

JAN 29 2015

A BILL FOR AN ACT

RELATING TO THE HAWAII CENTER FOR ASTRONAUTICS RESEARCH.

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

1 SECTION 1. The legislature finds that the State needs a
2 university research center dedicated to establishing and growing
3 a well-trained workforce in the State to support research and
4 development in a wide range of areas relating to astronautics.
5 This center shall be known as the Hawaii center for astronautics
6 research and shall conduct research and development in the areas
7 of astrodynamics, propulsion, the space environment, guidance,
8 navigation and control, and spacecraft design. Such a center
9 would complement existing Hawaii-based research and development
10 centers and assets, filling a scientific and technological gap
11 endemic to Hawaii and providing needed capabilities both
12 statewide and nationwide, strengthening Hawaii's space-related
13 technologies, and attracting more research and development
14 funding, with the potential of becoming a beacon for
15 international collaboration in astronautics research throughout
16 the Asia-Pacific region.



1 The legislature also finds that a Hawaii center for
2 astronautics research will stimulate economic growth and
3 diversification in the State, promote the establishment and
4 expansion of a well-trained workforce to support the design and
5 development of operationally responsive space assets to maintain
6 parity with the advancing capabilities of European and Asian
7 nations. A Hawaii center for astronautics research will also
8 support national security and the ability to operate safely in
9 space and maintain space situational awareness, to improve space
10 catalog development and maintenance capability, and to develop a
11 global sensing system for real-time monitoring of the upper
12 atmosphere to support science, technology, engineering and
13 mathematics education programs and the growth of associated jobs
14 throughout the State.

15 The legislature further finds that the Air Force Office of
16 Scientific Research is working to create and develop Centers of
17 Excellence in areas of interest to the Air Force, including
18 astrodynamics and astronautics, national security, space
19 situational awareness, and space object catalog development.
20 Our nation faces many current and pending challenges that
21 involve the field of astronautics at a fundamental level. These



1 include development and maintenance of a modern space catalog
2 that can be used to accurately and precisely track and support
3 strategic characterization of space objects; development of new
4 strategic capabilities in estimation, computation, and
5 prediction capabilities to enhance space situational awareness;
6 developing and delivering the capability for physics-based
7 modeling of the 6-Degree-of-Freedom dynamical evolution of space
8 debris; and leveraging Hawaii's parallel processing capabilities
9 at the Maui high performance computing center to expand and
10 enable new computational solutions to difficult problems in
11 astronautics. The Air Force Office of Scientific Research is
12 expected to appropriate matching funds to complete the
13 establishment and organization of the Hawaii center for
14 astronautics research.

15 The legislature further finds that a Hawaii center for
16 astronautics research can address core concerns and challenges
17 that the State and nation currently face. A Hawaii center for
18 astronautics research will require a diverse set of researchers
19 with broad skills in science, engineering, and mathematics.
20 Many standard theories for control, estimation and dynamics that
21 are currently used in civil and military applications do not



1 adequately capture or apply to astronautics systems. Thus, it
2 is critical that university departments and researchers have
3 appropriate capabilities and professional backgrounds in space-
4 based vehicles, science, and technology.

5 Accordingly, the purpose of this Act is establish and
6 provide seed funding for the Hawaii center for astronautics
7 research.

8 SECTION 2. Chapter 304A, Hawaii Revised Statutes, is
9 amended by adding a new section to part IV to be appropriately
10 designated and to read as follows:

11 "§304A- Hawaii center for astronautics research. (a)

12 There is established at the university the Hawaii center for
13 astronautics research. The duties of the center shall include
14 but not be limited to:

15 (1) Developing a well-trained workforce to support the
16 expanding role that space vehicles play nationwide,
17 including the design and development of operationally
18 responsive space assets;

19 (2) Retaining scientific and technological leadership in
20 space by addressing the lack of systematic investments
21 over the last thirty years and maintaining parity with



- 1 the advanced capabilities of European and Asian
2 nations;
- 3 (3) Supporting national security and the ability to
4 operate safely in space by predicting and mitigating
5 orbital hazards and developing alternate space asset
6 locations to ensure capabilities are not degraded in
7 the event of a crisis;
- 8 (4) Maintaining space situational awareness by making
9 required space catalog improvements that incorporate
10 the altitude, non-gravitational models, and propulsive
11 capabilities; and
- 12 (5) Developing a global sensing system for real-time
13 monitoring of the upper atmosphere.
- 14 (b) The establishment and organization of the center shall
15 be directed and coordinated by an astronautics research advisory
16 board, which shall report to the Hawaii aerospace advisory
17 committee. The members of the advisory board shall be nominated
18 by the Hawaii aerospace advisory committee and approved by the
19 governor.
- 20 (c) The center shall seek funding from the federal
21 government and private sector to sustain the center. The



1 programs of the center shall be developed in partnership with
2 the Air Force Office of Scientific Research and other federal-
3 and state-based organizations.

4 (d) As used in this section, "center" means the Hawaii
5 center for astronautics research."

6 SECTION 3. There is appropriated out of the general
7 revenues of the State of Hawaii the sum of \$250,000 or so much
8 thereof as may be necessary for fiscal year 2015-2016 and the
9 same sum or so much thereof as may be necessary for fiscal year
10 2016-2017 to support the establishment and organization of the
11 Hawaii center for astronautics research; provided that no funds
12 shall be appropriated under this Act unless the Air Force Office
13 of Scientific Research provides a dollar-for-dollar match of
14 funds for the purposes of this Act.

15 The sums appropriated shall be expended by the University
16 of Hawaii for the purposes of this Act.

17 SECTION 4. This Act shall take effect on July 1, 2015.

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S.B. NO. 1267

Report Title:

Hawaii Center for Astronautics Research; Establishment;
Appropriation

Description:

Establishes the Hawaii center for astronautics research. Makes an appropriation.

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