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S. 969

To award planning grants and implementation grants to State educational agencies to enable the State educational agencies to complete comprehensive planning to carry out activities designed to integrate engineering education into K–12 instruction and curriculum and to provide evaluation grants to measure efficacy of K–12 engineering education.

IN THE SENATE OF THE UNITED STATES

MAY 12, 2011

Mrs. GILLIBRAND (for herself, Ms. SNOWE, Mr. BROWN of Ohio, Ms. STABENOW, and Mr. BEGICH) introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

A BILL

To award planning grants and implementation grants to State educational agencies to enable the State educational agencies to complete comprehensive planning to carry out activities designed to integrate engineering education into K–12 instruction and curriculum and to provide evaluation grants to measure efficacy of K–12 engineering education.

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 “Engineering Education
3 for Innovation Act” or the “E² for Innovation Act”.

4 **SEC. 2. FINDINGS.**

5 Congress finds the following:

6 (1) There is a national concern that the Na-
7 tion’s preeminence in science and innovation is erod-
8 ing. According to the National Science Board’s 2010
9 Science and Engineering Indicators, only 5 percent
10 of college graduates in the United States major in
11 engineering, compared with 12 percent of European
12 students and 20 percent of those in Asia. The report
13 also notes that the performance of elementary and
14 secondary school students in the United States lags
15 behind many nations on international assessments of
16 mathematics and science.

17 (2) While women earn 58 percent of all bach-
18 elor’s degrees, they constitute only 18.5 percent of
19 bachelor’s degrees awarded in engineering.

20 (3) African-Americans earn only 4.6 percent of
21 bachelor’s degrees awarded in engineering and His-
22 panics earn only 7.2 percent.

23 (4) The introduction of engineering education
24 has the potential to improve student learning and
25 achievement in science and mathematics, increase
26 awareness about what engineers do and of engineer-

1 ing as a potential career, and boost students' tech-
2 nology and engineering literacy, according to a new
3 report, "Engineering in K–12 Education" from the
4 National Academy of Engineering (NAE) and the
5 National Research Council (NRC).

6 (5) The report described in paragraph (4) also
7 identifies the following 3 core principles for K–12
8 engineering education:

9 (A) Emphasize engineering design process.

10 (B) Incorporate important and develop-
11 mentally appropriate mathematics, science, and
12 technology knowledge and skills.

13 (C) Promote engineering habits of mind in-
14 cluding systems thinking, creativity, collabora-
15 tion, communication, and attention to ethical
16 considerations.

17 (6) While exposure to formal engineering edu-
18 cation has increased dramatically over the past 15
19 years, reaching several million K–12 students, most
20 students in the United States have never experienced
21 an engineering course or lesson.

22 (7) There is also a lack of diversity in these ex-
23 isting K–12 engineering education opportunities.
24 The number of girls and underrepresented minorities
25 participating in K–12 engineering education does

1 not correspond to their proportion of the general
2 population.

3 (8) The President’s Council of Advisors on
4 Science and Technology (PCAST) report Prepare
5 and Inspire: K–12 Science, Technology, Engineer-
6 ing, and Math (STEM) Education for America’s Fu-
7 ture recommends that the Nation focus on preparing
8 all students, including girls and minorities underrep-
9 resented in STEM fields, in order to meet the na-
10 tional need for a STEM-capable citizenry and a
11 STEM-proficient workforce. The report also notes
12 that achieving the Nation’s goals for K–12 STEM
13 education will require partnerships with State and
14 local governments and with the private and philan-
15 thropic sectors.

16 (9) Only a handful of States have integrated
17 engineering into their core academic K–12 stand-
18 ards.

19 (10) K–12 engineering education in the United
20 States is supported by a relatively small number of
21 curricular and teacher professional development pro-
22 grams.

23 (11) While science, technology, engineering, and
24 mathematics education is viewed as a national edu-
25 cation policy, often the implementation of policies

1 and initiatives focuses exclusively on mathematics
2 and science and overlooks the engineering and tech-
3 nology education components.

4 (12) Schools, policy makers, and other stake-
5 holders often narrowly refer to the term “techno-
6 logically literate” as the ability to use educational
7 technologies. Although educational technology is im-
8 portant, it is far from the only type of technology we
9 depend on in a modern society. In 2006, the Na-
10 tional Academy of Engineering and the National Re-
11 search Council’s report, “Technically Speaking”,
12 outlined a broader view of “technological literacy”,
13 one more consistent with how scientists, engineers,
14 and technologists see the world. In this view, tech-
15 nology and engineering literacy includes—

16 (A) knowledge of technology, the engineer-
17 ing design process, and impacts on society;

18 (B) critical thinking and decisionmaking
19 weighing benefits, risks, costs, and tradeoffs;
20 and

21 (C) capability to use a variety of tech-
22 nologies, apply the design process, fix simple
23 technological problems, and obtain and under-
24 stand information about technological issues.

1 (13) The Standards for Technological Literacy,
2 developed by the International Technology and Engi-
3 neering Education Association and passed by a for-
4 mal review by the National Academy of Engineering
5 and the National Research Council, closely align
6 with the Academies' concept of technology and engi-
7 neering literacy in paragraph (11).

8 (14) To support an innovation economy and
9 maintain our country's vitality and security, we
10 must expand students' understanding of technology
11 and engineering and widen the pipeline to careers in
12 these fields so that a diverse array of talented stu-
13 dents can pursue them.

14 (15) The Federal Government has an interest
15 in expanding K–12 engineering and technology edu-
16 cation. The National Assessment of Educational
17 Progress (NAEP) Science 2009 assessment included
18 items testing student's technological design skills.
19 The National Assessment Governing Board (NAGB)
20 will administer a NAEP Technology and Engineer-
21 ing Literacy probe assessment in 2014 that will as-
22 sess student knowledge in engineering design and
23 systems, information and communication technology,
24 and technology and society.

1 (16) To further expand K–12 engineering edu-
2 cation, this Act seeks to support planning and imple-
3 menting grants for educational agencies to invest in
4 programs and activities to integrate engineering edu-
5 cation into K–12 instruction and curriculum and to
6 fund research on, and evaluation of, such efforts.

7 **SEC. 3. DEFINITIONS.**

8 In this Act:

9 (1) **ENGINEERING.**—The term “engineering”
10 means a systematic and often iterative approach to
11 designing objects, processes, and systems to meet
12 human needs and wants.

13 (2) **ESEA TERMS.**—Except as otherwise pro-
14 vided in this Act, any term used in this Act that is
15 defined in section 9101 of the Elementary and Sec-
16 ondary Education Act of 1965 (20 U.S.C. 7801)
17 shall have the meaning given the term in such sec-
18 tion.

19 (3) **HIGH-NEED LOCAL EDUCATIONAL AGEN-**
20 **CY.**—The term “high-need local educational agency”
21 means a local educational agency—

22 (A)(i) that serves not fewer than 10,000
23 children from families with incomes below the
24 poverty line; or

1 (ii) for which not less than 20 percent of
2 the children served by the agency are from fam-
3 ilies with incomes below the poverty line; and

4 (B)(i) for which there is a high percentage
5 of teachers not teaching in the academic sub-
6 jects or grade levels that the teachers were
7 trained to teach; or

8 (ii) for which there is a high percentage of
9 teachers with emergency, provisional, or tem-
10 porary certification or licensing.

11 (4) HIGH-NEED SCHOOL.—The term “high-need
12 school” means a public K–12 school—

13 (A) for which not less than 20 percent of
14 the children served by the school are from fami-
15 lies with incomes below the poverty line; and

16 (B)(i) for which there is a high percentage
17 of teachers not teaching in the academic sub-
18 jects or grade levels that the teachers were
19 trained to teach; or

20 (ii) for which there is a high percentage of
21 teachers with emergency, provisional, or tem-
22 porary certification or licensing.

23 (5) INSTITUTION OF HIGHER EDUCATION.—The
24 term “institution of higher education” has the

1 meaning given such term in section 102 of the High-
2 er Education Act of 1965 (20 U.S.C. 1002).

3 (6) K-12.—The term “K-12” means kinder-
4 garten through grade 12.

5 (7) STATE EDUCATIONAL AGENCY.—The term
6 “State educational agency” includes the State edu-
7 cational agency in a State in which the State edu-
8 cational agency is the sole educational agency for all
9 public schools.

10 (8) TECHNOLOGY.—The term “technology”
11 means any modification of the natural world done to
12 fulfill human needs or desires.

13 (9) TECHNOLOGY AND ENGINEERING LIT-
14 ERACY.—The term “technology and engineering lit-
15 eracy” means the capacity to use, understand, and
16 evaluate technology and engineering as well as to
17 understand technological principles and strategies
18 needed to develop solutions and achieve goals.

19 **SEC. 4. PLANNING GRANTS.**

20 (a) PROGRAM AUTHORIZED.—

21 (1) IN GENERAL.—The Secretary of Education,
22 in consultation with the Director of the National
23 Science Foundation and other relevant heads of
24 Federal agencies, is authorized to award planning
25 grants to State educational agencies to enable such

1 agencies to complete comprehensive planning to
2 carry out activities designed to integrate engineering
3 education into K–12 instruction and curriculum.

4 (2) GRANT PERIOD.—A planning grant awarded
5 under this section shall be for a period of not more
6 than 2 years.

7 (3) NONRENEWABILITY.—The Secretary of
8 Education shall not award a State educational agen-
9 cy more than 1 planning grant under this section.

10 (4) RESERVATION FOR SMALL STATES.—

11 (A) IN GENERAL.—Except as provided in
12 subparagraph (B), the Secretary of Education
13 shall reserve not less than 15 percent of the
14 funds appropriated to carry out this section for
15 each fiscal year to award grants under this sec-
16 tion to States with populations of less than
17 2,600,000 on the date of enactment of this Act.

18 (B) WAIVER.—The Secretary of Education
19 may waive the 15 percent requirement under
20 subparagraph (A) after notifying Congress of
21 such intention.

22 (b) APPLICATION.—

23 (1) IN GENERAL.—Each State educational
24 agency desiring a planning grant under this section
25 shall submit an application to the Secretary of Edu-

1 cation at such time, in such manner, and accom-
2 panied by such information as the Secretary of Edu-
3 cation may require.

4 (2) APPLICATION CONTENTS.—Each application
5 described in paragraph (1), at a minimum, shall—

6 (A) include a description of how the State
7 educational agency proposes to use the planning
8 grant funds to develop a plan designed to inte-
9 grate engineering education into K–12 instruc-
10 tion and curriculum;

11 (B) describe the roles and responsibilities
12 of the partners, described in subsection (c), par-
13 ticipating in the planning under this section;

14 (C) provide a budget for the use of the
15 planning grant funds; and

16 (D) provide such additional assurances and
17 information as the Secretary of Education de-
18 termines to be necessary.

19 (c) PARTNERSHIP.—A State educational agency re-
20 ceiving a planning grant under this section shall complete
21 comprehensive planning to carry out activities designed to
22 integrate engineering education into K–12 instruction and
23 curriculum in coordination with partners, including the
24 following:

1 (1) The Governor of the State or the designee
2 of the Governor.

3 (2) Not less than 1 faculty member from a
4 school of engineering at an institution of higher edu-
5 cation located in the State.

6 (3) Not less than 1 faculty member from a
7 school of education at an institution of higher edu-
8 cation located in the State.

9 (4) Not less than 1 public elementary school ad-
10 ministrator employed in the State.

11 (5) Not less than 1 public elementary school
12 teacher employed in the State.

13 (6) Not less than 1 public secondary school ad-
14 ministrator employed in the State.

15 (7) Not less than 1 public secondary school en-
16 gineering or technology teacher employed in the
17 State.

18 (8) Not less than 1 representative of the
19 science, technology, engineering, and mathematics
20 business community in the State.

21 (9) Not less than 1 representative from an in-
22 formal science education center, if available, a non-
23 profit organization with a demonstrated history of
24 developing innovative and effective engineering cur-
25 riculum, or an afterschool program provider.

1 (10) Not less than 1 representative from a pro-
2 fessional engineering society or an academy of
3 science with a chapter or other presence in the
4 State.

5 (11) Any additional representatives identified
6 by the State educational agency who possess an ex-
7 pertise in developing high-quality K–12 engineering
8 education materials and resources.

9 (d) **REQUIRED ACTIVITIES.**—A State educational
10 agency receiving a planning grant under this section shall
11 use the planning grant funds to carry out each of the fol-
12 lowing activities:

13 (1) **REVIEW.**—The State educational agency
14 shall review resources and programs across the State
15 educational agency and its partners that are relevant
16 to the objectives of the grant, and coordinate any
17 new plans and resources under this section with
18 such existing resources and programs.

19 (2) **PLAN.**—The State educational agency shall
20 develop an implementation plan to achieve the objec-
21 tive of integrating engineering education into K–12
22 instruction and curriculum. The plan shall include a
23 description of how the State educational agency will
24 carry out the following:

1 (A) Set intermediate and long-term meas-
2 urable goals.

3 (B) Develop and implement a coherent
4 plan for achieving the goals, including the fol-
5 lowing core set of activities:

6 (i) An analysis of the State's existing
7 K–12 content standards and assessments
8 to determine—

9 (I) the extent to which they ad-
10 dress the integration of engineering
11 education into K–12 instruction and
12 curriculum; and

13 (II) the extent to which they
14 align with workforce and postsec-
15 ondary expectations.

16 (ii) An analysis of the State's existing
17 K–12 engineering education curricula,
18 which shall include the development of a
19 baseline analysis of key indicators that
20 measure—

21 (I) the number and diversity of
22 students who are exposed to this cur-
23 ricula, including populations under-
24 represented in engineering fields, for

1 example, girls and underrepresented
2 minorities; and

3 (II) the effectiveness of the cur-
4 ricula at improving student learning,
5 including—

6 (aa) increasing under-
7 standing of engineering;

8 (bb) increasing science, tech-
9 nology, engineering, and mathe-
10 matics career aspirations;

11 (cc) increasing technology
12 and engineering literacy skills;
13 and

14 (dd) increasing student
15 achievement in science, tech-
16 nology, engineering, and mathe-
17 matics subjects for all students.

18 (iii) An analysis of the State's K–12
19 engineering and technology education
20 teaching workforce, which shall include the
21 development of a baseline analysis of key
22 indicators that measure—

23 (I) the number of K–12 teachers
24 who received any certificates or cre-
25 dentials in engineering or technology

1 education, including the number who
2 received professional development in
3 engineering education;

4 (II) the number and types of pre-
5 service, induction, and professional
6 development engineering and tech-
7 nology education programs; and

8 (III) the effectiveness of the iden-
9 tified preservice, induction, and pro-
10 fessional development engineering and
11 technology education programs as
12 they relate to—

13 (aa) increasing under-
14 standing of engineering;

15 (bb) increasing science, tech-
16 nology, engineering, and mathe-
17 matics career aspirations;

18 (cc) increasing technology
19 and engineering literacy skills;
20 and

21 (dd) increasing student
22 achievement in science, tech-
23 nology, engineering, and mathe-
24 matics subjects.

1 (C) Create a plan for ongoing collection
2 and analysis of data on outcomes, including
3 progress toward outcomes.

4 (e) SPECIAL RULE.—In the event a State educational
5 agency declines or does not submit an application under
6 this section, the Secretary of Education shall provide for
7 another entity or consortium, with the capacity to carry
8 out the activities under this section, in partnership with
9 the partners listed in subsection (c), in such State, to sub-
10 mit an application.

11 (f) AUTHORIZATION OF APPROPRIATIONS.—There
12 are authorized to be appropriated to carry out this section
13 such sums as may be necessary for each of fiscal years
14 2013 and 2014.

15 **SEC. 5. IMPLEMENTATION GRANTS.**

16 (a) PROGRAM AUTHORIZED.—

17 (1) IN GENERAL.—The Secretary of Education,
18 in consultation with the Director of the National
19 Science Foundation and other relevant heads of
20 Federal agencies, is authorized to award grants to
21 State educational agencies to pay the Federal share
22 of the cost of implementing innovative, integrative
23 engineering education initiatives into K–12 instruc-
24 tion and curriculum.

1 (2) PARTNERSHIP.—A State educational agency
2 receiving an implementation grant under this section
3 may partner with such entities (including the enti-
4 ties listed in section 4(c)) that the State chooses in
5 order to carry out the activities described in this sec-
6 tion.

7 (b) MINIMUM AMOUNT.—The Secretary of Education
8 shall award a grant under this section in an amount that
9 is a comparably sufficient amount relative to the amounts
10 appropriated to carry out this section.

11 (c) DURATION AND RENEWAL.—

12 (1) DURATION.—The Secretary of Education
13 shall award grants under this section for not more
14 than 2 years.

15 (2) RENEWAL.—The Secretary of Education
16 may renew a grant awarded under this section sub-
17 ject to the progress of the State educational agency
18 in meeting the benchmarks described in subsection
19 (i).

20 (d) PRIORITY.—

21 (1) IN GENERAL.—In awarding grants under
22 this section, the Secretary of Education shall give
23 priority to State educational agencies that submit an
24 application under subsection (e) that dem-
25 onstrates—

1 (A) satisfaction of the required activities or
2 comparable activities under section 4(d), as de-
3 termined by the Secretary;

4 (B) that a significant percentage of per-
5 sons served by the grant will be students from
6 population underrepresented in engineering
7 fields; and

8 (C) that the State's partners under sub-
9 section (a)(2) agree to pay a portion of the non-
10 Federal share costs, provided in cash or in-kind,
11 of the programs and activities carried out under
12 the grant.

13 (2) SMALL STATE GUARANTEE.—

14 (A) IN GENERAL.—In each fiscal year in
15 which a grant is awarded under this section,
16 the Secretary of Education shall ensure that
17 not less than 1 grant be awarded to a State
18 with a population of less than 2,600,000 on the
19 date of enactment of this Act.

20 (B) WAIVER.—The Secretary of Education
21 may waive the requirement under subparagraph

22 (A) after notifying Congress of such intention.

23 (e) APPLICATIONS.—A State educational agency that
24 desires to receive a grant under this section shall submit
25 an application to the Secretary of Education at such time,

1 in such manner, and containing such information as the
2 Secretary of Education may require. Each such applica-
3 tion shall include a description of—

4 (1) how the State educational agency will inte-
5 grate engineering education into K–12 instruction
6 and curriculum through programs and activities de-
7 scribed in subsections (f) and (g); and

8 (2) the benchmarks developed under subsection
9 (i).

10 (f) USES OF FUNDS.—A State educational agency
11 that receives a grant under this section shall use the grant
12 funds to pay the Federal share of carrying out the fol-
13 lowing programs and activities in collaboration with the
14 State’s partners under subsection (a)(2):

15 (1) Implementing challenging academic content
16 standards, achievement standards, and curricula
17 frameworks that include engineering.

18 (2) Developing new or obtaining effective cur-
19 ricula in engineering education.

20 (3) Designing and implementing engineering
21 education assessment items and tools.

22 (4) Developing or improving elementary and
23 secondary teacher preservice, induction, and profes-
24 sional development engineering and technology edu-
25 cation programs, including those that lead to a cer-

1 tificate or other credential in engineering or tech-
2 nology education.

3 (5) Recruiting qualified teachers to provide en-
4 gineering education for high-need local educational
5 agencies and high-need schools.

6 (g) OTHER ALLOWABLE USES OF FUNDS.—In addi-
7 tion to carrying out the programs and activities described
8 in subsection (f), a State educational agency that receives
9 a grant under this section may use the grant funds for
10 the following:

11 (1) Establishing distance learning modules for
12 teachers or students in engineering education.

13 (2) Creating online engineering education tools
14 that are widely accessible.

15 (3) Investing in after-school engineering edu-
16 cation programs.

17 (h) TECHNICAL ASSISTANCE.—The Secretary of
18 Education is authorized to reserve not more than 1 per-
19 cent of the amounts available to carry out this section to
20 provide technical assistance, directly or by grant or con-
21 tract with nonprofit organizations with demonstrated ex-
22 pertise in designing, implementing, or evaluating relevant
23 programs, in order to help State educational agencies pre-
24 pare for, qualify for, apply for, and maintain a grant
25 under this section.

1 (i) BENCHMARKS.—

2 (1) BENCHMARKS.—Each State educational
3 agency desiring a grant under this section shall—

4 (A) develop quantifiable benchmarks for
5 the activities supported under the grant, which
6 shall include increasing student achievement in
7 science, technology, engineering, and mathe-
8 matics subjects, and may include—

9 (i) increasing student knowledge and
10 competency of grade-appropriate engineer-
11 ing design skills;

12 (ii) increasing the number of students
13 who are taught engineering education;

14 (iii) increasing the number of edu-
15 cators who are prepared to teach engineer-
16 ing education; and

17 (iv) increasing the number and diver-
18 sity of students who plan to enroll in post-
19 secondary engineering courses and pursue
20 an engineering degree; and

21 (B) submit, as part of the application
22 under subsection (e), the benchmarks for ap-
23 proval to the Secretary of Education in order to
24 receive grant funds under this section.

1 (2) REPORTS.—Each State educational agency
2 receiving a grant under this section shall—

3 (A) annually measure and report to the
4 Secretary of Education the progress of the
5 State educational agency in achieving the
6 benchmarks developed under paragraph (1);
7 and

8 (B) collect and report data of those served
9 by the grant relating to the student bench-
10 marks, disaggregated by race, ethnicity, gender,
11 disability status, migrant status, English pro-
12 ficiency, and status as economically disadvan-
13 taged, except that such disaggregation shall not
14 be required in a case in which the number of
15 students in a category is insufficient to yield
16 statistically reliable information or the results
17 would reveal personally identifiable information
18 about an individual student.

19 (3) GUIDANCE.—The Secretary of Education
20 shall provide guidance regarding acceptable data
21 sources and methodologies for—

22 (A) establishing baselines and performance
23 benchmarks; and

24 (B) measuring progress by State edu-
25 cational agencies receiving such grants.

1 (j) NON-FEDERAL SHARE; SUPPLEMENT, NOT SUP-
2 PLANT.—

3 (1) NON-FEDERAL SHARE.—

4 (A) IN GENERAL.—A State educational
5 agency that receives a grant under this section
6 shall provide the non-Federal share of the costs
7 of the programs and activities described in sub-
8 sections (f) and (g) that are carried out under
9 the grant. The amount of the non-Federal
10 share under this section for a fiscal year shall
11 be not less than 50 percent. The non-Federal
12 share may be in cash or in-kind, and may be
13 provided from local resources, contributions
14 from private organizations, contributions from
15 the State's partners under subsection (a)(2), or
16 a combination of such sources.

17 (B) FINANCIAL HARDSHIP WAIVER.—The
18 Secretary of Education may waive or reduce the
19 non-Federal share of a State educational agen-
20 cy that has submitted an application for a
21 grant under this section if the State educational
22 agency demonstrates a need for such waiver or
23 reduction due to extreme financial hardship.

24 (2) SUPPLEMENT, NOT SUPPLANT.—Grant
25 funds provided under this section shall be used to

1 supplement, and not supplant, any other Federal or
2 State funds otherwise available to carry out the ac-
3 tivities described in this section.

4 (k) SPECIAL RULE.—In the event a State educational
5 agency declines or does not submit an application under
6 this section, the Secretary of Education shall provide for
7 another entity or a consortium, with the capacity to carry
8 out the activities under this section in such State, to sub-
9 mit an application.

10 (l) AUTHORIZATION OF APPROPRIATIONS.—There
11 are authorized to be appropriated to carry out this section
12 such sums as may be necessary for each of fiscal years
13 2014 and 2015.

14 **SEC. 6. RESEARCH AND EVALUATIONS.**

15 (a) IN GENERAL.—The Institute of Education
16 Sciences shall support, directly or through grants or con-
17 tracts, research on engineering education and evaluation
18 of the grants awarded under this Act, including studies
19 and evaluations that—

20 (1) assess the effectiveness of the programs and
21 activities carried out by each State educational agen-
22 cy receiving a grant under section 5 in—

23 (A) improving student achievement in
24 science, technology, engineering, and mathe-
25 matics subjects;

1 (B) improving student understanding of
2 engineering;

3 (C) enhancing technology and engineering
4 literacy of students;

5 (D) increasing numbers and diversity of
6 students with science, technology, engineering,
7 and mathematics career aspirations; and

8 (E) increasing the supply of engineering
9 and technology education teachers;

10 (2) assess how the programs and activities car-
11 ried out by each State educational agency receiving
12 a grant under section 5 can be replicated by a vari-
13 ety of State educational agencies and local edu-
14 cational agencies;

15 (3) assess how the programs and activities car-
16 ried out by each State educational agency receiving
17 a grant under section 5 lead to students developing
18 engineering design ideas, practices and habits of
19 mind over time, and the types of conditions nec-
20 essary to support these developments;

21 (4) identify and assess how science inquiry and
22 mathematical reasoning can be connected to engi-
23 neering design in K–12 curricula and teacher profes-
24 sional development; and

1 (5) include any other information or assess-
2 ments the Secretary of Education may require.

3 (b) DISSEMINATION.—The Secretary of Education
4 shall, based on the results of each evaluation completed
5 under subsection (a), disseminate information and anal-
6 ysis to the public, and provide technical assistance to State
7 educational agencies, on best practices and promising in-
8 novations in the field of K–12 engineering education.

9 (c) AUTHORIZATION OF APPROPRIATIONS.—There
10 are authorized to be appropriated to carry out this section
11 such sums as may be necessary for fiscal year 2015.

○