
A BILL FOR AN ACT

RELATING TO THE UNIVERSITY OF HAWAII.

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

1 SECTION 1. The legislature declares that maximizing the
2 University of Hawaii's use of state funds is a matter of
3 statewide concern.

4 The legislature finds that organized research units were
5 created in the University of Hawaii system to foster research
6 activities that would increase extramural income to the State
7 and enhance the reputation of the University nationally and
8 internationally. While those goals have been accomplished, it
9 has become increasingly apparent that organized research units
10 are not economically sustainable as stand-alone units and that
11 significant disparities exist with respect to expectations for
12 faculty in organized research units relative to instructional
13 faculty in the University of Hawaii system. The legislature
14 also finds that most universities require research faculty to
15 cover a portion of their salaries with extramural funds that are
16 received from the award of grants or contracts.



1 The legislature further finds that requiring the University
2 of Hawaii's organized research units to use both direct and
3 indirect moneys from grants and contracts to pay for personnel
4 costs helps to maximize the impact of state moneys. Organized
5 research units include the institute for astronomy, University
6 of Hawaii cancer center, Hawaii institute of geophysics and
7 planetology, Hawaii institute of marine biology, Hawaii natural
8 energy institute, Pacific biosciences research center, water
9 resources research center, sea grant college program, center on
10 aging, and the John A. Burns school of medicine. For the
11 purposes of this Act, the Lyon arboretum and the Waikiki
12 aquarium are excluded.

13 The purpose of this Act is to establish funding
14 requirements for organized research units of the University of
15 Hawaii.

16 SECTION 2. Chapter 304A, Hawaii Revised Statutes, is
17 amended by adding a new subpart to part IV to be appropriately
18 designated and to read as follows:

19 " . ORGANIZED RESEARCH UNITS

20 **§304A- Organized research units; definitions.** For the
21 purposes of this subpart:



1 "Extramural funds" means moneys received through grants or
2 contracts.

3 "Organized research unit" means an extra-departmental
4 administrative structure, approved and established pursuant to
5 policies adopted by the board of regents and the president of
6 the University of Hawaii, that:

7 (1) Provides a locus for faculty, staff, and students to
8 engage in focused, collaborative research and training
9 activities;

10 (2) Exists at a school or college level; and

11 (3) Is supported in part by the organized research budget
12 of the University of Hawaii at Manoa.

13 "Research faculty" means faculty members of an organized
14 research unit who:

15 (1) Conduct research;

16 (2) Do not instruct students; and

17 (3) Are classified as "R" faculty.

18 "State moneys" means all moneys authorized by the
19 legislature and appropriated to the University of Hawaii,
20 including legislative appropriations, general funds, general
21 obligation bond moneys, special fund moneys, allocations of



1 tobacco settlement moneys, and allocations of tax revenues.
2 "State moneys" does not include moneys in or transferred from
3 the University of Hawaii tuition and fees special fund.

4 **§304A- Organized research units; funding.** (a) To
5 continue operation, an organized research unit shall be
6 primarily funded through the receipt of extramural funds and
7 moneys transferred from the University of Hawaii research and
8 training revolving fund; provided that the ratio of:

9 (1) The sum of annual expenditures of extramural funds and
10 moneys transferred from the University of Hawaii
11 research and training revolving fund by the organized
12 research unit; to

13 (2) The sum of annual expenditures of state moneys,
14 excluding the University of Hawaii research and
15 training revolving fund,
16 shall be equal to or greater than five-to-one within three years
17 following the effective date of this Act. After achieving this
18 ratio, an organized research unit shall maintain the ratio.

19 (b) Prior to establishing an organized research unit, the
20 board of regents shall review the proposed financial plan for
21 the organized research unit. If the proposed financial plan



1 does not project that the ratio set forth in subsection (a) will
2 be met within three years, the board of regents shall not
3 approve the establishment of the organized research unit.

4 (c) In order to achieve the ratio set forth in subsection
5 (a), the University of Hawaii may consider imposing any of the
6 following conditions:

7 (1) State moneys may only cover the percentage of a
8 faculty member's salary equal to the teaching load
9 performed by the faculty member;

10 (2) State moneys may only cover the salary for a faculty
11 member's time not covered by the amount of effort
12 reported on federal grants and contracts;

13 (3) Salaries of faculty members in permanent positions may
14 be capped using the salary cap established by the
15 National Institutes of Health as Executive Level II;

16 (4) The workload of a permanent faculty member may be
17 governed by the requirements of the contract between
18 the University of Hawaii and the exclusive
19 representative of bargaining unit (7) regarding
20 workload for instructional faculty; or

21 (5) A faculty member's salary may be funded as follows:



1 (A) During the first year of employment, one hundred
2 per cent of the salary may be funded by state
3 moneys;

4 (B) During the second year of employment, fifty per
5 cent of the salary may be funded by state moneys;
6 and

7 (C) During the third year of employment and
8 thereafter, twenty-five per cent of the salary
9 may be funded by state moneys.

10 (d) Any organized research unit of the University of
11 Hawaii that does not meet the requirements of this section shall
12 be reported to the board of regents for review.

13 The board of regents shall submit a report to the
14 legislature regarding any organized research unit that does not
15 meet the requirements of this section, including an explanation
16 of why the organized research unit does not meet the
17 requirements of this section and what steps, if any, will be
18 taken by the organized research unit to meet the requirements of
19 this section.



1 The board of regents shall submit the report to the
2 legislature not later than twenty days prior to the convening of
3 the next regular session.

4 **§304A- Reports to legislature.** The board of regents
5 shall submit a report on all organized research units to the
6 legislature not later than twenty days prior to the convening of
7 each regular session. The report shall include the following:

8 (1) The amount of funding received by each organized
9 research unit, including a breakdown of the sources of
10 funding;

11 (2) A list of faculty members, including research staff,
12 attached to each organized research unit that
13 identifies:

14 (A) Faculty members who are research staff who only
15 conduct research;

16 (B) Faculty members who only instruct students; and

17 (C) Faculty members who conduct research and instruct
18 students;

19 (3) A comprehensive plan for all organized research units
20 to achieve the funding requirements set forth in this
21 subpart;



- 1 (4) An itemization of the total operating costs of each
2 organized research unit, including:
- 3 (A) Research faculty, staff, and student personnel
4 costs, as well as information on grants and
5 contracts awarded;
- 6 (B) Administrative costs;
- 7 (C) Philanthropic funds and their uses;
- 8 (D) An itemization of the pro rata share of
9 administrative costs in support of the operation
10 of each organized research unit, including but
11 not limited to costs incurred by the office of
12 the vice president for research and innovation,
13 office of the vice chancellor for research,
14 office of research services, and office of
15 research compliance; and
- 16 (E) Building operational costs; and
- 17 (5) An itemization of the sources of funding for each
18 faculty member, including research staff, attached to
19 each organized research unit."

20 SECTION 3. This Act shall take effect upon its approval.



Report Title:

University of Hawaii; Organized Research Units; Funding

Description:

Establishes program and salary funding requirements for organized research units of the University of Hawaii. (HD1 Proposed)

The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.





UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
House Committee on Higher Education
February 16, 2016 at 2:02 p.m.

By
Michael Bruno
Vice Chancellor for Research
University of Hawai'i at Mānoa

HB 1625 Proposed HD1 – RELATING TO THE UNIVERSITY OF HAWAII

Chair Choy, Vice Chair Ichiyama, and Members of the Committee on Higher Education:

The University of Hawai'i (UH) does not support HB 1625 proposed HD1, which would require that an Organized Research Unit (ORU) of UH be primarily funded through the receipt of extramural funds and moneys transferred from the University of Hawai'i research and training revolving fund; provided that the ratio of this sum to the sum of annual expenditures of state moneys shall be equal to or greater than five-to-one.

The University of Hawai'i opposes this measure because of its profound impact on the research and educational missions of the University and by extension, its impact to our State and the nation.

According to UH Executive Policy 12.213, "Establishment and Review of Organized Research Units", Organized Research Units "benefit the State of Hawaii directly through programs of applied research, extension service, and training in areas which meet community and regional human and economic needs". Further, "ORUs are normally established and maintained only in areas where the University has intrinsic research advantages or particular capabilities to respond to special needs". With regard to financial sustainability, the policy states: "In most cases, funding is obtained from both State and Federal sources, the ratio of external to core funding is greater than one, and more than one external funding source is involved". By all of these expectations and measures, the UH ORUs have been remarkably successful:

1. They have provided distinct human and economic benefits to our community. For example, the School of Ocean and Earth Sciences and Technology, home to most of the UH ORUs, was recently celebrated by the Hawai'i Tourism Authority, Meet Hawai'i, and the state's tourism industry leaders as the 'Elele Organization of the Year for its outstanding work in helping to bring potentially more than \$100 million in convention business to the state. Researchers at the Hawai'i Natural Energy Institute (HNEI) develop and evaluate novel renewable energy technologies. Importantly, the HNEI, like the other UH ORUs, is conducting R&D efforts that have real and lasting impact to our citizens, in this case helping to solve the State's critical energy needs. The Institute hosts an array of public-private partnerships to solve real-world problems in areas that range from battery technology and alternative fuels, to the development of energy grid technology to increase the integration of renewable energy sources. The University of Hawai'i Center on Aging continues to lead interdisciplinary efforts in research, educational programs and service to enhance the well-being of our older adults. The Center is conducting significant and impactful externally-supported projects that include the Hawai'i Alzheimer's Disease Initiative, aimed at strengthening Hawai'i's "dementia capability" through

professional training, caregiver education, and new services for persons with dementia and their caregivers.

2. These and other activities at the UH ORUs leverage the existing, multi-disciplinary expertise at the University, as well as our unique location and environment to conduct research and training that could not possibly be performed anywhere else on earth.

3. The ORUs have significantly contributed to a remarkable increase in the externally-supported research at UH. The extramural funding at the University of Hawai'i at Mānoa has increased from \$193 million in FY01 to more than \$300 million presently. Although the UH Executive Policy mentioned earlier sets the expectation for the ratio of external to core funding as greater than one, the ORUs have consistently outperformed this expectation. For example, if we examine the numbers from FY11 through FY15, the ratio described in the proposed legislation ranged from 4.7 to 6.0 at the School of Ocean and Earth Sciences and Technology, which includes most of the UH ORUs, and 7.2 to 10.1 at the UH Cancer Center. I should mention that the John A. Burns School of Medicine has never been regarded as an ORU at UH.

As stated in the UH Strategic Directions, 2015-2021, the goal of the Hawai'i Innovation Initiative is to "Create more high-quality jobs and diversify Hawai'i's economy by leading the development of a \$1 billion innovation, research, education and training enterprise that addresses the challenges and opportunities faced by Hawai'i and the world." The UH ORUs have the primary role in this initiative. We are committed to ensuring that the work of the ORUs is sustainable, and further that they continue to address the most challenging problems of our time while also educating and inspiring students to achieve their full potential.

Let me end by returning to a phrase that appears here in my testimony as well as in the proposed legislation: "Research and Training". The ORUs, by virtue of the leading-edge nature of their research, the real-world impact of their work, and the passion and expertise of their faculty and research staff, are among the most exciting and effective places of learning that I have encountered in my 30 years as an educator and researcher. Undergraduate and graduate students participate in research projects here, in some of the most advanced research enterprises in the world, alongside many of the world's leading scholars. To the extent that the aim of the proposed legislation is to increase the involvement of ORU faculty in the UH educational mission and the participation of UH undergraduate students in the ORU research mission, I am supportive. This is in fact a primary goal of our ongoing research strategic planning process.



The House Committee on Higher Education
Tuesday, February 16, 2016
2:02 p.m., Room 309

RE: HB 1625, HD1, Relating to The University of Hawai'i

Attention: Chair Isaac Choy, Vice Chair Linda Ichiyama and
Members of the Committee

The University of Hawaii Professional Assembly (UHPA) urges the committee to **oppose HB 1625, HD1**. It is a proposal that substantially alters the ability of the University of Hawaii and its faculty members to determine the direction and means to advance research programs.

It inappropriately broadens the scope of legislative oversight to dictate the management of research programs and define the compensation and working conditions of Bargaining Unit 7 members. It's provisions undermine UHPA as the exclusive bargaining agent and seeks to circumvent to union's right to negotiate compensation and working conditions.

UHPA urges the Committee to **defer this proposed legislation**.

Respectfully submitted,

Kristeen Hanselman
Executive Director

**University of Hawaii
Professional Assembly**



2800 Woodlawn Dr.
STE #263
Honolulu HI 96028

14 February 2016

in reference to House Bill 1625

Growth of the state's technology sector is an important component of any plan to achieve diversification in Hawaii's economy. Significant progress has been made in recent years through programs supported by federal and state initiatives, but more is required to move Hawaii's technology industry to support technology development and subsequent commercialization. Continuing innovations in the science and technology fields will not only enable the State to succeed in a global marketplace, but will also support a sustainable economic growth mechanism through diversification and technology-based product development.

Spectrum Photonics is a technology-oriented small business whose core business is based on intellectual property licensed from the University of Hawaii, Manoa. At the time of Spectrum Photonics founding in 2008, we carefully considered where to locate the company. Having previously served as VP for Research with ICx Technologies, a publicly-traded technology company with research locations distributed in ten states across the Mainland, I considered many possibilities. The candidate list was eventually shortened to Florida, Texas, California and Hawaii. Although we were relatively unfamiliar with the business climate in Hawaii, we decided to establish our corporate headquarters on Oahu. We chose to locate Spectrum Photonics in Hawaii for numerous reasons, but the strength and reputation of the research programs at University of Hawaii Manoa in addition to the value proposition of new intellectual properties, were chief among those reasons.

Enactment of HB1625 would impose long term damage to the reputation, productivity, and infrastructure of the research enterprise at UH Manoa. At current levels, state support of the UH organized research units provides the funding necessary to attract and retain the quality faculty needed to achieve and maintain nationally-competitive research programs. It is my understanding that UH annually brings \$350,000,000 - \$450,000,000 into the state through extramurally-funded research grants and contracts, which in and of itself is an extremely valuable source of non-state revenues. This is not the end of the story, however, as the presence of a strong university research enterprise is undeniably one of the most important factors in the establishment and growth of a vibrant technology-based business community. During its seven year of operation, Spectrum Photonics has steadily grown to an employee headcount of 15 and has received approximately \$14,000,000 in federally-funded research and development contracts. Within the next several days we anticipate the announcement of a new \$17,000,000 federal contract award, with Spectrum Photonics serving as the contract prime and UH included as one of our subcontracted team members. With this and future awards we anticipate company headcount increasing to 30-50 within the next 3-5 years; however, continued growth for small business technology companies like ours is based in part on the sustained health of the UH research units.

Our future viability as a Hawaii-based producer of technology-based products depends on the successful establishment of technology innovation, commercialization, and infrastructure improvement. Spectrum Photonics is not unique in this matter; all current and future technology-oriented Hawaii-based businesses are fundamentally reliant on innovation and infrastructure. Enactment of HB1625 would quickly serve to erode and diminish the state's infrastructure as well as its primary engine for intellectual innovation.

We strongly urge defeat of HB1625.

Sincerely,

Edward T. Knobbe, Ph.D.
President and CEO

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 10:24 AM
To: HEDtestimony
Cc: adrian@cc.hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Adrian Franke	Individual	Oppose	No

Comments:

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Testimony Submitted to the House Committee on Higher Education
February 16, 2016 at 2:00 pm
Conference Room 309

Alexander Shor

HB 1625 – RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy. Vice Chair: Linda Ichiyama, and members of the committee:

Background

I offer this testimony as a private citizen opposed to HB 1625. In my professional capacity, I am the Associate Dean for Research of the School of Ocean and Earth Science and Technology (SOEST), the home of five of the Organized Research Units, or ORUs, that are singled out in this bill for management under new guidelines. I have been employed by University of Hawaii for a total of nearly 20 years, first on the research faculty from 1986 till 1998, and then again as Associate Dean for Research since 2007. I have been educated and employed by private universities (Harvard, MIT and Columbia) and research institutions (Woods Hole Oceanographic Institution) as a geologist and a seagoing oceanographer, and I served for 13 years as a Program Director at the National Science Foundation, in the Division of Ocean Sciences. I am quite familiar with procedures and policies guiding federally-funded research, not only at University of Hawaii, but more broadly in ocean and earth sciences at US private and public universities and federal science agencies (NSF, NOAA, ONR and NASA, particularly).

In my current position, I oversee the SOEST research portfolio (mostly projects managed by individual faculty members in our five ORUs and four departments), which is about \$100 million of extramural (mostly federal) research funds annually. I directly manage our research vessel operations (about \$10-15 million annually), including operation of two large ships (one owned by the US Navy, one by Hawaii), two research submersibles, our marine facility (currently moving from Pier 45 to new facilities at Piers 34-35 and Sand Island), and a large array of shared-use equipment and specialized instrumentation used by our faculty to study the oceans. The cost of operating these ships and seagoing research tools is supported by funds received through grants and contracts and RTRF, but not from the state general fund. It is, in part, the availability of these ships and related facilities that keeps our research programs in ocean science and related geosciences in the top tier, ranking alongside the very best universities and research laboratories in the world. It is truly an honor to be able to serve this exceptional group of faculty members in my current position, and I love working at the University of Hawaii.

Impact of HB 1625 on SOEST Grants for Federal Research

Federal research in SOEST is largely supported with grants, with some cooperative agreements and a few contracts. Most of the awards coming to SOEST

to support research are based on competitive proposals, with many of the federal programs having success rates of ten to thirty percent. Having even a fifty-fifty chance of proposal success is rare, indeed. Despite that, the overwhelming majority of our faculty have active research grants, and this is true whether their positions are Instructional or Research, and whether they are in academic departments or ORUs.

Agency rules for grants vary, some requiring institutional cost-sharing, some not (some, including unsolicited grants at NSF, even disallow it). The rules proposed in HB 1625 about limits on salary to be paid to faculty in ORUs, however, would put SOEST at a significant disadvantage compared to other universities in many of the programs at the federal agencies that currently fund our faculty research. In accordance with the NSF Grant Policy Guide, for example: “*NSF normally limits salary compensation for senior project personnel on awards made by the Foundation, **to no more than two months of their regular salary in any one year.** This limit includes salary received from all NSF funded grants.*” Putting a requirement that ALL faculty members in an ORU would need to raise 75% of their salary from grants would make it extremely difficult, if not impossible, for many of our NSF-funded faculty members to remain in ORUs, even with individual grant waivers of this rule. And even when it is allowed by NSF, including more salary in proposals reduces our faculty’s competitiveness with those places that have lower requirements.

The statement is made in the bill preamble that “...*most universities require research faculty to cover **a portion** of their salaries with extramural funds...*” While likely true, I am personally unaware of ANY university that places the level of this support as high as 75%. If such universities still exist, they are definitely not in the top ranks nationwide or internationally. The days of large, soft-money research institutions are largely in the past. The framework for supporting federal research has changed significantly in the past two decades, and the NSF grant policy noted above is a symptom of that change at the federal level. Within SOEST, we expect almost all of our faculty to raise part of their salary extramurally – very few have appointments of 100% over 11 months. These expectations are written into their offer letters and are part of their performance evaluations. We also expect most SOEST faculty to teach and carry out research, whether they are Instructional or Researcher in classification.

In another example of the negative impact of this bill, the Hawaii Sea Grant program would be severely impacted under a system in which very limited State salary fund is available to serve as cost-matching. Sea Grant has a cost-matching requirement built into its charter, as a shared federal-state program. Sea Grant has for many years been one of our most successful programs for supporting student projects and for conducting research projects of direct benefit to the local community. This bill would be particularly damaging to its function.

More generally, the apparently arbitrary guideline that the state must benefit with five dollars of ORU income for every one dollar of state funds would potentially force us to limit pilot programs and curtail partial support for high risk ventures designed to engender large, future research programs.

In Conclusion

As a taxpayer and homeowner in Hawaii, I am very concerned about the cost of living, the quality of life and the quality of education available here for myself, my family (including our two children) and future generations. I came here because of the superb reputation of University of Hawaii in ocean science research. That reputation is well deserved. From long experience both at the University of Hawaii and elsewhere in the US at university and federal research centers, however, I can state unequivocally that the bill that is proposed here will not improve the function and cost-effectiveness of research at UH, nor will it result in higher quality research or more research. Instead, it creates new and difficult divides between teaching faculty and research faculty, and it will certainly cause some of our best researchers to leave (with their grants) for places that encourage their productivity with positive incentives rather than constrain it with additional regulations. With new limits on salary in a time of declining overall federal support for basic research, we will see others lose out on grant opportunities due to lost competitiveness (or inability to qualify at all).

I predict that if this bill is passed in its present form, and particularly if it passes in conjunction with other pending bills related to the operation of the Research Corporation of the University of Hawaii (RCUH), we will have to shut down our research ship operations within three to five years, as the flexibility needed to maintain steady ship operations on annual federal budgets will become too great to continue as our research grants decline and the overall SOEST research enterprise withers and dies. I see that as a major step down in our capabilities, and our reputation, and though it is something I very much doubt you intend, I think it is an almost certain result of the changes proposed here.

I strongly oppose this bill, for my children's future and that of our state economy. I urge you to vote against it.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 11:02 AM
To: HEDtestimony
Cc: acast@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
ALMA CAROLINA CASTILLOTUJILLO	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 7:55 PM
To: HEDtestimony
Cc: elkadi@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Aly El-Kadi	Individual	Oppose	No

Comments:

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Feb. 15, 2016

Dear Legislators,

My name is Andrew Howard. I am a faculty member at the Institute for Astronomy at the University of Hawaii, submitting testimony as an individual.

I write in strong opposition to amendment HD1 to the bill HB 1625. I have read the amendment carefully and considered its impact. The amendment would have disastrous effects on the University of Hawaii and the basic research in the state of Hawaii. It is difficult to see how Organized Research Units (ORUs) at the University of Hawaii could function if the amendment is included and the bill passes. Such ORUs include the Institute for Astronomy (IfA) and the School for Ocean and Earth Science and Technology (SOEST).

These ORUs are vital to UH and the state for several reasons. First, they support a research and technology sector of the Hawaiian economy. Students trained in research in the ORUs have high-paying jobs and contribute to the innovation economy. Second, the ORUs also have large economic impacts of their own. A recent study of the UH Economic Research (UHERO) shows that in 2012 astronomy had a total economic impact of \$168 million, a job creation impact of 1400, and generated State taxes of \$8.2 million, about twice as much as we received in G-funds. Third, removing the research infrastructure from UH would likely compromise our status as a Carnegie R1 university. Since tuition is strongly correlated with R1 status, UH would likely suffer further economic distress, as it would not be able to raise the tuition funds needed to run the university.

There are other, more effective ways to control cost and increase transparency at UH. I urge the Legislature to consider other options with careful attention to their unforeseen consequences.

Sincerely,
Andrew Howard
Honolulu resident and UH faculty member

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 11:19 AM
To: HEDtestimony
Cc: annabneuheimer@hotmail.com
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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Anna Neuheimer	Individual	Oppose	No

Comments:

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Committee on Higher Education
DATE: Tuesday, February 16, 2016
TIME: 2:02 pm
PLACE: Conference Room 309
State Capitol
415 South Beretania Street

STRONGLY OPPOSED to HB1625 Proposed HD1

Dear Chair Choy, Vice-Chair Ichiyama, and members of the Committee on Higher Education,

I am Barbara Yee, Professor and Chair of Family and Consumer Sciences and testifying as a private citizen. I STRONGLY OPPOSE HB1625, Proposed HD1. The autonomy of the University of Hawaii is critical to the State of Hawaii. As the only public university in Hawaii, the loss of accreditation will jeopardize Hawaii now and for many generations. As supported by public vote, university autonomy of accreditation of universities, and UH Mānoa's as a Carnegie high research intensive university, this bill will effectively destroy our international and national research status with its ability to secure over \$400 million dollars in 2015.

As a previous member of the National Institute of Health Advisory Committee on Research on Women's Health and professor for over 34 years, the integration of research and teaching enables both undergraduate and graduate students, to learn from scientists who are generating cutting edge research. We need to maintain our ability to secure research grants and afford research opportunities for students in Hawaii. If this type of cutting edge research and teaching is not available here, students will study on the mainland, and are likely to stay on the mainland. For example, I obtained my graduate degrees on the mainland and I returned 28 years later. We need to provide research and graduate training at UHM, so that we can keep our Hawaii residents at home.

Approval of this bill will sent a long term chilling and damaging effect on the research opportunities offered at the University of Hawaii at Mānoa.

Respectfully,

Barbara Yee
Honolulu, HI 96816

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 9:04 AM
To: HEDtestimony
Cc: boryann.liaw@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Boryann Liaw	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

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Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Brian N. Popp	Individual	Oppose	No

Comments: Are you kidding me. What is this micromanagement of UH necessary? Do our elected officials not have enough to do?

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ichiyama2-Brandon

From: Brian Powell <powellb@me.com>
Sent: Sunday, February 14, 2016 12:41 PM
To: HEDtestimony
Subject: HB1625 Testimony

To the Representatives in the Legislature of Hawaii,

I, Brian Powell, am a citizen of the state of Hawaii and reside in the district of Manoa. I, respectively, would like to submit the following testimony in opposition of HB1625:

Former Chairman of the Federal Reserve, Alan Greenspan, a strong critic of governmental oversight on the economy also stressed the importance of the public University: "One critical element in creating [global economic] opportunity is to provide rigorous education and ongoing training to all members of our society. This proposal is not novel; it is, in fact, the strategy that we have followed successfully for most of the past century and a strategy that we now should embrace with renewed commitment. ... Research on wealth creation in both emerging and developed nations strongly suggests that it is the knowledge and the skill of our population interacting under our rule of law that determine our real incomes, irrespective of the specific jobs in which these incomes are earned and irrespective of the proportion of domestic consumption met by imports." [1]

Basic and Applied Research generate the ideas that build new industries and knowledge to educate and train future generations. The continued attack upon the University of Hawaii System by the legislature combined with the lack of strategic leadership at the Board of Regents has led to continual decay at the only Research University in the state: UH-Manoa. World-renowned faculty are steadily departing due to declining support and incompetent administration. The situation has been a slow decline; however, this bill will be the event that triggers an irreversible and sudden shutdown of knowledge generation in Hawaii. The State of Hawaii is facing a situation where it must choose if it wishes to be a state whose citizens work in support of tourism and the military or one that creates citizens that build new industries and knowledge. This bill chooses the former, but the future for our economy is the latter.

[1] - "The Central Role Education Plays In Our Nation's Economic Prosperity", Alan Greenspan:
Talk from the Boston College Finance Conference 2004, Boston, Massachusetts; March 12, 2004
<<http://www.federalreserve.gov/boarddocs/speeches/2004/20040312/default.htm>>

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 9:49 PM
To: HEDtestimony
Cc: brkonter@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Bridget Konter	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 1:31 AM
To: HEDtestimony
Cc: bgbaysjr@commspeed.net
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Brooks G. Bays, Jr.	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 12:08 PM
To: HEDtestimony
Cc: brucemhowe@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Bruce Howe	Individual	Oppose	No

Comments: Testimony Presented to the House Committee on Higher Education February 16, 2016 at 2:00pm Conference Room 309 Bruce M. Howe HB 1625 HD1 – RELATING TO THE UNIVERSITY OF HAWAII Chairs: Isaac W. Choy, Vice Chairs: Linda Ichiyama, and members of the committee: I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as a research professor and the chair of the Department of Ocean and Resources Engineering (ORE) within the School of Ocean and Earth Science and Technology (SOEST) at the University of Hawaii at Manoa (UHM). While ORE is an academic department, research plays equally crucial roles in producing research results of state, national and international import, and in improving our teaching of our students, exposing them to the latest cutting edge thinking and the process of life-long inquiry; ORE supplies half the ocean engineering demand within the state. We consider many of the Organized Research Units (ORUs) at UHM to be essential partners in the combined academic/research endeavor – we work closely with the Hawaii Natural Energy Institute (HNEI), Sea Grant, Hawaii Institute for Geophysics and Planetology (HIGP), Water Resources Research Center (WRRC), Hawaii Institute of Marine Biology (HIMB) and others. Most ORUs at UHM have long obtained extramural research funding, such that UHM is a top tier research university, and a shining beacon in the middle of the Pacific. For instance, SOEST and the ORUs within it bring in extramural funding roughly 4-5 times the state contribution in funding, and is ranked very highly in the entire world with a commensurate reputation that brings glory to the state. Don't try and fix something that is not broken. Respect the autonomy of the University, as specified in the state constitution. Value the contribution of the research university and understand that research is an integral part of the quality higher education that UHM provides intimately intertwined with the instruction, and contributes much, much more to the state and the world than represented by oversimplified accounting. UH is one state entity that lifts the state above serving tourism or the military.

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ichiyama2-Brandon

From: Caroline <dcb@hawaii.edu>
Sent: Sunday, February 14, 2016 1:25 PM
To: HEDtestimony
Subject: HB 1625

I am writing to express my opposition to HB 1625. This bill contains provisions that will act to destroy the research mission of the University of Hawaii and the training of future citizens of this State.

Thank you for consideration of this view.

Caroline Blanchard,
Research Professor, UH

Sent from my iPhone

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 12:05 PM
To: HEDtestimony
Cc: hi.albrights@yahoo.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
cheryl albright	Individual	Oppose	No

Comments: This is a direct attack on Chapter 89 concerning collective bargaining of public employees. It appears to be a Trojan horse, covert attack on public employees, similar to that of Walker in Wisconsin. It will also effectively destroy research units that address state problems and that bring prestige and millions of dollars of federal and foundation funds to Hawaii, having a multiplying effect on our economy. It is also extreme micro-management by the Hawaii legislature. This bill would result in severe reductions in new faculty coming to UH to do cutting-edge research. This bill should not see the light of day following this hearing.

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 8:52 PM
To: HEDtestimony
Cc: christi.cba@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Christi Reed	Individual	Oppose	No

Comments: HB1625 is essentially an attack on research units at UH based on some pretty screwed up accounting and/or a plain lack of understanding of (or appreciation for) the impacts of academic research, both financial and otherwise. The proposed changes would be crippling to research programs at UH, not to mention all the related educational opportunities and associated benefits to the community. Please turn this bill down.

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 2:48 PM
To: HEDtestimony
Cc: halelea@hotmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Christian Smith	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 1:15 PM
To: HEDtestimony
Cc: christin.shacat@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Christin Shacat	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 9:17 AM
To: HEDtestimony
Cc: christinecabalo@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Christine	Individual	Oppose	No

Comments:

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Testimony against House Bill 1625 proposed HD1

My name is Christoph Baranec. I am a tenure-track Assistant Astronomer at the Institute for Astronomy (IfA) at UH Manoa, submitting this testimony as an individual. The IfA is an Organized Research Unit (ORU) distributed across Oahu, Maui and Hawaii Islands. I specifically live and work in Hilo, although I teach classes at both UH Hilo and UH Manoa.

The proposed amendment HD1 to the bill HB1625 places an undue burden on researchers at Organized Research Units (ORU) at the University of Hawaii. I believe in transparent reporting of how UH funds ORU, and this reporting mechanism is already in place. The major flaw in this amendment culminates in §304A-(c),(5),(C): “During the third year of employment and thereafter, twenty-five per cent of the salary may be funded by state moneys.” It is infeasible for the majority of faculty to raise 75% of their salary through external funds. I specifically develop and build adaptive optics technology and use it for astronomical research for which I have to main funding avenues, the National Science Foundation (NSF) and NASA. Both have limits on the amount of direct salary that can be requested as part of proposals. For example, the NSF grant proposal guide¹ Section II.C.2.g.i.a. states, “As a general policy, NSF limits the salary compensation requested in the proposal budget for senior personnel to no more than two months of their regular salary in any one year. This limit includes salary compensation received from all NSF-funded grants.”

I currently have 1 grant from NASA which covers 1 month of my salary per year, and I am about to submit a \$4.2M proposal to the NSF that, if selected for funding, will also cover 1 month of my salary per year. The majority of funding for this proposal will go to support engineers, graduate students and postdoctoral scholars at the University. The instrument built as part of the proposal will be used by graduate students, as well as undergraduate students in astronomy at UH Manoa and UH Hilo.

Unfortunately this external funding is by no means assured and success rates for federal awards are dropping². We are in competition with the best schools in the world and are already at a disadvantage in terms of funding (e.g., endowments, alumni giving). The proposed amendment HD1 to the bill HB1625 puts Hawaii at an even greater disadvantage by creating an undue burden on researchers having to fund the majority of their salaries. Instead, the legislature should see ORU researchers as investments that uniquely create a long-term educational, economic and social benefit to the people of Hawaii.

Sincerely,



Christoph Baranec

¹ http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg

² “Impact of Declining Proposal Success Rates on Scientific Productivity,” Cushman, P., et al., 2015. (<http://arxiv.org/abs/1510.01647>)

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 3:41 PM
To: HEDtestimony
Cc: ckelley@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Christopher Kelley	Individual	Oppose	No

Comments:

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Testimony Presented Before the
Committee on Higher Education
Tuesday, February 16, 2016 at 2:02pm

By
Christy Nishita, Ph.D.
Interim Director, Center on Aging, University of Hawaii

RE: HB1625 HD1; In Opposition

Chair Choy, Vice-Chair Ichiyama, and Members of the Higher Education Committee,

My name is Christy Nishita and I am the Interim Director of the Center on Aging (COA) at University of Hawai'i at Mānoa (UHM). I am providing individual testimony in opposition to HB1625 because of its negative impact on the capacity building and future growth of COA.

COA is a small unit on campus, conducting primarily applied research, program development and evaluation in the community. It does not have any faculty supported by state funds. Instead, COA has been active in bringing in contracts and grants over the past few years. Current projects address important community needs such as family caregiving, elder abuse, dementia, and building an "age-friendly city". *However*, efforts by its half-time Interim Director and temporary researchers, are limited to activities specified in contracts. It has not been able to engage in strategic planning or a broad based assessment of the needs of Hawaii's older population. Nor has it been able to fully achieve all areas of its mission, which is to develop educational programs and initiatives in gerontology. Permanent positions will help to achieve this goal.

I would like to thank the Committee on Higher Education for their support of bills requesting 2 permanent positions with funding at COA (HB1883, HB493 HD1). If passed, these faculty, one specialist and one instructional faculty member, will identify workforce development needs and gaps in aging, create educational initiatives on campus, and implement training for practitioners and caregivers in the community. This *protected time*, to focus on strategic planning and needs within the state, is important for its long-term growth.

Even if COA is successful in securing 2 additional permanent positions, the pursuit of extramural funding will not end. It is already a part of the culture of the COA to compete for grants and contracts to support financial sustainability; as well as to advance scholarship and build recognition for COA locally, nationally, and internationally. COA is and will continue to be driven to discover, innovate, and create meaningful change for older adults in Hawaii.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 2:29 PM
To: HEDtestimony
Cc: glenn@soest.hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Craig Glenn	Individual	Oppose	No

Comments: I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I am a Professor of 26 years with the Department of Geology and Geophysics at the University of Hawaii at Manoa. Should HB 1625 be enacted this legislation would do highly significant harm to all organized research units at the University and its mission in serving the State and People of Hawaii. Please do not allow Bill 1625 to move forward.

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 4:48 PM
To: HEDtestimony
Cc: nelsoncraige@netscape.net
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Craig Nelson	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 5:59 PM
To: HEDtestimony
Cc: craig.randall.smith@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Craig Randall Smith	Individual	Oppose	No

Comments: This bill will stifle the ability of the University of Hawaii to conduct extramurally funded research and will result in a major loss of grant and contracts to the University and the State of Hawaii. It will cause some of our most productive researchers to seek employment elsewhere. It is certain that this bill, if passed, will yield a drain of our research faculty best at creating important new knowledge, at getting grants and contracts funded from highly competitive agencies and foundations, and at providing educational and research opportunities for our graduate and undergraduate students. I speak from experience as a highly successful scientific researcher who has brought more than \$9.5 million in research funding to the University of Hawaii.

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From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 3:05 PM
To: HEDtestimony
Cc: okimotod@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Darren Okimoto	Individual	Oppose	No

Comments:

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Testimony for Public Hearing
House Committee on Higher Education

February 16, 2016 at 2:02pm
Conference Room 309

Darren T. Lerner
47-387 Lulani St.
Kānʻeohe, HI 96744

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chairs: Isaac W. Choy, Vice Chairs: Linda Ichiyama, and members of the committee:

Good morning Representatives Choy, Ichiyama and members of the committee. I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as the director for the University of Hawaiʻi Sea Grant College Program (Hawaiʻi Sea Grant) and the Interim Director for the University of Hawaiʻi Water Resources Research Center (WRRC). This legislation establishes program and salary funding requirements for organized research units of the University of Hawaiʻi. Should it be enacted, this legislation would do significant harm to all organized research units at the University and would severely reduce the ability for Hawaiʻi Sea Grant and WRRC to continue their more than 50 years of successful engagement in research, extension, education and outreach serving Hawaii's communities. Should this bill pass it may ultimately result in the closure of Hawaiʻi Sea Grant and WRRC programs in Hawaiʻi.

The Water Resources Research Act of 1964, which was signed into Public Law 88-379 by President Lyndon B. Johnson, was established to promote understanding of critical state and regional water management and policy issues through research, community outreach and engagement, and public education, ultimately creating the National Institutes of Water Resource Research. WRRC was established in 1964 and is part of a 54 program network including programs in the 50 US states, the District of Columbia, Puerto Rico, the US Virgin Islands, and Guam.

The Water Resources Research Act established the Water Resource Research Institutes as a partnership program with core federal funding requiring a match of non-federal funds from the states where they are located. Each institute must demonstrate non-federal matching funds and a commitment from the state in the amount of 2 dollar for every 1 federal dollars received. In as much as most of the extramural funding garnered by the significant efforts of the faculty of WRRC and the faculty of any organized research unit at the University of Hawaiʻi for that matter, is derived from federal funding opportunities, HB1625, should it be enacted into law, would remove the ability to provide the required match and demonstrated commitment of the State of Hawaii as a partner in this more than 50 year relationship with the Federal Government. Should the WRRC fail to provide the required 2:1 match, the result would be withdrawal of the federal support and closure of this program.

The National Sea Grant College Program Act of 1966, which was signed into Public Law 89-688 by President Lyndon B. Johnson, was modeled after the Land Grant Act of 1862 and established

what is now a network of 33 university based programs focused on understanding and communicating conservation and sustainable use of coastal and ocean resources to the betterment of coastal communities across all US coastal states, Great Lakes states, Puerto Rico and Guam. Hawai'i Sea Grant was established in 1968.

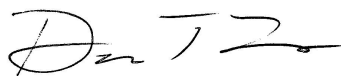
The National Sea Grant College Program Act established the Sea Grant Colleges as a partnership program with core federal funding requiring a match of non-federal funds from the states where they are located. Each Sea Grant College Program must demonstrate non-federal matching funds and a commitment from the state in the amount of 1 dollar for every 2 federal dollars received. In as much as most of the extramural funding garnered by the significant efforts of the faculty of Hawai'i Sea Grant and the faculty of any organized research unit at the University of Hawai'i for that matter, is largely from federal sources, HB1625, should it be enacted into law, would remove the ability to provide the required match and demonstrated commitment of the State of Hawaii as a partner in this nearly 50 year relationship with the Federal Government.

Hawai'i Sea Grant is a highly leveraged program with 5 FTE supported by institutional funds, an additional 10 FTE supported by federal funds and 30 FTE that are project-based and supported by extramural funds. I respectfully offer that this is an equation that greatly benefits the University and State of Hawai'i. Reducing the commitment of institutional funds will only serve to reduce the ability to provide the basis for the significant leveraging demonstrated. Abolishing institutional support will remove the ability to provide the required matching funds and would ultimately result in the removal of Hawai'i Sea Grant's institutional status and dissolution of the program.

Both of these programs, not unlike other organized research units at the University of Hawai'i strive for a future for Hawai'i where the environment sustainably supports culturally, economically and socially inclusive and resilient communities. To do this we must better understand, communicate, and develop policy based on knowledge gained from excellence in research on disaster resilience and preparedness, coastal process such as beach erosion and sea level rise, and the sustainable use of fresh water resources, renewable energy, and food sources. I hope that you will agree that maintaining the utmost effectiveness of the organized research units at the University of Hawai'i, the State of Hawai'i's only Carnegie 1 Research Institution (R1: Doctoral Universities – Highest Research Activity), are key to this success.

Thank you for the opportunity to provide testimony in opposition of this measure.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. T. Lerner', with a stylized flourish at the end.

Darren T Lerner

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 10:30 AM
To: HEDtestimony
Cc: theatacamakid@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
David Duffy	Individual	Oppose	No

Comments: This is a direct attack on Chapter 89 concerning collective bargaining of public employees. It appears to be a Trojan horse, covert attack on public employees, similar to that of Walker in Wisconsin. It will also effectively destroy research units that address state problems and that bring prestige and millions of dollars of federal and foundation funds to Hawaii, having a multiplying effect on our economy. It is also extreme micro-management. This bill should not see the light of day following this hearing.

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From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 3:58 PM
To: HEDtestimony
Cc: david.ho@me.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
David Ho	Individual	Oppose	No

Comments: I'm opposed to HB1625 HD1 as an individual citizen.

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 1:07 PM
To: HEDtestimony
Cc: dkarl@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
David Karl	Individual	Oppose	No

Comments: The University of Hawaii (UH) was founded in 1907 under the Morrill Land Grant Act of 1862. Over the past 100+ years, UH has grown in stature and importance to the State. Currently it is listed among only 115 public and private universities nationwide who have earned the designation "R1- highest research activity" by the Carnegie Classification of Higher Education. Much of the research currently conducted is through the organized research units (ORUs). This bill would diminish their ability to create and disseminate knowledge and would eventually erode UH's international reputation, that has taken a century to establish. Thank you for your consideration.

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My name is David Trang. I am a postdoctoral fellow at the University of Hawai‘i at Mānoa, submitting my testimonial as an individual. I would like to express my opposition to proposed bill H.B. 1625 H.D.1.

I would like to stress that from a report from the Department of Business, Economic Development, & Tourism as well as financial report from the University of Hawai‘i at Mānoa, the University’s reliance on state funding has declined by 33% with an increase in revenue from tuition & fees (19%) and federal grants and contracts (16%) in the years between 1987 and 2012. The latter emphasizes that research brings revenue to the University and plays a bigger role in Hawaii’s state economy each year. However, in order for the faculty and staff of the University of Hawai‘i at Mānoa to obtain these federal grants and contracts, the state must provide support so that they can write proposals, which in return obtain these federal grants.

If this proposed bill is enacted, 1) researchers at the University would search for jobs elsewhere due to better financial support from other states and institutions, 2) the University would fail to recruit young talented and top-of-the-line researchers due to poor support from the state of Hawaii, and 3) revenue from federal grants and contract would decrease due to the lack of state support, which would force the state to increase funding to reconcile the deficit. Recognize that the University of Hawai‘i produces and performs first-class research resulting in the University’s ranking at 34 in earth science (in 2014), 16 in astrophysics (in 1998), and 17 in geophysics (in 1998) by U.S. News (Note: astrophysics and geophysics are no longer ranked in U.S. News). Because the University would lose high quality researchers as well as a decrease in productivity, there would be a dramatic decrease in published articles, which would also decrease the University’s ranking in several major sciences. Bearing in mind that foreign and out-of-state students represent “export education”, which brings revenue to the University. Noting further that the Department of Business, Economic Development & Tourism and the Brookings Institution in 2014 found that foreign students primarily study science, technology, engineering, and mathematics. A decrease in several rankings in science would no longer attract out-of-state students, such as myself, as well as foreign students to the University, thus decreasing the “export education”. Keep in mind that the decrease in out-of-state students and foreign students would 1) decrease revenue from tuition & fees, which would force the state to increase its funding to the University or 2) force dramatic increases in tuition & fees to compensate for the loss of out-of-state and foreign students, which could result in increase “import education” or Hawaii-resident students to attend an out-of-state college/university due to lower or similar cost of education. The consequence of increase in “import education” would create deficits for the University and damage Hawaii’s economy. It is deeply concerning that the University of Hawai‘i system strongly emphasizes that research and science in their undergraduate recruiting ads, which would no longer be the case as a means to recruit out-of-state and foreign students.

After several hours of researching the consequence of this bill from a major think tank as well as state documents, I conclude that there would be a major decline in revenue for the University in both tuition & fees as well as federal grants and contracts, which could only be counterbalanced by a dramatic increase in state funding. I would like to emphasize that the enactment of this bill would ultimately worsen the state economy.

Testimony Submitted to the House Committee on Higher Education

Deborah Eason

HB 1625 HD1 Proposed – RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in opposition to HB 1625 HD1 Proposed. This bill imposes extraordinary requirements on the state's return on investment (5 to 1) in organized research units (ORUs) at the University of Hawai'i, and on reporting of the finest minutia of activities and resources associated with these ORUs. I know of no other state-funded activity held to such exorbitant standards and detailed scrutiny, nor are the proposed policies common practice at any other public research institute to my knowledge. Furthermore, the proposed metric of direct extramural-to-state funding ratio fails to account for the many long-term indirect benefits of a robust research program, including critical roles educating our future tech workforce and as a driver for the local economy both inside out outside the tech industry (see for example SOEST's recent award from the Hawaii Tourism Authority for helping to bring what promises to be more than \$100 million in convention business to the State of Hawai'i). ORUs lead UH Manoa's disproportionate share of Federal funding and world-class reputation, with significant tangible and intangible effects.

If enacted, this legislation would do significant harm to the University and its mission to conduct research relevant to Hawai'i, resulting negative impacts on its international reputation as a leader in scientific research. The impacts on the University, innovation and scientific progress in the State of Hawai'i, and the local economy would be long-lasting. This bill would act to divest in and critically endanger research programs in:

- Clean, freshwater resources for Hawaii's growing population
- Hawaii's marine and on-land living resources and ecosystems
- Research and education that leads the UH system in national rankings in areas such as natural hazard preparedness and resilience, ocean and space engineering, and crucial developments in renewable energy resources and infrastructure
- Award winning medical research supporting healthy living and aging for Hawaii's citizens, cancer treatment and patient care, as well as professional educating for Hawaii's physicians

Passing this bill will risk:

- the loss of many millions of dollars annually of extramural funding with its immediate as well as long-term economic impacts;
- the loss of long-term technological developments that will support Hawaii in a changing climate and global economy;
- the loss of related educational opportunities, and the resulting skilled workforce in the areas above and related fields

I respectfully implore you to stop this proposed measure.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 6:25 PM
To: HEDtestimony
Cc: dereky@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
derek young	Individual	Oppose	No

Comments:

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HOUSE COMMITTEE ON HIGHER EDUCATION

Rep. Isaac W. Choy, Chair
Rep. Linda Ichiyama, Vice Chair

Tuesday February 15, 2016
Conference Room 206
2:02 PM

Testimony in Opposition to HB 1625 HD1

Relating to the University of Hawaii
Submitted by:
Donald Thomas

I am a member of the research faculty at the University of Hawaii and have conducted applied and basic research on Hawaii's geology, groundwater, and geothermal systems for more than 40 years. I present the following testimony in opposition to HB 1625.

HB 1625 requires all organized research units to annually generate five times the level of state funding in extramural funds and require faculty members salaries to be funded at a level of no more than 20% by state funds. If passed, such a requirement would effectively end extramurally funded research at the University of Hawaii and deprive Hawaii of a substantial economic engine, a source of funding for the University, and a knowledge base in a wide variety of technical fields. Over the course of my career, I have generated extramural funds of between \$20 million and \$30 million (in today's dollars) but have contributed to many times that amount of investment in Hawaii. My current research, on groundwater on Hawaii Island, has increased the recognized groundwater resources on the island by at least a factor of two, and will encourage substantial investment by the Army in upgrading their infrastructure and facilities at Pohakuloa based on the availability of accessible groundwater where, previously, none was thought to exist. I am currently working on a project, in support of Department of Hawaiian Home Lands, to identify a reliable source of water for their more than 50,000 acre holdings on the east flank of Mauna Kea; an available, reliable water source for their prospective beneficiaries on that land has made it extremely difficult for them to place beneficiaries on these parcels. My research has shown that there are fundamental misunderstandings of the processes affecting groundwater storage and transport within the Island of Hawaii, as well as possibly other islands. That work has shown that the accepted groundwater models that Hawaii's regulatory agencies rely on to manage and sustain Hawaii's groundwater resources are incorrect in ways that could affect established sustainable yields, as well as contaminant migration paths. I have, in the past, assisted the

Commission on Water Resources Management staff to better understand the Keauhou aquifer system and its interaction with surrounding aquifer systems, and I am currently assisting the Department of Health in their efforts to manage the Red Hill fuel spill. My colleagues and I are currently competing for extramural funding that will expand our groundwater research focus to the other islands using modern geophysical methods that will enable us to better assess groundwater resources as well as to understand how our development and use of groundwater affects those resources.

Many of my colleagues in the research community provide similar services to Hawaii's agencies, to the business community, to the agriculture community, and to the community at large. The decimation of funding to the organized research units at the University of Hawaii would not only eliminate a substantial extramural revenue stream that supports the University's educational mission, it would also end these external services that the research community provides to the state.

Thank you for this opportunity to offer testimony.

This testimony reflects my views alone and is not an official statement of the University of Hawaii.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 10:20 AM
To: HEDtestimony
Cc: duskgoo@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Dusko Pavlovic	Individual	Oppose	No

Comments: The bill proposes to impose a major constraint on managing the research function of the UH system. The way in which radical micromanagement measure is justified in the text of the bill suggests that the proposers did not seek any sound economic evidence to substantiate their proposal, but are justifying it by superficial economic appearances. The justification (lines 8-16, sentence numbering mine) states: "(1) it has become increasingly apparent that organized research units are not economically sustainable as stand-alone units and that significant disparities exist with respect to expectations for faculty in organized research units relative to instructional faculty in the University of Hawaii system. (2) The legislature also finds that most universities require research faculty to cover a portion of their salaries with extramural funds that are received from the award of grants or contracts." Ad (1): Saying that it is "increasingly apparent" that an organization is "not economically sustainable" conceals the fact that economic sustainability can never be measured by appearances, but requires at least a crude economic model of the organization. The essential aspect of economic sustainability of publicly funded research organizations are the public benefits from the results of their research. The bill never mentions the social benefits of the UH research for the State of Hawaii. Scientific research is, of course, a fundamental public investment for every state, and its economic consequences go deeper than the public investments into any other form of social infrastructure. Ignoring this fundamental aspect of economic sustainability of scientific research, and focusing only on the investments that *apparently* sustain themselves in the short term (such as tourism, or contracting, or services for the military) is a short sighted investment strategy, that guarantees long term losses (as demonstrated e.g. by the case of Puerto Rico). Ad (2): The claim that "the legislature also finds that most universities require re search faculty to cover a portion of their salaries with extramural funds" suggests that the writers of the bill are not familiar with the way in which the universities actually operate. The extramural funds requirements are generally imposed from within the universities, as a matter of balancing budgetary and research performance. The extramural funds requirements are *in no known instances* imposed on the universities from outside, as this would remove the flexibility necessary for balancing of the long term and the short term investments into different research programs.

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HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Earl Hishinuma	Individual	Oppose	No

Comments: I am opposed to HB 1625.

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Re: HB 1625 RELATING TO THE UNIVERSITY OF HAWAI'I

Chairs: Isaac W. Choy, Vice Chairs: Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in opposition to HB 1625. I am currently a member of the Pacific Biosciences Research Center (PBRC), which is specifically named in this bill. I have recently taken a position at the University of Hawaii, leaving a professorship at the University of Wisconsin-Madison. One of my reasons for moving from such a prestigious university was that the administration of Governor Scott Walker had in recent years both weakened the state employee unions, and moved to decrease the autonomy of the University. As a result of the efforts of the Wisconsin legislature and its governor to diminish the academic strength and competitiveness of the University, many of us have questioned whether the UW would ever recover its ability to serve the State as a premier research and instructional institution. I and over 60 other tenured faculty have already left.

I recognize attitudes and intentions similar to those of the Walker administration at work in our own Hawaii legislature, in the form of HB 1625. My suggestion to the State of Hawaii is not to follow in the footsteps of Wisconsin, but to learn from their mistakes. Wisconsin's employment growth has dropped from 13th to 40th in the country, having failed to recover either its pre-recession household income or its attractiveness to small business entrepreneurs. Its University is no longer the engine of research and innovation it was prior to 2010, and the economy reflects that fact.

I trust that Hawaii's state legislature will remember the insight and leadership that created ORUs at the University of Hawaii with these words:

"ORUs are established to advance the University's research and training mission. They foster and support interdisciplinary faculty research activities, and they assist undergraduate, graduate, and postgraduate students by giving them access to research opportunities, facilities, and equipment. ORUs benefit the State of Hawai'i directly through programs of applied research, extension service, and training in areas that meet community and regional human and economic needs. ORUs provide an efficient, visible, and effective means of pooling appropriate expertise, equipment, and management resources." (UH Executive Policy E5.213.III.B, May 1991).

Thank you for the opportunity to provide testimony in opposition to measure HB 1625.

Edward G. Ruby, Professor and Senior Research
Kewalo Marine Laboratory
Pacific Biosciences Research Center
University of Hawaii, Manoa

and, formerly,
Professor and Vice-Chair, Department of Medical Microbiology & Immunology
Steenbock Chair in Microbiological Sciences
University of Wisconsin, Madison

To whom it may concern,

My name is Elizabeth Fisher. I am a Manoa resident and staff scientist, fully supported by federal research funding at UH, and am submitting this testimony as an individual. I have been working at Hawaii's Institute of Geophysics and Planetology as a planetary geologist for the past 6 months, and will remain an employee for the next 6 months. Without the federal funding available at UH through the Research Corporation of the University of Hawaii, the position I applied for would have never existed. Because of this funding, I have been able to gain invaluable experience as a young female scientist with a disability that has jump-started my career, and in many ways ensured that I have a good future. The research experience I have gained through my job has left me able to apply to many graduate programs as a competitive candidate, including the Department of Geology and Geophysics at UH Manoa, Brown University, and The University of Washington in St. Louis. In fact, my research experience at UH Manoa has been described as top notch by the institutions listed above. Passing this bill will devastate and likely eliminate federal research at UH, causing the loss of many jobs like my own. I see Hawaii's culture of excellence in science and research as one of its greatest assets. I ask that you continue to pave the way for young future scientists like me by rejecting this bill and supporting Hawaii's research community.

Thank you for your time,
Elizabeth Fisher

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

I wish to voice my strong opposition to this bill. This bill imposes extraordinary requirements on the state's return on investment (5 to 1) in organized research units (ORUs) at UH, and on reporting of the finest minutia of activities and resources associated with these ORUs. I know of no other state-funded activity held to such exorbitant standards and detailed scrutiny.

Incredulously, I therefore read this bill as a statement that the State of Hawaii should divest in University-affiliated research in areas such as:

- Clean, freshwater resources for Hawaii's growing population
- Hawaii's marine and on-land living resources and ecosystems
- Award winning medical research supporting healthy living and aging for Hawaii's citizens, cancer treatment and patient care, as well as professional educating for Hawaii's physicians
- Research and education that leads the UH system in national rankings in areas such as the origin of earth and the solar system, natural hazard preparedness and resilience, and ocean and space engineering
- Renewable energy resources and infrastructure

Passing this bill will risk

- the loss of many millions of dollars annually of extramural funding with its immediate (2-to-1 on investment), as well as long-term direct economic impacts;
- the loss of long-term technological developments that will support Hawaii in a changing climate and global economy;
- the loss of a skilled workforce in the areas above and related fields
- the loss of expertise that enables pertinent classroom instruction and student research training in these ORUs as well as their affiliated instructional organizations.

Respectfully, I implore you to stop this bill.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 1:47 PM
To: HEDtestimony
Cc: enjy@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Enjy El-Kadi	Individual	Oppose	No

Comments:

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Cc: efiring.ocean@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Eric Firing	Individual	Oppose	No

Comments: 1) This bill fails to adequately consider the benefits to Hawaii of a healthy research enterprise. 2) Research and education in STEM fields are closely connected; good education goes far beyond the classroom setting. 3) It is unhelpful for the legislature to attempt to manage UH and the ORUs at this level of detail.

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To: HEDtestimony
Cc: edecarlo@soest.hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Eric Heinen De Carlo	Individual	Oppose	No

Comments: I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as a tenured professor in the Department of Oceanography at the University of Hawaii at Manoa. Over the more than thirty years of my career at UHM I was a research faculty member on partial State Support for approximately 25 years, during which I raised the rest of my salary as part of grants which have totaled multiple millions of dollars. During this time the State received a better than 5:1 return on my efforts (i.e., Fed dollars/State dollars). I have also been heavily involved in teaching over my entire career, educating literally tens of thousands of undergraduate students, using results of my federally funded research to exemplify the science content of my courses. Now as a tenured instructional faculty I continued to carry out research although my primary mission is to "teach". I am convinced that this bill will effectively kill the research enterprise at the University of Hawaii at Manoa by preventing many productive research faculty from obtaining grants and causing them to leave our institution and State for places where research is encouraged through strong State and institutional support. I should like to add that many funding agencies currently do not allow tenured faculty from requesting salary other than summer salary in their grant applications. This is the case in my own situation and I MUST obtain 25% of my salary each year to fill the remainder of the 75% G funds that I am provided. Just obtaining this amount has become increasingly difficult in a highly competitive funding environment, and I cannot imagine what it would be like to attempt (and probably fail) to obtain the amounts indicated in this bill. I strongly urge the Legislature to kill this bill as our highly internationally and nationally regarded Ocean Sciences units would loose a large part of their competitive status and we would see a commensurate decrease in our ability to bring research funding to Hawaii, not to mention loose our outstanding reputation as one of the top five ranked institutes in the USA. Your attention to and vote against this critical bill is deeply appreciated.

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Testimony Against House Bill 1625 proposed HD1

My name is Eugene Magnier. I am a faculty member of the Institute for Astronomy at UH Manoa. I am submitting this testimony as an individual.

The UH Institute for Astronomy was founded to bring science and technology opportunities to the people of Hawaii, in part by inspiring Hawaii's keiki in science in general and astronomy in particular. I represent that goal.

I grew up in Honolulu, graduating from Punahou in 1985. From a very young age, I have loved astronomy. My parents fostered this by helping me to buy a small telescope in middle school. I spent many nights in our back yard with my little 'scope, looking at Saturn's rings and Jupiter's moons and searching for faint galaxies and nebulae. Even in middle, I knew that Maunakea and Haleakala were special places to look at the stars, and that gave me an extra sense of pride in Hawaii. One summer, my family took a trip to Maui during which I was able to bring my telescope and spend a few hours in astronomy heaven looking at the stars and galaxies while my family huddled in the rental car for warmth. There is no question I was hooked.

The real inspiration came later in college. I went to the Massachusetts Institute of Technology (MIT) as an undergraduate student. I knew that I wanted to work in a science-related field. However, I believed that my love of astronomy would have to be a hobby. I assumed I was destined for a career in engineering, probably in California where many of my friends from high school were finding technology-related careers. It made me sad to think I would probably not be able to return to Hawaii for a real science career.

Part way through college, I had an opportunity to visit the Institute for Astronomy and talk to some of the faculty there. I met Jim Heasley, now retired, and talked with him about astronomy opportunities in Hawaii. I became convinced that not only could people pursue astronomy as a valid career, but that I could possibly come back to Hawaii in that field. That sold me. I went on to graduate school at MIT and studied Physics with Astronomy as the focus. I became an expert in large-scale astronomy data analysis projects, with first my PhD thesis on the populations of the Andromeda Galaxy, then later with the LONEOS project, an early search for killer asteroids. In 1999, I achieved part of my dream by joining the faculty of the UH IfA as part of the support team for the Canada-France-Hawaii Telescope on the Big Island. Since 2004, I have been based in Manoa, heading the data analysis system of the Pan-STARRS project, currently the largest astronomy survey project in the world.

When I tell my life story in classroom visits around Hawaii, I see the same inspiration in the eyes of the kids who realize maybe they can live in Hawaii and do something more inspiring than catering to the whims of tourists.

But my life story is also a cautionary tale for Hawaii. I have been able to come home to work in an exciting and challenging field, but I could have instead represented the brain drain.

Science and technology, and astronomy in particular, are fields where talented people can pick and choose where to work. When we try to recruit people to work at the Institute for Astronomy, we cannot just rely on the good weather and aloha spirit. Young prospective faculty who might work here are also enticed by Berkeley, Caltech, MIT, Harvard. The cost of living in Hawaii is a real concern, especially the cost of housing. If the IfA cannot offer competitive opportunities, talented astronomers and engineers will go elsewhere. The research environment which the State of Hawaii has built will wither. The same is true for the other research units at UH.

HB 1625 HD1 is a dangerous weakening of one of the few ways UH can provide a competitive edge when trying to recruit world-class talent. If it were to pass, I fear the impact on the UH research environment would be swift and irreversible.

I strongly oppose HB 1625 HD1 and hope the legislature will not pass this bill.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 11:04 PM
To: HEDtestimony
Cc: schloess@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Fabian Schloesser	Individual	Oppose	No

Comments: It is my understanding that this bill would be extremely harmful for the University of Hawaii (UH) research community. I believe that it is in the interest of Hawaii and to us the people to strengthen and support UH, and hence I oppose this bill.

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Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Faten El-Telbany	Individual	Oppose	No

Comments:

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To: HEDtestimony
Cc: seneca@hawaii.edu
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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Francois Seneca	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

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To: HEDtestimony
Cc: fred@soest.hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Frederick K Duennebier	Individual	Comments Only	No

Comments: Testimony against HB 1625 HD-1 Submitted by Individual: Fred K. Duennebier Emeritus Researcher, UHM, SOEST, Dept. of Geology & Geophysics Dear Representatives I request that you vote against HB 1625 HD-1 for the following reasons: 1)Most researchers in ORUs tenured or tenure track, and their salaries are protected under union contract. 2) External salary support in many fields is limited by the funding agencies, thus it would be very difficult for many researchers to obtain the required level of funding to support living in Hawaii. 3) Most top researchers would not accept a position at a university that did not support them with significant salary. 3) Since use of State moneys for salary support would be strongly limited by this act, nearly all University research now funded by grants from the State, such as shoreline studies, landslide research, climate research, and medical research would end. 4) Many researchers teach classes, both graduate and undergraduate, lessening the need for Instructional faculty. 5) Administration of this act will likely require more hires than it will save. 6) Certainly the Legislature can find better things to do than to micro-manage the University. Autonomy is a joke. Please kill this bill before it does even more harm, and turns the University into little more than a backwater junior college to train hotel workers.

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555 University Ave., #2007
Honolulu, HI 96826
505-947-0872
g.jeff.taylor@gmail.com

My name is G. Jeffrey Taylor. I am a Researcher (research faculty member) at UH, submitting this testimony as an individual. I believe that HB 1625 HD1 would have devastating effects on the state and the university.

HIGP, one of the organized research units (ORU) in the School of Ocean and Earth Science and Technology at UH, is an economic engine, a state service organization, and an innovator in formal and informal education.

My faculty colleagues and I bring in external funding equal to almost triple the state's contribution to our efforts. This new money percolates through the economy, magnifying itself. The whole UH research enterprise revolves around the OHUs, and the proposed way of funding them will result in their disappearance, along with hundreds of millions of outside funding to the state's economy.

HIGP (and the other ORUs) performs research valuable to the state, ranging from studies of tsunamis, earthquake and volcanic hazards, geothermal energy resources, and water resources. Other researchers in SOEST have contributed to understanding beach erosion and the effects of climate change. In addition, we always hear about the state developing high-tech industries to make the economy more robust and less subject to economic downturns that hurt tourism. HIGP and the other ORUs contribute to high-tech alternatives through development of high-tech tools. Others recognize the quality of our research. Researchers elsewhere know that the state is more than a tourist destination. Crippling the research effort at UH will change that view.

HB 1625 HD1 does not recognize the education services provided by researchers. Not only do we teach courses, we also create them. Most of us in HIGP teach courses in the Department of Geology and Geophysics, where we have created at least three undergraduate courses and several graduate courses. Most importantly, HIGP researchers provide research opportunities for undergraduates. Speaking from personal experience, there is no better way to learn than by doing. The research infrastructure pays for these research experiences. No research at UH, no undergraduate research opportunities. Finally, HIGP manages the Hawaii Space Grant Consortium. Space Grant funds undergraduate research fellowships, promotes educational research opportunities at the community colleges, and has created a pipeline from K-12 through graduate school of high-tech education.

Testimony in relation to bill HB1625-HD1

I am a PhD student in my 7th year at the Institute for Astronomy, which is one of the organized research units directly affected by the passing of this bill.

I oppose this bill because it is unreasonable to impose such a high 5:1 limit on the ratio of extramural to state funds in research institutions. Acquiring research grants is not a predictable process and the total amount of money available from extramural sources is fixed each year and depends on forces outside the control of researchers. The economic downturn in 2008 caused the federal funding for the National Science Foundation (NSF) and NASA (the typical funding agencies for Astronomy) to stay flat for 5 years. While this may not seem too bad, a flat funding curve is bad when you account for inflation and the increasing number of researchers joining the community. At the same time this is taking place the government is pursuing a policy of encouraging more students to join STEM careers since supposedly there are plenty of job and they are not being filled. This is obviously in contradiction to the flat funding budget. While right now the economy is on a better track and the budgets are creeping upwards again, this will not necessarily be the case in perpetuity and the economy will eventually hit another roadblock.

The point I am making is that the availability of research grants is heavily dependent on factors outside of our control. Imposing a rigid ratio on funding availability for the departments will make them very susceptible to shocks due to contractions in federal funds. Research faculty is already spending a large amount of time writing grant proposals instead of engaging in research. By imposing these restrictions on our departments you would be making them less competitive since any potential hires will re-consider choosing appointments here if they feel afraid their funding could be pulled due to factors largely outside their control. The people who would accept the positions would perhaps be less well qualified. Thus attracting less talented faculty the departments will be less competitive and thus attract less extramural funds which would lead to a decrease in funding. This type of feedback

loop would destroy the departments.

If a level of oversight and control is really wanted a more careful analysis of the variation of the ratio should be made over the past decades. This analysis could then inform a more realistic ratio to be required.

Gabriel Dima

Testimony Submitted to the House Committee on Higher Education
Garrett Ito

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

I wish to voice my strong opposition to this bill. This bill imposes extraordinary requirements on the state's return on investment (5 to 1) in organized research units (ORUs) at UH, and on reporting of the finest minutia of activities and resources associated with these ORUs. I know of no other state-funded activity held to such exorbitant standards and detailed scrutiny.

Incredulously, I therefore read this bill as a statement that the State of Hawaii should divest in University-affiliated research in areas such as:

- Clean, freshwater resources for Hawaii's growing population
- Hawaii's marine and on-land living resources and ecosystems
- Award winning medical research supporting healthy living and aging for Hawaii's citizens, cancer treatment and patient care, as well as professional educating for Hawaii's physicians
- Research and education that leads the UH system in national rankings in areas such as the origin of earth and the solar system, natural hazard preparedness and resilience, and ocean and space engineering
- Renewable energy resources and infrastructure

Passing this bill will risk

- the loss of many millions of dollars annually of extramural funding with its immediate (2-to-1 on investment), as well as long-term direct economic impacts;
- the loss of long-term technological developments that will support Hawaii in a changing climate and global economy;
- the loss of a skilled workforce in the areas above and related fields
- the loss of expertise that enables pertinent classroom instruction and student research training in theses ORUs as well as their affiliated instructional organizations.

Respectfully, I implore you to stop this bill.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 10:57 AM
To: HEDtestimony
Cc: ggruns@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Gary Grunseich	Individual	Oppose	No

Comments:

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Re: Opposition to HB1625_HD1

My name is Gary R. Huss. I am a Researcher (R5) in the Hawai'i Institute of Geophysics and Planetology, University of Hawai'i and am submitting testimony as an individual.

I am Director of the W. M. Keck Cosmochemistry Laboratory, I teach graduate courses related to cosmochemistry in the Department of Geology and Geophysics, and I support and advise graduates students (I currently have two Ph. D. students). The core instrument in my laboratory is a state-of-the-art Cameca ims 1280 ion microprobe costing ~\$6,000,000 in today's market. It was purchased with equal shares of money from NASA, the W. M. Keck Foundation, and the University of Hawai'i. My laboratory and I have an international reputation for excellence in research, and we generate millions of dollars in research funding and millions of dollars in economic activity for the state of Hawai'i. Yet I fail to meet the minimum laid out in HB1625_HD1 by a factor of >2, and there is no viable path forward by which I could ever meet those criteria. I provide details behind these statements below.

Basic accounting for my operation:

1) My research operation receives the following from the University: 10.2 months of my salary, half the salary of my laboratory manager, laboratory space in the basement of the POST building with utilities paid. Total: ~\$300,000 per year.

2) My research program currently has \$2,344,837 in active research grant funding (~\$781,612 per year). Over the lifetime of the lab (which opened in 2006), I have raised \$4,761,183 in research funding. This funding has generated ~\$1,856,000 in overhead return for the University.

3) My laboratory, which is the focal point of research by faculty members from HIGP and other units in UH, has facilitated obtaining ~\$16,000,000 in research funding over the past eight years. However, even though the work could not be done without my laboratory, this money cannot all be assigned to me in the calculation proposed in the bill, and money raised by other units to use my laboratory cannot even be assigned to HIGP.

To summarize the above, my research program has received roughly \$2,500,000 in operational support from the University since my lab opened, and I have generated \$4,761,000 in research funding that can be assigned to me according to the bill. By the criteria in HB1625_HD1, I am failing by more than a factor of two to generate the money required to keep the laboratory open. This calculation does not give me credit for the money raised by others because my operation exists.

Scientific productivity: As of January, 2016, 58 peer-reviewed papers (with 10 more in process) had been published based on data from our laboratory. These papers all appeared in top-flight scientific journals (typical impact factor 3-5), including three in *Science* and one in *Nature Geoscience*, the gold standard for scientific papers. Included among these are papers on the first materials formed in the solar system, the timing of events during the first 25 million years of solar system history, the origin of Earth's water, the nature of the particles that make up comets (based on measurements of material returned by NASA's Stardust Mission), and the

composition of the sun (we measure solar wind trapped and returned to Earth by the Genesis Mission. We also measured the samples returned by the Japanese Hyabusa mission to an asteroid and are gearing up to measure the materials returned by NASA's OSIRIS-REx Mission to an asteroid. We are one of the preferred labs to analyze materials returned by NASA Missions and are thus an integral part of the US space program. A full list of our published papers can be found at:

<http://www.higp.hawaii.edu/cosmochemistry/research.html>

In addition to the peer-reviewed papers, researchers using data collected in our laboratory have made ~250 oral and poster presentations at annual international conferences such as the Lunar and Planetary Science Conference, the Goldschmidt Conference, the Meteoritical Society Meeting, and a variety of international workshops.

Reputation of the University of Hawai'i: The University of Hawai'i is currently considered one of the flagship international institutions in Astronomy and Cosmochemistry (the fields I am most familiar with). This reputation helps us to attract resources and top people (faculty, post docs, graduate students) to the University. We have a very high profile at national and international meetings, and we are invited in various capacities to give presentations at national and international venues (for example, I just visited Pacific Northwest National Laboratories in Washington State in January to advise them on setting up their new ion microprobe, and I have just been invited to give a keynote talk at the Goldschmidt conference, the annual international conference on Geochemistry, to be held in Yokohama, Japan, this summer). Bill HB1625_HD1 would threaten this hard-earned reputation by damaging the UH research enterprise.

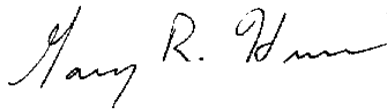
Broader impacts of my research operation: The limited accounting described in HB1625_HD1 does not capture the full economic impact of our research effort. The reputation of our laboratory has permitted us to attract international meetings and workshops to Hawai'i, including Microscopy and Microanalysis (Convention Center, 2006), Chondrites and the Protoplanetary Disk (Kauai, 2007), Sixth Biennial Geochemical SIMS Workshop (Waikiki, November, 2011); and the Workshop on the Formation of the First Solids in the Solar System (Kauai, November, 2011). These events generated millions of dollars for the Hawai'i economy. The state gets VAT revenue and lodging taxes from this type of activity.

I currently pay part of my salary, the salaries of three full time staff and half of the salary of our laboratory manager, and I support two graduate students, for a total of about \$475,000 per year. This money goes directly into the Hawai'i economy. Applying the typical multiplier factor of ~2, gives ~\$950,000 in economic activity in the state every year. Many people from the mainland and from other countries come to Hawai'i to do research in our laboratory. Each visit generates revenue for hotels, restaurants, and rental car agencies. Each visitor puts ~\$2500 into the state economy, money that pays the salaries of Hawai'i workers. We have averaged 5 visitors per year for the last ten years, for an annual contribution to the Hawai'i economy of \$12,500 (~\$25,000 in total economic activity), making a total of ~\$975,000 of economic activity per year from my research program. This generates \$45,900 in VAT plus the income tax on actual salaries of ~\$48,000 per year (total ~\$93,900 per year) for the state. My operation is not as expensive to the state as bill HB1625_HD1 implies.

Impact of proposed bill: I compete with researchers from all over the country for research dollars. The total amount of US government money available for this work has not been growing at a rate that matches inflation, partly fallout from the economic downturn and partly due to the completely dysfunctional federal government. If I am required to raise 100% of my salary, as this bill implies, I will be significantly less competitive for the tight resources, because most researchers are not required to pay their full salaries. The assumption that we can simply increase our grant funding to cover any decreases in the amount state funding, is just wrong. With the “seed money” that I get from UH, I can raise several times the state contribution in research funds (but nowhere near the >5:1 the bill requires). Without the seed money, it is likely that I will raise less money, not more, generating a negative feedback loop that will eventually (probably sooner rather than later), kill my research operation.

The W. M. Keck Cosmochemistry Laboratory is one of the success stories of the University of Hawai‘i. If we cannot meet the criteria set out in HB1625_HD1 for continued state support, then I don’t know who can.

Respectfully,

A handwritten signature in cursive script that reads "Gary R. Huss".

Gary R. Huss
808-737-2032

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 9:44 AM
To: HEDtestimony
Cc: grwilkins@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
George Wilkins	Individual	Oppose	No

Comments:

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Written Testimony Presented to the House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Gerard J. Fryer

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chairs: Isaac W. Choy, Vice Chairs: Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as a Senior Geophysicist at the Pacific Tsunami Warning Center (PTWC), the organization within the National Oceanic & Atmospheric Administration that is responsible for issuing tsunami warnings to Hawai'i. I apologize for not being able to present this testimony in person: at the time of the hearing I must serve as lead duty scientist at PTWC.

Before I came to the Pacific Tsunami Warning Center I was, for over twenty years, on the faculty of Hawaii Institute of Geophysics and Planetology (HIGP), one of the units at UH Mānoa addressed by HB 1625. Mine was a non-tenured "soft-money" research position, though, in reality, I only spent about a third of my time on research. The rest of my time was split about equally between teaching and service.

That high proportion of service was by default. As you are probably aware, Hawai'i is the only state in the Union without a state geological survey. As a consequence, many of the responsibilities which would otherwise be met by such a survey, such as advising the State on natural hazards, must instead be taken on by those university faculty with the appropriate expertise, many of whom are within HIGP. As a tsunami researcher, I found myself repeatedly tapped to sit on State advisory committees and to work with the State's emergency managers to quantify tsunami hazards and develop protocols to follow in the event of a tsunami. While some of this work was fundable through the National Tsunami Hazard Mitigation Program and other federal programs, these programs are not intended to cover faculty salaries. Fortunately, the Director of HIGP recognized that my efforts were worthwhile and arranged for me to receive half my salary from State moneys. Once it was apparent that State support of nontenurable faculty would have to be cut back, I transferred to federal service. I did so with great reluctance, as it was clear to me that the State would be far better served if I stayed at the University.

Under HB 1625, the financial flexibility that allowed me to function at the University would be eliminated. I find several aspects of the bill alarming. First,

the bill assumes that all that faculty do is teaching or research; there is no mention of service whatsoever, yet, as my example demonstrates, service is a vital function of a State university, especially in the sciences. Second, the drafters of the bill appear to have little understanding of the priorities of federal funding. The National Science Foundation, for example, is eager to launch young postdoctoral researchers in their careers and so will gladly pay a sizable proportion of their salaries. They are less generous with assistant professors, and once someone is promoted to associate they frown on covering more than three months of summer salary. As a reviewer of NSF proposals, I always tot up the federal support from all sources for each senior investigator. If the total exceeds three months in any year, I recommend the budget be cut back. Since the investigator's university is reaping the considerable other benefits of the grant, the expectation is that the university pay the investigator's salary.

HB 1625 appears to be an attempt to eliminate State payment of any faculty salary for research. I am reminded of the fable of the Goose That Laid the Golden Eggs.

Thank you for this opportunity to provide testimony in opposition.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 3:54 PM
To: HEDtestimony
Cc: glenn.carter@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Glenn Carter	Individual	Oppose	No

Comments:

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Sent: Saturday, February 13, 2016 1:31 PM
To: HEDtestimony
Cc: gmoorehn@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Greg Moore	Individual	Oppose	No

Comments: This is yet another example of legislative micromanagement if UH. Please stop!

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ichiyama2-Brandon

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Sent: Friday, February 12, 2016 5:48 PM
To: HEDtestimony
Cc: griegfsteward@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Grieg Steward	Individual	Oppose	No

Comments:

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Testimony against House Bill 1625 proposed HD1

My name is Günther Hasinger. I am the Director of the Institute for Astronomy at UH Manoa, submitting this testimony as an individual.

While we understand the motivation of the proposed amendment HD1 to the bill, HB1625, we feel that the specific measures proposed in this bill are unnecessarily prescriptive and burdensome, and will do damage to a highly productive academic research enterprise in a strong international competition. We also believe that many of the desired outcomes are already being achieved or well on the way to being achieved.

At the Institute for Astronomy all of our tenure track and tenured R faculty have an obligation to teach, which is spelled out explicitly in their appointment letter. Since several decades we are running one of the largest and highly ranked astronomy graduate program. Recently we have started two very attractive undergraduate programs in astronomy and astrophysics in close cooperation with the UH Manoa College of Natural Sciences. We already require new R faculty and those seeking merit salary increases to fund a portion of their salary from external funds. Thus we are moving in the proposed direction. Since many years IfA faculty are creating extramural funds, which are substantially larger than the state appropriated funds in our budget.

The Institute for Astronomy (IfA) was founded with the explicit goal to develop astronomy as an economic driver for the State of Hawaii, in particular for Hawaii Island. Over the past half century, IfA has been the driving force behind the development of world-class astronomy education and research in Hawaii, including in particular the development of the state-of-the-art international observatories on Maunakea and Haleakala. A recent study of the UH Economic Research Organization (UHERO) shows that in 2012 astronomy had a total economic impact of \$168 million, a job creation impact of 1400, and generated State taxes of \$8.2 million, about twice as much as we received in G-funds. This is not even yet including the TMT and DKIST projects, or the Maui Space Surveillance complex on Haleakala.

Astronomy has other direct benefits to the State of Hawaii. It directly provides close to 1000 jobs in a clean high-tech activity that offers employment opportunities in STEM fields to local young people. This is particularly important when such jobs are hard to find without leaving Hawaii. Our astronomy outreach programs are particularly effective in sparking interest in Hawaii's youth for all types of STEM-related fields - not just astronomy. The fascination of astronomical research attracts a whole generation of young children into the world of science to learn the tools of mathematics and science.

The Pan-STARRS and ATLAS observatories are providing the world's best early-warning system for dangerous asteroids, such as the one that struck Russia two years and ago, and even larger ones that could have devastating impact. All of this is

funded with Federal dollars, but contributing to the economic impacts discussed above. The Maunakea Weather Center (MKWC) was created to provide custom forecasts for the observatories. Recently, MKWC has adapted its computer programs to predict the dispersion of Vog from the Kilauea volcano. This valuable service is at no cost to the State. Twenty years ago, a \$2 million up-front contribution from the Maunakea observatories expedited the installation of fiber-optics communications infrastructure on Hawaii Island, and today astronomy is leading the big data efforts in the State.

Without the type of vision and leadership that IfA has exercised over the past half century, it is unlikely that world-leading astronomy and its many benefits would have come to Hawaii. The fact that IfA was able to do this in no small part is due to its organization as an ORU. A major factor in this is the ability to attract world-leading research faculty in a highly competitive environment. Higher education and research are closely connected. The one is not possible without the other. At every world class university, such as Harvard, Princeton, Caltech, Cambridge, Yale etc. you have a combination of first class education with outstanding research. The same is true for the good state universities, UC Berkeley, University of Tokyo, Munich, Leiden, Cambridge, Oxford you name it.

In summary, we are aware of the many pressing demands on State General funds both within the University and throughout the State - and we understand the motivation in this bill to achieve a proper balance between State and external funding for ORU's. At the same time, we feel that the objectives of this bill are already being achieved and that further progress does not require the type of measures proposed. On the contrary, these measures would severely hamper our competitiveness. We also want to remind everyone of the special capabilities and benefits that ORU's were intended to provide and in fact are providing to all of the citizens of Hawaii.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 10:53 AM
To: HEDtestimony
Cc: sheltonh@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Hannah Shelton	Individual	Oppose	No

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From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 9:24 AM
To: HEDtestimony
Cc: hchang@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Dr. Healani Chang	Individual	Oppose	No

Comments: I oppose HB1625 HD1 Proposed

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Heather M. Kaluna
Hawai'i Institute of Geophysics and Planetology
1680 East-West Road, POST 529
Honolulu, HI 96822
kaluna@higp.hawaii.edu

Testimony Regarding HB 1625 HD1
February 14, 2016

Aloha e Representative Isaac Choy and members of the Committee on Higher Education,

My name is Heather Kaluna and I am a Native Hawaiian postdoctoral researcher at the Hawai'i Institute of Geophysics and Planetology (HIGP). I am writing to **oppose HB 1625 HD1** because I believe this bill will have a drastically negative effect on the sustainability of organized research units (ORUs) at the University of Hawai'i, with a very strong possibility of losing these units all together. As someone who has obtained their Ph.D from the Institute for Astronomy and who is now a postdoctoral researcher at HIGP, I can truly say the loss of these ORUs would result in a significant lack of STEM (science, technology, engineering and mathematics) higher education and professional training opportunities within the state of Hawai'i.

From my experience, research faculty at these ORUs spend up to 50% of their time writing proposals and pursuing funding opportunities. Additionally, when looking at data from 2001 to 2014, the mean ratio of extramural funds to state funds in my department is about 2.5:1. When considering this ratio along with the amount of time spent pursuing extramural funds, it quickly becomes clear that achieving and sustaining a ratio of 5:1 would require research faculty to spend almost all of their time pursuing funding opportunities. The problem with this scenario is that the success of obtaining extramural funding is strongly dependent on the quality of research of the proposer. Thus, a 5:1 requirement quickly makes the sustainability of ORUs unachievable as our research faculty will not have the time needed to conduct the quality research that is required to write successful grant proposals.

Additionally, while research faculty may not formally teach in a classroom setting, they do spend a notable fraction of their time training undergraduate and graduate students, and postdoctoral researchers whom they support with these grant moneys. Without the professional and funding support from OSU researchers, I would not have been able to obtain my Ph.D and continue my professional development as a postdoctoral researcher. Lastly, having been born and raised on the island of Hawai'i, I cannot express more how detrimental the loss of ORUs would be on increasing the number of local (including Native Hawaiian) professionals in the growing scientific and technical workforce within the state. Thus, I kindly urge the committee to **oppose HB 1625 HD1**. Thank you for taking the time to consider my testimony.

Mahalo nui loa,
Heather Kaluna

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 9:34 AM
To: HEDtestimony
Cc: hdulai@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Henrietta Dulai	Individual	Oppose	No

Comments:

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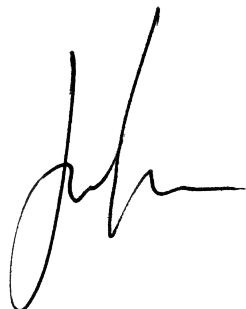
FROM: James Foster
TO: Committees on Higher Education and the Arts, and Governmental Operation
RE: **HB1625-HD1** RELATING TO THE UNIVERSITY OF HAWAII.
DATE: 14 February 2016

Representative Choy and other distinguished committee members, I want to thank you for this opportunity to address the proposed HB1625-HD1. My name is James Foster. I am an Associate Researcher at the University of Hawaii, focusing on developing applications of GPS for understanding and mitigating natural hazards. I strongly oppose this bill.

My research includes: the development of a new tsunami detection network that will improve tsunami warnings; developing technology to monitor the tectonic faults that generate devastating earthquakes and tsunamis; investigations of volcanoes activity; improving estimates of sea-level change. I chose my research areas because I live and work in Hawaii, and like that I am able to apply my training to problems that are so clearly important to my community. Over the last three years I have successfully secured grants worth more than \$2.2M. These grants not only enable my research, but also provide salaries for research assistant and technicians, and for myself and another senior colleague. My research provides inspiration and financial support for students, and brings national and international recognition and prestige to the University.

All my research stands on the shoulders of a broad foundation of basic research, much of which attracts less grant support than I have received, and is thus more dependent on some significant level of institutional support. I also rely on both the administrative and collegial support that I receive as a part of a vibrant Organized Research Unit. I believe the proposed HB1625 HD1 is antithetical to the mission of the university. Its passage would almost certainly kill my research program and force me to pursue my career elsewhere.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'J. Foster', with a long horizontal flourish extending to the right.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 7:15 AM
To: HEDtestimony
Cc: leary@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
James Leary	Individual	Oppose	No

Comments:

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Cc: jsferguson@alum.mit.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
James Scott Ferguson	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
James T. Potemra	Individual	Oppose	No

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HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Jasper Konter	Individual	Oppose	No

Comments: The proposed salary requirements will shift, in a matter of a few years, the majority of salary sources to external grants for research units. This is proposed in a time of significant decline in federal grant funding (approximately 50% decline in nationwide success rates across most fields: e.g., C. Cesare, Nature, 2015 -- [dx.doi.org/10.1038/nature.2015.18631](https://doi.org/10.1038/nature.2015.18631)). Most federal programs have annual or biannual solicitations, and 10- 20% funding rates, leading to limited opportunities to ramp up external salary sources across entire research units within only a handful of years. Clearly, this will affect faculty retention (threat of salary reduction vs. family obligations), which will reduce external fund generation (less people = less money), which reduces external salary funding for local support staff, research activities and purchases locally, research training for the university's students, and eventually the (inter)national ranking of the university (e.g., state universities like Univ. North Carolina, Chapel Hill dropped 35 to 59 due to cuts and salary freezes; bot.unc.edu/files/archives/PP512FB2FacultyRetention.pdf).

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Jeffrey Gillis-Davis
45-032 Malulani Street
Kaneohe, HI 96744

February 15, 2016

Aloha, My name is Jeffrey Gillis-Davis. I am an associate researcher in the Hawaii Institute of Geophysics and Planetology at the University of Hawai'i (HIGP), and I am submitting this testimony as an individual. I oppose HB 1625– Relating To The University Of Hawaii.

“SECTION 1. The legislature declares that maximizing the University of Hawaii's use of state funds is a matter of statewide concern. The legislature finds that organized research units were created in the University of Hawai'i system to foster research activities that would increase extramural income to the State and enhance the reputation of the University nationally and internationally. While those goals have been accomplished, it has become increasingly apparent that organized research units are not economically sustainable as stand-alone units and that significant disparities exist with respect to expectations for faculty in organized research units relative to instructional faculty in the University of Hawaii system. The legislature also finds that most universities require research faculty to cover a portion of their salaries with extramural funds that are received from the award of grants or contracts.

To me the, the underlined portion of section 1 says that the legislature provides support to the University and organized research units (ORU) with the realistic expectation that, in return, the ORUs will increase extramural income of the State and enhance the reputation of the University nationally and internationally. This expectation is perfectly logical and by the States own words accomplished by ORUs: “those goals have been accomplished”.

I hope you can empathize with my surprise that the aim of HB1625 is to decrease funding to ORUs when we have faithfully met the expectations set upon us. As a scientist I live in an evidenced based world. I do not see the substantiation of the claimed in HB1625 that “it has become increasingly apparent that organized research units are not economically sustainable as stand-alone units”. I am 1 of 35 faculty in HIGP who generate an annual average of ~250% return on the investment of State moneys. In my 12 years at the University I have secured awards totaling more than \$3M of extramural revenue. Along with my peers in HIGP I help support an additional 65 staff, post-doctoral researchers and students. Money that I pay for people's salary goes directly into the economy of the state and typically generates 2 times the overall economic activity. Thus, for my group, I generate \$500,000 per year in economic activity from the salaries that I pay.

HB1625 also suggest that “significant disparities exist with respect to expectations for faculty in organized research units relative to instructional faculty” without discussing specifically what those disparities are. The State funds 75% of my salary to “increase extramural income to the State and to enhance the reputation of the University nationally and internationally”. These are the expectations that I am held to and meet. No researcher can be expected to earn his/her bread and butter by teaching while simultaneously conducting world-class research and writing grants. The plan to use State moneys to only cover the percentage of a faculty member's salary equal to the teaching load performed by the faculty member will affectively make us a teaching unit and reduce our research to a minor role, which would handicap our ability to raise extramural income to the State and enhance the reputation of the University nationally and internationally.

Any concept that faculty in ORUs do not teach is false. Education and research are mutually enhanced when accomplished conjointly. As a university professor and researcher I want to help

high school/undergraduate and graduate students achieve their goals by affording them opportunities. *My philosophy of teaching is to ignite students' imagination by actively engaging them.* I engage students by making the teaching experience authentic. I share my personal knowledge, passion for science and research, and science related job connections. I utilize my space-weathering laboratory for not only sparking the research interests of graduates but also undergraduates. I regularly host NASA Space Grant research fellows. I have worked with undergraduates on thesis projects and directed reading projects. Getting to know the undergraduates personally allows me to write authentic letters of recommendations – I write about half-dozen letters of recommendations per year for students seeking internships, student research opportunities, and jobs. Finally, I also help connect students to internships like the Lunar and Planetary Science Internship (LPI) program – I assisted two students in getting LPI summer internships. From the small steps of getting non-science majors to appreciate how science is a part of their everyday lives, to the giant leaps of graduating a PhD student. These are some of the most rewarding parts of my job but I could not do them if I had to choose between teaching and research. This succession of knowledge and experience that HIGP has developed is critical to sustainably building the skilled workforce necessary to support the State of Hawai'i's bid to diversify its economy through a high-tech industry. HIGP has trained at least four outstanding graduate students that are or have been Principal Investigators (PI) on NASA missions: Dr. Jim Bell, PI of all the Mars cameras on the two Mars Exploration Rovers (Spirit and Opportunity) and the Mars Curiosity rover (active on Mars now) and the up coming Mars 2020 rover; Dr. Diane Blaney PI of the Mapping Imaging Spectrometer for Europa; Dr. Bob Brown, PI of Cassini The Visible and Infrared Mapping Spectrometer on the Cassini mission orbiting Saturn, and Dr. Mark Robinson, PI of the Lunar Reconnaissance Orbiter camera. There are many other graduate students that have international reputations in science. All of these scientist hold a UH manoa diploma and were taught by research faculty in HIGP. If the proposed legislation were to be enacted, the impact on the present would be painful, but the impact on the future could possibly be unrecoverable.

The construction of OSUs made certain that University rode the first waves of science and technology reputation nationally and internationally. If this and future generations of the legislature do not the University intend to founder in the backwash of science and technology we need support for OSUs.

Thank you for the opportunity to provide testimony in opposition of this measure.
Dr. Jeffrey J. Gillis-Davis

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
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HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Jennifer Engels	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/14/2016

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Submitted By	Organization	Testifier Position	Present at Hearing
Joanne Yew	Individual	Oppose	No

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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Joe Lichwa	Individual	Oppose	No

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Submitted By	Organization	Testifier Position	Present at Hearing
John Casey	Individual	Oppose	No

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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Juanita Andaya	Individual	Oppose	No

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Cc: jlemus@hawaii.edu
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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Judith Lemus	Individual	Oppose	No

Comments: I strongly oppose this bill, as it appears to be a direct affront on the rights of public employees to collective bargaining. Through their representative unions, public employees have the right to collectively negotiate issues of salary and compensation, instead than having these unilaterally mandated by the employer. This bill is contrary to accepted labor laws in Hawaii. In addition, the feasibility of this measure is in serious doubt given that federal agencies limit the amount of salary months a full-time faculty can request from their grants (for NSF this is 2 months total). Reduced state support for faculty will also result in reduced negotiated indirect cost rates from federal funding agencies (further reducing RTRF). This bill will completely undermine the role that UH research plays in supporting technological, medical, and economic development, science-based resource management, and K-20 education system in Hawaii.

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February 14, 2016

46-035 Konohiki St. #3865
Kaneohe, HI 96755-6118
808-235-8525
meech@ifa.hawaii.edu

My name is Karen J. Meech. I am a research faculty member at UH, submitting this testimony as an individual. I believe that HB 1625 HD1 would have devastating effects on the university and the state.

The Institute for Astronomy (IfA) is one of the organized research units (ORU) at UH. My faculty colleagues and I bring in far more research dollars annually than is contributed by the state. The UH Manoa ORUs create an environment of excellence in research, innovation and teaching that enable the categorization of UH Manoa as a Carnegie-1 research university. This places UH Manoa in the top few percent of all accredited four-year colleges and universities in the US.

The research programs at IfA bring in large prestigious programs and people, including new telescope facilities, instruments for space facilities, and have the potential to lead in the development of space missions. These large projects bring valuable high-tech jobs to the state, as well as educational opportunities in research and technology for local students. At the IfA we have had many highly acclaimed programs for middle school and high school students that enable local students to excel. These type of experiences can feed local students into UH programs.

As federal research dollars get more difficult to secure, the faculty at Carnegie-1 institutions, and those with large research enterprises will be in the best competitive position to secure those funds.

HB 1625 HD1 would cripple the research efforts at UH and could put the Carnegie-1 categorization in jeopardy. It is unlikely that faculty could generate long-term funding at a 5:1 ratio over what the state provides. Drastically increasing the teaching will result in a direct decrease in the ability of faculty to do research and generate research dollars. This will decimate graduate programs and postdoctoral training since these are funded by research funds. Because of this, mainland and local students will no longer consider UH when they are seeking an education in science and in the high tech areas. I suspect that this would also lead to significant loss of the most highly regarded UH faculty to competing mainland universities, decimating the ability of UH to secure federal funding. Having a strong research university is key to providing technological and economic benefits to the state, and high quality education to local students.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
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HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Karen Selph	Individual	Oppose	No

Comments:

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HB1625

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Submitted By	Organization	Testifier Position	Present at Hearing
Katherine Fryer	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/14/2016

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Submitted By	Organization	Testifier Position	Present at Hearing
Kathleen Ruttenberg	Individual	Oppose	No

Comments: I provide this testimony as a private citizen in opposition to HB 1625. I am a professor of Oceanography at the University of Hawaii at Manoa. If enacted, this legislation would do significant harm to the University and its ability to serve the State using knowledge gained from excellence in research.

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HB1625

Submitted on: 2/13/2016

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Submitted By	Organization	Testifier Position	Present at Hearing
Kazuhide Nagashima	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/15/2016

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Submitted By	Organization	Testifier Position	Present at Hearing
Kazuyoshi Kikuchi	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/12/2016

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Submitted By	Organization	Testifier Position	Present at Hearing
Kellie Terada	Individual	Oppose	No

Comments:

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Cc: k.e.lockhart@gmail.com
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HB1625

Submitted on: 2/15/2016

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Submitted By	Organization	Testifier Position	Present at Hearing
Kelly Lockhart	Individual	Oppose	No

Comments:

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Cc: robertsk@hawaii.edu
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HB1625

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Submitted By	Organization	Testifier Position	Present at Hearing
Kelly Roberts	UHM	Oppose	No

Comments:

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HB1625

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Submitted By	Organization	Testifier Position	Present at Hearing
Kelvin Richards	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Ken Rubin	Individual	Oppose	No

Comments: Bad bill with bad consequences for the UH research enterprise, by proposing to meddle in compensation packages for faculty in organized research units at UH. Just like sports coaches, you have to pay to get the best talent. Unlike sports at UH, the research enterprise with ORUs make money for the state and have huge positive secondary economic impacts. Support this bill and you will kill the golden goose. It is short-sighted and informed.

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Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

I am writing to you on with regard to House Bill 1625, HD1 Proposed. I am opposed to this bill, and believe that it is misguided on several points. I have worked at several Colleges and Universities, both public and private, and thereby have some insight into how legislation at the state level can affect day to day operations for such institutions. It is not my intention to be condescending or abrasive, and I apologize if this testimony appears that way. I will attempt to keep my comments brief, and denote the corresponding sections of the bill where appropriate.

Section 1.

To start, it is misguided to suggest that scientific research should exist for the expressed purpose of securing extramural funding. While the acquisition of extramural funding is a useful and frequent consequence of operating research programs, such programs can and should exist (as many others do) for their intrinsic educational and humanitarian purposes. This is most immediately apparent, though not exclusive to, endeavors directly related to health, medicine, and the environment.

The above having been said, and intrinsic value notwithstanding, it should be noted that research programs, when examined as stand alone entities, will never appear at face value to be economically sustainable. The benefits of primary research are not immediate or obvious at the time said research is being conducted, but are nonetheless widespread and often difficult to measure. Adoption of knowledge and technologies developed from publicly funded research by the private sector is common and not always predictable, and the presence of research institutions often contributes to the development of technology industry and the attraction of educated worked and entrepreneurs.

Drawing a distinction in the respective value of instructional faculty versus research faculty is, at best, inaccurate. Such a distinction would be artificial, as the responsibilities of research faculty frequently change to accommodate the needs of their respective departments, and interactions between research faculty and students often occur in unofficial capacities that are difficult if not impossible to measure accurately. It should also be noted the incidence of this kind of interplay, as well as the mere presence of successful research programs, acts as a significant attraction for tuition and tax paying undergraduates, who contribute to the success of the university as a whole.

Section 2.

Enforcing a strict five to one ratio of extramural to state moneys in research unit budgets, and recommending detailed plans on how to portion out funding patronizes duly appointed regents with the experience and authority to administer to their affairs, and degrades their ability to accommodate the needs of their respective programs with a reasonable level of precision. Furthermore, requiring an extended funding plan for new research units is impractical, given the fact that it is impossible to predict how much extramural funding can or will be acquired with any accuracy given the constantly

changing landscape of funding sources. This uncertainty could thereby be used to deny the creation of virtually any new research unit.

Requiring the university system to submit reports pertaining to facility usage and faculty compensation in such exhausting detail would inevitably create additional overhead administrative costs, and waste the time of both university administrators and members of the legislature. This requirement would also inflate the costs this bill seems to be attempting to control.

Thank you for your time,
Kenneth Armour

ichiyama2-Brandon

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Sent: Sunday, February 14, 2016 12:44 PM
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Cc: kevink59@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Kevin Kelly	Individual	Oppose	No

Comments: Chair Choy, Vice-chair Ichiyama, and members of the Higher Education Committee, I am a faculty member in the School of Ocean, Earth Science and Technology at UH Manoa. I am not associated with any Organized Research Unit. For the last 15 years I have worked with faculty across the UH System to identify funding opportunities, get proposals submitted and, once awarded, efficiently manage large complex awards. It is difficult to briefly point out in testimony the unintended consequences that would result from passage of HB1625. In its current form this proposed legislation would devastate the research enterprise at the University and significantly impact the \$450M of extramural funds brought into the state by research faculty and the dollars spent locally on support staff salaries, equipment and services from companies across the state. While state spending on research faculty may be reduced, the damage to the University and the State would be much more severe in terms of tax revenue, access to higher education, workforce development and creating an environment for innovation. I urge you to defer this bill. Thank you for the opportunity to testify, Kevin Kelly

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HB1625

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Submitted By	Organization	Testifier Position	Present at Hearing
Ksenia Trifonova	Individual	Oppose	No

Comments:

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Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Kyle Edwards	Individual	Oppose	No

Comments:

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Testimony Submitted to the **House Committee on Higher Education**
February 16, 2016 at 2:00pm ~ Conference Room 309

L. Neil Frazer

OPPOSING HB 1625: RELATING TO THE UNIVERSITY OF HAWAII

Aloha Chair Choy, Vice-Chair Ichiyama, and Committee Members,

I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as Professor in the Department of Geology and Geophysics. I joined the University of Hawaii at Mānoa in 1978. When I was hired I took an oath of loyalty to the State of Hawaii, and although that oath is no longer required of new hires I take it very seriously. No day goes by that I do not think of the taxpayers who pay my salary—dishwashers, truck drivers (jobs I did in younger days), and everyone else. It is a privilege to serve them as a researcher and teacher at UHM.

As I often work closely with researchers in the Hawaii Institute of Geophysics and Planetary Physics (HIGP), I'll comment on that particular ORU, citing only three recent examples.

In the last twelve months I've been part of an HIGP-led team that brought \$1.4M to the State of Hawaii from the federal Department of Energy (DOE) for a statewide assessment of geothermal resources. We all worked long hours, including many weekends, to make this happen, and we continue to work on it. (Today is Sunday, and as soon as this testimony is submitted, I'll resume grinding on the mathematical statistics we need for the next phase of this project.) In my opinion, if the DOE hadn't given us a penny, this project would be entirely worthy of 100% state support because it is an essential component to getting our state off its oil addiction. (Unlike wind and solar, geothermal is always on, and its potential isn't confined to Hawaii Island.) Quite apart from its research aspects, and partial salary support for all involved, the project has financially supported the training of four local students.

In the last twelve months I've also worked closely with an HIGP scientist to estimate the probability of a Mw 9+ earthquake along the Aleutians Island Arc. As you may or may not know, an event of that magnitude in the Aleutians will generate a tsunami that would put most of inhabited Hawaii more than 10 feet underwater. There is archeological evidence for such tsunamis in the past. As our paper is now in review at *Journal of Geophysical Research*, I'll forbear to quote the number here, except to say that it is much greater than I would have guessed.

In the last twelve months I worked closely with yet another HIGP scientist to help understand the magmatic plumbing beneath Kilauea, Mauna Loa and Mauna Kea volcanoes via a simultaneous analysis of tilt-meter and GPS data. This scientist's project is funded by the National Science Foundation, but in my opinion it would be worthy of 100% state support.

Mahalo for your unselfish work for the people of Hawaii.

L. Neil Frazer

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 9:01 PM
To: HEDtestimony
Cc: lindamar.mail@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Linda Martel	Individual	Oppose	No

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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Lindsay Root	Individual	Oppose	No

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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Loic Le Marchand	Individual	Oppose	No

Comments: HB 1625-HD1 is short-sighted and based on false premises. Sustainability is defined on the ability of ORUs to currently cover overall costs to the state through receipt of extramural grants and contracts. The economical value of research is much greater and less tangible than the immediate bottom lines of the ORU budgets. Research brings many quality jobs (beyond those of the UH researchers themselves) to diversify Hawaii's economy, a priority for the short-term well-being of the state. It also brings local job opportunities for Hawaii's young scientists in order to stop the on-going brain drain and family separations toward the US mainland. Research at UH serves as a magnet for private R&D companies by providing critical mass, new ideas and implementations of research findings. Most importantly, UH research provides solutions to critical local problems which would not be addressed by outside research institutions. Finally, Hawaii has much to offer to humanity with regard to applied and fundamental research that is best conducted locally by Hawaii scientists. The economical value of these side effects and long-term (and sometimes unpredictable) favorable outcomes are harder to quantify than the current budgetary bottom lines but must be considered in any realistic sustainability analysis. The bill would also make recruitment of qualified scientists to Hawaii near impossible since UH would not be able to offer competitive salaries and job security. This would come on top of Hawaii's high cost of living and UH's small critical mass and poor research support. Respectfully, Loic Le Marchand, MD, PhD Researcher Principal Investigator of the Multiethnic Cohort Study University of Hawaii Cancer Center

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ichiyama2-Brandon

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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Lormand	Individual	Oppose	No

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Dear Hawaii State Legislature:

I am writing to express my strong **OPPOSITION** to **House Bill 1625 HD1 Proposed**.

In 1992, I graduated from the University of Hawaii at Manoa with a PhD in Geology & Geophysics. I have lived in Hawaii for 30 years and raised two children here who also graduated from UH. I am now a professor in the Hawaii Institute of Geophysics and Planetology (HIGP). Throughout my research career, I have managed 23 external grants and contracts worth approximately \$45.8M or an average of \$1.9M/year since graduation. A very high proportion of these funds are used to support faculty co-Investigators, staff, and students that have all supported the State economy.

Since 2002, I have been the Director of the NASA Hawaii Space Grant Consortium (HSGC) and the NASA Hawaii EPSCoR Programs. Both programs are part of HIGP. The function of HSGC is to provide STEM education and NASA workforce development opportunities in Hawaii. HSGC maintains 3 pipelines of high tech activities starting at K-12 and culminating in undergraduate and graduate fellowship research programs. Through our K-12 Future Flight Program, under the direction of Art and Rene Kimura, we encourage thousands of Hawaii's underrepresented youth to pursue robotics and other high-tech after school programs. As an example, in the early 1990's 0-1 students from Waialua High School enrolled at the College of Engineering at UH, while now we receive applications from 10-15 students per year, and Waialua students have a national reputation in robotics programs. The focus of HSGC is the 70-80 hands-on research fellowships (at as high as \$4000/semester) that are granted to undergraduates across the UH System. HSGC fellowships pair a faculty researcher with a student who gets a unique opportunity to participate in her/his mentor's research. Most students go on to graduate school as they build self-esteem and understand that their research makes a difference. Most of the mentors come from HIGP and other ORU's across UH-Manoa. HSGC impacts thousands of students per year.

Since 2007, I have been the Director of the Hawaii Space Flight Laboratory (HSFL). HSFL's objective is to design, build, test, launch, and operate small spacecraft from the Hawaiian Islands. On November 3, 2015, HSFL's first launch from the Pacific Missile Range Facility did not achieve orbit. However, there were a lot of successes. The world took notice that Hawaii can become a space-faring State, and the world took notice that our local students built a satellite that passed all tests for space flight. Of the 130 students working on the HiakaSat satellite, all were hired into high tech jobs as a result of their research experience that put them in a much better position to compete for jobs than others with only a Bachelor's degree. Many of these students worked in project teams as part of engineering capstone classes where our students worked on real problems related to space flight. Since launch, HSFL has received numerous queries for another launch at ~ \$18M and for work on another \$9M satellite project. US commercial companies want to launch 10,000 small satellites in the next few years. HSFL offers hands-on research opportunities that show that our students are valuable to this rapidly expanding growth industry. The exciting part is that a growing number of government labs and commercial groups are coming to UH to use HSFL facilities and students to perform research on the next generation of small satellites. This is all part of the HSFL plan to expand launch and small sat development opportunities in the State to create highly paid jobs as a complement to our traditional economic focus areas.

The proposed House Bill 1625 HD 1 would be devastating to UH Research, and also devastating to the many students that receive hands-on and very unique research opportunities as a result of our programs.

Thank you for your time and consideration,

Dr. Luke Flynn

94-1115 Hahana St.

Waipahu, HI 96797

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 12:04 AM
To: HEDtestimony
Cc: stuecker@hawaii.edu
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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Malte Stuecker	Individual	Oppose	No

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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Marek Kirs	Individual	Oppose	No

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Testimony Presented to the
House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Margaret McFall-Ngai

HB 1625 HD1 PROPOSED - RELATING TO THE UNIVERSITY OF HAWAI'I

Chair Isaac W. Choy, Vice Chair Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in opposition to HB 1625 HD1 Proposed. I am currently the Director of the Pacific Biosciences Research Center (PBRC), which is specifically named in this bill. PBRC is an Organized Research Unit (ORU) within the School of Ocean and Earth Science and Technology (SOEST) at the University of Hawai'i at Mānoa.

PBRC was established as an ORU in 1960, and currently has a faculty of 24. It has productive and well-funded research programs in the areas of marine science, neurobiology and behavior, ecology, conservation, and evolutionary and developmental biology. Because Hawai'i has the largest number of endangered animals and plants among the 50 states in the U.S., a plethora of invasive species, and all of the Earth's climate types, it is an exemplary microcosm for biodiversity research in both terrestrial and marine systems. The research, training, and outreach activities at PBRC are focused largely on this unique opportunity.

Although, as an ORU, the primary responsibility of the PBRC is research rather than formal classroom instruction, its faculty actively engages in hands-on mentoring of undergraduate, graduate, and postdoctoral students, complementing and augmenting the education provided in lecture-based classes. Across the U.S. there has been a recognized need to develop innovative educational programs that train students in STEM (science, technology, engineering and math) disciplines. The traditional classroom experience has been shown to be insufficient to prepare students for the modern, highly competitive workforce. Experiential learning, with knowledge and expertise passed from mentor to trainee, is key to modern STEM education; students must learn science by doing science, and PBRC provides this hands-on experience. Thus, the teaching offered by PBRC is at the cutting-edge of education for the citizens of the future.

PBRC sponsors a large fraction of all the undergraduate research training programs at UH Mānoa, including minority-serving programs targeting Native Hawaiians and Pacific Islanders, and the educators that serve them. For example, PBRC has been funded by the National Institutes of Health, Minority Access to Research Careers (MARC) program nearly continuously since 1978. Over 150 UH undergraduates have participated in this PBRC-sponsored program. Over the last decade the PBRC has also trained many students and small-college educators, not only from UH, but also from the other Pacific Islands, in programs such as COSEE (Centers for Ocean Science Education Excellence-Pacific Partnerships). Other federally funded educational programs managed by PBRC include Undergraduate Mentoring in Environmental Biology (UMEB), Undergraduate Research Mentoring (URM), and Integrated Graduate Education and Research Training (IGERT). All three of these National Science Foundation-sponsored programs have targeted Native Hawaiian and Pacific Islander students. Together, these programs are critical components of the education of UH students, and constitute significant, but administratively unrecognized, contributions to the University's

educational mission, both on and off campus. Current and new PBRC faculty are developing mechanisms to expand the high level of research training offered to UH Mānoa undergraduates, graduate students, and postdoctoral scholars, enabling them to “find their passion”. Cooperative agreements with instructional departments would formalize these educational opportunities, even incorporating current research-based courses into the academic curriculum.

In addition, each year PBRC’s outreach activities touch many of the State’s citizens beyond the University, including high-school teachers, the native Hawaiian community, and small business researchers. PBRC sponsors an array of outstanding community outreach activities, among the strongest of any unit at UH Mānoa. PBRC researchers collaborate with and advise State, federal, and community stakeholders. These interactions have led to participation in K-12 education, promotion of local and international biodiversity awareness, and effective conservation efforts. Outreach activities are contributing to sustained and rational stewardship of the natural resources of Hawai‘i’s mountain-to-the-sea or ahupua‘a environments, which enhance the well being and enrich the lives of Hawai‘i’s residents and visitors.

Passage of HB 1625 HD1 Proposed would have profound effects on the teaching and outreach mission of the University of Hawai‘i, such as the Hawai‘i Exemplary State Program, sponsored by Center for Conservation Research and Training (CCRT) within PBRC. Within this program, K-12 students are involved in environmental research that will create an international model for citizen science. HB 1625 HD1 Proposed would alter the very fabric of PBRC and other ORUs that are active in these and other education and outreach pursuits. Such legislation would put these units in a position that would reward them for shutting down diverse programs that serve the state and, instead, to focus their efforts on obtaining a possibly unsustainable portion of their salaries from extramural funds. When this model has been implemented at other universities, the inevitable result has been ORUs that must become even more directed toward research funding, with less opportunity or incentive for quality teaching or outreach efforts. UH has developed a powerful strategy in which research is coupled with hands-on training of students and highly active outreach to the community. The members of the PBRC faculty and staff are dedicated to this mission.

If any member of the legislature would be interested in reading PBRC’s recent in-depth self study that lead to the UH Board of Regents reaffirmation of its value to the university, I would be happy to send along the PDF (mcfallng@hawaii.edu).

Thank you for the opportunity to provide testimony in opposition of this measure.

Testimony Presented to the House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Margo H. Edwards

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chairs: Isaac W. Choy, Vice Chairs: Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as the Interim Director for the Hawai'i Institute of Geophysics and Planetology and as the Interim Executive Director of the Applied Research Laboratory, both at the University of Hawai'i.

The Hawai'i Institute of Geophysics (HIG) was established in 1958. Hawai'i Revised Statute §304A-1501 (§304-42) mandated the formation of an institute of geophysics at the University of Hawai'i (UH) that "shall undertake basic research and training in geophysics, and shall disseminate knowledge of geophysics affecting Hawaii, and to the extent its facilities permit, may serve to apply the results of its research to geophysical problems in the State." In 1994 the Planetary Geosciences group, then in the UH Department of Geology and Geophysics, merged with HIG to form the Hawai'i Institute of Geophysics and Planetology (HIGP). HIGP is one of the UH Mānoa organized research units addressed by HB 1625.

Currently there are 35 faculty in HIGP who support an additional 65 staff, post-doctoral researchers and students. In contrast to the notion that "organized research units are not economically sustainable as stand-alone units," HIGP has been an economic engine for UH and the State, generating an annual average of ~250% return on the investment of State moneys over the past fifteen years, totaling more than \$100M of extramural revenue. HIGP faculty typically raise 25-100% of their salaries through extramural funding, with State support providing critical funding stability that helps ensure success. If the proposed legislation were to be enacted, the result would not be the enrichment of the State, but rather its impoverishment, as these proven, productive researchers depart to find positions with less onerous requirements.

HIGP's positive economic impact extends well beyond its ratio of extramural to State moneys. Through the Hawai'i Space Flight Laboratory, HIGP is building a cottage industry of technicians and engineers to support the emerging field of small satellite development, including a nascent capability to launch these satellites from the islands. HIGP research has spun off multiple high-tech companies in the State, employing dozens of personnel not captured in the list of 100 HIGP faculty, staff and administrators. HIGP operates state-of-the-art equipment, such as the Keck Cosmochemistry Laboratory, which provides fundamental capabilities for agencies like the National Aeronautics and Space Administration and attracts a host of national and international clientele ready to pay for its unique services.

As mandated, HIGP serves the State, the Nation and the world in researching and sharing knowledge about geophysical problems involving earthquakes, tsunami, volcanic activity, geothermal resources, sound in the ocean and atmosphere, and the physical properties of materials. HIGP's Hawai'i Groundwater and Geothermal Resources Center partners with Hawai'i's Department of Land and Natural Resources, Department of Business, Economic Development & Tourism, Department of Health, and the Hawaiian Electric Company to disseminate information related to the State's natural resources via the internet. The Center for the Study of Active Volcanoes provides local through international training in volcano hazards monitoring. HIGP researchers provide critical data and support for the Treaty on the Non-Proliferation of Nuclear Weapons and the Chemical Weapons Convention arms control treaty. HIGP engineers support first responders worldwide through the development of innovative technologies such as stand-off sensors to detect explosives at distances of hundreds of feet.

Recognizing that education and research are mutually enhanced when accomplished conjointly, HIGP's Space Grant Consortium supports fellowships, training programs, workshops for teachers and public exhibitions that promote the appreciation and understanding of scientific research within the broader community. Students get hands-on experience with HIGP research faculty, building and deploying instruments in environments ranging from Mars to the bottom of Earth's ocean. These students in turn serve as role models, encouraging and inspiring younger generations to follow in their footsteps. This succession of knowledge and experience that HIGP has developed is critical to sustainably building the skilled workforce necessary to support the State of Hawai'i's bid to diversify its economy through a high-tech industry. If the proposed legislation were to be enacted, the impact on the present would be painful, but the impact on the future could potentially be unrecoverable.

Thank you for the opportunity to provide testimony in opposition of this measure.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 11:52 AM
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Cc: marilou.andres@gmail.com
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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Marilou A. Andres	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Mark Merrifield	Individual	Oppose	No

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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Matthieu Dubarry	Individual	Oppose	No

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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Melissa Rotella	Individual	Oppose	No

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Testimony Submitted to the House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Michael Cooney

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

Background

I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve in the Hawaii Natural Energy Institute (HNEI) within the School of Ocean and Earth Science and Technology. HNEI was created in statute by the State Legislature in the 1970s. I have served UH for 15 years.

Statement of Opposition

While I agree with the Bill's underlying premise that we have arrived at a new era wherein the role of ORU's at UHM should be revisited and reinvented, I do not agree, however, with this Bill's assumption that the best course of action is their outright destruction.

Rationale for Opposition

The destruction of ORU's, as articulated in this Bill, would have devastating long-term consequences to UH and its role in the State of Hawaii economy.

It is important to understand the role ORU's play in a University and how they contribute to their ability to operate as a net-positive \$-generating businesses that significantly contribute to the local and State economies.

There are three principles pathways that Universities contribute \$ to their local and State economy: (i) out of State and overseas student undergraduate and professional school tuition, (ii) overheads charged to grants, and (iii) \$ from endowment funds.

One of the most fundamental factors increasing a University's competitive ability to secure the most \$ from these three sources is its research reputation. All three – tuition paying out of State and overseas students, grant agencies (and their grant reviewers), and private contribution to endowments – are deeply impacted by the research reputation of the University.

ORU's, particularly at UH, are a major engine producing national and international research reputations. And yes, ORU's are a major engine at major R1 university's throughout the world. But regardless of whether you disagree with this assumption, ORU's are nonetheless deeply integrated into the structure of UH. This is a reality. Changing this structure to one more in line with the vision articulated by this Bill - if that is deemed appropriate for the future - will take time and rational premediated steps. It will not be accomplished by their rapid and overnight destruction as articulate in this Bill.

Not all ORU's are alike. Their structure and role within a University are varied and complex. They are not merely groupings of faculty who write individual grants. They are often institutions that use faculty grouping to secure large blocks of \$ from nontraditional funding sources that have detailed objectives that lie outside the purview of single PI driven research. In many cases these funding sources will demand significant cost share which is largely derived from State funded faculty salary. In other cases they expect their funds to flow-through the university but still be managed by state funded faculty. In many of these

cases the funding sources will *not* support budget requests that fully fund the faculty's salary but *will* support overhead charges that produce far more \$ than the faculty salary. National and out of State funding agencies are quite varied in their requirements and demands and often demand significant cost share. *No two are alike.*

HB 1625, as written, will simply destroy the ORU system en-masse and leave the University of Hawaii with no alternative structure. Because of the deep rooted structure of ORU's at UH, there overnight destruction will drop the UH to a third or fourth tier university overnight and leave the State of Hawaii with a permanently dependent "welfare" university that has no functional capacity to become a major \$ generating business and a third "rail" to the Hawaii State economy. After investing tens of billions of dollars in the UH this Bill will overnight destroy the UH's ability to earn a return on that investment.

None of this is to say that the ORU structure, as it currently stands, should not be reviewed, revised, and in some cases reinvented. I agree we are entering a new era of research funding and that the ORU's at UH will have to change to meet this new paradigm. Institutional barriers that separate ORU's from OIU's should be diminished, for example, and in some cases replaced with mechanisms and pathways that foster increased collaboration between ORU's and OIU's. Some ORU's should be phased out while others expanded. But these constructive changes cannot happen if the ORU's – en-masse – are destroyed overnight, which will occur if this Bill is passed as written.

Like all industries, including the tourism and military industry in Hawaii, one has to invest \$ to earn \$. The only viable option to develop a third rail to the State of Hawaii's economy is through the business of higher education. At the end of the day that is Hawaii's only real option (for a third rail) in a world economy that demands specializations in market niches. A competitive \$-generating higher education industry demands, at its core, a high quality R1 University. To be a world class R1, however, a University needs a menu of ORU's in various forms. And even if the structure of ORU's at UH need to be revised and reinvented, the UH still needs the faculty within those ORU's to stay and participate in the reinvented structure. Destroying the ORUs, as designed by this Bill, will chase these faculty away precisely at a time where the UH cannot afford to recruit their replacements.

Summary

The State and UH must continue its investment in ORU's if the UH (and all its OIU's and other bodies) are to thrive. A UH that thrives can compete in the national and international economy for (i) tuition dollars, (ii) grant overheads, and (iii) endowments – all of which will benefit the State's economy and fiscal budget. Destroying the ORU's, as outlined in this Bill, will permanently damage the UH and downgrade it permanently to a third or fourth tier institution that not only has no ability to become self-reliant and contribute to the State economy but, in fact, will become a permanent welfare institution that depends solely upon State funding.

Testimony in opposition to HB 1625

If enacted, HB 1625 will have a devastatingly negative impact on both scientific research and research training in Hawaii. It woefully fails to recognize the importance of the entire research enterprise to higher education and, particularly, to the in-the-laboratory experience that enables students to fully recognize how research is actually conceived and conducted and thus assume the personal mantle of 'scientist' that is so important to conveying science to the Hawaiian public. The organized research units are the most significant locales for such training experiences at UH. In addition, the faculties of research units like the Pacific Biosciences Research Center have taken the lead for decades in securing extramural training grants for undergraduate students, with a special focus on training Hawaiians and Pacific Islanders. The impacts of these training grants have been enormous. HB 1625 has the potential to completely destroy the incredibly important and long-lasting programs.

Michael G. Hadfield

Testimony Submitted to the House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Michael Guidry

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

Background

I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as the undergraduate chair of the Global Environmental Science (GES) Program that is administered by the Department of Oceanography in the School of Ocean and Earth Science and Technology at the University of Hawaii at Manoa (UHM).

I leave it to others to explain how the proposed legislation would fundamentally harm the ability of Organized Research Units (ORUs) to function. I would like to instead highlight how the proposed legislation would deleteriously impact the following three critical undergraduate-related areas at the UHM: (I) undergraduate STEM-related education and research; (II) STEM-related undergraduate degree programs; and (III) undergraduate female and local STEM students.

I. Negative Impact on Undergraduate STEM-Education and –Research

In terms of undergraduate education and research, the proposed legislation decimates one of the primary avenues for undergraduates at UHM to experience and engage in fundamental scientific education and research -- a hallmark opportunity provided by any top-flight undergraduate public or private university in their undergraduate education enterprise.

To be more explicit, the width and breadth of research that these ORUs span and support allows for systematic and regular integration of STEM undergraduates (from various degree programs, schools, and academic units across the UHM) into their active, cutting-edge research programs and foci.

These undergraduates contribute directly to the UHM research mission in ways beneficial to the state of Hawaii and to the general advancement of science. They also receive hands-on scientific and technical training and educational experience that classrooms can not teach or offer. This experience is essential for workforce placement or moving on to graduate school in STEM-related fields or professional degree programs upon graduation.

II. Negative Impact to the UHM Global Environmental Science (GES) Program

Students in the UHM GES Program have conducted primary research with at least eight of the ten (80%) listed ORUs in this proposed legislation.

The results of these research experiences and mentoring by ORU faculty served as the foundation for the student's research thesis project degree requirement – a hallmark of the GES Program. Without completing this research project experience degree requirement, GES

students can not graduate.

III. Negative Impact on Females and Local Students in STEM-related Programs like GES

For GES Program graduates, 60% are female and 50% are from Hawaii.

These ORUs, through their offering and mentoring of research experiences, are critical to supporting training of underrepresented and underserved STEM-related populations (e.g., females) and to the local population. This training allows graduates to enter to the workforce or continue their education at the graduate/professional degree level.

Summary

This proposed legislation would do significant damage to STEM-related undergraduate education and research at the UHM. The proposed legislation would negatively impact STEM-related undergraduate degree programs, underrepresented populations (females), and local students. ORUs are essential components to undergraduate STEM-related research and education, STEM-related workforce training for undergraduates, and the preparation of undergraduates for moving on to graduate school in STEM-related fields and professional fields.

Thank you for the opportunity to provide testimony in opposition to this measure.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 8:11 AM
To: HEDtestimony
Cc: steck4@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Mireille Steck	Individual	Oppose	No

Comments:

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To: HEDtestimony
Cc: nschneid@hawaii.edu
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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Niklas Schneider	Individual	Oppose	No

Comments:

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Sent: Friday, February 12, 2016 5:46 PM
To: HEDtestimony
Cc: maximenk@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Nikolai Maximenko	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 3:26 PM
To: HEDtestimony
Cc: pcooper@hawaii.edu
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HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Patricia Cooper	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 1:33 AM
To: HEDtestimony
Cc: patricia.couvillon@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
patricia couvillon	Individual	Oppose	No

Comments: Decisions affecting the organized research units at the University of Hawaii should be discussed by the appropriate governing bodies of the University of Hawaii. Legislation that mandates changes to the structure, operation, and function of organized research units is inappropriate. This bill should be voted down in committee and I urge the committee members to respect the governance processes of the university.

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 11:47 AM
To: HEDtestimony
Cc: pauldk@hawaii.edu
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HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Paul Krushelnycky	Individual	Oppose	No

Comments:

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HB1625_Lucey_testimony

My name is Paul Lucey. I am a Researcher at the Hawaii Institute of Geophysics and Planetology at UH Manoa, submitting this testimony as an individual.

The proposed bill would devastate the research and UH Manoa and effectively eliminate UH as a research institution.

All of the research grants I have raised, and the intellectual property I have developed for UH has all been done using State funds. To eliminate state funds would drastically reduce the number of grant proposals I can write because proposals to the Federal government cannot be written on time paid for by federal funds.

I joined UH Manoa in 1980 and in my career have raised over \$20 million in federal research funds through grant proposals. The majority of these funds have supported jobs that would not exist without these federal dollars, funds that would go to another state without my efforts.

At the present time I support four individuals: three scientists, one of whom is a Native Hawaiian and a second is a graduate of UH Hilo, and a graduate student. I also cover 50% of my salary on federal funds. I have seven federal research grants that bring in almost \$500,000 each year into the economy of the State of Hawaii.

Under State funds I have developed technology that has been licensed to a small business in the State of Hawaii--Spectrum Photonics Inc.-- that employs 15 people, most of whom are UH graduates. This company raises over \$5M dollars in federal contracts annually based almost entirely on UH licenses. Reducing support for research will reduce the technology available to our small businesses to bring high technology jobs to Hawaii.

This bill will cut the research done by the University of Hawaii, and reduce the \$300 million dollars brought into the State from external funding sources. The bill claims that organized research units at UH are not sustainable, but my unit, the Hawaii Institute of Geophysics and Planetology, raises \$3 dollars of federal funds for every \$1 dollar of State support received.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 8:35 AM
To: HEDtestimony
Cc: paulnachtigall@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
paul nachtigall	Individual	Oppose	No

Comments: I am a researcher at the Hawaii Institute of Marie Biology. This bill is bad for a number of reasons. ORUs generally bring in much more money to the State than the salaries of the principal investigators that the University pays. Most funded by NSF would ONLY be competitive with University paid salaries. NSF rarely pays the salary of the PI. The grants bring in 48% of the total in overhead. This bill would throw away most NSF funding at the HIMB. This bill would encourage top world class people to leave this University. That would in time greatly diminish the value of a degree from the University of Hawii. This bill would make a very bad law. It embarrasses me to read it. Paul E Nachtigall Researcher

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As director of Curriculum Research & Development Group (CRDG) in the University of Hawaii at Manoa College of Education, I strongly urge the members of the Hawaii State House of Representatives Higher Education Committee to vote against H.B 1625 H.D. 1, which will be discussed in the hearing of February 16.

Although CRDG was omitted from the list of an Organized Research Units (ORU) given within the bill, we have existed as an ORU with state and extramural support since 1966. Our purpose is to directly serve the educational needs of K-12 educators within the state. We have accomplished this through producing curriculum products and materials, conducting research, and providing teacher and administrator professional development. Our products include, for example, the award-winning program, *Foundational Approaches in Science Teaching*, which has been used statewide since the 1970s. The quality of the program is reflected by the fact that it has not only been used widely within the state but also adopted in about two-thirds of American states and in about a dozen foreign countries. Among other efforts, we have produced, and continue to produce, state-of-the-art materials in mathematics and marine science, and, through funding by the US Department of Education, literacy materials serving Hawaii students, with a focus on native Hawaiians. A stellar example of the work we produce that directly serves the state is the textbook *A History of Hawaii*, now undergoing revision in its third edition and due for completion in May. We have recently invested about a quarter of a million dollars in revising the text, which we expect will be adopted by schools statewide over the next few years. The previous two editions of the textbook have been used by Hawaii schools since the 1980s. No other entity besides CRDG has the mandate or expertise to produce such a text. We also recently completed an algebra textbook at the behest of the Hawaii Department of Education. These are only some examples of the products we produce. In addition, we regularly provide teacher professional development to schools statewide and consistently receive accolades for this work. (If asked, administrators at the highest levels of the Hawaii Department of Education would corroborate this assertion.) Furthermore, we intensively collaborate with University Laboratory School, our partner in curriculum and program development. Our faculty regularly teach University classes, as well.

Contrary to the assertion of the bill, I respectfully submit that ORUs within the University system were not created simply to increase extramural income and enhance the reputation of the University. For one thing, the primary purpose of a university's research units is to contribute to the knowledge base of disciplines. Furthermore, as exemplified by CDRG's history over the last 50 years, an ORU can provide services and materials that enhance the knowledge and skills of educators within the state. The proposed legislation would significantly disrupt CRDG's and other ORUs' capability to fulfill their mandates. I urge legislators to strongly consider these points and to vote against passing the legislation out of committee.

Thank you for this opportunity to provide testimony.

Paul R Brandon, Director
Curriculum Research & Development Group
College of Education
University of Hawaii at Manoa

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 4:44 PM
To: HEDtestimony
Cc: p.wessel@mac.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Paul Wessel	Individual	Oppose	No

Comments: This bill attacks collective bargaining of public employees, specifically researchers at the University of Hawaii, and UHM autonomy. The bill singles out the most prestigious and successful research enterprises on campus and imposes a new set of arbitrary rules and regulations that are orthogonal to the running of successful research enterprises. Basically, legislators assume they know more than Directors how research institutes should operate, ignoring market competition. These units have great impacts on the state (in terms of expertise) and the state economy (via the multiplying effect). By pursuing solutions that likely would discourage top scientists from working here the bill may promote actions that may reduce UHM to community college.

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TESTIMONY IN OPPOSITION TO HB 1625

My name is Peter Mouginis-Mark. For the last 33 years, I have been a researcher faculty member within the Hawaii Institute of Geophysics and Planetology (HIGP). I am submitting this testimony as an individual and a Hawaii resident since 1982. **I strongly oppose HB 1625!**

I contend that any restriction on the ability of my Institute, or any other organized research unit (ORU) at the University of Hawaii (UH) is highly detrimental to the mission of the University and would have serious negative impacts for the State. It is incorrect that research be treated as separate from the teaching and community service roles for the students and the State. During my time at UH, I have raised over \$24,000,000, and have spent the majority of these funds in supporting over 40 staff and students who would otherwise not have had jobs here in Hawaii. Furthermore, the notion that researcher do not teach is in error, since I have taught over 80 credits at UH at all levels ranging from introductory undergraduate courses to graduate-level. I have also graduated 14 graduate students as their committee chair, served on a further 10 graduate committees, and mentored 10 undergraduate students working on research topics.

Research is the economic driver for the University, and it is the State salary support that enables us to explore high-risk/high-payoff funding opportunities. For instance, at the present time I am Science Lead on a \$20,000,000 proposal to the National Science Foundation that would provide critically needed geophysical information on Hawaii's water resources. I would never have worked for almost a year to help develop this project had I not had the State salary support that I now receive. And if this support were not available, the people of Hawaii would be left with an uncertain future regarding the availability and quality of water in such critical localities as Honolulu and Kailua-Kona.

A second example where the State benefits from the research skills at UH lies in the many scientific conferences that we attract to the State. The testimony of my Dean (Dr. Brian Taylor) notes that SOEST has recently been congratulated by the Hawaii Tourism Board for generating over \$100,000,000 in new visitor revenue by organizing conferences in Hawaii. In my own case, as part of my researcher effort, I am helping to plan a conference in 2018 that will bring an estimated \$9,000,000 to the State – a figure that dwarfs all of the salary that I have been paid by the State since I became a faculty member in 1982!

The same situation is true for all of my Institute, as well as the remainder of the School of Ocean Earth Science and Technology (SOEST). SOEST has been ranked by the international journal Nature as the 15th best in the world, and this is because we raise over \$100M per year in funding. But Federal grants are becoming increasingly difficult to win, and so to continue to expand there has to be stability for the core researchers and their support staff. HB 1625 would completely destroy our capability to attract such funding because, with fixed budgets, hundreds of support staff would be let go in order to use the funds for faculty salaries. The impact on the University would be catastrophic, and the negative impact on the State through the loss of these jobs would be severe.

Indeed, I would predict a downward spiral in the quality of effort at UH that would essentially make UH Manoa another community college within 5 – 10 years. I am sure that this is not the intent of HB 1625.

The final issue is one of a faculty salary cap. Both HIGP and SOEST have to compete at the international level for the best and brightest researchers and teachers. We have accomplished this because we are able to offer market-driven salaries; this has enabled us to achieve the ranking of 15th university in the world for geosciences. If there were a salary cap, not only would we be unable to hire the next generation of innovative researchers, but we would be at great risk of losing our current capabilities. It would truly be a case of killing the goose that lays the golden egg for the State, as the salary support is but a small fraction of the total dollars raised by the researchers.

Accordingly, I strongly oppose HB 1625, and hope that the Committee on Higher Education will reject this bill.

Thank you for your time in hearing my testimony.



Peter Mougini-Mark
2212 Round Top Drive
Honolulu, HI 96822
(808) 387-3700

Role of ORUs in the Education of Hawaii's Students

UHM's strategic plan includes the goals of 1) ***Being A Native Hawaiian Place Of Learning & Indigenous-Serving Institution***; and 2) ***Enhancing Student Success***. Two recent job interviews for a tenure faculty position (Feb. 4,5 and Feb. 11,12) have demonstrated that UHM has been successful in these areas, and that ORUs play a central role in this success. The job candidates are both Native Hawaiians, born and raised on Oahu.

The first candidate got her introduction to research at the UH Cancer Center, an ORU, as a high-school student. This seminal experience led to the completion first of her undergraduate and then her graduate degrees. In her interview, she discussed the value of this early experience at a UHM ORU, and how this led the way to her enrollment in a graduate program and completion of a Ph.D. It is one of the main reasons she applied for a faculty position in an ORU (PBRC).

The second Native Hawaiian candidate also spoke eloquently about his early research experience at UHM. As a scholar in two undergraduate research-training programs, this candidate spoke of mentorship, opportunities and how grateful he was for these early experiences. The programs that supported and funded his experiences were in an ORU (PBRC) deeply committed to enhancing student success through research experiences. This candidate applied for the tenure track position in PBRC (an ORU) at UHM because he wants to give back to the institution and he has a deep desire to develop experiential teaching tools, integrate research, teaching and service, and serve as mentor.

The proposed bill will erode educational opportunities for the students in Hawaii. Preparation of a STEM workforce does not occur in the classroom alone, the experiential learning experiences that students obtain working in ORUs, often funded by extramural grants and contracts will disappear, since their "pay line" is low.

Petra Lenz

ichiyama2-Brandon

From: morav . <philip.moravcik@gmail.com>
Sent: Sunday, February 14, 2016 3:09 PM
To: HEDtestimony
Subject: HB1625 HD1

I would like to register my strong opposition to passage, or even consideration of this bill. It is clear that the accountants who are proposing this have no understanding of what the research organizations at the University of Hawaii are bringing to the state, that is to say, millions of dollars. HB1625 HD1 represents the worst of the idiotic austerity philosophy which has brought the American (and many European) economies to their knees. Instead of making life difficult for researchers at the University of Hawaii we should be supporting and encouraging them in their work. Every dollar invested by the state in scientific research brings in multiple additional dollars from outside funders. Why are they trying to kill the goose that's laying the golden eggs?

It is a totally ignorant and misguided policy.

Philip Moravcik, Honolulu

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 7:26 PM
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Cc: prapoza@hawaii.edu
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HB1625

Submitted on: 2/12/2016

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Submitted By	Organization	Testifier Position	Present at Hearing
Philip T. Rapoza	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

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Sent: Monday, February 15, 2016 12:13 PM
To: HEDtestimony
Cc: rcflentz@gmail.com
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HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Rachel CF Lentz	Individual	Oppose	No

Comments:

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February 15, 2016

Dr. Rhett Butler
1661 IHILOA Loop
Honolulu, HI 96821

Committee On Higher Education
HOUSE OF REPRESENTATIVES

Mr. Chairman, Madam Vice Chair, and members of the Committee On Higher Education:

I am a resident of Honolulu and a registered voter. I am writing to express my strong **opposition** to HB1625.

The legislation proposed in HB1625 has no demonstrable benefit for the people of Hawai'i. Worse, it threatens to damage excellence in our State. HB1625 ignores the fact that the University of Hawai'i researchers are among the world's experts. The foremost international scientific journal, *Nature*, in 2015 rated UH's research programs in Earth and Environmental Science at 15th globally—leading Harvard, Princeton, Yale, *and* Oxford Universities. This has been accomplished in part by the research of the Hawai'i Institute of Geophysics and Planetology, which has brought in more than \$140M in extramural funding since 2001—a return of more than \$3 on each \$1 of State funding. Where else can such a return be found, even in the private sector?

Organized research has an important role for the State of Hawai'i. This State is particularly susceptible to geophysical disasters. The same forces that have made such beauty in our islands are capable of great destructive potential. Our knowledge of these threats arises almost entirely from research at the University of Hawai'i. Earthquake, tsunami, volcanic, submarine landslide, VOG—each of these are studied, monitored, and delineated by research scientists, not simply for science but rather for the societal benefits to Hawai'i's people. Direct results that affect everyday life are seismic building codes, earthquake hazard response, expanded tsunami evacuation zones, resolution of tsunami currents near-shore and

in harbors, VOG warnings, detailed mapping of submarine landslides and their concomitant tsunami threat at the coast. These scientists also study and advise the State on groundwater surveys, geothermal potential, submarine cable routes, and lava flow dynamics.

Should we rely upon researchers at other Universities to answer these questions, refine our understanding, and advise the State? Where is our *kuleana* of accomplishment, pride, and self-reliance in our State in meeting the challenges that nature presents us?

It would be great if the Legislature recognized our successes at UH. But it is imperative that this bill be quashed.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rhett Butler", with a stylized, flowing script.

Rhett Butler

Testimony Related to
House Bill 1625 HD1
RELATING TO THE UNIVERSITY OF HAWAII
Presented before the
House Committee on Higher Education
The Twenty-Eighth Legislature
February 16, 2016
by
Richard J. Wainscoat

Chair Choy, Vice-Chair Ichiyama and members of the Committee. My name is Richard Wainscoat and I am a faculty member at the University of Hawaii Institute for Astronomy. I am submitting this testimony in strong opposition to this bill as an individual.

I note that the content of HB 1625 HD1 does not match the bill's description: "Requires UH to report on classroom usage. Requires an open public meeting to discuss proposed buildings."

I believe that HB1625 HD1 is misguided and would cause irreparable harm to the University of Hawaii. The bill targets some of the most prestigious research units of the University of Hawaii and would impose unrealistic requirements.

The bill contains errors. For example, tenured faculty at the Institute for Astronomy, including those in "R" positions, are required to teach.

The Institute for Astronomy has led astronomy development in Hawaii. The economic benefit to the state of Hawaii from astronomy far exceeds the state funding that has been provided to the Institute for Astronomy.

The requirement of a 5:1 ratio of extramural funding to state funding is unrealistic.

I urge you to reject this bill.

Testimony Presented to the House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Richard Rocheleau

HB 1625, HD1- RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

I provide this written testimony as a private citizen in strong opposition to HB 1625, HD1. In my professional capacity I serve as the Director of the Hawai'i Natural Energy Institute in the School of Ocean and Earth Science and Technology at the University of Hawaii.

Similar to other Organized Research Units at the University of Hawaii, the Hawai'i Natural Energy Institute (HNEI) was established to conduct research and training of direct benefit to the State of Hawaii, in this case, to coordinate and undertake the development of natural energy sources for Hawai'i. In 2007, the HNEI was established in statute (Hawai'i Revised Statutes §304A-1891) with an expanded mandate to coordinate and undertake the development of Hawai'i's natural energy resources in order to:

- Diminish Hawaii's dependence on imported fossil fuels
- Meet the state's increasing energy demands with little or no environmental degradation
- Contribute to the technology base for finding solutions to the national and global energy shortage
- Coordinate with state and federal agencies; and
- Demonstrate and deploy efficient end use technologies, including those that address peak electric demand.

Since 2007 and continuing today, HNEI has developed strong partnerships with industry, state and national organizations; creating a thriving synergy that expands the resources and accomplishments for all involved to meet critical state needs. HNEI works closely with federal funding agencies, industry, the State Energy Office, our State legislators, the Public Utilities Commission (HPUC), and our Congressional delegation. Each year since 2007, HNEI has leveraged modest state funding with federal awards at ratios far exceeding that required by HB1625, HD1. These federal funds have been used to develop, deploy and demonstrate advanced energy solutions that offer the potential to substantially reduce our dependence of fossil fuels. HNEI also conducts technical and economic analysis that directly support HPUC deliberations, contribute to sound policy development by the administration, and inform the public about critical energy issues. In the development of these projects, a significant fraction of these funds go to support local small business and contractors, directly fueling the Hawai'i economy.

Select examples of current work include:

- Grid Modeling-RPS Study: HNEI conducts independent electric utility system analysis to identify cost effective solutions for increasing renewable energy generation. These studies directly inform the HPUC and have been used by the utility in decision making.
- Wave Energy Test Site: HNEI has worked with the US Dept. of Energy and US Navy bringing more than \$25 million of investment to Hawai'i for development of the nation's first grid-connected wave energy test site.
- Maui Smart Grid Initiatives: This effort funded by multiple federal awards in excess of \$10 million with equivalent industry cost share is developing and demonstrating critical technology to allow the integration of additional solar energy (photovoltaics) into the Hawaii electrical grids.
- Grid-Scale Battery Energy Storage: HNEI is deploying and testing grid scale batteries in high value applications on Hawai'i, Oahu and Molokai to validate the use of these technologies to support grid systems with high penetrations of renewable energy, with the goal of demonstrating pathways for additional use of renewable energy.

The projects described above, as for almost all HNEI work, are supported primarily by federal funds. In fact, nearly all the direct projects costs for these types of effort come from federal dollars. However, without state funding that supports a small fraction of HNEI's total faculty, and provides critical required cost share, it is unlikely that any of these projects would have succeeded in attracting federal funding.

HNEI currently has 34 faculty. Eight of those 34 receive partial salary from the state. The balance are supported 100% from other extramural funds. In addition, extramural funds support approximately 25 other professional technical staff and 25 person undergoing training under the supervision of HNEI faculty including post-doctoral fellow, graduate and undergraduate students and visiting scientists. Although, HNEI does not have its own academic program, its faculty members develop and present courses in SOEST, the College of Engineering, and the College of Tropical Agriculture and Human Resources (CTAHR). HNEI also provides direct financial support (federal dollars) to Maui Community College, Kauai Community College, the College of Engineering (UH Manoa) and College of Economics (UH Manoa), supporting education and training in a diverse ranged of disciplines supporting development of a highly qualified, diverse energy workforce.

If the proposed legislation were to be enacted, it would significantly impact HNEI's ability to operate in the entrepreneurial fashion that has led to the many successful partnerships and projects that contribute so significantly to the state's energy goals. The impacts on HNEI's activities and on Hawaii's energy future would be substantial.

Thank you for the opportunity to provide testimony in opposition of this measure.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 5:30 AM
To: HEDtestimony
Cc: zeebe@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

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Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Zeebe, Richard	Individual	Oppose	No

Comments: This bill will destroy research units that address critical state problems, contribute to student education, and bring extramural funding into the state (millions of dollars). It would have a devastating effect on Hawaii's education and economy. I strongly urge you to vote against bill HB1625.

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
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To: HEDtestimony
Cc: holasekre@corning.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Rick Holasek	Individual	Oppose	No

Comments: The UH research community brings \$300M+/-year of outside \$ to the State of Hawaii already. UH has ample administration and process to govern researchers and their work. This bill seeks to overly burden UH with additional requirements and administration. The net effect of this bill will be a reduction in the \$ these researchers are bringing into the State and it will have the opposite results of what the bill claims to be trying to achieve.

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Testimony Submitted to the House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Robert Cowie

HB 1625, H.D. 1 Proposed – RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in strong opposition to HB 1625. In my professional capacity I am a faculty member in an Organized Research Unit (the Pacific Biosciences Research Center) and formerly a researcher at the Bishop Museum. I have been a researcher in Hawaii for 26 years.

Faculty in ORUs at UH Manoa are not necessarily required to undertake formal classroom instruction. However, they are instrumental in the training of both undergraduate and graduate students in hands-on science—learning-by-doing. ORUs in general undertake far more research and bring in far more dollars per capita than traditional instructional departments. They are key to the research endeavor in the State and their research is highly regarded nationally and internationally, which is critical to maintaining the high reputation of UH Manoa. It is largely research that is the measure of a university's reputation, not its instructional activities. Only by maintaining the good reputation of UH Manoa can the University attract and retain the best faculty, both research and instructional (and other).

The proposed legislation addresses salary and funding requirements of faculty members in ORUs, essentially requiring that they fund almost their entire operation from extramural grant sources. This includes not only support of the research they undertake (e.g. laboratory equipment and supplies) and the laboratory staff (e.g. technicians) and students (graduate and undergraduate) that they train in their laboratories, as is currently the norm, but that they also support the greater part of their salaries from such external sources. Essentially, this means that the State would get all the benefits of having a Research Intensive university that attracts millions of dollars and attracts and retains high quality faculty, without making a significant contribution to that endeavor.

Partial funding of research faculty salaries is a model that has been tried, especially in the medical field. Research grants from the National Institutes of Health (NIH) often include a portion of the salary of the Principal Investigator (PI). In other fields such as the non-medical biological sciences this is not the case. Indeed in many of its programs the National Science Foundation (NSF), the key federal funding source for most non-medical research, explicitly will not fund the PI's salary—NSF expects the home institution to support the PI. This legislation will therefore put an end to much of the research funded by the National Science Foundation at UH Manoa.

Much of the research undertaken in ORUs at UH Manoa is not funded by major federal granting agencies but by small grants cobbled together to support a graduate student or an undergraduate

trainee. Yet such research is often of direct relevance to Hawaii (e.g. studies of rat lungworm disease, taro pests, endangered and invasive species) but would disappear as such grants are unable to support the PI's salary.

Just this last January, I was at NSF serving on a grants review panel, and the NSF Assistant Director in charge of Biological Sciences spoke to the panel. He stated very clearly that it is now widely accepted that the model of research support that this legislation proposes has failed. One reason for this failure is that the necessarily intermittent funding of the model provides no professional job security, which is key to development of long-term research programs. PIs give up trying to obtain funding and leave science.

If this legislation is enacted it would pave the way for UH Manoa, the flagship of the University of Hawaii system, to become little more than a large community or liberal arts college. Its research, both of local and of broader significance, would decline in both extent and impact, with tenured faculty, especially dynamic younger faculty moving elsewhere and the reputation of UH Manoa vanishing with it. Jobs for support personnel would disappear. And promising local students would increasingly be forced to look elsewhere for their education as UH Manoa declined into obscurity.

This is a bad bill that would do irreparable harm to the University of Hawaii.

Thank you for the opportunity to testify against this legislation.

ichiyama2-Brandon

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Cc: rd48d06mn@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Robert Dunn	Individual	Oppose	No

Comments:

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UNIVERSITY OF HAWAI'I AT MANOA

Kewalo Marine Laboratory
Pacific Biosciences Research Center
41 Ahui Street, Honolulu, HI 96813

February 14, 2016

House of Representatives
Twenty-Eighth Legislature, 2016
State of Hawaii

Dear Chair and Committee Members,

I am submitting this testimony in opposition to HB 1625, HD 1 as proposed. I am a Researcher (R faculty) and Director of the Kewalo Marine Laboratory, Pacific Biosciences Research Center, within SOEST at the University of Hawaii at Manoa. While I can certainly understand and appreciate the need for financial sustainability at the University, I do not believe this bill, as written, will achieve the goals expressed in the preamble. The details and conclusions presented in the bill do not reflect a full examination of facts and impacts, and the result of passage may end up negatively affecting the quality of research programs at the University as well as the financial bottom line. Academic excellence and program success cannot be legislated, but must come from within the institution. There are faculty review and performance criteria already established and a process to insure these are met through a process agreed upon with UHPA. I present the following for consideration:

- There is a misperception that “R” faculty do not teach. I, as do my colleagues, supervise graduate students, undergraduate students, postdoctoral researchers and even high school interns. Guiding these students through their research and degrees requires a great deal of engagement, time and effort, including obtaining their financial support. I presently have 6 Ph.D. students that I supervise, including two that are Native Hawaiian. I spend several hours per week performing the needed support activities. I also teach a graduate seminar course every Fall, team teach a portion of a course in Biological Oceanography, supervise students in directed research and give lectures in undergraduate courses. I also serve on MS and Ph.D. committees in 5 departments. This is typical for most “R” faculty.
- My salary provided by UH is often used as a non-Federal match for grants from NOAA, the National Fish and Wildlife Foundation and other funders who have such a requirement. Without this match, I am not eligible for such funding and the indirect costs that come with these grants.
- As written, this bill provides a strong incentive for the best researchers to leave UH and go elsewhere for better support and facilities. UHM is a Research1 institution; this bill will likely end up diminishing overall capacity due to such losses and making it harder to recruit top researchers, who have the ability to bring in large grants and overhead, as they will be better off at other institutions.
- Kewalo Marine Laboratory faculty are all well-funded and have always been, with this unit generating hundreds of thousands of dollars in indirect each year as well as making valuable research contributions that go beyond simple dollar calculations though our support for our students, the State and our stakeholders. These are important benefits to Hawaii of having an R-1 university and top tier researchers. This bill will have the impact of reducing such research services provided to agencies such as the Department of

UNIVERSITY OF HAWAI'I AT MANOA

Kewalo Marine Laboratory
Pacific Biosciences Research Center
41 Ahui Street, Honolulu, HI 96813

Land and Natural Resources (e.g. Matson Oil Spill), the Division of Aquatic Resources (Coral bleaching event), the Dept. of Health (coastal water quality), the Dept. of Agriculture, the Coastal Zone Management Program, as well as other key stakeholders such as the Native Hawaiian Legal Corp (protection of the areas used by the Native Hawaiian *limu* fishers), the Maui Nui Resource Council, Friends of Kewalos, Malama Maunalua and others who directly benefit from our expertise available without costs, as we are a public institution with a service requirement.

- As most grant programs have a strict grant cap, faculty will be forced to remove support for graduate and undergraduate students (many of whom in our programs are Native Hawaiian and Pacific Islanders) to cover their own salaries. The result will be a loss of training opportunities for our local students and problems in attracting the best and brightest students from around the world, who will go elsewhere to follow the financial support.
- Facilities grants are important to improving the research capacity of the University to meet our research, service and training missions yet do not support salaries. The bill removes incentives to spend time on these proposals that may help the university, but that will not provide salary funds for the faculty who submit them.
- All of the “R” faculty with whom I interact work at least 50 hours a week on their job, as the only way to meet our research, instructional, service and related responsibilities. Research is a 24/7 enterprise, requiring work at night, on holidays and weekends.
- At present, extramural funding is extremely tight, with programs within the National Science Foundation and the National Institutes of health funding 8% or less of the proposals submitted. No matter how good a researcher may be, there will likely be periods during which funding levels will decrease. The funding success rate for those researchers willing to sell their services for predetermined results (think tobacco industry funded individuals who denied negative health effects or participated in “manufactured uncertainty,”) is much higher. The legislature needs to consider if profit is preferred over academic integrity and reliable data being provided to our stakeholders.

The State needs to consider the high value of a strong and vibrant research community as a critical resource now and into the future. Legislative efforts should focus on growing rather than constraining the research environment at UHM. There are better ways to improve the finances at UH, and I hope the conversation on this issue will continue.

In closing, I cordially invite the Committee Chair and members to come visit our research facility in Kaka’ako and meet our faculty, students and staff to see for themselves, what we do and the benefits provided.

Respectfully submitted,



Robert H. Richmond, Ph.D,
Research Professor and Director

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 7:03 AM
To: HEDtestimony
Cc: rlukas@hawaii.rr.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Roger Lukas	Individual	Oppose	No

Comments: Testimony submitted to the Committee On Higher Education: Rep. Isaac W. Choy, Chair; Rep. Linda Ichiyama, Vice Chair, Rep. Henry J.C. Aquino, Rep. Calvin K.Y. Say, Rep. Kaniela Ing, Rep. Roy M. Takumi, Rep. Ken Ito, Rep. Clift Tsuji, Rep. Sam Satoru Kong, Rep. Lauren Kealohilani Matsumoto, Rep. Takashi Ohno, Rep. Andria P.L. Tupola For Committee meeting scheduled Tuesday, February 16, 2016 2:02 pm Re: HB1625 HD1 proposed Dear Committee members: Please do not advance this bill. The State of Hawaii subsidizes film productions in Hawaii because of the publicity for our islands and to stimulate the economy. The research enterprise at the University of Hawaii should not be considered to be less worthy of State support. That enterprise can be lost in a very few years, but it took decades to build. It is already severely challenged. A university is a place of knowledge generation (research), knowledge transfer (education), and knowledge service (applications of knowledge to external problems). Education is a fundamental aspect of a university, but education is much more than just teaching classes, grading exams and awarding diplomas. Students learn in many ways outside of the classroom, for example as assistants in research labs, in the field, and in the applications of knowledge to societal problems. The committee should consider the value of knowledge generation about issues facing Hawaii, and knowledge application in reaching solutions for these issues. Organized Research Units the University of Hawaii were originally conceived to address research matters of significance to the State of Hawaii where resident expertise was deemed to be important. They still provide this essential function. Research faculty positions were created to bring talented researchers to the University of Hawaii, which is far from the mainstream of academia, and where the infrastructure and support for research has been very inconsistent over time and across research areas. These faculty have to work much harder, and travel further, to overcome disadvantages to achieve the same levels of professional success as their mainland colleagues. An essential one-day meeting on the mainland takes three days for a UH researcher to attend, with two of those in airports and on airplanes. Field research often interferes with teaching, but it is essential to the generation of knowledge including knowledge of Hawaii, its environment, and its people. Over the years, many of those 100% research positions were sliced and diced to partially support the existing research enterprise, with the rest of faculty time supported by instruction or extramural funding. In my opinion, the draft legislation will kill the University of Hawaii as a Research I university, and will reduce the pool of expertise available to help generate solutions to existing (and unknown future) matters of state-wide concern. The following is a list of research areas where UH faculty have made substantial contributions over the years that are directly relevant to important issues affecting Hawaii. This list is far from complete, being only what I could think of in a few minutes. Volcanoes Earthquakes Tsunami Vog and human health Vog prediction Water resources Flooding Hurricanes El Nino Climate change around Hawaii Sea level rise Coastal erosion

Invasive species Transportation and traffic management (e.g. Traffic cams) Network protocols and management OTEC Solar power Wind power Wave power Biofuels Tropical diseases (e.g. dengue) Hawaii epidemiology and genetic links to disease Aging and longevity genetics Marine mammals Beach safety Fisheries management Aquaculture Near-earth asteroid detection Endangered species Waste management Coral reefs Ocean acoustics Pacific Islands archaeology and anthropology Marine pollution The value of knowledge that has been generated at the University of Hawaii and applied to these areas of state-wide concern should not be discounted. Likewise, the out-of-classroom education of students that has taken place alongside this research should not be overlooked. Then there is the overall economic value of UH research activity to the State of Hawaii, well-addressed by Carl Bonham of the University of Hawaii Economic Research Organization in a report just a few years ago. That report documents very clearly that the State investment in research pays economic dividends to the State with a large multiplier. The metric of [extramural funds generated/State funds for research salaries] is a poor measure of the economic benefits of organized research to the State of Hawaii. Roger Lukas, Emeritus Professor of Oceanography Consulting Oceanographer

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Sent: Saturday, February 13, 2016 2:03 PM
To: HEDtestimony
Cc: rosie.alegado@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Rosanna 'Anolani Alegado	Individual	Oppose	No

Comments:

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HB 1625 HD1 – RELATING TO THE UNIVERSITY OF HAWAII

Chairs: Isaac W. Choy, Vice Chairs: Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in opposition to HB 1625 HD1. In my professional capacity, I serve as the director for the Hawai‘i Institute of Marine Biology (HIMB), an organized research unit (ORU) at the University of Hawai‘i. Prior to assuming the directorship in 2015, I was an R faculty member at the HIMB. I believe that if enacted, the funding requirements for ORUs proposed in this legislation will severely impact the functionality, competitiveness and capacity of the Hawai‘i Institute of Marine Biology to pursue its mission to conduct, promote and support multi-disciplinary research and education in tropical coastal ecosystems.

The HIMB is on Moku o Lo'e, Coconut Island, in the southern section of Kane‘ohe Bay about a quarter mile from land on Oahu. The late Edwin W. Pauley provided an opportunity to establish a marine laboratory on Moku o Lo'e in 1947 and in 1993, the Pauley family again provided the university with funds to purchase the remaining portion of Moku o Lo'e and construct a new world-class marine laboratory on the island. From this coral island embedded in a dynamic coastal ecosystem, the faculty, staff, students and volunteers conduct leading edge, technology-enabled research that is exquisitely tuned to the site and needs of the state and the world.

Over the almost 70 years of existence, the HIMB has grown and flourished and is now the premiere tropical coastal marine lab in the world. This is reflected in the global reputations and competitiveness of the resident faculty; the amount and variety of funds attracted to support their activities; the high profile of their research and education products; the extensive network of agencies and collaborators that interact to conduct the work; and, by the fact that the HIMB is now a destination for the world's science and education community. The majority of research conducted at the HIMB is place based and serves a state and national agenda of understanding, managing and preserving tropical coastal ecosystems and their interaction with humans. For example, HIMB's research was instrumental in designating and setting management boundaries for the Papahānaumokuākea Marine National Monument. HIMB scientists lead the field in tracking shark behavior and in understanding the interaction of these top marine predators with humans. Another area of excellence is in understanding how coral reef communities are changing and responding to climate change and human use. Collectively, the HIMB faculty, students, and staff produce data and knowledge that can be translated into actionable solutions aimed at sustaining Hawai‘i's coastal resources.

The term “organized research unit” does not do justice to the range and creative nature of the activities that take place at the HIMB. The HIMB is committed to seamlessly integrating education, skills training, and professional development with the research, and is an extraordinary experiential learning site for these coordinated endeavors. This is reflected by our highly diverse community comprised of a core faculty of state funded researchers, education specialists and support staff, a more dynamic pool of extramurally funded researchers, postdoctoral scholars and technical professionals, and a large pool of graduate and undergraduate students who are embedded in our research and education labs. We platform a broad diversity of educational activities from lectures, to seminars, to lab activities and workshops and these are

tuned to educate undergraduate and graduate students, K-12 students, middle and high school teachers, and the public. The HIMB has exceptional ties to our local community and we collaborate closely on projects that platform from Moku o Lo'e or at locations throughout the He'eia Watershed. The HIMB has a very active community education program that is run primarily by docents and which provide tours showcasing the history of Moku o Lo'e and the work that we do on behalf of the University of Hawai'i and the State. These tours are in very high demand, with over 7000 people touring Moku o Lo'e last year alone.

The HIMB is an exciting place to be. As currently funded, the State provides the HIMB the intrinsic capacity to platform and develop creative ways of interacting researchers, educators, students, the local community and the public at large. The way the HIMB is conducting university business is innovative and highly competitive and is based on the excellence of the faculty, the collective effort of the community, and the novel integration of activities that attracts the extramural funds and the attention of the world. As currently configured, our extramural funds support the activities themselves and the salaries in these grants are allocated to the professional development of students and early career stage scholars - the next generation of scientists and educators.

The current measure seeks to dramatically reduce funding for the state funded R faculty and force the previously state funded faculty to focus on attracting their own salary from extramural sources. This redirect will, by default, reduce the amount of funding available to conduct research and training, and to support early career stage scientists. This change in focus will ultimately narrow the scope of the core activities; weaken the levels of interaction between research, education, and outreach; and reduce overall competitiveness and capacity to attract extramural funds. Should this bill pass, I believe that the long term growth of the Hawai'i Institute of Marine Biology will be reversed and the sustainability and persistence of this exceptional component of the University of Hawai'i threatened.

Ruth Gates

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 8:09 PM
To: HEDtestimony
Cc: fagents@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Sarah Fagents	Individual	Oppose	No

Comments:

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To: HEDtestimony
Cc: saulo@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Saulo Soares	Individual	Oppose	No

Comments:

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To: HEDtestimony
Cc: smbateni@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Sayed Bateni	Individual	Oppose	No

Comments:

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To: HEDtestimony
Cc: slyagi@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Seanyelle Yagi	Individual	Oppose	No

Comments:

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Shadia Rifai Habbal
Institute for Astronomy
University of Hawaii
2680 Woodlawn Drive, B-103
Honolulu, HI 96822
808-206-1147
shadia.rifai@gmail.com

My name is Shadia Rifai Habbal. I am a tenured faculty at the Institute for Astronomy (IfA) of the University of Hawaii (UH). I am submitting this testimony as an individual. I believe that HB 1625 HD1 would have devastating effects on the State of Hawaii, the University of Hawaii, and the people of Hawaii.

The Institute for Astronomy is one of the organized research units (ORU) at UH. It is an organization that has contributed world-wide to Astronomy since its foundation in the early 70's. Its contribution is not limited to research. It has been and remains heavily involved in teaching, education at the undergraduate and graduate levels, to outreach at the K-12 levels, as well as to the community at large.

My particular field of research is in solar physics. I worked at the Harvard-Smithsonian Center for Astrophysics, one of the premier institutions in astronomical research in the world, for 22 year, prior to moving to the IfA. The impetus for my move was for the unique opportunities offered for individual faculty at UH to make a difference among the student population, the public and outstanding research.

I have brought and continue to secure close to \$0.5 million in external funding on average per year, since my arrival here. This is research money to support student projects, and one of my main research activities to observe the solar corona during total solar eclipses. As eclipses take my international team across the world, often to very remote areas, the banner of IfA/UH is carried with us, as well as our pride to be a member of an institution that is a model of how research and education go hand in hand, across cultures, with no geographical boundaries stopping in our way.

Through our research, we educate and create new courses to expose the young generations to the beauty of the solar system, the Sun, our closest star, and its immediate impact on the planet that we call home. Through total solar eclipses, we educate the public about the clockwork of planetary motions, a clockwork whose impact extends to other stars and the burgeoning discovery of extrasolar planets.

DKIST will be the largest solar telescope in the world. Haleakala was chosen as its home among different sites across the US and the world. It is our duty through our teaching, education and research efforts to make this honor befitting to Hawaii. HB 1625 HD1 would be devastating to the future of this incredible project, to research and education in Hawaii.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 9:21 PM
To: HEDtestimony
Cc: shivhaw1@hotmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
SHIV K SHARMA	Individual	Oppose	No

Comments: This bill if passed has potential to adversely affect higher education and future employment of Hawaiian people.

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To: HEDtestimony
Cc: martels001@hawaii.rr.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Stephen Martel	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

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Sent: Saturday, February 13, 2016 10:42 PM
To: HEDtestimony
Cc: businger@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Steven Businger	Individual	Oppose	No

Comments: This is a direct attack on Chapter 89 concerning collective bargaining of public employees. It appears to be a Trojan horse, covert attack on public employees, similar to that of Walker in Wisconsin. It will also effectively destroy research units that address state problems and that bring prestige and millions of dollars of federal and foundation funds to Hawaii, having a multiplying effect on our economy. It is also extreme micro-management. This bill should not see the light of day following this hearing.

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 12:22 AM
To: HEDtestimony
Cc: tiziana@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Tiziana Cherubini	Individual	Oppose	No

Comments:

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To: HEDtestimony
Cc: tobiasf@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
tobias friedrich	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Sunday, February 14, 2016 11:34 AM
To: HEDtestimony
Cc: tom.ranker@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Tom Ranker	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Friday, February 12, 2016 10:27 PM
To: HEDtestimony
Cc: tomdansunvolcan@yahoo.fr
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/12/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Tom Shea	Individual	Oppose	No

Comments:

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To: Committee on Higher Education
Meeting February 16, 2016 at 2:02pm
Relating to HB 1625

From: Dr. Trina Kudlacek , Ed.D
University of Hawaii Lecturer, Dept. of Women's Studies and
Kinesiology and Rehabilitation Sciences

Feb 15, 2016

I am writing to state in the strongest manner possible that I am opposed to the proposed actions to change funding for organized research units at the University of Hawaii. As a lecturer in the social sciences and the child of parents who were educators, I value education in all areas including STEM and feel that the activities of these research units are a great benefit to the people of Hawaii and the world. The University of Hawaii has some of the most well respected researchers in the world specializing in areas which impact not only the residents of this state but internationally as well. Providing state funding for their activities should be maintained indefinitely, if not increased.

It would be short sighted to change the funding model as proposed in HB 1625. If the university is to continue to attract world class research scientists, they must be provided with the funds necessary to continue research projects whether they receive external funding or not.

ichiyama2-Brandon

From: mailinglist@capitol.hawaii.gov
Sent: Saturday, February 13, 2016 11:34 PM
To: HEDtestimony
Cc: vfinlays@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/13/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Valerie Finlayson	Individual	Oppose	No

Comments: Passage of this bill will severely limit Hawai'i's ability to nurture and maintain the world-class scientific research community it has maintained for decades. Limiting State-funded backing to the research faculty at UH Manoa to 20% salary (among the lowest rates in the nation, if not the lowest) will result in the loss of our highly-ranked faculty members in the affected departments, and with them the projects, graduate students, and undergraduate research opportunities that provide the basis for expanding research at the University of Hawai'i, and the knowledge base available to the State. This has long-reaching downstream effects to the state of education in Hawai'i at a time when education and investment in research taking place here has never been more important. The ability to secure outside funding is decreasing as an ever-greater pool of researchers are competing for funds sourced from largely stagnant federal funds. The expectation of research faculty to generate 80% outside funding is, quite frankly, not possible in this current funding environment. This will send our best researchers elsewhere, and with them, the funding and overhead that they are able to secure, effectively depleting the University of one of its major financial resources. Additionally, without our best researchers, we lose an important educational resource for students interested in exploring STEM subjects in depth through mentored research projects. Students may, instead of staying in the UH system for further education, find themselves elsewhere in the U.S. for postgraduate education and may not return to Hawai'i, which removes some of the potential to attract technological resources to the State, which may be key to revitalizing the unbalanced economic situation extant on Oahu, and which will work its way to the other islands. Please reconsider the language and extreme measures of this bill - continued funding of research at UH-Manoa is only beneficial to the State economy. Curtailing research and its educational potential for young STEM students will cause substantial long-term harm to Hawai'i.

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Sent: Sunday, February 14, 2016 11:45 PM
To: HEDtestimony
Cc: wprice@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/14/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Wes Price	Individual	Oppose	No

Comments:

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Testimony Presented Before the House of Representatives
Committee on Higher Education
Tuesday, February 16, 2016
By
Shoreline Science & Engineering, LLC

In consideration of
House Bill 1625, H.D. 1 Proposed, Relating to the University of Hawaii Research Funding

Dear Chair: Isaac W. Choy, Vice Chair: Linda Ichiyama, and members of the committee:

Thank you for the opportunity to provide written testimony in opposition of the proposed bill HB1625, H.D. 1 Proposed. The proposed bill would impose new, unrealistic requirements related to the State's investment of supporting scientific research.

The University of Hawaii (UH) is a world-renowned leader in academic research, and our State benefits from this research to maintain and improve the quality of life for our citizens. The successful research and education carried out by UH faculty and research staff leads the UH system in national rankings in areas such as the origin of earth and the solar system, natural hazard preparedness and resilience, ocean and space engineering, and renewable energy resources and infrastructure.

Passing this bill will risk the loss of millions of dollars annually of extramural funding with its proposed matching requirements, and have lasting impacts to our State's economy and general well-being as we can surely expect to lose many of our extraordinary research faculty to other universities that do not impose such funding restrictions.

Respectfully, I implore you to stop this bill. Thank you for considering our testimony on the bill.

Sincerely,



Robert Walker, PE
President/Coastal Engineer
Shoreline Science & Engineering, LLC

ichiyama2-Brandon

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 7:22 PM
To: HEDtestimony
Cc: kauaimermaid@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Tiffany R Anderson	Individual	Oppose	No

Comments:

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Sent: Monday, February 15, 2016 10:15 PM
To: HEDtestimony
Cc: assaf@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Assaf Azouri	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 8:58 AM
To: HEDtestimony
Cc: bakerlyd@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Lydia Baker	Individual	Comments Only	No

Comments: I strongly oppose this bill. As a voting resident of Hawaii I am appalled that this measure was even proposed.

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From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 2:41 PM
To: HEDtestimony
Cc: bonnet@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Morgan Bonnet	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 8:51 AM
To: HEDtestimony
Cc: mitch.ewan@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Mitch Ewan	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 15, 2016 5:03 PM
To: HEDtestimony
Cc: bjfultn@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
BJ Fulton	Individual	Oppose	No

Comments:

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LATE

Hawai'i has a first-class research university that provides solutions aimed at addressing many of our pressing problems in food supply, agricultural pests, invasive species, endangered species, pollution, health, emergent diseases, population growth, and resource limitation. A state university is not a for-profit enterprise. Taxpayer support is an investment for future return that comes from advancing human knowledge, both by passing along old knowledge to students and by creating new knowledge through research. The two are inextricably linked: degrading research degrades education by shutting off student access to up-to-date knowledge and training from those creating it. By pushing University of Hawai'i research faculty to focus their efforts instead on obtaining unrealistic portions of their salaries from ever-shrinking extramural funds, passage of HB 1625 will destroy much of the university's best research and training capability.

New knowledge is crucial to Hawai'i's prospering in the 21st century. We continue to face old challenges that call for new solutions. We will face many new challenges in the years to come, such as those caused by climate change. We need a vibrant research university to provide solutions to these challenges and to assure a supply of young people armed with the best current knowledge to deal with them. This bill will block that.

Daniel Hartline

ichiyama2-Brandon

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 8:03 AM
To: HEDtestimony
Cc: hiltonac@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
ALAN C HILTON	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 8:06 AM
To: HEDtestimony
Cc: sghhawaii@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Steven Howell	Individual	Oppose	No

Comments: I am a researcher at the University of Hawai`i Mānoa, though not a member of any of the ORUs the proposed legislation addresses. The proposed legislation appears to be a classic instance of micromanagement that would impede research efforts, cause problems recruiting new faculty, and increase paperwork requirements. Penny wise and pound foolish comes to mind. The text makes it clear that the authors take a narrow accounting-only approach to the role of research at the university, neglecting the fundamental mission, which is to expand human knowledge, particularly in ways that benefit the people of Hawai`i and the rest of the world. Certainly there are issues about individual ORUs, but this is a poor way to approach the problem.

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ichiyama2-Brandon

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 7:56 AM
To: HEDtestimony
Cc: ahonui78@hotmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Kelii Kotubetey	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 7:27 AM
To: HEDtestimony
Cc: jmaskrey@hawaii.rr.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Arthur Maskrey	Individual	Oppose	No

Comments:

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To: HEDtestimony
Cc: nedved@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/15/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Brian T. Nedved	Individual	Oppose	No

Comments:

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Sent: Tuesday, February 16, 2016 7:22 AM
To: HEDtestimony
Cc: dkoride@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
David Oride	Individual	Oppose	No

Comments:

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Sent: Tuesday, February 16, 2016 8:23 AM
To: HEDtestimony
Cc: gt@soest.hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Lily Shao	Individual	Oppose	No

Comments:

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LATE

Personal Testimony Presented before the
House Committee on Higher Education
February 16, 2016 at 2:02 pm
by
Douglas L. Vincent, Ph.D., P.A.S.

HB 1625 Relating to the University of Hawaii

Personal Testimony Opposed to HB 1625

Chair Choy and Vice Chair Ichiyama and members of the committee

My name is Douglas L. Vincent and I am a Professor and Animal Scientist in the College of Tropical Agriculture and Human Resources in the Department of Human Nutrition, Food and Animal Sciences. I am also a former Department Chair and have been a member of the faculty at the University of Hawaii at Manoa for over 30 years. I have a split appointment at UH Manoa with both teaching and research responsibilities. I also was a member, representing the UH Faculty Senate, of the Vice President for Research and Innovation's Task Force to examine the Cancer Center. I am pleased to provide personal testimony in opposition to HB 1625. This testimony does not represent the position of the University of Hawaii nor the College of Tropical Agriculture and Human Resources.

I recognize that the Hawaii State Legislature has concerns about the research enterprise at the University of Hawaii at Manoa and how it is to be funded. It is true that one of our organized research units (ORU), the UH Cancer Center is currently running a significant deficit that hurts the entire University of Hawaii at Manoa. I personally believe that the measures proposed in this legislation would have long lasting detrimental effects on the research enterprise at UH Manoa. By "research enterprise" it means that the scientists and researchers in our organized research units are seeking fundamental knowledge that is at the forefront of scholarly work. Besides the scholarly work which brings prestige to the flagship university, this research brings in grant funds, hires students and postdocs, and contributes to the economy of our state. The faculty must have the opportunity to conduct this fundamental research without fear of losing their job or having their pay cut. It's not the fault of the faculty that past administrators have not been fiscally responsible. This bill will devastate the moral of the faculty, make it extraordinarily difficult to recruit future faculty and the research at our university will wither like a plant without water.

I am opposed to HB 1625 and urge deferral of it.

Thank you for the opportunity to provide testimony.

LATE

Testimony Presented to the House Committee on Higher Education

February 16, 2016 at 2:00pm

Conference Room 309

Maya M. Walton

HB 1625– RELATING TO THE UNIVERSITY OF HAWAII

Chairs: Isaac W. Choy, Vice Chairs: Linda Ichiyama, and members of the committee:

I provide this testimony as a private citizen in opposition to HB 1625. In my professional capacity I serve as research coordinator for the University of Hawai'i Sea Grant College Program (Hawai'i Sea Grant). This legislation establishes program and salary funding requirements for organized research units of the University of Hawai'i. Should it be enacted, this legislation would do significant harm to all organized research units at the University and will severely reduce the ability for Hawai'i Sea Grant to continue their more than 50 years of successful engagement in research, extension, education and outreach serving Hawaii's communities. Should this bill pass it may ultimately result in the closure of Hawai'i Sea Grant.

LATE

Dear Hawaii State Legislature:

I am writing as a private individual to express my strong **OPPOSITION** to **House Bill 1625 HD1**.

I have been on the faculty of the Hawaii Institute of Geophysics and Planetology since late 2002. In the last 13 years I have raised \$5.5 million as principal investigator, primarily from NASA. By the end of March this year I will submit another \$3 million worth of proposals. The money I raise, wholly federal research dollars, is a direct injection of money into the economy of Hawaii, money which if I were not in HIGP would not come here. I currently pay, from my grants, 25% of my own salary, two post-doctoral fellows (18 months of salary per year), three graduate students (36 months per year of salary), three support engineers (17 months of salary support per year) and one educational and outreach specialist (3 months per year salary support). These are high tech jobs. These people pay taxes on the income my support provides. They pay their rent and mortgages. They buy groceries, make car payments, and eat in restaurants. If I were not in HIGP, these people would not be here either. I personally grow the state economy, because I am successful at getting research grants funded.

SOEST, of which I am part, receives about \$17 million per year from the state general fund. SOEST takes this and turns it into another \$100 million in extramural funding per year. These are facts, this value does not include any multipliers. Another way of looking at it, is that the state's return on investment is about 5 to 1. I think most would consider this to be a good return, and cannot imagine another vehicle via which the state could turn \$17 million into \$100 million. The proposed bill, which seeks to dismantle the University of Hawaii's research engine by effectively firing the research faculty who get the grants, makes zero economic sense.

SOEST is also one of the absolute top-tier Earth and ocean science institutions in the US, and was recently ranked in the world top 15 by the prestigious journal Nature, on the basis of the scientific papers published by SOEST faculty. We are a world leader, by any metric you choose to use, and should be something that the state of Hawaii can feel proud of (even ignoring the small matter of the \$100 million in external grants and contracts). Yet this bill seems explicitly aimed at gutting SOEST.

Presently I am supported nine months per year on state funds, raising the other three months of salary from my grants. I am incentivized to work hard because without grant income I will take a 25% pay cut. This bill seeks to withdraw the support that the state provides me. If this happens I will immediately leave Hawaii to work on the mainland, taking my current grant money, and all future grant money, with me. There will be no reason to stay. As a successful principal investigator, I will be welcomed with open arms.

Thank you for taking the time to read this.

Dr. Robert Wright

ichiyama2-Brandon

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 9:06 AM
To: HEDtestimony
Cc: lkajiwar@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Leslie Kajiwar	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 9:06 AM
To: HEDtestimony
Cc: halrichman3@gmail.com
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Nurney H Richman	Individual	Oppose	No

Comments: I am strongly opposed to this bill. I urge legislature NOT to pass it.

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Sent: Tuesday, February 16, 2016 10:03 AM
To: HEDtestimony
Cc: roger@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Roger S. Fujioka	Individual	Oppose	No

Comments: UH Manoa is a Research One University and faculty members must be equal in quality in teaching and research to other peer universities.

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 10:13 AM
To: HEDtestimony
Cc: byoza@hawaii.edu
Subject: Submitted testimony for HB1625 on Feb 16, 2016 14:02PM

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Brandon Yoza	Individual	Oppose	No

Comments: Regarding ORU Please consider that for grant proposals the additional cost that is included for non-tenure senior faculty salaries has the potential to reduce competitiveness. Grants that request funds for developing junior faculty, post doctoral fellows and student support have professional and educational merits. These funds are important for providing the needed training for a career in research. It will be difficult for the University to competitively attract talented faculty without the ability to offer general funded tenure track positions.

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 10:14 AM
To: HEDtestimony
Cc: fiona.langenberger@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
fiona langenberger	Individual	Oppose	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 10:17 AM
To: HEDtestimony
Cc: bjones@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Bradley R Jones	Individual	Oppose	No

Comments:

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ichiyama2-Brandon

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 10:31 AM
To: HEDtestimony
Cc: ksouza@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Kathleen A Souza	Individual	Oppose	No

Comments:

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Cc: melissaiwamoto@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Melissa Iwamoto	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Alex WL Lee	University of Hawaii	Oppose	No

Comments: It is critical the State of Hawaii financially supports STEM Educators and University of Hawaii Departments engaged in STEM education regardless of class size. The proposed 5(self funded) to 1(state funds) ratio is too extreme and not sustainable. University Professors will be forced to focus 90% of their time on writing proposals for grants instead on focusing 90% of their efforts on teaching and hiring Graduate Assistants to train them to be future professors, and Managers in the scientific fields. The saving of \$5 dollars now, means losing \$5 Billions of economic dollars in the near future. University of Hawaii Departments engaged in research, and education field should be considered the 2nd best sustainable economic industry next to Tourism for Hawaii. Every STEM related researcher, Professor, student, graduate student will have spend higher disposable income rate than most people due their higher level of income due to their the high level expertise of scientific knowledge and skills. The University of Hawaii Departments engaged in STEM researched should be rewarded long term, similar to the Movie/TV/Tourism industries, instead of being punished for bringing more highly educated, socially responsible, STEM Educational opportunities and economic expansion to the State of Hawaii.

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LATE

From: Stephen Kwock [mailto:skwock@kwockcpa.com]
Sent: Tuesday, February 16, 2016 10:37 AM
To: Rep. Isaac W. Choy
Cc: Greg Moore
Subject: HB 1625

Aloha Isaac Choy,

I'm emailing to you my disagreement with HB1625 which will be presented today at 2:00pm. Please consider this my testimony against HB 1625 as I firmly believe it would hurt University of Hawaii. You can make the difference in keeping your alma mater thriving towards being a top university in the nation in ocean and earth science.

Aloha and thank you for accepting my testimony.

Respectfully submitted,

Stephen Kwock, CPA

ichiyama2-Brandon

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 16, 2016 11:45 AM
To: HEDtestimony
Cc: christina.comfort@gmail.com
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Christina Comfort	Individual	Oppose	No

Comments:

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Cc: jen.davidson18@gmail.com
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HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Jennifer Davidson	Individual	Oppose	No

Comments:

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HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
JINHEE YOON	Individual	Oppose	No

Comments:

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Sent: Tuesday, February 16, 2016 1:22 PM
To: HEDtestimony
Cc: jianyu@hawaii.edu
Subject: *Submitted testimony for HB1625 on Feb 16, 2016 14:02PM*

HB1625

Submitted on: 2/16/2016

Testimony for HED on Feb 16, 2016 14:02PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Jian Yu	Individual	Oppose	No

Comments:

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Testimony Submitted to the
House Committee on Higher Education
February 16, 2016 at 2:00pm
Conference Room 309

Brian Taylor

HB 1625 HD1 Proposed – RELATING TO THE UNIVERSITY OF HAWAII

Chair: Isaac W. Choy, Vice Chair Linda Ichiyama, and members of the committee:

Background

I provide this testimony as a private citizen in opposition to HB 1625 HD1 Proposed. In my professional capacity I serve as the Dean of the School of Ocean and Earth Science and Technology, that includes four Departments and five Organized Research Units (HIGP, HIMB, HNEI, PBRC and Sea Grant). I have served UH for 34 years, the first 24 as a Department instructional faculty member and the last 10 as Dean.

This legislation proposes program and salary funding requirements for organized research units (ORUs) of the University of Hawai'i. Should it be enacted, this legislation would do significant harm to the University and its ability to serve the State using knowledge gained from excellence in research on such issues as renewable energy, disaster resilience and preparedness, fresh water resources, climate change, living marine and terrestrial resources, healthy living and graceful aging.

Mission Specialization

All University of Hawai'i faculty have teaching, research and service functions, but UH Mānoa also has specialized faculty, as negotiated in the Collective Bargaining Agreement with UHPA– such as Researcher, Extension Agent, Specialist, Librarian, etc. And some of these are concentrated in units with specialized functions, such as CTAHR and Sea Grant for extension services, Organized Research Units, Hamilton Library, etc.

UH Manoa is the premier place of higher learning in the State, with the capacity to enrich, inspire and transform minds, lives and livelihoods. Our undergraduate teaching programs and Instructional faculty provide the most cost-effective higher education per graduating student in the State. UH Mānoa is also a research-intensive university, with a mission to conduct research that matters to Hawai'i and the world in areas of Hawai'i's particular need or natural advantage. And UH Mānoa is a 1907 land-grant college, and subsequently sea-grant and space-grant, with a mission to transfer knowledge gained in the areas of agricultural, marine and space sciences to practical advances for the people and businesses of the State.

Organized Research Units

Within this tri-fold mission of Hawai'i's flagship university, ORUs were established to "advance the University's research and training mission", . . . "benefit the State of Hawai'i directly through programs of applied research, extension service, and training in areas which meet community and regional human and economic needs" . . . "long term" . . . "where the University has intrinsic research advantages or particular capabilities". UH policy further

states: "In most cases, funding is obtained from both State and Federal sources, the ratio of external to core funding is greater than one, and more than one external funding source is involved". UH Mānoa has established ORUs in only a few focus areas such as Energy, Water Resources, Cancer, Aging, Astronomy, Geophysics, Marine Biology and Biosciences, and, in the past, the Pineapple Research Institute (when that product was so important to the State's economy).

The ORUs have led to UH Mānoa's disproportionate share of Federal funding and world-class reputation. They leverage more external than State funding (whereas few academic Colleges do), some many times so, and collectively serve as one of the State's high-tech employers, economic engines and sources of innovation. As such they are a critical part of the UH Innovation Initiative. They are operational 24/7/365 and, as intended, provide long-term, world-class, mission critical, infrastructure and equipment (e.g., ships, telescopes and labs) to students and faculty.

Leveraging

The leveraging of ORUs is not limited to extramural funding. For example, this year I was proud to receive from the Hawai'i Tourism Authority on behalf of SOEST the 'Elele Organization of the Year award for helping to bring what promises to be more than \$100 million in convention business to the State.

Anchored by SOEST, UH is ranked in the top 15 Universities in the world in the Geosciences (earth, ocean, atmosphere, polar and planetary sciences). This reputation precedes me when I travel and recruit students, faculty and staff to the University. They want to be involved in cutting edge research that matters, surrounded by faculty, staff and facilities that are world class. All the faculty in SOEST, in Departments and ORUs, teach and mentor students, albeit to differing degrees, and oftentimes as much in the field and the lab as in the classroom. This specialization maximizes productivity and engagement.

It also means that productivity needs to be collectivized and measured at the unit level, rather than by fractions of individual tenured faculty salaries. For example, a given Principle Investigator usually supports not only a fraction of their own State salary but also the salary of other non-State-supported faculty, staff, post-docs and students, not to mention major facilities and research costs. Furthermore, the ORU collective is much greater than the sum of its individual parts/faculty, their specialization and interdisciplinary expertise collectively providing an "effective means of pooling appropriate expertise, equipment and management resources", as per UH policy.

Finally, had this proposed Legislation been in place, our most productive ORU's (such as HNEI), that today leverage many, many times more Federal than State dollars, would not have survived long enough to become so – despite the importance of their work to the State.

Thank you for the opportunity to provide testimony in opposition to this measure.