Funding for the National Science Foundation, which provides about 50% of the federal support for university-based research in materials science and engineering, is expected to increase to \$187.5 million from \$176.2 million. In NSF's Mathematical and Physical Sciences Directorate, funding for all three subgroups increased. This includes materials research project support (from \$66.0 million to \$69.2 million), materials research labs and groups (from \$34.6 million to \$36.9 million), and

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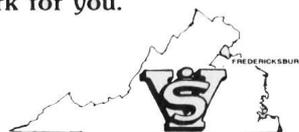


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