



Written Statement of
Robbie Melton
Executive Director & CEO
High Technology Development Corporation
before the
House Committee on Finance
Tuesday, February 28, 2017
1:00 p.m.
State Capitol, Conference Room 308

In consideration of
HB1326 HD1
RELATING TO WORKFORCE DEVELOPMENT.

Chair Luke, Vice Chair Cullen, and Members of the Committee on Finance.

The High Technology Development Corporation (HTDC) **supports** HB1326 HD1 that appropriates funds for a basalt rebar market study.

As part of HTDC's vision to create 80,000 new innovation jobs in Hawaii earning \$80,000 or more by 2030, HTDC supports initiatives aimed at promoting technology and innovation jobs.

Through applied research, PISCES has successfully manufactured innovative materials using Hawaiian basalt with applications both in space exploration and on-island, generating significant interest from the aerospace sector and the local business community.

PISCES' continued work to expand and develop products and markets (including basalt-based concrete, basalt rebar, basalt mesh, cording and fabric) derived from Hawaii's naturally occurring basalt will positively impact the demand for quarried basalt in the Islands with long-term economic benefits. While produced internationally, the lack of a domestic basalt material industry in Hawaii offers an untapped market that could yield profitable returns. Basalt-based products and materials have the potential to create new manufacturing opportunities while significantly reducing Hawaii's dependence on imported products.

We respectfully request the correction of the defective effective date. We support this initiative as long as it does not replace our priorities requested in the Executive Budget.

Thank you for the opportunity to offer these comments.

Written Statement of:
Rodrigo Romo
Program Manager, PISCES.

Before the:
House Committee on Finance
February 28th, 2017
13:00
State Capitol, Conference Room 308
In Support of
HB1326-HD1: Relating Workforce Development.

To: Chair Sylvia Luke, Vice-Chair Ty J. K. Cullen; and members of the committees.

Thank you for the opportunity to submit testimony in **support of HB1326-HD1.**

PISCES has been involved in basalt research during the last four years. Research has been done to study different ways in which local basalt, which is similar in composition to lunar regolith, can be manipulated and used in different applications. One application that has created a significant amount of interest in the State is Basalt Rebar.

Today, basalt fiber research, production and most marketing efforts are based in countries once aligned with the Soviet bloc. Companies currently involved in production and marketing include Kamenny Vek (Dubna, Russia), Technobasalt (Kyiv, Ukraine), Hengdian Group Shanghai Russia & Gold Basalt Fibre Co. (Shanghai, China), and OJSC Research Institute Glassplastics and Fiber (Bucha, Ukraine).

Despite its ready availability from mines and open-air quarries around the world, only a few dozen locations contain basalt that has been analyzed and qualified as suitable for manufacturing continuous thin filaments. Samples taken from a quarry in Hilo have shown that the basalt composition falls within the necessary parameters required for basalt fiber manufacturing.

This presents a unique opportunity for the State of Hawai'i to take a lead in the development of a new industry based on local resources.

The purpose of this bill is to provide funding to conduct a market assessment study to validate the feasibility of starting a basalt fiber and a basalt rebar manufacturing industry in Hawai'i.

We strongly urge you to support HB1326-HD1

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Rodrigo Romo
Program Manager
PISCES



Written Statement of
DR. PATRICK K. SULLIVAN
PRESIDENT/CEO OCEANIT

Before the
HOUSE COMMITTEE ON FINANCE

February 28, 2017

1:00 p.m.

State Capitol, Conference Room 308

In Support of

HB1326 RELATING TO WORFORCE DEVELOPMENT

To: Chair Sylvia Luke, Vice Chair Ty J.K. Cullen and Members of the Committee

From: Dr. Patrick K. Sullivan, President/CEO

Re: Testimony in Support of HB1326

Honorable Chair, Vice-Chair and Committee Members:

Thank you for the opportunity to submit testimony **in support of HB1326.**

The State of Hawaii has a genuine need to broaden its economic base. We now have a major opportunity to support and fulfill that necessity.

The work that PISCES has been conducting with regards to different uses and applications of basalt could have a strong positive impact on the state's economy and potentially lead to the creation of a new industry: basalt fibers and derivative products.

There is currently no basalt fibers manufactured in the US. All fibers are being manufactured in China, Russia, Korea and former members of the Soviet Union. Hawaii has the potential to become a source for US made basalt fiber.

Basalt fibers have unique characteristics and can be used to make products such as rebar, fabric, mesh, rope and used also as aggregates to strengthen concrete. Basalt rebar does not corrode like steel rebar, this could present a great benefit for Hawaii and other coastal and tropical areas in the world.

We strongly support HB1326-HD1 and ask you for your support of this Bill.

DATE: 02/26/2016
NAME: Keegan Kirkpatrick
TITLE: Chief Executive Officer, COMPANY: RedWorks
PRESENTING TO: Committee on Finance
DATE & TIME: Tuesday February 28, 2017 @ 13:00
Conference Room 308, State Capitol
MEASURE: HB1326 HD1

TESTIMONY IN SUPPORT OF HB1326-HD1: RELATING WORKFORCE DEVELOPMENT

To the Members of the Committee on Finance;

I am writing to ask for your support of HB1326-HD1.

The work that PISCES has been conducting with regards to different uses and applications of basalt could have a strong positive impact on the state's economy and potentially lead to the creation of a new industry: basalt fibers and derivative products. This research into In-Situ Resource Utilization technology is what attracted RedWorks to PISCES, and it is our hope that through your support of PISCES' continued work in Basalt-based construction technology, Hawaii will signal its position as a center for innovation.

RedWorks is working to develop on-site 3d printing construction products as a means of reducing construction costs and environmental impact. To these ends, we encourage you to give PISCES your full support to continue developing Hawaii's own capabilities toward hyper-local basalt-based construction materials. Both of our organizations are working to introduce new construction solutions that would drastically reduce the need for material imports for construction projects. This should be of chief concern for Hawaii given the state's reliance on imported goods, but also because it offers the chance for Hawaii to become a source for American-made basalt fiber. Presently, basaltic fibers are manufactured primarily in China, Russia, and Korea, with no domestic production in the US. They can be used to make products such as rebar, fabric, mesh, rope, and aggregates to strengthen concrete. Moreover, Basalt fibers do not corrode, making them ideal for wet and humid environments in the tropics.

RedWorks believes that the future of construction and manufacturing is local, and states who lead the way in encouraging the development of these technologies will benefit with stronger economies, new business, and job opportunities that will improve the lives of your state's residents for the long term.

We strongly support HB1326-HD1 and ask you for your support of this Bill.

Thank you,



Keegan Kirkpatrick
42969 Pearlwood Dr.
Lancaster, CA 93534

Dr. Luke Flynn
94-1115 Hahana Street
Waipahu, HI 96797

Dear Members of the 29th Hawaii State Legislature:

I am writing to express my **SUPPORT** for **HB1326-HD1: Relating to Workforce Development**.

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 26 external grants and contracts worth approximately \$50M 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. The function of HSGC is to provide STEM education and NASA workforce development opportunities in Hawaii. The function of NASA Hawaii EPSCoR is to expand aerospace research infrastructure within the State. Finally, 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.

I apologize for the long introduction, but, as with space flight opportunities, I believe that this bill offers a chance for the State of Hawaii to broaden its economic base in a new growth area for construction and manufacturing. PISCES has successfully manufactured innovative materials using Hawaiian basalt with applications to space exploration and conventional construction here in Hawaii. PISCES' continued work to expand and develop products and markets (including basalt-based concrete, basalt rebar, basalt mesh, cording and fabric) derived from Hawaii's naturally occurring basalt will positively impact the demand for quarried basalt in the Islands with long-term economic benefits. While produced internationally, the lack of a domestic basalt material industry in Hawaii offers an untapped market that could yield profitable returns. Basalt-based products and materials have the potential to create new manufacturing opportunities while significantly reducing Hawaii's dependence on imported products. In addition, basalt-based products are impervious to corrosion and can be used to build permanent structures in tropical climates.

I believe that PISCES is already well on its way to developing cutting-edge, basalt-based products and materials that will directly benefit Hawaii's economy. I would greatly appreciate your affirmative consideration of this bill.

Thank you for your time and consideration,

A handwritten signature in black ink, appearing to read "Luke Flynn", followed by a long horizontal line extending to the right.

Dr. Luke Flynn

Christian Andersen
HC1 Box 4187
Keaau, HI 96749

TESTIMONY IN SUPPORT OF:

HB1326– RELATING TO WORKFORCE DEVELOPMENT

Dear Members of the 29th Hawaii State Legislature,

I am writing in support of the passage of HB1326

The State of Hawaii has a genuine need to leverage its strengths while broadening its economic base. Basalt fiber, and its derivative products, offer unique properties that make it competitive with fiberglass, steel, carbon fiber and others. Basalt fibers are currently being used in the manufacturing of various products that include rebar, mesh, rope and fabric. These products have extraordinary properties with regards to strength, durability, chemical resistance, thermal insulation and radiation tolerance. Currently, all basalt fiber is produced outside the United States. Hawaii is well-positioned to be a reliable source of domestic basalt fiber and its products.

HB1326 offers a great potential for the State to encourage a new industry and its derivative impacts on workforce development and the economy.

I would greatly appreciate your affirmative consideration of HB1326.

Mahalo,

Christian Andersen

Dr. Luke Flynn
94-1115 Hahana Street
Waipahu, HI 96797

Dear Members of the 29th Hawaii State Legislature:

I am writing to express my **SUPPORT** for **HB1326-HD1: Relating to Workforce Development**.

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Thank you for your time and consideration,

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Dr. Luke Flynn

2/27/2017

Kris Zacny, PhD

Honeybee Robotics

PRESENTING TO: Committee on Finance

DATE & TIME: [Tuesday February 28, 2017 @ 13:00](#)

Conference Room 308, State Capitol

MEASURE: HB1326 HD1

LATE

TESTIMONY IN SUPPORT OF HB1326-HD1: RELATING WORKFORCE DEVELOPMENT.

To the Members of the Committee on Finance:

I am writing to ask for your support of HB1326-HD1. The work that PISCES has been conducting with regards to different uses and applications of basalt could have a strong positive impact on the state's economy and potentially lead to the creation of a new industry: basalt fibers and derivative products.

There is currently no basalt fibers manufactured in the US. All fibers are being manufactured in China, Russia, Korea and former members of the Soviet Union. Hawaii has the potential to become a source for US made basalt fiber.

Basalt fibers have unique characteristics and can be used to make products such as rebar, fabric, mesh, rope and used also as aggregates to strengthen concrete. Basalt rebar does not corrode like steel rebar, this could present a great benefit for Hawaii and other coastal and tropical areas in the world.

I strongly support HB1326-HD1 and ask you for your support of this Bill.

Thank you.

