



LATE LATE TESTIMONY

University of Hawai'i at Mānoa

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February 7, 2012

and Members of the Committee on Economic Revitalization & Business
The Honorable Scott Nishimoto, Chair
and Members of the Committee on Higher Education
The House of Representatives
State Capitol
Honolulu, Hawaii 96813

Dear Chairs McKelvey and Nishimoto and Members:

Subject:

House Bill No. 2873
Relating to the Pacific International Space Center for Exploration Systems (PISCES)
Hearing Date: February 7, 2012
Hearing Time: 11:00 AM

As the lead on HI-SEAS (Hawaii Space Exploration Analog and Simulation) project, and co-investigator on the NASA grant that funds it, I support House Bill 2873. I have worked with PISCES on several field deployments, both as a Canadian Space Agency program scientist, and in preparation for HI-SEAS.

PISCES has made excellent headway in advancing space exploration research in Hawaii, and bringing research *funding to our state*. However, due in part to its place within the UH system, it has not been able to grow in response to demand for its services, and has not been able to respond quickly and effectively to opportunities as they arise. The changes proposed in HB 2873 would address these issues.

Thank you for your consideration. If you have any questions, or would like more information on HI-SEAS, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Kim Binsted".

Kim Binsted
Associate Professor
binsted@hawaii.edu
(808) 398 1300

Feb. 7, 2012

LATE LATE TESTIMONY

Hon. Committee,

I am writing to provide testimony on HB2873. HB2873 is much more important bill than it may appear on the surface. The state of Hawaii is uniquely positioned to benefit from the exploitation of space-related resources in the relatively near future. With its advantageous launch position, its natural volcanic soils that are the world's best natural lunar analog, Hawaii can expect to create jobs and gradually become an important center of lunar research. This will not only create jobs, but attract some of the most lucrative industries to the state, such as the types of aerospace engineering firms that currently provide many well-paying jobs to the Pacific Northwest.

As an expert in aeronautics and space, I attended the International Lunar Research Park Leaders Summit last year, and am personally familiar with the plans and operation of PISCES. I believe PISCES is very important to the future economy of this state. The PISCES project is already attracting a range of interest and expertise to this state that is unusual in my professional experience, and as the PISCES project expands, it will attract the burgeoning robotics industry and position Hawaii at the forefront of the emerging breakthrough industries in commercial space.

We are on the leading edge of a veritable revolution in how space is conducted. At one time, space was funded primarily by governments (e.g., NASA and other agencies), but we are now at the dawn of the era of commercial space. This will be as important to the world as the shift to commercial airliners, if not more. The moon, for example, will almost certainly be a key site of early commercial mining efforts that will be supported by commercial space.

Few bills, in my opinion, are more important to the economic future of the state of Hawaii.

Respectfully,

Christine Hansen, Ph.D.

Assistant Professor, Embry-Riddle Aeronautical University

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LATE LATE TESTIMONY

6 February 2012

Letter of Support for PISCES and
The International Lunar Research Park

To whom it may concern,

I recently had the opportunity to attend the International Lunar Research Park (ILRP) Leader's Summit at Waikoloa, Hawaii the week of November 13, 2011. The goal of the ILRP Leader's Summit was to investigate ways to move the ILRP and PISCES forward toward becoming a true multi-national, industrial-academic partnership. This was accomplished by sharing experiences in international consortiums gained by attendees from a wide variety of backgrounds, including the US State Department, the Pacific Science Association, the Japan Aerospace Exploration Agency, NASA, the University of Hawaii, and over twenty potential industrial partners.

During the course of this conference, several noteworthy announcements were made by the participants. These included a visionary dream of the Shimizu Corporation to create solar panels on the surface of the Moon to beam power to Earth, and the intent of two US companies, Moon Express and Shackleton Energy, to begin industrial operations on the Moon. These announcements present Hawaii with a unique opportunity to leap to the forefront of this wave of research, technology and industrial development. By taking the lead with the ILRP, Hawaii has the chance to generate dramatic economic growth and become the focal point of a new high-tech region similar to Silicon Valley.

As an example of this type of economic growth, let me describe my experiences with the World's leading research consortium, the Advanced Manufacturing Research Centre (AMRC) in Sheffield, England. The AMRC is the anchor tenant for the Advanced Manufacturing Park, the site of a now defunct coal mine.

After the collapse of UK Coal in 1980, Sheffield became an economically impoverished region. In 2001, with the aid of Boeing, the University of Sheffield created the AMRC, with a staff of 6 people in a vacant warehouse. By the end of 2011 (after only 10 years), the AMRC has grown to a world renowned research center, with 70 industrial partners and a staff of over 200, which is expected to double in the next 2 years. Their partners include Boeing, Rolls-Royce, BAE Systems, Messier-Dowty, ALCOA, TiMet, and Carpenter Steels. Their 200 staff members are mostly engineering graduates with PhDs and Masters Degrees, earning substantial salaries. They have won over \$300 MILLION in research grants over their 10 year existence.

The AMRC is now housed in 3 new, purpose-built buildings, with 3 more under construction, for a total under-roof area of 180,000 square feet. These include a new Knowledge Transfer Centre, and an Apprentice Training Centre, both of which are aimed at continuing to improve the Yorkshire region's competitive economic standing. In addition, more than a dozen companies have moved onto the AMP. Rolls-Royce has recently announced plans to build 2 new factories on the AMP, with plans to employ over 300 people at this site.

The AMRC has also had a tremendous effect on the University of Sheffield. Always known for its fine cutting tools, the University's faculty now ranks NUMBER 2 in the UK, ahead of such prestigious institutions as Oxford and Cambridge. The AMRC brings over \$25 Million of research funds to the University, and in 2009 was awarded the Queen's Anniversary Prize, which led to Her Majesty's recent visit to the AMRC (only the second time a Monarch has visited Sheffield).

With the AMRC as its guide, the International Lunar Research Park could likewise vault Hawaii and the University of Hawaii to the forefront of a variety of technological fields, including tele-operated robotics, remote site material processing, telecommunications, low cost sustainable solar energy, astronaut & crew training and a variety of science and mathematics disciplines. The potential for job creation in these high tech fields, as well as construction and infrastructure support is extremely large. Transportation and entertainment sectors will likewise benefit, as a host of international partners' employees and

representatives make Hawaii their preferred vacation spot. Imagine the impact if, after ten years, the ILRP and PISCES are able to bring \$100 Million to the State of Hawaii.

I believe the ILRP and PISCES are crucial to the economic development of a high-technology sector in Hawaii, as well as for the development of Lunar Commerce. This Lunar Commerce has the potential to create massive economic benefit to the world, and could provide a clean, continuous source of Space Based Solar Power (the only truly green energy source).

Finally, with the vision of Mālama Hawai'i (caring for and protecting Hawai'i) and Mālama Honua (for the Earth), the Hawaiian people can again navigate the stars by leading the way back to the Moon.

Mahalo nui loa!



David Heck

David Heck is an Associate Technical Fellow at The Boeing Company on the Manufacturing Technology Team and works with several domestic and international research consortiums to develop new manufacturing technology for the aerospace industry.

The opinions expressed in this document are his own and do not reflect the position of The Boeing Company

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From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 07, 2012 8:17 AM
To: ERBtestimony
Cc: brian.shiro@gmail.com
Subject: LATE LATE TESTIMONY - Testimony for HB2873 on 2/7/2012 11:00:00 AM

LATE LATE TESTIMONY

Testimony for ERB/HED 2/7/2012 11:00:00 AM HB2873

Conference room: 312
Testifier position: Support
Testifier will be present: No
Submitted by: Brian Shiro
Organization: Individual
E-mail: brian.shiro@gmail.com
Submitted on: 2/7/2012

Comments:

I strongly support both the PISCES (the Pacific International Space Center for Exploration Systems) and the ILRP (International Lunar Research Park) initiatives. They will bring many economic, educational, and technological benefits to Hawaii and humanity as it learns to live sustainably on other worlds and the Earth.

From: mailinglist@capitol.hawaii.gov
Sent: Tuesday, February 07, 2012 9:17 AM
To: ERBtestimony
Cc: david.clark11@comcast.net
Subject: LATE LATE TESTIMONY - Testimony for HB2873 on 2/7/2012 11:00:00 AM

LATE LATE TESTIMONY

Testimony for ERB/HED 2/7/2012 11:00:00 AM HB2873

Conference room: 312
Testifier position: Support
Testifier will be present: No
Submitted by: David Clark
Organization: Individual
E-mail: david.clark11@comcast.net
Submitted on: 2/7/2012

Comments:

This is an important piece of legislation the will help Hawai'i maintain its high regard in the space community.