
A BILL FOR AN ACT

RELATING TO INNOVATION IN EDUCATION.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. The legislature finds that Hawaii's
2 longstanding desire for economic growth, diversification, and
3 sustainability, which benefits all residents, depends on the
4 strengthening of our state's human resources.

5 Investing in the preparation of a highly-skilled workforce
6 and in innovation as a driver of economic development lays the
7 foundation for Hawaii's continued prosperity and ability to
8 preserve a high quality of life for all its residents, and
9 enables the state to rise to the challenge of globalization.

10 Therefore, the legislature believes it is crucial to make
11 these investments. The purpose of this Act is to:

12 (1) Develop a manageable, expandable, comprehensive system
13 of science, technology, engineering, and mathematics
14 (STEM) academies and pre-academies, based on the
15 successful CISCO and construction academy models, that
16 will focus on developing STEM skills in children from
17 their middle school through high school years;



- 1 (2) Improving the quality of STEM teaching in Hawaii's
2 schools by providing enhanced professional development
3 opportunities for practicing teachers and attracting
4 highly qualified people with STEM degrees to the
5 teaching profession;
- 6 (3) Increasing opportunities for high school and college
7 students to gain experience through internships; and
- 8 (4) Increasing the quality of STEM education in Hawaii's
9 postsecondary education institutions through the
10 creation of endowed chairs in the STEM disciplines.

11 SECTION 2. (a) There is established within the University
12 of Hawaii community college system, the Hawaii excellence
13 through science and technology academy program to increase the
14 readiness and motivation of public high school graduates to
15 pursue post secondary training and career options in the
16 science, technology, engineering, and mathematics disciplines.
17 The program shall place priority on engaging all students to
18 better prepare them for graduation and enable them to transition
19 to the colleges of their choice without the need for
20 remediation.



1 (b) The program shall partner with the department of
2 education, interested public high schools, and appropriate
3 public, non-profit and private agencies, to establish individual
4 Hawaii excellence through science and technology academies at
5 selected public high schools throughout the state. School
6 participation in the program shall be on a voluntary basis. The
7 academies:

- 8 (1) Shall be located on space on or adjacent to the campus
9 of the high school, as provided by the high school;
- 10 (2) Shall include a lead instructor employed by the
11 community college system;
- 12 (3) May include the following:
- 13 (A) Additional qualified instructors hired by the
14 community colleges; and
- 15 (B) Teachers, including teachers from the department
16 of education, if they have received certification
17 training from the community college system;
- 18 (4) Shall have all instructors certified to teach
19 according to both department of education and
20 community college standards;



1 (5) Shall offer courses that provide students with both
2 high school and University of Hawaii community college
3 academic credit to the maximum extent possible; and

4 (6) Shall work with the host high school to implement
5 required academic programs as well as project-based,
6 contextual learning programs designed primarily for
7 grades eleven and twelve for math, science, and
8 technology, coupled with math development for grades
9 nine and ten.

10 (c) Each of the seven community colleges of the University
11 of Hawaii shall make efforts to partner with selected public
12 high schools on their respective islands to establish the
13 academies. Each community college shall consult regularly with
14 the respective county economic development boards, workforce
15 investment boards, and other stakeholders to advise them of and
16 receive input on their plans and progress in developing the
17 academies.

18 (d) The academies shall support the partnership of the
19 University of Hawaii and the department of education in the
20 American diploma project, which establishes a dialogue and joint
21 curriculum assessment between teachers from high school and



1 college to ensure a smooth transition from high school to
2 college and to improve the ability of students to meet their
3 educational and career objectives.

4 (e) The program shall develop performance measures to
5 ensure that the academies are contributing substantially and
6 directly to an increase in public high school graduates who
7 ultimately enter post-secondary science, technology,
8 engineering, and mathematics programs and pursue related
9 occupations.

10 (f) The program shall be headed by a director and staffed
11 by one support specialist, one secretary, and one fiscal/records
12 support position.

13 SECTION 3. (a) There is established within the University
14 of Hawaii, the fostering inspiration and relevance through
15 science and technology pre-academy program to:

16 (1) With respect to public middle schools, stimulate the
17 interest and achievement of students in science,
18 technology, engineering, and mathematics skills and
19 help prepare those students for entry into the Hawaii
20 excellence through science and technology academy
21 program beginning in ninth grade; and



1 (2) With respect to students enrolled in the Hawaii
2 excellence through science and technology academies,
3 support and complement the academic programs of the
4 Hawaii excellence through science and technology
5 academy's with contextual learning projects.

6 (b) The pre-academy program shall partner with the Hawaii
7 excellence through science and technology academies, other
8 relevant programs within the University of Hawaii system, the
9 department of education, interested public schools in areas
10 served by Hawaii excellence through science and technology
11 academies, and appropriate public and private agencies, to
12 establish a program of contextual learning for middle school
13 students in science, technology, engineering, and math. The
14 program shall also provide contextual learning programs for
15 students enrolled in the Hawaii excellence through science and
16 technology academies in cooperation with the Hawaii excellence
17 through science and technology academy staff.

18 (c) School participation in the pre-academy program shall
19 be on a voluntary basis. The pre-academy program shall:

20 (1) Be located on space provided by the selected public
21 school;



1 (2) Be provided logistical support by the selected public
2 school;

3 (3) Employ staff and affiliated contextual learning and
4 teacher training specialists who shall strive to
5 tailor the nature and mix of the contextual learning
6 projects and training for teachers to the needs of
7 each individual school served; and

8 (4) Include and provide direction for a robotics and space
9 contextual learning program and research experiences
10 for teachers program.

11 (d) The pre-academy program shall be headed by a director
12 and staffed by a secretary and six field staff as follows:

13 (1) Two staff members for Oahu;

14 (2) Two staff members for the island of Hawaii;

15 (3) One staff member for the county of Kauai; and

16 (4) One staff member for the county of Maui.

17 When appropriate, the functions of the field staff may be
18 contracted to qualified private or nonprofit providers.

19 (e) The robotics and space contextual learning program
20 shall develop science, technology, engineering, and mathematics
21 skills in students participating in the fostering inspiration
22 and relevance through science and technology pre-academy program



1 and the Hawaii excellence through science and technology academy
2 programs, through robotics- and space technology-based
3 contextual projects and competitions. The robotics and space
4 contextual learning program shall be headed by a state
5 coordinator and employ two field staff. The coordinator and
6 staff shall coordinate and cooperate with the director and staff
7 of the fostering inspiration and relevance through science and
8 technology pre-academy program and Hawaii excellence through
9 science and technology academy programs to establish an
10 integrated system of science, technology, engineering, and
11 mathematics-related, contextual learning programs under the
12 administration of the pre-academy program. The robotics and
13 space contextual learning program shall also:

- 14 (1) Work with existing programs to improve and expand
15 activities, including but not limited to:
- 16 (A) The National Aeronautics and Space Administration
17 Explorer schools;
- 18 (B) For Inspiration and Recognition of Science and
19 Technology robotics competitions;
- 20 (C) For Inspiration and Recognition of Science and
21 Technology lego league;



1 (D) For Inspiration and Recognition of Science and
2 Technology vex challenge;

3 (E) Botball educational robotics program; and

4 (F) National underwater robotics challenge;

5 and

6 (2) Recruit, train, and support volunteer teachers and
7 other mentors to conduct robotics and space-related
8 programs at the school level.

9 (f) The research experiences for teachers program, the
10 purpose of which is to support the development of public middle
11 school teacher skills, knowledge, and development of public
12 middle school curriculum materials in science, technology,
13 engineering, and mathematics subject areas, with a particular
14 focus on wireless communications, shall:

15 (1) Educate teachers in wireless communications and
16 engineering;

17 (2) Enhance teacher research skills through the use of
18 software and innovative uses of equipment;

19 (3) Provide teacher participants with hands-on research
20 experiences;



1 (4) Support teachers in developing classroom lessons and
2 program activities which meet their course objectives
3 and student performance standards; and

4 (5) Provide opportunities to share and collaborate with
5 other teacher participants to ensure successful
6 implementation of curricula and programs.

7 The research experiences for teachers program shall be
8 administered by the University of Hawaii college of engineering
9 in cooperation and coordination with the fostering inspiration
10 and relevance through science and technology pre-academy
11 program.

12 (g) The director and staff of the fostering inspiration
13 and relevance through science and technology pre-academy program
14 shall develop contextual learning projects and summer science,
15 technology, engineering, and mathematics training programs for
16 public elementary, middle, and high school teachers.

17 (h) The fostering inspiration and relevance through
18 science and technology pre-academy program shall develop
19 performance measures to ensure that all programs conducted under
20 the pre-academy programs at selected public schools are
21 contributing substantially and directly to an increase in
22 student performance in science, technology, engineering, and



1 mathematics academics and matriculation into the Hawaii
2 excellence through science and technology academy program.

3 SECTION 4. (a) There is established within the University
4 of Hawaii college of education, a professional development
5 program to provide practicing public elementary, middle, and
6 high school science and mathematics teachers with opportunities
7 to increase their knowledge and understanding of recent
8 developments in science, technology, and mathematics.

9 (b) The program shall be available to certificated and
10 non-certificated teachers.

11 (c) The process of designing the program shall include an
12 evaluation of best practices in other school jurisdictions.

13 (d) In recognition that the year-round public school
14 calendar has shortened the summer period, that not all schools
15 operate using the same academic calendar, and that programs
16 throughout the year, offered in a variety of formats, would
17 facilitate immediate implementation in the classroom, the
18 program shall have the following attributes:

19 (1) Flexibility. The program shall provide a variety of
20 options designed to meet the specific needs of
21 Hawaii's teachers, which may include summer
22 institutes, a combination of summer, after school, or



1 weekend institutes, distance learning through video
2 conferencing or other mechanisms, and sites on the
3 neighbor islands; and

4 (2) Accountability. The program shall track student
5 outcomes derived from participation in the program.

6 SECTION 5. There is provided funding to support the
7 recruitment program currently funded by the federal Department
8 of Education Transition to Teaching Program, which provides
9 stipends as an initiative for individuals who hold degrees in
10 science, technology, engineering, and mathematics to obtain
11 teaching certificates through the University of Hawaii's post
12 baccalaureate certificate in secondary education program. The
13 University of Hawaii's transition to teaching grant is scheduled
14 to expire in 2008.

15 SECTION 6. (a) There is established within the department
16 of business, economic development, and tourism, the business and
17 education internship and mentorship program to establish, with
18 the cooperation of educational institutions, internship,
19 mentorship, and other experiential learning arrangements within
20 the for-profit, nonprofit, and government sectors, for public
21 high school students and graduates attending college in Hawaii
22 or elsewhere.



1 (b) The program shall provide students with working
2 experience to improve their career choices and to provide an
3 opportunity for employers to establish relationships with
4 students.

5 (c) The department may contract with appropriate for-
6 profit, nonprofit, or government entities to implement the
7 program.

8 SECTION 7. (a) There is established, within the high
9 technology development corporation, an eminent scholars program
10 to be funded by the state akamai investment matching special
11 fund, to enable the University of Hawaii to provide matching
12 funds for donations to establish at least five permanently
13 endowed chairs in the science, technology, engineering, and
14 mathematics disciplines at the University of Hawaii.

15 (b) All funds appropriated for the akamai investment
16 matching program shall be deposited into the special fund and
17 invested until the board of directors of the high technology
18 development corporation allocates the funds to the University of
19 Hawaii to match private donations on a dollar-for-dollar basis.

20 SECTION 8. Chapter 206M, Hawaii Revised Statutes, is
21 amended by adding a new section to part I to be appropriately
22 designated and to read as follows:



1 "§206M- State akamai investment matching special fund.

2 (a) There is established the state akamai investment matching
3 special fund, into which shall be deposited appropriations made
4 by the state legislature and matching private donations, to pay
5 for the expenses of administering the eminent scholars program
6 and to provide funds to establish a permanently endowed chair in
7 the science, technology, engineering, and mathematics
8 disciplines at the University of Hawaii.

9 (b) The board shall administer the fund with the advice of
10 the Hawaii innovation council.

11 (c) The board may contract with a qualified person or
12 appoint employees as provided in section 206M-3, to administer
13 the fund.

14 (d) The director of budget and finance shall invest moneys
15 in the fund not currently needed to meet the obligations of the
16 fund in the same manner as other public funds may be invested.

17 (e) No state appropriations deposited into the fund shall
18 be expended unless matched by private funds on a dollar-for-
19 dollar basis.

20 (f) Moneys remaining in the fund at the end of the fiscal
21 year shall not be returned to the general fund.



1 (g) The board shall take into consideration the following
2 criteria before approving state matching funds to establish
3 an endowed chair:

4 (1) The ability for the chair to contribute to Hawaii's
5 economic development;

6 (2) The ability for the chair to make a significant
7 contribution to the University of Hawaii's academic
8 quality;

9 (3) The ability for the chair to obtain significant
10 amounts of research from highly competitive grant
11 sources each year; and

12 (4) The field of the proposed chair and the subject of the
13 chair's research at the University of Hawaii and in
14 the state, size, and scope of related industries, and
15 other relevant factors.

16 (h) The board shall adopt rules pursuant to chapter 91 to
17 implement this section, including but not limited to:

18 (1) Rules to determine which University of Hawaii
19 departments may be classified as belonging to the
20 science, technology, engineering, or mathematics
21 disciplines; and



1 (2) Rules to establish the application process for the
2 University of Hawaii to request funding to support an
3 endowed chair."

4 SECTION 9. Section 206M-3.5, Hawaii Revised Statutes, is
5 amended to read as follows:

6 "[~~f~~]**\$206M-3.5**[~~]~~ **Annual reports.** The development
7 corporation shall report [~~annually~~] to the legislature twenty
8 days prior to the convening of [~~the~~] every regular session on
9 the impact of the program on:

10 (1) Increasing the awareness of the federal small business
11 innovation research program and the number of
12 companies submitting proposals to federal agencies;

13 (2) Increasing the number of phase I awards received by
14 Hawaii businesses under the small business innovation
15 research program; [~~and~~]

16 (3) Increasing the number of phase I to phase II
17 conversions by Hawaii businesses[~~-~~]; and

18 (4) Funding permanently endowed chairs in the science,
19 technology, engineering, and mathematics disciplines
20 at the University of Hawaii."

21 SECTION 10. There is appropriated out of the general
22 revenues of the State of Hawaii the sum of \$ or so much



1 thereof as may be necessary for fiscal year 2007-2008 and the
2 sum of \$ or so much thereof as may be necessary for fiscal
3 year 2008-2009 to establish the Hawaii excellence through
4 science and technology academy program.

5 The sums appropriated shall be expended by the University
6 of Hawaii for the purposes of section 2.

7 SECTION 11. There is appropriated out of the general
8 revenues of the State of Hawaii the sum of \$ or so much
9 thereof as may be necessary for fiscal year 2007-2008 and the
10 sum of \$ or so much thereof as may be necessary for fiscal
11 year 2008-2009 to establish the fostering inspiration and
12 relevance through science and technology pre-academy program, of
13 which:

14 (1) \$ for fiscal year 2007-2008 and \$ for fiscal
15 year 2008-2009 shall be expended for the robotics and
16 space contextual learning program;

17 (2) \$ for fiscal year 2007-2008 and \$ for fiscal
18 year 2008-2009 shall be expended for the research
19 experiences for teachers program; and

20 (3) \$ for fiscal year 2007-2008 and \$ for fiscal
21 year 2008-2009 shall be expended for additional
22 contextual learning programs.



1 The sums appropriated shall be expended by the University
2 of Hawaii for the purposes of section 3.

3 SECTION 12. There is appropriated out of the general
4 revenues of the State of Hawaii the sum of \$ or so much
5 thereof as may be necessary for fiscal year 2007-2008 and the
6 sum of \$ or so much thereof as may be necessary for fiscal
7 year 2008-2009 for a professional development program within the
8 University of Hawaii college of education to provide practicing
9 public elementary, middle, and high school science and
10 mathematics teachers with opportunities to increase their
11 knowledge and understanding of recent developments in science,
12 technology, and mathematics.

13 The sums appropriated shall be expended by the University
14 of Hawaii college of education for the purposes of section 4.

15 SECTION 13. There is appropriated out of the general
16 revenues of the State of Hawaii the sum of \$ or so much
17 thereof as may be necessary for fiscal year 2007-2008 and the
18 sum of \$ or so much thereof as may be necessary for fiscal
19 year 2008-2009 to provide stipends as an initiative for
20 individuals who hold degrees in science, technology,
21 engineering, and mathematics to obtain teaching certificates



1 through the University of Hawaii's post baccalaureate
2 certificate in secondary education program.

3 The sums appropriated shall be expended by the University
4 of Hawaii college of education for the purposes of section 5.

5 SECTION 14. There is appropriated out of the general
6 revenues of the State of Hawaii the sum of \$ or so much
7 thereof as may be necessary for fiscal year 2007-2008 and the
8 sum of \$ or so much thereof as may be necessary for fiscal
9 year 2008-2009 for a business and education internship and
10 mentorship program within the department of business, economic
11 development, and tourism.

12 The sums appropriated shall be expended by the department
13 of business, economic development, and tourism for the purposes
14 of section 6.

15 SECTION 15. There is appropriated out of the general
16 revenues of the State of Hawaii the sum of \$ or so much
17 thereof as may be necessary for fiscal year 2007-2008 and the
18 sum of \$ or so much thereof as may be necessary for fiscal
19 year 2008-2009 for the state akamai investment matching special
20 fund.

21 The sums appropriated shall be expended by the University
22 of Hawaii for the purposes of section 7.



1 SECTION 16. Statutory material to be repealed is bracketed
2 and stricken. New statutory material is underscored.

3 SECTION 17. This Act shall take effect on July 1, 2007.



Report Title:

Education; Innovation Initiatives

Description:

Establishes the Hawaii Excellence Through Science and Technology Academy Program to increase the readiness and motivation of public high school graduates to pursue post secondary training and career options in science, technology, engineering, and mathematics (STEM) disciplines. Establishes the Fostering Inspiration and Relevance Through Science and Technology Pre-academy Program. Establishes a professional development program to provide practicing public elementary, middle, and high school science and mathematics teachers with opportunities to increase their knowledge and understanding of recent developments in science, technology, and mathematics. Provides stipends as an initiative for individuals who hold degrees in STEM subjects to obtain teaching certificates through the UH's post baccalaureate certificate in secondary education program. Creates the Business and Education Internship and Mentorship Program. Establishes an Eminent Scholars Program to be funded by the State Akamai Investment Matching Special Fund, to enable UH to provide matching funds for donations to establish at least five permanently endowed chairs in the STEM disciplines at UH. Appropriates funds. (HB1268 HD1)

