110TH CONGRESS
1ST SESSION

H. R. 1068

IN THE SENATE OF THE UNITED STATES

MARCH 13, 2007

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

AN ACT

To amend the High-Performance Computing Act of 1991.

1   *Be it enacted by the Senate and House of Representa-*

2 *tives of the United States of America in Congress assembled,*

SECTION 1. HIGH-PERFORMANCE COMPUTING RESEARCH AND DEVELOPMENT PROGRAM.

Title I of the High-Performance Computing Act of 1991 (15 U.S.C. 5511 et seq.) is amended—

(1) in the title heading, by striking "**AND THE NATIONAL RESEARCH AND EDUCATION NETWORK**" and inserting "**RESEARCH AND DEVELOPMENT**";

(2) in section 101(a)—

(A) by striking subparagraphs (A) and (B) of paragraph (1) and inserting the following:

"(A) provide for long-term basic and applied research on high-performance computing;

"(B) provide for research and development on, and demonstration of, technologies to advance the capacity and capabilities of high-performance computing and networking systems;

"(C) provide for sustained access by the research community in the United States to high-performance computing systems that are among the most advanced in the world in terms of performance in solving scientific and engineering problems, including provision for technical support for users of such systems;

1   "(D) provide for efforts to increase software

2   availability, productivity, capability, security, port-

3   ability, and reliability;

4   "(E) provide for high-performance networks, in-

5   cluding experimental testbed networks, to enable re-

6   search and development on, and demonstration of,

7   advanced applications enabled by such networks;

8   "(F) provide for computational science and en-

9   gineering research on mathematical modeling and al-

10   gorithms for applications in all fields of science and

11   engineering;

12   "(G) provide for the technical support of, and

13   research and development on, high-performance

14   computing systems and software required to address

15   Grand Challenges;

16   "(H) provide for educating and training addi-

17   tional undergraduate and graduate students in soft-

18   ware engineering, computer science, computer and

19   network security, applied mathematics, library and

20   information science, and computational science; and

21   "(I) provide for improving the security of com-

22   puting and networking systems, including Federal

23   systems, including research required to establish se-

24   curity standards and practices for these systems.";

1   (B) by striking paragraph (2) and redesig-

2   nating paragraphs (3) and (4) as paragraphs

3   (2) and (3), respectively;

4   (C) in paragraph (2), as so redesignated

5   by subparagraph (B) of this paragraph—

6   (i) by striking subparagraph (B);

7   (ii) by redesignating subparagraphs

8   (A) and (C) as subparagraphs (D) and

9   (F), respectively;

10   (iii) by inserting before subparagraph

11   (D), as so redesignated by clause (ii) of

12   this subparagraph, the following new sub-

13   paragraphs:

14   "(A) establish the goals and priorities for Fed-

15 eral high-performance computing research, develop-

16 ment, networking, and other activities;

17   "(B) establish Program Component Areas that

18 implement the goals established under subparagraph

19 (A), and identify the Grand Challenges that the Pro-

20 gram should address;

21   "(C) provide for interagency coordination of

22 Federal high-performance computing research, devel-

23 opment, networking, and other activities undertaken

24 pursuant to the Program;"; and

1   (iv) by inserting after subparagraph

2   (D), as so redesignated by clause (ii) of

3   this subparagraph, the following new sub-

4   paragraph:

5   "(E) develop and maintain a research, develop-

6   ment, and deployment roadmap for the provision of

7   high-performance computing systems under para-

8   graph (1)(C); and"; and

9   (D) in paragraph (3), as so redesignated

10   by subparagraph (B) of this paragraph—

11   (i) by striking "paragraph (3)(A)"

12   and inserting "paragraph (2)(D)";

13   (ii) by amending subparagraph (A) to

14   read as follows:

15   "(A) provide a detailed description of the Pro-

16   gram Component Areas, including a description of

17   any changes in the definition of or activities under

18   the Program Component Areas from the preceding

19   report, and the reasons for such changes, and a de-

20   scription of Grand Challenges supported under the

21   Program;";

22   (iii) in subparagraph (C), by striking

23   "specific activities" and all that follows

24   through "the Network" and inserting

25   "each Program Component Area";

1   (iv) in subparagraph (D), by inserting

2   "and for each Program Component Area"

3   after "participating in the Program";

4   (v) in subparagraph (D), by striking

5   "applies;" and inserting "applies; and";

6   (vi) by striking subparagraph (E) and

7   redesignating subparagraph (F) as sub-

8   paragraph (E); and

9   (vii) in subparagraph (E), as so redes-

10   ignated by clause (vi) of this subpara-

11   graph, by inserting "and the extent to

12   which the Program incorporates the rec-

13   ommendations of the advisory committee

14   established under subsection (b)" after

15   "for the Program";

16   (3) by striking subsection (b) of section 101

17 and inserting the following:

18 "(b) ADVISORY COMMITTEE.—(1) The President

19 shall establish an advisory committee on high-performance

20 computing consisting of non-Federal members, including

21 representatives of the research, education, and library

22 communities, network providers, and industry, who are

23 specially qualified to provide the Director with advice and

24 information on high-performance computing. The rec-

25 ommendations of the advisory committee shall be consid-

1 ered in reviewing and revising the Program. The advisory

2 committee shall provide the Director with an independent

3 assessment of—

4   "(A) progress made in implementing the Pro-

5   gram;

6   "(B) the need to revise the Program;

7   "(C) the balance between the components of the

8   Program, including funding levels for the Program

9   Component Areas;

10   "(D) whether the research and development un-

11   dertaken pursuant to the Program is helping to

12   maintain United States leadership in high-perform-

13   ance computing and networking technology; and

14   "(E) other issues identified by the Director.

15   "(2) In addition to the duties outlined in paragraph

16 (1), the advisory committee shall conduct periodic evalua-

17 tions of the funding, management, coordination, imple-

18 mentation, and activities of the Program, and shall report

19 not less frequently than once every two fiscal years to the

20 Committee on Science of the House of Representatives

21 and the Committee on Commerce, Science, and Transpor-

22 tation of the Senate on its findings and recommendations.

23 The first report shall be due within one year after the date

24 of enactment of this paragraph.

1 ''(3) Section 14 of the Federal Advisory Committee
2 Act shall not apply to the advisory committee established
3 by this subsection.''; and

4   (4) in section 101(c)(1)(A), by striking ''Pro-
5   gram or'' and inserting ''Program Component Areas
6   or''.

7 **SEC. 2. DEFINITIONS.**

8   Section 4 of the High-Performance Computing Act
9 of 1991 (15 U.S.C. 5503) is amended—

10   (1) in paragraph (2), by inserting ''and multi-
11   disciplinary teams of researchers'' after ''high-per-
12   formance computing resources'';

13   (2) in paragraph (3)—

14   (A) by striking ''scientific workstations,'';

15   (B) by striking ''(including vector super-
16   computers and large scale parallel systems)'';

17   (C) by striking ''and applications'' and in-
18   serting ''applications''; and

19   (D) by inserting '', and the management of
20   large data sets'' after ''systems software'';

21   (3) in paragraph (4), by striking ''packet
22   switched'';

23   (4) by striking ''and'' at the end of paragraph
24   (5);

1   (5) by striking the period at the end of para-
2 graph (6) and inserting ''; and''; and

3   (6) by adding at the end the following new
4 paragraph:

5   ''(7) 'Program Component Areas' means the
6 major subject areas under which are grouped related
7 individual projects and activities carried out under
8 the Program.''.

Passed the House of Representatives March 12, 2007.

Attest: LORRAINE C. MILLER,
            Clerk.