

JAN 23 2025

A BILL FOR AN ACT

RELATING TO THE UNIVERSITY OF HAWAII'S SPACE SCIENCE AND
ENGINEERING INITIATIVE.

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

1 SECTION 1. The legislature finds that there is a need in
2 the State for long-term science, technology, engineering, and
3 mathematics (STEM) workforce development programs to foster a
4 sustainable and economically diverse base for advanced-
5 technology-sector companies, particularly on the neighbor
6 islands. Supporting such industries in the State will stimulate
7 economic growth and ensure that Hawaii's youth are able to
8 remain in Hawaii to pursue long-term, stable career paths in
9 these high-need areas.

10 The legislature further finds that the university of Hawaii
11 is uniquely situated to create viable STEM career pathways
12 through its network of campuses and engagements with the K-12
13 educational system. The demand for more formal educational,
14 research, and career opportunities in space sciences and
15 engineering fields continues to grow, especially with renewed
16 federal and international interest in expanded space



1 exploration. However, less than fifteen per cent of engineering
2 schools nationwide have focused or dedicated aerospace or
3 related programs directly supporting these career paths.

4 The legislature also finds that increased space mission and
5 monitoring activities in Hawaii as well as the existing ground-
6 based observatory facilities on Maunakea and Haleakala are
7 appropriate platforms for instrumentation and detector
8 technology development, facility innovation, and operational
9 upgrade and advancement investigations and could thus expand
10 employment opportunities for Hawaii's local high-tech workforce.

11 In addition, a new facility dedicated to engineering education
12 and the development and fabrication of astronomical instruments
13 is in the design phase via funds previously provided by the
14 legislature. This new building on the university of Hawaii at
15 Hilo campus adjacent to the institute for astronomy building
16 would increase the instructional and educational offerings to
17 Hawaii's students by providing student internships,
18 undergraduate research opportunities, and exposure to
19 engineering careers in astronomy and other fields.

20 In addition, the legislature finds that the university of
21 Hawaii's new space sciences and engineering initiative (SSEI) is



1 recruiting an initial cohort of dedicated engineering faculty
2 within the college of engineering through recent appropriations
3 from the legislature. These new faculty will be located at the
4 university of Hawaii's Manoa campus and the institute for
5 astronomy's facility on the university of Hawaii at Hilo campus.
6 This engineering cohort will focus on teaching, research, and
7 engineering applied to astronomy, aerospace, and advanced
8 technologies, offering for the first time an engineering degree
9 pathway for university of Hawaii at Hilo students. A
10 cornerstone of the program is integrating this team with
11 high-tech development and instrumentation at the observatories
12 on Maunakea and Haleakala, which combined have facilities worth
13 over \$1,000,000,000 and regularly sustain research, education,
14 and technology development advancements.

15 Furthermore, the legislature recognizes that these globally
16 significant investments in Hawaii, which together generate more
17 than \$200,000,000 in annual economic impact statewide, can serve
18 as the basis for a workforce development program that
19 substantially deepens the long-term benefits of these
20 investments for local students, businesses, and communities.
21 The most cost-effective approach to creating such a workforce



1 development program is to expand upon programs that have
2 demonstrated success; integrate them into a continuum of support
3 from kindergarten to careers; and link students to a multitude
4 of educational hands-on learning opportunities and, ultimately,
5 employers. The building blocks for such a program are
6 substantially in place, but additional resources are needed to
7 integrate and expand them, providing a robust, globally unique,
8 end-to-end STEM workforce development program.

9 The legislature additionally finds that premier examples of
10 programs that serve as vital tracks at the high school and
11 undergraduate levels for the proposed next-generation workforce
12 development program include the Maunakea scholars program and
13 the new Maunakea observatories internship program. The Maunakea
14 scholars program is made possible through a partnership between
15 the department of education, university of Hawaii, and Maunakea
16 Observatories. The program started as a pilot program in 2016
17 involving students at both Kapolei and Waiakea high schools, and
18 over 1,200 students have since participated in the program in
19 schools on Oahu, Lanai, Molokai, Maui, and Hawaii island. This
20 program, the first and only one of its kind in the world, pairs
21 high school students with mentors, predominantly graduate



1 students at the university of Hawaii institute for astronomy, to
2 help the students design and execute their own research projects
3 utilizing all of the observatories on Maunakea and several
4 observatories on Haleakala. This program focuses on rural
5 public schools, working with students at a wide range of
6 academic levels, from credit recovery to advanced placement
7 research. The program is designed to empower students to
8 envision themselves as individuals who can engage in a variety
9 of STEM professions, including astronomy, engineering, computer
10 science, data analytics, and systems design.

11 The legislature further notes that through mentoring and
12 collaboration, numerous Maunakea scholars have gone on to pursue
13 STEM degrees, including astronomy degrees at the university of
14 Hawaii at Manoa and university of Hawaii at Hilo, and employment
15 in the astronomy, education, and engineering fields. Spin-off
16 programs include the new Waipahu high school observatory, the
17 only professional-grade high school observatory in the State.
18 The program involves ten public high schools and is already at
19 capacity given currently available resources. Expanding the
20 program to all public high schools and including additional



1 disciplines, such as engineering, is viable but will require
2 additional staff and resources.

3 The legislature believes that integrating distinct
4 programs, such as those developed by the institute for astronomy
5 and the college of engineering, to provide career pathway
6 continuity into jobs for local students is central to the
7 envisioned workforce development program. Persistent mentoring
8 to help bridge the historic gaps between education and
9 employment tracks for local students, leading them to
10 fulfilling, long-term careers, is the holistic approach that is
11 needed.

12 Moreover, the legislature finds that at the nexus of so
13 many workforce development components, the institute for
14 astronomy is the logical place to host a next-generation
15 workforce development program that connects local students with
16 hands-on STEM training and careers. Coordinating all of this
17 activity and sustained funding to cover operational costs will
18 be essential to leveraging investments in place now and enabling
19 the kindergarten-to-career approach needed, which is intended to
20 grow the pool of Hawaii's workforce, not only in space sciences
21 but in the engineering field as a whole.



1 Therefore, the purpose of this Act is to appropriate funds
2 to the institute for astronomy, in collaboration with the
3 college of engineering, to support the university of Hawaii's
4 space science and engineering initiative.

5 SECTION 2. There is appropriated out of the general
6 revenues of the State of Hawaii the sum of \$650,000 or so much
7 thereof as may be necessary for fiscal year 2025-2026 and the
8 same sum or so much thereof as may be necessary for fiscal year
9 2026-2027 to provide salaries, office supplies, stipends and
10 other operational expenses for these programs for the university
11 of Hawaii at Manoa institute for astronomy, to be allocated as
12 follows:

13 (1) \$400,000 for salaries and fringe benefits for the
14 following positions:

15 (A) One full-time equivalent (1.0 FTE) university of
16 Hawaii space science and engineering initiative
17 workforce development program manager;

18 (B) One full-time equivalent (1.0 FTE) Maunakea
19 scholars program coordinator; and

20 (C) One full-time equivalent (1.0 FTE) administrative
21 clerk for the university of Hawaii space science



1 and engineering initiative workforce development
2 program; and

3 (2) \$250,000 for office equipment and supplies,
4 operational costs, and internship stipends for high
5 school and college students.

6 The sums appropriated shall be expended by the university
7 of Hawaii for the purposes of this Act.

8 SECTION 3. This Act shall take effect on July 1, 2025.

9

INTRODUCED BY: *Armanie R. Frange*



S.B. NO. 1268

Report Title:

University of Hawaii; Space Sciences Workforce Development Program; Maunakea Scholars Program; Internship Program; Equipment and Supplies; Stipends; Positions; Appropriation

Description:

Appropriates funds for salaries and fringe benefits of positions for the University of Hawaii Institute for Astronomy's Space Science and Engineering Initiative Workforce Development Program, Maunakea Scholars Program, and Internship Program. Appropriates funds for office equipment and supplies, operational costs, and stipends for the Maunakea Scholars Program and Internship Program.

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