

## Union Calendar No.

108<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

# H. R. 3598

[Report No. 108- ]

To establish an interagency committee to coordinate Federal manufacturing research and development efforts in manufacturing, strengthen existing programs to assist manufacturing innovation and education, and expand outreach programs for small and medium-sized manufacturers, and for other purposes.

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### IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 21, 2003

Mr. EHLERS (for himself and Mr. UDALL of Colorado) introduced the following bill; which was referred to the Committee on Science

JULY , 2004

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union and ordered to be printed

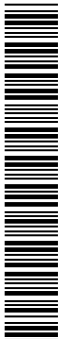
[Strike out all after the enacting clause and insert the part printed in *italie*]

[For text of introduced bill, see copy of bill as introduced on November 21, 2003]

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## A BILL

To establish an interagency committee to coordinate Federal manufacturing research and development efforts in manufacturing, strengthen existing programs to assist manufacturing innovation and education, and expand outreach programs for small and medium-sized manufacturers, 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,*

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “Manufacturing Tech-*  
5 *nology Competitiveness Act of 2004”.*

6 **SEC. 2. INTERAGENCY COMMITTEE AND ADVISORY COM-**  
7 **MITTEE.**

8 *(a) INTERAGENCY COMMITTEE.—*

9 *(1) ESTABLISHMENT.—The President shall estab-*  
10 *lish or designate an interagency committee on manu-*  
11 *facturing research and development, which shall in-*  
12 *clude representatives from the Office of Science and*  
13 *Technology Policy, the National Institute of Stand-*  
14 *ards and Technology, the Science and Technology Di-*  
15 *rectorate of the Department of Homeland Security,*  
16 *the National Science Foundation, the Department of*  
17 *Energy, and any other agency that the President may*  
18 *designate. The Interagency Committee shall be*  
19 *chaired by the Under Secretary of Commerce for*  
20 *Technology.*

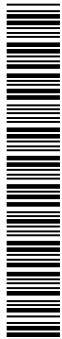
21 *(2) FUNCTIONS.—The Interagency Committee*  
22 *shall be responsible for the planning and coordination*  
23 *of Federal efforts in manufacturing research and de-*  
24 *velopment through—*



1           (A) *establishing goals and priorities for*  
2           *manufacturing research and development, in-*  
3           *cluding the strengthening of United States man-*  
4           *ufacturing through the support and coordination*  
5           *of Federal manufacturing research, development,*  
6           *technology transfer, standards, and technical*  
7           *training;*

8           (B) *developing, within 6 months after the*  
9           *date of enactment of this Act, and updating*  
10          *every 3 years for delivery with the President's*  
11          *annual budget request to Congress, a strategic*  
12          *plan, to be transmitted to the Committee on*  
13          *Science of the House of Representatives and the*  
14          *Committee on Commerce, Science, and Transpor-*  
15          *tation of the Senate, for manufacturing research*  
16          *and development that includes an analysis of the*  
17          *research, development, technology transfer, stand-*  
18          *ards, technical training, and integration needs of*  
19          *the manufacturing sector important to ensuring*  
20          *and maintaining United States competitiveness;*

21          (C) *proposing an annual coordinated inter-*  
22          *agency budget for manufacturing research and*  
23          *development to the Office of Management and*  
24          *Budget; and*



1           (D) developing and transmitting to Con-  
2           gress an annual report on the Federal programs  
3           involved in manufacturing research, develop-  
4           ment, technical training, standards, and integra-  
5           tion, their funding levels, and their impacts on  
6           United States manufacturing competitiveness,  
7           including the identification and analysis of the  
8           manufacturing research and development prob-  
9           lems that require additional attention, and rec-  
10          ommendations of how Federal programs should  
11          address those problems.

12           (3) *RECOMMENDATIONS AND VIEWS.*—In car-  
13          rying out its functions under paragraph (2), the  
14          Interagency Committee shall consider the rec-  
15          ommendations of the Advisory Committee and the  
16          views of academic, State, industry, and other entities  
17          involved in manufacturing research and development.

18          (b) *ADVISORY COMMITTEE.*—

19           (1) *ESTABLISHMENT.*—Not later than 6 months  
20          after the date of enactment of this Act, the President  
21          shall establish or designate an advisory committee to  
22          provide advice and information to the Interagency  
23          Committee.



1           (2) *RECOMMENDATIONS.*—*The Advisory Com-*  
2           *mittee shall assist the Interagency Committee by pro-*  
3           *viding it with recommendations on—*

4                   (A) *the goals and priorities for manufac-*  
5                   *turing research and development;*

6                   (B) *the strategic plan, including proposals*  
7                   *on how to strengthen research and development*  
8                   *to help manufacturing; and*

9                   (C) *other issues it considers appropriate.*

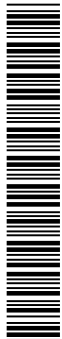
10           (3) *REPORT.*—*The Advisory Committee shall*  
11           *provide an annual report to the Interagency Com-*  
12           *mittee and the Congress that shall assess—*

13                   (A) *the progress made in implementing the*  
14                   *strategic plan and challenges to this progress;*

15                   (B) *the effectiveness of activities under the*  
16                   *strategic plan in improving United States man-*  
17                   *ufacturing competitiveness;*

18                   (C) *the need to revise the goals and prior-*  
19                   *ities established by the Interagency Committee;*  
20                   *and*

21                   (D) *new and emerging problems and oppor-*  
22                   *tunities affecting the manufacturing research*  
23                   *community, research infrastructure, and the*  
24                   *measurement and statistical analysis of manu-*



1 *facturing that may need to be considered by the*  
2 *Interagency Committee.*

3 *(4) FEDERAL ADVISORY COMMITTEE ACT APPLI-*  
4 *CATION.—Section 14 of the Federal Advisory Com-*  
5 *mittee Act shall not apply to the Advisory Committee.*

6 **SEC. 3. COLLABORATIVE MANUFACTURING RESEARCH**  
7 **PILOT GRANTS.**

8 *The National Institute of Standards and Technology*  
9 *Act is amended—*

10 *(1) by redesignating the first section 32 as sec-*  
11 *tion 34 and moving it to the end of the Act; and*

12 *(2) by inserting before the section moved by*  
13 *paragraph (1) the following new section:*

14 **“SEC. 33. COLLABORATIVE MANUFACTURING RESEARCH**  
15 **PILOT GRANTS.**

16 **“(a) AUTHORITY.—**

17 **“(1) ESTABLISHMENT.—***The Director shall estab-*  
18 *lish a pilot program of awards to partnerships among*  
19 *participants described in paragraph (2) for the pur-*  
20 *poses described in paragraph (3). Awards shall be*  
21 *made on a peer-reviewed, competitive basis.*

22 **“(2) PARTICIPANTS.—***Such partnerships shall*  
23 *include at least—*

24 **“(A) 1 manufacturing industry partner;**  
25 **and**



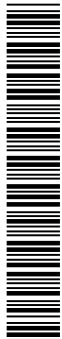
1                   “(B) 1 nonindustry partner.

2                   “(3) *PURPOSE.*—*The purpose of the program*  
3                   *under this section is to foster cost-shared collabora-*  
4                   *tions among firms, educational institutions, research*  
5                   *institutions, State agencies, and nonprofit organiza-*  
6                   *tions to encourage the development of innovative,*  
7                   *multidisciplinary manufacturing technologies. Part-*  
8                   *nerships receiving awards under this section shall*  
9                   *conduct applied research to develop new manufac-*  
10                   *turing processes, techniques, or materials that would*  
11                   *contribute to improved performance, productivity,*  
12                   *and competitiveness of United States manufacturing,*  
13                   *and build lasting alliances among collaborators.*

14                   “(b) *PROGRAM CONTRIBUTION.*—*Awards under this*  
15                   *section shall provide for not more than one-third of the costs*  
16                   *of a partnership. Not more than an additional one-third*  
17                   *of such costs may be obtained directly or indirectly from*  
18                   *other Federal sources.*

19                   “(c) *APPLICATIONS.*—*Applications for awards under*  
20                   *this section shall be submitted in such manner, at such*  
21                   *time, and containing such information as the Director shall*  
22                   *require. Such applications shall describe at a minimum—*

23                   “(1) *how each partner will participate in devel-*  
24                   *oping and carrying out the research agenda of the*  
25                   *partnership;*



1           “(2) the research that the grant would fund; and

2           “(3) how the research to be funded with the  
3           award would contribute to improved performance,  
4           productivity, and competitiveness of the United States  
5           manufacturing industry.

6           “(d) *SELECTION CRITERIA.*—In selecting applications  
7           for awards under this section, the Director shall consider  
8           at a minimum—

9           “(1) the degree to which projects will have a  
10          broad impact on manufacturing;

11          “(2) the novelty and scientific and technical  
12          merit of the proposed projects; and

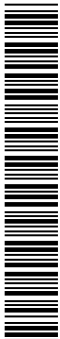
13          “(3) the demonstrated capabilities of the appli-  
14          cants to successfully carry out the proposed research.

15          “(e) *DISTRIBUTION.*—In selecting applications under  
16          this section the Director shall ensure, to the extent prac-  
17          ticable, a distribution of overall awards among a variety  
18          of manufacturing industry sectors and a range of firm sizes.

19          “(f) *DURATION.*—In carrying out this section, the Di-  
20          rector shall run a single pilot competition to solicit and  
21          make awards. Each award shall be for a 3-year period.”.

22       **SEC. 4. MANUFACTURING FELLOWSHIP PROGRAM.**

23           Section 18 of the National Institute of Standards and  
24           Technology Act (15 U.S.C. 278g-1) is amended—





1           (1) *by inserting “(a) IN GENERAL.—” before*  
2           *“The Director is authorized”; and*

3           (2) *by adding at the end the following new sub-*  
4           *section:*

5           “(b) *MANUFACTURING FELLOWSHIP PROGRAM.—*

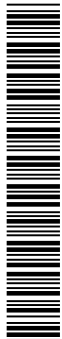
6           “(1) *ESTABLISHMENT.—To promote the develop-*  
7           *ment of a robust research community working at the*  
8           *leading edge of manufacturing sciences, the Director*  
9           *shall establish a program to award—*

10           “(A) *postdoctoral research fellowships at the*  
11           *Institute for research activities related to manu-*  
12           *facturing sciences; and*

13           “(B) *senior research fellowships to estab-*  
14           *lished researchers in industry or at institutions*  
15           *of higher education who wish to pursue studies*  
16           *related to the manufacturing sciences at the In-*  
17           *stitute.*

18           “(2) *APPLICATIONS.—To be eligible for an award*  
19           *under this subsection, an individual shall submit an*  
20           *application to the Director at such time, in such*  
21           *manner, and containing such information as the Di-*  
22           *rector may require.*

23           “(3) *STIPEND LEVELS.—Under this section, the*  
24           *Director shall provide stipends for postdoctoral re-*  
25           *search fellowships at a level consistent with the Na-*



1        *tional Institute of Standards and Technology*  
2        *Postdoctoral Research Fellowship Program, and sen-*  
3        *ior research fellowships at levels consistent with sup-*  
4        *port for a faculty member in a sabbatical position.”.*

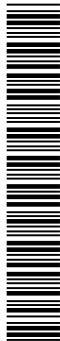
5        **SEC. 5. MANUFACTURING EXTENSION.**

6        *(a) MANUFACTURING CENTER EVALUATION.—Section*  
7        *25(c)(5) of the National Institute of Standards and Tech-*  
8        *nology Act (15 U.S.C. 278k(c)(5)) is amended by inserting*  
9        *“A Center that has not received a positive evaluation by*  
10        *the evaluation panel shall be notified by the panel of the*  
11        *deficiencies in its performance and may be placed on proba-*  
12        *tion for one year, after which time the panel may reevaluate*  
13        *the Center. If the Center has not addressed the deficiencies*  
14        *identified by the panel, or shown a significant improvement*  
15        *in its performance, the Director may conduct a new com-*  
16        *petition to select an operator for the Center or may close*  
17        *the Center.” after “sixth year at declining levels.”.*

18        *(b) MANUFACTURING EXTENSION CENTER COMPETI-*  
19        *TIVE GRANT PROGRAM.—Section 25 of the National Insti-*  
20        *tute of Standards and Technology Act (15 U.S.C. 278k) is*  
21        *amended by adding at the end the following new subsection:*

22        *“(e) COMPETITIVE GRANT PROGRAM.—*

23                *“(1) ESTABLISHMENT.—The Director shall estab-*  
24        *lish, within the Manufacturing Extension Partnership*  
25        *program under this section and section 26 of this Act,*



1        *a program of competitive awards among participants*  
2        *described in paragraph (2) for the purposes described*  
3        *in paragraph (3).*

4            “(2) *PARTICIPANTS.—Participants receiving*  
5        *awards under this subsection shall be the Centers, or*  
6        *a consortium of such Centers.*

7            “(3) *PURPOSE.—The purpose of the program*  
8        *under this subsection is to develop projects to solve*  
9        *new or emerging manufacturing problems as deter-*  
10       *mined by the Director, in consultation with the Di-*  
11       *rector of the Manufacturing Extension Partnership*  
12       *program, the Manufacturing Extension Partnership*  
13       *National Advisory Board, and small and medium-*  
14       *sized manufacturers. One or more themes for the com-*  
15       *petition may be identified, which may vary from year*  
16       *to year, depending on the needs of manufacturers and*  
17       *the success of previous competitions. These themes*  
18       *shall be related to projects associated with manufac-*  
19       *turing extension activities, including supply chain*  
20       *integration and quality management, or extend be-*  
21       *yond these traditional areas.*

22            “(4) *APPLICATIONS.—Applications for awards*  
23        *under this subsection shall be submitted in such man-*  
24        *ner, at such time, and containing such information*  
25        *as the Director shall require, in consultation with the*



1 *Manufacturing Extension Partnership National Advi-*  
2 *sory Board.*

3 “(5) *SELECTION.—Awards under this subsection*  
4 *shall be peer reviewed and competitively awarded.*  
5 *The Director shall select proposals to receive*  
6 *awards—*

7 “(A) *that utilize innovative or collaborative*  
8 *approaches to solving the problem described in*  
9 *the competition;*

10 “(B) *that will improve the competitiveness*  
11 *of industries in the region in which the Center*  
12 *or Centers are located; and*

13 “(C) *that will contribute to the long-term*  
14 *economic stability of that region.*

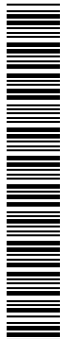
15 “(6) *PROGRAM CONTRIBUTION.—Recipients of*  
16 *awards under this subsection shall not be required to*  
17 *provide a matching contribution.”.*

18 **SEC. 6. SCIENTIFIC AND TECHNICAL RESEARCH AND SERV-**

19 **ICES.**

20 (a) *LABORATORY ACTIVITIES.—There are authorized*  
21 *to be appropriated to the Secretary of Commerce for the*  
22 *scientific and technical research and services laboratory ac-*  
23 *tivities of the National Institute of Standards and*  
24 *Technology—*

25 (1) *\$425,688,000 for fiscal year 2005, of which—*



1 (A) \$55,777,000 shall be for *Electronics and*  
2 *Electrical Engineering;*

3 (B) \$29,584,000 shall be for *Manufacturing*  
4 *Engineering;*

5 (C) \$50,142,000 shall be for *Chemical*  
6 *Science and Technology;*

7 (D) \$42,240,000 shall be for *Physics;*

8 (E) \$62,724,000 shall be for *Material*  
9 *Science and Engineering;*

10 (F) \$23,594,000 shall be for *Building and*  
11 *Fire Research;*

12 (G) \$60,660,000 shall be for *Computer*  
13 *Science and Applied Mathematics, of which*  
14 *\$2,800,000 shall be for activities in support of*  
15 *the Help America Vote Act of 2002;*

16 (H) \$17,445,000 shall be for *Technical As-*  
17 *sistance; and*

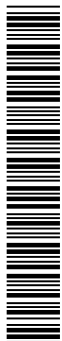
18 (I) \$78,102,000 shall be for *Research Sup-*  
19 *port Activities;*

20 (2) \$446,951,000 for *fiscal year 2006;*

21 (3) \$469,299,000 for *fiscal year 2007; and*

22 (4) \$492,764,000 for *fiscal year 2008.*

23 (b) *MALCOLM BALDRIGE NATIONAL QUALITY AWARD*  
24 *PROGRAM.—There are authorized to be appropriated to the*  
25 *Secretary of Commerce for the Malcolm Baldrige National*



1 *Quality Award program under section 17 of the Stevenson-*  
2 *Wydler Technology Innovation Act of 1980 (15 U.S.C.*  
3 *3711a)—*

4 (1) \$5,400,000 for fiscal year 2005;

5 (2) \$5,535,000 for fiscal year 2006;

6 (3) \$5,674,000 for fiscal year 2007; and

7 (4) \$5,815,000 for fiscal year 2008.

8 (c) *CONSTRUCTION AND MAINTENANCE.—There are*  
9 *authorized to be appropriated to the Secretary of Commerce*  
10 *for construction and maintenance of facilities of the Na-*  
11 *tional Institute of Standards and Technology such sums as*  
12 *may be necessary for each of fiscal years 2005 through 2008.*

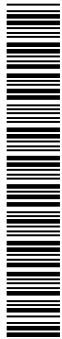
13 **SEC. 7. STANDARDS EDUCATION PROGRAM.**

14 (a) *PROGRAM AUTHORIZED.—(1) As part of the*  
15 *Teacher Science and Technology Enhancement Institute*  
16 *Program, the Director of the National Institute of Stand-*  
17 *ards and Technology shall carry out a Standards Edu-*  
18 *cation program to award grants to institutions of higher*  
19 *education to support efforts by such institutions to develop*  
20 *curricula on the role of standards in the fields of engineer-*  
21 *ing, business, science, and economics. The curricula should*  
22 *address topics such as—*

23 (A) *development of technical standards;*

24 (B) *demonstrating conformity to standards;*

25 (C) *intellectual property and antitrust issues;*



1           (D) standardization as a key element of business  
2           strategy;

3           (E) survey of organizations that develop stand-  
4           ards;

5           (F) the standards life cycle;

6           (G) case studies in effective standardization;

7           (H) managing standardization activities; and

8           (I) managing organizations that develop stand-  
9           ards.

10          (2) Grants shall be awarded under this section on a  
11          competitive, merit-reviewed basis and shall require cost-  
12          sharing from non-Federal sources.

13          (b) *SELECTION PROCESS.*—(1) An institution of high-  
14          er education seeking funding under this section shall submit  
15          an application to the Director at such time, in such man-  
16          ner, and containing such information as the Director may  
17          require. The application shall include at a minimum—

18               (A) a description of the content and schedule for  
19               adoption of the proposed curricula in the courses of  
20               study offered by the applicant; and

21               (B) a description of the source and amount of  
22               cost-sharing to be provided.

23          (2) In evaluating the applications submitted under  
24          paragraph (1) the Director shall consider, at a minimum—



1           (A) *the level of commitment demonstrated by the*  
2           *applicant in carrying out and sustaining lasting cur-*  
3           *ricula changes in accordance with subsection (a)(1);*  
4           *and*

5           (B) *the amount of cost-sharing provided.*

6           (c) *AUTHORIZATION OF APPROPRIATIONS.—There are*  
7           *authorized to be appropriated to the Secretary of Commerce*  
8           *for the Teacher Science and Technology Enhancement Insti-*  
9           *tute program of the National Institute of Standards and*  
10          *Technology—*

11           (1) *\$773,000 for fiscal year 2005;*

12           (2) *\$796,000 for fiscal year 2006;*

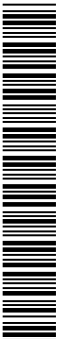
13           (3) *\$820,000 for fiscal year 2007; and*

14           (4) *\$844,000 for fiscal year 2008.*

15          **SEC. 8. AUTHORIZATION OF APPROPRIATIONS.**

16           (a) *MANUFACTURING EXTENSION PARTNERSHIP PRO-*  
17          *GRAM.—There are authorized to be appropriated to the Sec-*  
18          *retary of Commerce, or other appropriate Federal agencies,*  
19          *for the Manufacturing Extension Partnership program*  
20          *under sections 25 and 26 of the National Institute of Stand-*  
21          *ards and Technology Act (15 U.S.C. 278k and 278l)—*

22           (1) *\$110,000,000 for fiscal year 2005, of which*  
23           *not more than \$4,000,000 shall be for the competitive*  
24           *grant program under section 25(e) of such Act (15*  
25           *U.S.C. 278k(e));*





1           (2) \$115,000,000 for fiscal year 2006, of which  
2           not more than \$4,100,000 shall be for the competitive  
3           grant program under section 25(e) of such Act (15  
4           U.S.C. 278k(e));

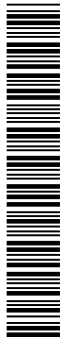
5           (3) \$120,000,000 for fiscal year 2007, of which  
6           not more than \$4,200,000 shall be for the competitive  
7           grant program under section 25(e) of such Act (15  
8           U.S.C. 278k(e)); and

9           (4) \$125,000,000 for fiscal year 2008, of which  
10          not more than \$4,300,000 shall be for the competitive  
11          grant program under section 25(e) of such Act (15  
12          U.S.C. 278k(e)).

13 *In any fiscal year for which appropriations are*  
14 *\$106,000,000 or greater, none of the funds appropriated*  
15 *pursuant to this subsection shall be used for a general re-*  
16 *competition of Centers established under section 25 of the*  
17 *National Institute of Standards and Technology Act (15*  
18 *U.S.C. 278k).*

19          (b) *COLLABORATIVE MANUFACTURING RESEARCH*  
20 *PILOT GRANTS PROGRAM.—There are authorized to be ap-*  
21 *propriated to the Secretary of Commerce for the Collabo-*  
22 *rative Manufacturing Research Pilot Grants program*  
23 *under section 33 of the National Institute of Standards and*  
24 *Technology Act—*

25           (1) \$10,000,000 for fiscal year 2005;



1           (2) \$10,000,000 for fiscal year 2006; and

2           (3) \$10,000,000 for fiscal year 2007.

3           (c) *FELLOWSHIPS*.—*There are authorized to be appro-*  
4 *priated to the Secretary of Commerce for Manufacturing*  
5 *Fellowships at the National Institute of Standards and*  
6 *Technology under section 18(b) of the National Institute of*  
7 *Standards and Technology Act, as added by section 4 of*  
8 *this Act—*

9           (1) \$1,500,000 for fiscal year 2005;

10          (2) \$1,750,000 for fiscal year 2006;

11          (3) \$2,000,000 for fiscal year 2007; and

12          (4) \$2,250,000 for fiscal year 2008.

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