

DOE Seeks Applications For Small Business Grants

The Department of Energy (DOE) invites small businesses to respond to a small business technology transfer (STTR) program solicitation. The solicitation is for research in the following technical topics:

- Characterization and Treatment of Mixed Waste;
- Improved Heating and Cooling Thermal Distribution Systems for Residential Buildings;
- Technology in Support of Nuclear Physics Research;
- Materials and Control Technology for Fossil Energy Applications; and
- Novel Materials for Energy Applications.

Applicants must collaborate with a non-profit research institution, such as a university or national laboratory. Successful applicants may receive up to \$100,000 for a grant period of nine months to develop the feasibility of the idea, with up to \$500,000 available in a competitive second phase. The solicitation closes December 16, 1996.

To obtain a copy of the solicitation contact the STTR Program Manager, ER-33, U.S. Department of Energy, Germantown, MD 20874; 301-903-5707; World Wide Web <http://sttr.er.doe.gov/sttr.htm>.

Congress Appropriates \$74 B for R&D in FY 1997

On September 30, right before the start of fiscal year 1997, the U.S. Congress finalized the FY 1997 appropriations granting \$74 billion for research and development (R&D). Nondefense R&D for FY 1997 totals \$33.5 billion, and \$40.5 billion goes to defense R&D. By agency, federal support is \$9.3 billion for the National Aeronautics and Space Administration (NASA), \$2.4 billion for the National Science Foundation, and \$593 million for the Environmental Protection Agency. The Department of Energy is appropriated \$6.3 billion and the Department of Commerce is appropriated \$1.0 billion. Of those listed, all have received increases from FY 1996 except for NASA, which received a 1.6% decrease. Federal support for basic research is \$14.8 billion, a 2.7% increase from FY 1996. A preliminary analysis of FY 1997 appropriations is provided by American Association for the Advancement of Science (AAAS) on the World Wide Web at <http://www.aaas.org>. To order a copy of a report giving a complete analysis of the implications of the FY 1997 budget for R&D, contact Shirley Young, Directorate for Science and Policy Programs, AAAS, 1200 New York Ave., NW, Washington, DC, 20005; 202-326-6612; fax 202-289-4950; or e-mail syoung@aaas.org.

Congress also passed an Omnibus bill

to provide funds to agencies whose appropriations bill could not be completed before the start of FY 1997. The package includes \$588 million for the National Institute of Standards and Technology (NIST). According to NIST, the \$225 million going to the Advanced Technology Program (ATP) will meet past commitments and enable new awards. The \$95 million going to Manufacturing Extension Partnership (MEP) will cover the government's share of supporting the centers. No funds have been appropriated to the NIST facilities upgrade effort. NIST had intended to upgrade its 30-40-year-old facilities through a \$540-million, ten-year plan that started in FY 1993.

Basic College Science Courses Filter Out Most Students

Introductory college science and math courses serve largely as a filter, screening out all but the most promising students, and leaving the majority of college graduates—including most prospective teachers—with little understanding of how science works, according to the report, *Shaping the Future: New Expectations for Undergraduate Education in Science, Mathematics, Engineering, and Technology*, conducted for the National Science Foundation (NSF). As a result, "despite the observation that America's basic research in science, mathematics, and engineering is world-class, its education is still not," according to the independent team of reviewers.

Because few teachers, particularly those at the elementary level, experience any collegiate science teaching that stresses the skills of inquiry and investigation, they do not learn to use those methods in their teaching, the report said.

According to the report, the U.S. goal for undergraduate education should be that all students have access to supportive, excellent undergraduate education in science, mathematics, engineering, and technology (SME&T), and all students learn these subjects by direct experience with the method and processes of inquiry.

This latest review of undergraduate programs continues NSF's efforts to improve the quality of collegiate SME&T programs that began a decade ago with a study of that became known as the Neal Report.

The current report's findings were compiled over the course of a year by a nine-member committee of officials of two-year and four-year institutions, led by Melvin D. George, the president emeritus of St. Olaf College. The committee's main recommendation is that college science and math programs should be re-focused in order to better educate the 80%

of students who do not major in the scientific disciplines.

Luther S. Williams, the head of NSF's education and human resources directorate, said that although student performance in math and science at the K-12 level is improving, any sustained national effort to improve science and math teaching eventually must address the quality of teacher education at the undergraduate level.

To improve basic science education, the report concludes with recommendations for the U.S. President and Congress; industry; the national and regional media; state governments; university and college governing boards and administrators; science, mathematics, engineering, and technology professional societies; and NSF.

The report is available on the World Wide Web at <http://www.ehr.nsf.gov/EHR/DUE/documents/review/96139/start.htm>.

Report Urges R&D Partnerships Between Government, Industry, Universities

The report from Washington DC-based Council on Competitiveness, *Endless Frontier, Limited Resources: U.S. R&D Policy for Competitiveness*, cites the end of the Cold War and a more short-term focus on research and development (R&D) by industry, government, and academia as factors contributing to the current turbulent environment for R&D. The Council, chaired by Frank H.T. Rhodes, President Emeritus at Cornell University, and Gary L. Tooker, Chief Executive Officer of Motorola, Inc., has drawn on a group of 80 scientists and entrepreneurs, creating the report that recommends a concerted effort be made to build more productive R&D partnerships between industry, universities, and government. The report emphasizes the need for more consensus on the federal role in which the government creates a business climate that will encourage the private sector to fund as much R&D as possible. Simultaneously, resources of the federal laboratories must be channeled more effectively in the current budget environment, according to the report.

Rhodes said, "The United States will not remain in the forefront of technology unless industry increases its contribution, the federal role becomes more stable, and universities strike the right balance between their teaching and research missions."

The report can be obtained from the Council on Competitiveness, Publications Office, 1401 H Street, NW, Suite 650, Washington, DC 20005; 202-682-4292; fax 202-682-5150; or from the World Wide Web at <http://nii.nist.gov/coc.html>.

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