

SENATE, No. 225

STATE OF NEW JERSEY 216th LEGISLATURE

PRE-FILED FOR INTRODUCTION IN THE 2014 SESSION

Sponsored by:

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SYNOPSIS

Establishes the four-year “New Jersey Innovation Inspiration School Grant Pilot Program” in DOE to fund non-traditional Science, Technology, Engineering and Mathematics (STEM) programs.

CURRENT VERSION OF TEXT

Introduced Pending Technical Review by Legislative Counsel



1 AN ACT establishing the “New Jersey Innovation Inspiration School
2 Grant Pilot Program” in the Department of Education.

3

4 **BE IT ENACTED** by the Senate and General Assembly of the State
5 of New Jersey:

6

7 1. This act shall be known and may be cited as the “New Jersey
8 Innovation Inspiration School Grant Pilot Program Act.”

9

10 2. The Legislature finds and declares that:

11 a. A 2011 report on STEM (science, technology, engineering,
12 and mathematics) jobs by the Georgetown University Center on
13 Education and the Workforce indicates that New Jersey will
14 demand a total of 248,250 STEM jobs by 2018, up from 223,190 in
15 2008, and about 93% of the predicted jobs will require
16 postsecondary education and training;

17 b. According to the National Science Board’s 2010 Science and
18 Engineering Indicators, only 5% of American college graduates
19 major in engineering, whereas in Asia about 20% of all
20 baccalaureate degrees are in engineering and in China about 33% of
21 all baccalaureate degrees are in engineering;

22 c. Although 4th graders in the United States score well against
23 international competition, students in the United States fall near the
24 bottom or dead last by 12th grade in mathematics and science,
25 respectively;

26 d. Admissions requirements for undergraduate engineering
27 schools include a solid background in mathematics (algebra,
28 geometry, trigonometry, and calculus) and science (biology,
29 chemistry, and physics), in addition to courses in English, social
30 studies, and the humanities;

31 e. According to the Bureau of Labor Statistics, overall
32 engineering employment is expected to grow by 11% from 2008
33 through 2018, and as a group, engineers earn some of the highest
34 average starting salaries among individuals holding baccalaureate
35 degrees;

36 f. Exposure to project- and problem-based learning in a
37 competitive team environment gives students in grades 9 through 12
38 the skills they need to be successful in engineering programs of
39 study and engineering careers; and

40 g. According to Brandeis University’s Center for Youth and
41 Communities, participants in FIRST Robotics, a non-profit
42 organization that inspires young people to be science and
43 technology leaders by engaging the young people in mentor-based
44 programs, are more likely than nonparticipants to attend an
45 institution of higher education on a full-time basis (88% versus
46 53%), nearly twice as likely to major in a science or engineering

1 field, and more than three times as likely to have majored
2 specifically in engineering.

3

4 3. As used in this act:

5 “Low-income student” means a student who qualifies for free or
6 reduced price lunch under the federal school lunch program.

7 “Non-traditional STEM teaching method” means a STEM
8 education method or strategy such as incorporating self-directed
9 student learning, inquiry-based learning, cooperative learning in
10 small groups, collaboration with mentors in the field of study, and
11 participation in STEM-related competitions.

12 “STEM” means science, technology, engineering (including
13 robotics), or mathematics.

14

15 4. The Commissioner of Education shall develop and
16 administer the four-year New Jersey Innovation Inspiration School
17 Grant Pilot Program. The purpose of the pilot program shall be to
18 award grants to school districts to:

19 a. support non-traditional STEM teaching methods for students
20 in grades 9 through 12;

21 b. support the participation of students in nonprofit STEM
22 competitions;

23 c. foster innovation and broaden interest in, and access to,
24 careers in the STEM fields by investing in programs supported by
25 teachers and professional mentors; and

26 d. encourage collaboration among students, engineers, and
27 other professional mentors.

28 The grants shall be allocated to school districts on a competitive
29 basis.

30

31 5. a. A school district that wants to apply for a grant under the
32 pilot program shall submit an application to the commissioner. The
33 application shall, at the minimum, include a description of how the
34 school district will:

35 (1) implement STEM teaching programs that use a non-
36 traditional STEM teaching method;

37 (2) identify and recruit partners and mentors to help implement
38 the programs, and to assist students who participate in STEM
39 programs, including through the use of technology;

40 (3) support teachers who lead the STEM programs, and
41 participants in the programs, through stipends or other incentives;

42 (4) recruit young women and students from other populations
43 historically underrepresented in the STEM fields to participate in
44 the programs;

45 (5) identify public and private partners that can support the
46 programs with cash or in-kind contributions;

- 1 (6) develop a plan for sustaining the programs financially
- 2 beyond the grant period; and
- 3 (7) develop a method to evaluate the impact of the STEM
- 4 teaching programs on participating students that includes:
 - 5 (a) comparing students who participate in the program to similar
 - 6 students who do not participate; and
 - 7 (b) evaluating the program's impact on the number of students
 - 8 taking advanced STEM-related high school classes, the ability of
 - 9 participating students to partner with professional mentors, the
 - 10 district's high school graduation rate, and the rate of enrollment of
 - 11 district students in institutions of higher education upon graduation.
- 12 b. The commissioner shall award a one-time, up-front grant not
- 13 to exceed \$150,000 to each of six qualifying school districts to be
- 14 used to implement the pilot program. The grant funds may be used
- 15 by the school district for a period of up to four years. The
- 16 commissioner shall award the grants as follows: two grants shall be
- 17 awarded to school districts located in Warren, Sussex, Passaic,
- 18 Bergen, Morris, Essex, or Hudson Counties; two grants shall be
- 19 awarded to school districts located in Hunterdon, Somerset, Union,
- 20 Middlesex, Mercer, or Monmouth Counties; and two grants shall be
- 21 awarded to school districts located in Atlantic, Burlington, Camden,
- 22 Cape May, Cumberland, Gloucester, Ocean, or Salem Counties.
- 23 In awarding grants under the pilot program, the commissioner
- 24 shall give priority to applications from school districts that propose
- 25 to carry out activities that target:
 - 26 (1) a rural or urban school;
 - 27 (2) a low-performing school; or
 - 28 (3) a school or school district that serves low-income students.
- 29 c. A school district that receives a grant may use the grant
- 30 funds for any of the following:
 - 31 (1) the promotion of STEM education and career activities;
 - 32 (2) the purchase of supplies needed to support participation in
 - 33 non-traditional STEM teaching programs, such as robotics;
 - 34 (3) to provide incentives and stipends for teachers involved in
 - 35 non-traditional STEM teaching methods outside of their regular
 - 36 teaching duties;
 - 37 (4) to provide support and finance the expenses of student
 - 38 participation in regional and national nonprofit STEM competitions;
 - 39 (5) to finance items such as equipment, facility use, technology,
 - 40 broadband access, and other expenses, directly associated with non-
 - 41 traditional STEM teaching and mentoring; and
 - 42 (6) to carry out other activities that are related to the goals of the
 - 43 pilot program.
- 44 d. A school district that receives a grant under the pilot
- 45 program shall provide district matching funds in an amount equal to
- 46 25% of the grant amount. The district shall also secure matching
- 47 funds or in-kind contributions from corporate donors or other

1 private sector donors in an amount equal to 25% of the grant
2 amount. The matching funds shall be used by the district to support
3 the STEM-related activities outlined in the application submitted to
4 the commissioner for grant funds.

5 e. Grant funds provided to a school district shall be used to
6 supplement, and not supplant, funds used for STEM activities in the
7 district at the time of the application for the grant.

8

9 6. a. There is established within the Department of Education a
10 fund to be known as the “Innovation Inspiration School Grant
11 Fund,” hereinafter referred to as the “fund.” The fund shall be used
12 to provide grants to school districts under the pilot program.

13 b. The fund shall be annually credited with money appropriated
14 by the Legislature, any moneys received by the State from corporate
15 donors or other private sector support, and any federal funds which
16 may become available for STEM-related activities.

17 c. The department shall seek to secure the use of such funds or
18 other resources from the federal government or private nonprofit or
19 for-profit sources to effectuate the purposes of this act as may be
20 available therefor.

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22 7. This act shall first take effect in the 2013-2014 school year,
23 but the Commissioner of Education may take such anticipatory
24 administrative action in advance thereof as shall be necessary for
25 the implementation of this act.

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STATEMENT

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30 This bill establishes the four-year “New Jersey Innovation
31 Inspiration School Grant Pilot Program” in the Department of
32 Education. The pilot program will award grants to school districts
33 to support non-traditional STEM (science, technology, engineering,
34 and mathematics) teaching methods for students in grades 9 through
35 12, support the participation of students in nonprofit STEM
36 competitions, foster innovation and broaden interest in careers in
37 STEM fields, and encourage collaboration among students,
38 engineers, and professional mentors.

39 Under the bill, a school district may submit to the commissioner
40 an application that includes a description of how the school district
41 will establish STEM teaching programs that use a non-traditional
42 STEM teaching method, identify and recruit partners and mentors to
43 help implement these programs, and support teachers and
44 participants. The application also will contain information on how
45 the district will assess the impact of the STEM teaching programs
46 on participating students.

1 Under the pilot program the commissioner will award a total of
2 six one-time, up-front grants of up to \$150,000 each. Two grants
3 will be awarded to districts located in the northern region of the
4 State, two to districts in the central region, and two to districts in
5 the southern region. In awarding the grants, the commissioner will
6 give priority to applications from districts that intend to target
7 activities in a rural or urban school, a low-performing school, or a
8 school or school district that serves low-income students. The
9 districts will be permitted to use the grant funds for a period of up
10 to four years.

11 A school district that receives a grant is to use the funds to:
12 promote STEM education and career activities; purchase supplies
13 needed for participation in non-traditional STEM teaching
14 programs; finance the expenses of student participation in regional
15 and national nonprofit STEM competitions; and provide incentives
16 and stipends for teachers involved in non-traditional STEM
17 teaching methods outside of their regular teaching duties.

18 The bill establishes the “Innovation Inspiration School Grant
19 Fund” within the Department of Education to provide grants to
20 school districts under the pilot program. A school district that
21 receives a grant will provide district matching funds in an amount
22 equal to 25% of the grant amount. In addition, the district must
23 secure matching funds or in-kind contributions from corporate
24 donors or other private sector donors in an amount equal to 25% of
25 the grant amount.