

Research Grant Opportunities

When chemists put pencil to paper to design the synthetic sequence that will be used to manufacture a chemical product, they also decide whether that sequence will use or generate hazardous substances that will require special handling, treatment, transportation, or disposal. Chemists can choose from literally hundreds of different chemical reactions to construct chemicals, some of which are more hazardous and generate more pollution than others. With proper forethought and analysis, chemists can choose reactions that are less hazardous and prevent pollution, thereby avoiding many of the environmental problems and liabilities that chemical manufacturers face.

OBJECTIVE:

The Presidential Green Chemistry Challenge seeks to support fundamental research in green chemistry to provide industry with the practical tools and methods necessary to design products and processes that are more environmentally benign.

BACKGROUND:

In 1992, the U.S. Environmental Protection Agency (EPA) awarded six grants to fund basic research projects that considered impacts to human health and the environment in the design of chemical syntheses. Also in that year, EPA's Office of Pollution Prevention and Toxics signed a Memorandum of Understanding with the National Science Foundation (NSF) to jointly fund green chemistry research. In 1994, EPA's Office of Research and Development entered into a partnership with NSF to fund environmental research as part of its new Science to Achieve Results (STAR) research program. This partnership includes research in green chemistry through an annual solicitation titled "Technology for a Sustainable Environment."

DESCRIPTION:

The Presidential Green Chemistry Challenge was established to recognize and support innovative green chemistry technologies that are scientifically sound and economically beneficial. Although the program does not provide an independent vehicle for green chemistry research grants, it does support the EPA/NSF partnerships.

The Technology for a Sustainable Environment solicitation focuses on the technological and environmental aspects of the design, synthesis, processing, production, and use of products in continuous and discrete manufacturing operations. Research proposals are invited that advance the development and use of innovative manufacturing and processing technologies and approaches directed at avoiding or minimizing the use or generation of hazardous substances at the source.

The total number of grants awarded for this activity depends upon the technical merit of the proposals (determined by external peer review), their relation to the agencies' missions, and the financial support available to both EPA and NSF



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for this program. Individual projects selected for support may be funded by EPA, NSF, or jointly by both agencies. This is at the option of the agencies, not the grantee.

GRANT RESEARCH AREA: CHEMISTRY FOR POLLUTION PREVENTION:

The long-range goal of this grant program is to develop safer commercial substances and environmentally-friendly chemical syntheses that reduce the risks posed by chemical technologies. Green chemistry, a fundamental approach to preventing pollution at the source, involves the design of chemicals and chemical syntheses that do not utilize toxic feedstocks, reagents, or solvents, or do not produce toxic byproducts or coproducts. Appropriate areas of investigation include chemical synthesis and catalysis, analysis and detection, separation processes, and reaction mechanisms. The types of projects eligible for grants directly parallel the focus areas of the Presidential Green Chemistry Challenge Awards Program.

GRANT AMOUNTS:

In fiscal years 1995 through 2002, EPA and NSF awarded \$47.8 million for 164 research projects under the Technology for a Sustainable Environment solicitation, most of which addressed green chemistry and processing. Typically, a grantee receives an average of \$120,000 per year for three years.

ELIGIBILITY:

Eligible applicants include academic and nonprofit institutions located in the United States, and state or local governments.

The following individuals or groups may collaborate with eligible applicants:

- Personnel in profit-making firms functioning as non-funded co-investigators.
- Personnel in profit-making firms subcontracting with an awardee institution.
- Personnel participating as co-investigators with eligible institutions and who are associated with entities such as national laboratories and federally-funded research development consortia.
- Non-EPA federal employees (certain limits apply).

Ineligible applicants include:

- Profit-making firms and federal agencies.
- Federal employees seeking to increase their agency's appropriations.

Additional information about the Technology for a Sustainable Environment solicitation, including forms, is available at <http://www.epa.gov/ncerqa> or <http://www.nsf.gov>, or from Steve Lingle at 202 564-6821 and Barbara Karn at 202 564-6824. Other sources of information regarding EPA's Green Chemistry Program include EPA's Pollution Prevention Information Clearinghouse at 202 566-0799 (e-mail ppic@epa.gov), Richard Engler of EPA at 202 564-8740 or engler.richard@epa.gov, and the Green Chemistry Web site at <http://www.epa.gov/greenchemistry>.

