



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

Date: 03/25/2013

Committee: House Water & Land

Department: Education

Person Testifying: Kathryn S. Matayoshi, Superintendent of Education

Title of Resolution: HCR 098 EXPRESSING SUPPORT FOR ONGOING EFFORTS TO PLAN AND DEVELOP A SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH (STEM) EDUCATION AND TRAINING CENTER IN KAKA'AKO MAKAI

Purpose of Resolution: STEM Training Center; Kakaako Makai; Marine Education.

Department's Position:

The Department of Education supports this resolution and ongoing efforts to plan and develop a STEM education and training center with a focus in the marine and environmental science for students in K-12 and university students.

**TESTIMONY OF
Kenneth Y. Kaneshiro**

**IN SUPPORT OF HCR 98 FOR ONGOING EFFORTS TO PLAN AND DEVELOP A SCIENCE,
TECHNOLOGY, ENGINEERING, AND MATH (STEM) EDUCATION AND TRAINING
CENTER IN KAKA'AKO MAKAI**

**BEFORE THE
HOUSE COMMITTEE ON WATER AND LAND
Representative Cindy Evans, Chair
Representative Nicole E. Lowen, Vice Chair**

Date: Monday, March 25, 2013

Time: 9:00 am

Pace: Conference Room 325

Aloha Chair Evans, Vice Chair Lowen, and members of the Committee on Water and Land. My name is Ken Kaneshiro and I am the Director of the Center for Conservation Research and Training (CCRT) administered by the Pacific Biosciences Research Center (PBRC) at the University of Hawaii at Manoa. However, I am presenting testimony on HCR 98 as a private individual and my comments do not reflect the position of the University of Hawaii.

I have been involved in a particular research project at the University of Hawaii for nearly 50 years now. I started to work on the project as a dishwasher on the Hawaiian Drosophila Project when I was a sophomore at UH Manoa in 1963 and so 2013 marks the 50th Anniversary of the Project. During these 50 years, more than 80 senior scientists from all over the world have come to Hawaii to study the evolution of this group of insects. More than 400 students, undergraduates, graduates, and postdoctoral fellows have participated on this project and more than 500 scientific papers have been published as a result of the research on this group. The work on the Hawaiian Drosophila is cited in a number of textbooks of Biology as a leading example of speciation and evolution.

The reason I wanted to mention the Hawaiian Drosophila Project is to emphasize that it was the opportunity to do research on just about every aspect of the biology of this group of insects that enabled me to better understand evolutionary theory and basic concepts of ecology, behavior, genetics, molecular biology, etc. better than I ever gained from attending classes at UH. This is what we envision for the proposed STEM education and training center at Kaka'ako Makai to provide more research opportunities to our K-12 students and to get them to experience scientific discovery. This is what will excite them about pursuing a career in the STEM fields.

From 2000 to 2010, I received a National Science Foundation (NSF) GK-12 Grant of nearly \$5M to provide graduate students at UH support to serve as research mentors to K-12 teachers and students. The GK-12 Graduate Fellows worked with the K-12 teachers in integrating field-based research activities into the K-12 science curriculum where students

collected valid data which contributed to the scientific data set. Just to describe one of many examples, one of the GK-12 Fellows worked with several of the K-12 schools in the Hilo area and discussed the impact of invasive alien species on Hawaii's urban and native ecosystems. He then focused on a particular alien species which had recently been found in the Hawaiian Islands and was known to be present in the Hilo area but the State Department of Agriculture did not have the resources to survey the distribution of this ant species which is known as the little fire ant. The GK-12 Fellow taught the K-12 students about the biology, the ecology, the behavior of this species and then taught them how to collect them with baits consisting of peanut butter on a chopstick. The grant provided the materials and a couple of thousand students set baits in their backyards, the school ground, the playgrounds, etc. and each bait station was identified on a GIS map with the student's name. After a couple of days, the chopsticks were collected, placed in a plastic ziplock bag and brought back to the classroom where the Graduate Student taught the K-12 students how to identify the ant species that were known from the Hilo area by using a pictorial key. Among the samples collected, two incipient population of the little fire ant were discovered, the data given to the State Department of Agriculture which then set out to eradicate these populations before they had a chance to spread throughout the Hilo area. Along the way, the samples also revealed two species of ants that were previously unrecorded for the area. The NSF did a press release on the story of how K-12 students' research on the little fire ant in Hawaii resulted in the eradication of the species from the Hilo area; that story made the New York Times.

There are many more stories similar to the one described above resulting from the GK-12 project in Hawaii and demonstrates how engaging the community, especially the K-12 community in research relevant to their everyday lives and needs, can lead not only to enhanced learning and awareness but also contribute to the broader scientific database. Pacific Biosciences Research Center in partnership with the Curriculum Research and Development Group in the College of Education at UH Manoa has the capacity and the experience to assist in the initiative to develop a first-class STEM Research and Training Center at the Kaka'ako Makai site. I strongly believe that we will be able to develop a model for STEM education by integrating research into the curriculum and PBRC as an Organized Research Unit at UH, can play a major role in this effort.

I am in strong support of the intent of HCR 98.

Thank you for the opportunity to provide testimony.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
House Committee on Water and Land
March 25, 2013 at 9:00 AM

by
Alan Lau, Ph.D.
Interim Director
Pacific Biosciences Research Center
University of Hawai'i at Mānoa

HCR 98 – EXPRESSING SUPPORT FOR ONGOING EFFORTS TO PLAN AND DEVELOP A SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH (STEM) EDUCATION AND TRAINING CENTER IN KAKA'AKO MAKAI

Chair Evans, Vice Chair Lowen and members of the committee:

The University of Hawai'i would like to express its strong support for efforts to develop a Science, Technology, Engineering and Math (STEM) education, research and training center in Kaka'ako Makai. As identified in the resolution, the future of our island state depends on having a well-trained workforce in the STEM disciplines. Our economy, culture and quality-of-life are integrally tied to wise stewardship of our land and ocean resources, as reflected by the traditional land divisions, ahupua'a, that extend from the land to the sea. Modern science integrated with traditional ecological knowledge is essential to insuring a bright future for Hawaii's people. We possess one of the best natural laboratories, the ocean, for engaging our students (K-12, undergraduate and graduate) and our broader community of stakeholders in the STEM disciplines. At present, no such facilities exist to adequately and effectively address Hawai'i's needs in STEM workforce preparation, or the need for bridging locally-relevant science to education, natural resource management and policy development. Hawaii's efforts under such programs as the Department of Education's "race to the top" would clearly be strengthened by having a world class facility to train our students and such a facility would also serve to enhance community understanding of critical issues such as climate change.

The effort to further develop and expand partnerships among various stakeholders, such as the University of Hawai'i, the Hawai'i State Department of Education, Kamehameha Schools, the Office of Hawaiian Affairs, the Hawai'i Department of Land and Natural Resources, appropriate Federal agencies and community groups supports the best opportunity to effectively and practically address the needs of our state and people now and into the future. The proposed STEM center could truly be a gathering place of great value to our communities.

The University of Hawai'i already has facilities in Kaka'ako Makai, including the Pacific Biosciences Research Center's Kewalo Marine Laboratory, that has a multimillion dollar

seawater system that could be used to provide unparalleled opportunities for the hands-on study of Hawai'i's marine life. Discussions are already underway on how a proposed STEM education, research and training center could partner with a proposed "Obama Presidential Center" to address ocean and island sustainability, including opportunities to bridge science to policy development and implementation regionally and internationally.

In summary, the University of Hawai'i strongly supports this resolution and would be a willing and fully engaged partner in efforts to improve STEM education for our students, to provide additional opportunities to invest in research relevant to Hawai'i, and to expand community outreach efforts in putting knowledge to work to insure the brightest future for Hawai'i and its people.

Thank you for this opportunity to provide testimony in support of this resolution.



25 Malunui Ave., Suite 102., PMB 282 • Kailua, HI 96734 • Phone/Fax: (808) 262-0682 E-mail: htf@lava.net

COMMITTEE ON WATER & LAND

Rep. Cindy Evans, Chair
Rep. Nicole E. Lowen, Vice Chair

HCR 98

EXPRESSING SUPPORT FOR ONGOING EFFORTS TO PLAN AND DEVELOP A SCIENCE,
TECHNOLOGY, ENGINEERING, AND MATH (STEM) EDUCATION AND TRAINING CENTER IN
KAKA`AKO MAKAI

Committee Chair and members:

Hawaii's Thousand Friends, a statewide non-profit land and water advocacy organization supports the creation this facility that will help train our island keiki in marine and environmental sciences.

The training center setting in Kaka`ako makai melds nicely with the existing Kewalo Marine Laboratory which was established in 1972.

Hawaii's marine ecosystems are the backbone of Hawaii's culture, economy, unique quality-of-life and future. The mere fact that our *island* state has only two such facilities, Kewalo Marine Laboratory and Coconut Island, when Oregon and Rhode Island have three and Florida has twenty is disturbing.

Providing future generations with the training and tools needed to not only protect our islands valuable marine resources but to be competitive in seeking local positions is a win-win opportunity.

Please support these ongoing efforts and pass HCR 98.



Committee on Water and Land
Rep. Cindy Evans, Chair

Monday, March 25, 2013
9:00 am, Conference room 325, State Capitol

Testimony in support of HCR 98

Aloha Chair Cindy Evans and committee members,

I am Ron Iwami, President of Friends of Kewalos, a non profit organization whose mission is to Protect, Preserve, and Malama the Kaka'ako Makai (KM) area. We are part of the Save Our Kaka'ako Coalition who has fought diligently since 2005 in our red shirts to accomplish our mission. We also worked diligently with the community and other stakeholders to develop the Kaka'ako Makai Master plan that was adopted by HCDA in May of 2011.

This proposed plan to develop a Science, Technology, Engineering, and Math (STEM) Education and Training Center in KM is a win - win for all. It is a much needed Marine Science education facility that will excite the minds of the children of Hawaii. It is located in the perfect place near the ocean and will fit in nicely with the Vision and Education Guiding principle of the KM Master Plan mentioned above.

The seawater to be used in the Center is slated to come from the same fresh seawater that is pumped daily into the adjacent UH Kewalo Marine Lab run by Dr. Robert Richmond. His expertise together with his passion to make it happen will be the impetus to see this STEM Center to fruition.

Friends of Kewalos is currently working with Dr. Richmond and the lab in conducting a Water quality project in the waters off Kewalo Basin Park and within the harbor. This joint project is the start toward the ultimate goal of ensuring the health and safety to the public for this heavily used recreational area.

Mahalo for this opportunity to testify and share our manao.

Ron Iwami
President, Friends of Kewalos

lowen1-Kyli

From: mailinglist@capitol.hawaii.gov
Sent: Friday, March 22, 2013 12:50 PM
To: waltestimony
Cc: kaimi@lava.net
Subject: *Submitted testimony for HCR98 on Mar 25, 2013 09:00AM*

HCR98

Submitted on: 3/22/2013

Testimony for WAL on Mar 25, 2013 09:00AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
Maria Orr	Kaimipono Consulting Services LLC	Support	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov

House Committee on Water & Land
Monday, March 25, 2013
Conference Room 221
9:00 a.m.

House Concurrent Resolution 98
Expressing Support for Ongoing Efforts to Plan and Develop a
STEM Education and Training Center in Kaka'ako Makai

Testimony in STRONG SUPPORT

Aloha Chair Evans, Vice Chair Lowen and Committee Members:

I am very pleased and proud to strongly support HCR 98. This commendable Resolution by the House, with the Senate concurring, will help ensure progress by the University of Hawaii in moving forward with a most significant marine and environmental sciences center incorporating advanced technology and educational outreach within the Pacific region.

Merging marine science, technology, engineering and math (STEM) disciplines within this advanced marine and environmental sciences center will be of exceptional value to marine and environmental science education and training. It will benefit Hawaii's present and future generations, including K-12 through graduate programs, expand local professional careers, and will have global importance.

Further, the STEM education and training center is in keeping with the educational and environmental policies of the Kaka'ako Makai master plan, and is consistent and compatible with the plan's community-based Guiding Principles approved and adopted by the Hawaii Community Development Authority in May, 2011, as follows:

- *Provide enriching public recreational, cultural and educational opportunities for residents and visitors alike through Kaka'ako Makai's scenic coastal and marine environment, the Native Hawaiian cultural heritage, compatible facilities and activities, and historic sites and settings.*
- *Preserve, restore and maintain Kaka'ako Makai's valuable coastal and marine resources for present and future generations.*
- *Enable the monitoring, protection, restoration, and conservation of natural coastal and ocean resources, including reef and marine life, through responsible stewardship and sustainable practices.*
- *Support Kewalo Marine Laboratory's continued valuable marine biology and ecosystems research and education in the vicinity of Kewalo Basin.*

The seawater infrastructure investment for the STEM educational and training center is already in place, and has proven its irreplaceable value to the Kewalo Marine Laboratory's highly successful and self-sustaining national grant operations over many years. Hawaii's ecological, cultural and economic future is strongly tied to this work, including sustaining and improving the coastal health of our ahupua'a and their near-shore waters, as well as determining factors of sea-level rise impacts and climate change over time.

Affiliated scientists, educators, and the interested and affected community look forward to this significant accomplishment on behalf of the future of Hawaii's marine and environmental sciences benefitting Hawaii's people in the greater public interest. Mahalo nui loa for your support.

Michelle Spalding Matson
Honolulu

lowen1-Kyli

From: mailinglist@capitol.hawaii.gov
Sent: Friday, March 22, 2013 12:46 PM
To: waltestimony
Cc: rkayelny@gmail.com
Subject: *Submitted testimony for HCR98 on Mar 25, 2013 09:00AM*

HCR98

Submitted on: 3/22/2013

Testimony for WAL on Mar 25, 2013 09:00AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
Robin Kaye	Individual	Support	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email webmaster@capitol.hawaii.gov