

108TH CONGRESS
2D SESSION

H. R. 3970

IN THE SENATE OF THE UNITED STATES

APRIL 22, 2004

Received; read twice and referred to the Committee on Commerce, Science,
and Transportation

AN ACT

To provide for the implementation of a Green Chemistry
Research and Development Program, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Green Chemistry Re-
3 search and Development Act of 2004”.

4 **SEC. 2. DEFINITIONS.**

5 In this Act—

6 (1) the term “green chemistry” means chem-
7 istry and chemical engineering to design chemical
8 products and processes that reduce or eliminate the
9 use or generation of hazardous substances;

10 (2) the term “Interagency Working Group”
11 means the interagency working group established
12 under section 3(c); and

13 (3) the term “Program” means the Green
14 Chemistry Research and Development Program de-
15 scribed in section 3.

16 **SEC. 3. GREEN CHEMISTRY RESEARCH AND DEVELOPMENT**
17 **PROGRAM.**

18 (a) **IN GENERAL.**—The President shall establish a
19 Green Chemistry Research and Development Program to
20 promote and coordinate Federal green chemistry research,
21 development, demonstration, education, and technology
22 transfer activities.

23 (b) **PROGRAM ACTIVITIES.**—The activities of the Pro-
24 gram shall be designed to—

(1) provide sustained support for green chemistry research, development, demonstration, education, and technology transfer through—

(A) merit-reviewed competitive grants to individual investigators and teams of investigators, including, to the extent practicable, young investigators, for research and development;

(B) grants to fund collaborative research and development partnerships among universities, industry, and nonprofit organizations;

(C) green chemistry research, development, demonstration, and technology transfer conducted at Federal laboratories; and

(D) to the extent practicable, encouragement of consideration of green chemistry in—

(i) the conduct of Federal chemical science and engineering research and development; and

(ii) the solicitation and evaluation of all proposals for chemical science and engineering research and development;

(2) examine methods by which the Federal Government can create incentives for consideration and use of green chemistry processes and products;

1 (3) facilitate the adoption of green chemistry
2 innovations;

3 (4) expand education and training of under-
4 graduate and graduate students, and professional
5 chemists and chemical engineers, including through
6 partnerships with industry, in green chemistry
7 science and engineering;

8 (5) collect and disseminate information on
9 green chemistry research, development, and tech-
10 nology transfer, including information on—

11 (A) incentives and impediments to develop-
12 ment and commercialization;

13 (B) accomplishments;

14 (C) best practices; and

15 (D) costs and benefits;

16 (6) provide venues for outreach and dissemina-
17 tion of green chemistry advances such as symposia,
18 forums, conferences, and written materials in col-
19 laboration with, as appropriate, industry, academia,
20 scientific and professional societies, and other rel-
21 evant groups;

22 (7) support economic, legal, and other appro-
23 priate social science research to identify barriers to
24 commercialization and methods to advance commer-
25 cialization of green chemistry; and

1 (8) provide for public input and outreach to be
2 integrated into the Program by the convening of
3 public discussions, through mechanisms such as cit-
4 izen panels, consensus conferences, and educational
5 events, as appropriate.

6 (c) INTERAGENCY WORKING GROUP.—The President
7 shall establish an Interagency Working Group, which shall
8 include representatives from the National Science Founda-
9 tion, the National Institute of Standards and Technology,
10 the Department of Energy, the Environmental Protection
11 Agency, and any other agency that the President may des-
12 ignate. The Director of the National Science Foundation
13 and the Assistant Administrator for Research and Devel-
14 opment of the Environmental Protection Agency shall
15 serve as co-chairs of the Interagency Working Group. The
16 Interagency Working Group shall oversee the planning,
17 management, and coordination of the Program. The Inter-
18 agency Working Group shall—

19 (1) establish goals and priorities for the Pro-
20 gram, to the extent practicable in consultation with
21 green chemistry researchers and potential end-users
22 of green chemistry products and processes; and
23 (2) provide for interagency coordination, includ-
24 ing budget coordination, of activities under the Pro-
25 gram.

1 (d) AGENCY BUDGET REQUESTS.—Each Federal
2 agency and department participating in the Program
3 shall, as part of its annual request for appropriations to
4 the Office of Management and Budget, submit a report
5 to the Office of Management and Budget which identifies
6 its activities that contribute directly to the Program and
7 states the portion of its request for appropriations that
8 is allocated to those activities. The President shall include
9 in his annual budget request to Congress a statement of
10 the portion of each agency's or department's annual budg-
11 et request allocated to its activities undertaken pursuant
12 to the Program.

13 (e) REPORT TO CONGRESS.—Not later than 2 years
14 after the date of enactment of this Act, the Interagency
15 Working Group shall transmit a report to the Committee
16 on Science of the House of Representatives and the Com-
17 mittee on Commerce, Science, and Transportation of the
18 Senate. This report shall include—

19 (1) a summary of federally funded green chem-
20 istry research, development, demonstration, edu-
21 cation, and technology transfer activities, including
22 the green chemistry budget for each of these activi-
23 ties; and

1 (2) an analysis of the progress made toward
2 achieving the goals and priorities for the Program,
3 and recommendations for future program activities.

4 **SEC. 4. BIENNIAL REPORT.**

5 Section 37(a) of the Science and Engineering Equal
6 Opportunities Act (42 U.S.C. 1885d(a)) is amended by
7 striking “By January 30, 1982, and biennially thereafter”
8 and inserting “By January 30 of each odd-numbered
9 year”.

10 **SEC. 5. MANUFACTURING EXTENSION CENTER GREEN SUP-**
11 **PLIERS NETWORK GRANT PROGRAM.**

12 Section 25(a) of the National Institute of Standards
13 and Technology Act (15 U.S.C. 278k(a)) is amended—

14 (1) by striking “and” at the end of paragraph
15 (4);

16 (2) by striking the period at the end of para-
17 graph (5) and inserting “; and”; and

18 (3) by adding at the end the following:

19 “(6) the enabling of supply chain manufactur-
20 ers to continuously improve products and processes,
21 increase energy efficiency, identify cost-saving oppor-
22 tunities, and optimize resources and technologies
23 with the aim of reducing or eliminating the use or
24 generation of hazardous substances.”.

1 **SEC. 6. UNDERGRADUATE EDUCATION IN CHEMISTRY AND**
2 **CHEMICAL ENGINEERING.**

3 (a) PROGRAM AUTHORIZED.—(1) As part of the Pro-
4 gram activities under section 3(b)(4), the Director of the
5 National Science Foundation shall carry out a program
6 to award grants to institutions of higher education to sup-
7 port efforts by such institutions to revise their under-
8 graduate curriculum in chemistry and chemical engineer-
9 ing to incorporate green chemistry concepts and strate-
10 gies.

11 (2) Grants shall be awarded under this section on a
12 competitive, merit-reviewed basis and shall require cost
13 sharing in cash from non-Federal sources, to match the
14 Federal funding.

15 (b) SELECTION PROCESS.—(1) An institution of
16 higher education seeking funding under this section shall
17 submit an application to the Director at such time, in such
18 manner, and containing such information as the Director
19 may require. The application shall include at a min-
20 imum—

21 (A) a description of the content and schedule
22 for adoption of the proposed curricular revisions to
23 the courses of study offered by the applicant in
24 chemistry and chemical engineering; and

25 (B) a description of the source and amount of
26 cost sharing to be provided.

1 (2) In evaluating the applications submitted under
2 paragraph (1), the Director shall consider, at a min-
3 imum—

4 (A) the level of commitment demonstrated by
5 the applicant in carrying out and sustaining lasting
6 curriculum changes in accordance with subsection
7 (a)(1); and

8 (B) the amount of cost sharing to be provided.

9 (c) AUTHORIZATION OF APPROPRIATIONS.—In addi-
10 tion to amounts authorized under section 8, from sums
11 otherwise authorized to be appropriated by the National
12 Science Foundation Authorization Act of 2002, there are
13 authorized to be appropriated to the National Science
14 Foundation for carrying out this section \$7,000,000 for
15 fiscal year 2005, \$7,500,000 for fiscal year 2006, and
16 \$8,000,000 for fiscal year 2007.

17 **SEC. 7. STUDY ON COMMERCIALIZATION OF GREEN CHEM-**
18 **ISTRY.**

19 (a) STUDY.—The Director of the National Science
20 Foundation shall enter into an arrangement with the Na-
21 tional Research Council to conduct a study of the factors
22 that constitute barriers to the successful commercial appli-
23 cation of promising results from green chemistry research
24 and development.

25 (b) CONTENTS.—The study shall—

1 (1) examine successful and unsuccessful at-
2 tempts at commercialization of green chemistry in
3 the United States and abroad; and

4 (2) recommend research areas and priorities
5 and public policy options that would help to over-
6 come identified barriers to commercialization.

7 (c) REPORT.—The Director shall submit a report to
8 the Committee on Science of the House of Representatives
9 and the Committee on Commerce, Science, and Transpor-
10 tation of the Senate on the findings and recommendations
11 of the study within 18 months after the date of enactment
12 of this Act.

13 **SEC. 8. AUTHORIZATION OF APPROPRIATIONS.**

14 (a) NATIONAL SCIENCE FOUNDATION.—(1) From
15 sums otherwise authorized to be appropriated by the Na-
16 tional Science Foundation Authorization Act of 2002,
17 there are authorized to be appropriated to the National
18 Science Foundation for carrying out this Act—

19 (A) \$7,000,000 for fiscal year 2005;

20 (B) \$7,500,000 for fiscal year 2006; and

21 (C) \$8,000,000 for fiscal year 2007.

22 (2) The sums authorized by paragraph (1) are in ad-
23 dition to any funds the National Science Foundation is
24 spending on green chemistry through its ongoing chem-
25 istry and chemical engineering programs.

1 (b) NATIONAL INSTITUTE OF STANDARDS AND
2 TECHNOLOGY.—From sums otherwise authorized to be
3 appropriated, there are authorized to be appropriated to
4 the National Institute of Standards and Technology for
5 carrying out this Act—

6 (1) \$5,000,000 for fiscal year 2005;

7 (2) \$5,500,000 for fiscal year 2006; and

8 (3) \$6,000,000 for fiscal year 2007.

9 (c) DEPARTMENT OF ENERGY.—From sums other-
10 wise authorized to be appropriated, there are authorized
11 to be appropriated to the Department of Energy for car-
12 rying out this Act—

13 (1) \$7,000,000 for fiscal year 2005;

14 (2) \$7,500,000 for fiscal year 2006; and

15 (3) \$8,000,000 for fiscal year 2007.

16 (d) ENVIRONMENTAL PROTECTION AGENCY.—From
17 sums otherwise authorized to be appropriated, there are
18 authorized to be appropriated to the Environmental Pro-
19 tection Agency for carrying out this Act—

20 (1) \$7,000,000 for fiscal year 2005;

21 (2) \$7,500,000 for fiscal year 2006; and

1 (3) \$8,000,000 for fiscal year 2007.

Passed the House of Representatives April 21, 2004.

Attest: **JEFF TRANDAH**,
Clerk.