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# 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 system shall make efforts to partner with selected  
12 public 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) There is established the robotics and space contextual  
20 learning program which shall develop science, technology,  
21 engineering, and mathematics skills in students participating in  
22 the fostering inspiration and relevance through science and



1 technology pre-academy program and the Hawaii excellence through  
2 science and technology academy programs, through robotics- and  
3 space technology-based contextual projects and competitions.  
4 The robotics and space contextual learning program shall be  
5 headed by a state coordinator and employ two field staff. The  
6 coordinator and staff shall coordinate and cooperate with the  
7 director and staff of the fostering inspiration and relevance  
8 through science and technology pre-academy program and Hawaii  
9 excellence through science and technology academy programs to  
10 establish an integrated system of science, technology,  
11 engineering, and mathematics-related, contextual learning  
12 programs under the administration of the pre-academy program.  
13 The robotics and 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) There is established the research experiences for  
10 teachers program, the purpose of which is to support the  
11 development of public middle school teacher skills, knowledge,  
12 and development of public middle school curriculum materials in  
13 science, technology, engineering, and mathematics subject areas,  
14 with a particular focus on wireless communications, which 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. Section 13 of this Act provides funding to  
7 support the recruitment program currently funded by the federal  
8 Department of Education Transition to Teaching Program, which  
9 provides stipends as an initiative for individuals who hold  
10 degrees in science, technology, engineering, and mathematics to  
11 obtain teaching certificates through the University of Hawaii's  
12 post baccalaureate certificate in secondary education program.  
13 The University of Hawaii's transition to teaching grant is  
14 scheduled 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 of the chair to contribute to Hawaii's  
5 economic development;

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

9       (3) The ability of the chair to obtain significant amounts  
10 of research funds 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       "~~+~~**§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, 2034.



**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)

