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Statement of

THEODORE E. LIU

Director

Department of Business, Economic Development, and Tourism

before the

**HOUSE COMMITTEES ON HIGHER EDUCATION AND
HUMAN SERVICES & HOUSING**

Tuesday, March 18, 2008

2:00 p.m.

State Capitol, Conference Room 309

in consideration of

SB 2480 SD2 HD1

RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT.

Chair Chang, Vice Chair Bertram, Chair Shimabukuro, Vice Chair Rhoads and Members of the Committees.

The Department of Business, Economic Development & Tourism supports SB 2480 SD2 HD1, which would amend Act 111 to provide additional funds to meet the demand for science, technology, engineering, and math (STEM) programs in Hawaii's public schools, change the means of financing some of these programs, include funding for Project EAST, add funds to support K-12 creative media education programs, and establish a science, technology and education special fund.

As you know, many of the measures in Act 111 and other STEM education proposals were strongly supported by the Administration during the 2007 Legislature and the various agencies that were assigned responsibility to implement them have been working to make them a reality. It is the vision of the Governor that all schools who wish to adopt STEM programs have that opportunity. We note that any additional funds have not been included in this year's updated six-year financial plan.

The Administration continues to place a high priority on empowering our public school system with increased opportunities to improve STEM education and believes that a good start has been made. Education programs that weave the arts and sciences together to engage a broad spectrum of students, such as the proposed Creativity Academies, as well as Project EAST, are important to expanding the reach of STEM education statewide. It is important that we have an inventory of all the worthy projects in our schools, in addition to the STEM academies and Project EAST mentioned in this bill, so that working together, DBEDT, the Department of Education, the University of Hawaii, and all the STEM education stakeholders can develop a system of programs that engages and challenges our students in ways that lead to STEM careers and build a workforce that incorporates STEM skills in every occupation.

We hope that a long-term funding strategy can be developed that does not rely on yearly appropriation bills, but rather on expanded core budgets to create STEM programs, as part of our schools regular curriculum and extra-curricular activities. In regard to the creation of a special fund, we defer to the Department of Budget & Finance.

Thank you for the opportunity to offer these comments.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the House Committees on Higher Education and Human Services & Housing

March 18, 2008 at 2:00 pm
State Capitol, Conference Room 309

by
Virginia S. Hinshaw, Chancellor
Presented by
Peter Crouch
Dean, College of Engineering
University of Hawai'i at Mānoa

SB2480, SD2, HD1 – RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT

Chair Jerry L. Chang, Vice Chair Joe Bertram, III and Members of the Committee on Higher Education;

Chair Maile S. L. Shimabukuro, Vice Chair Karl Rhoads, and Members of the Committee on Human Services and Housing:

I appreciate the opportunity to provide testimony in support of SB2480, SD2, HD1 and commend the commitment of the Legislature to provide the opportunities and resources required to advance STEM education and experiences through various successful programs.

We are keenly aware of the variety of programs and the number of organizations involved in advancing Science, Technology, Engineering and Mathematics (STEM). Robotics, RET, Project EAST, HiEST Academies, STEM teacher development, creative media program and numerous other initiatives provide for a variety of engaging STEM experiences.

The passing of ACT 111 resulted in statewide implementation of the Administration's Innovation in Education Initiative – Fostering Innovation and Relevance through Science and Technology – Pre-Academy Program. The robotics competitions will provide hundreds of students and teachers with hands on experience as problem solving members of a robotics team and bring them in contact with peers from across the state and nation.

The Research Experiences for Teachers – Middle School Program is a cross-disciplinary educational partnership driven by the needs and requirements of teachers, and by technological advancements in engineering, specifically in advanced wireless

communications. It is a unique model which will bring innovation and excitement into the middle schools classrooms.

We want to take this opportunity to recognize our faculty, Dr. Magdy Iskander who together with his graduate and undergraduate students took a small pilot National Science Foundation RET program and transformed it into a model which is gaining national interest. RET has already made a difference in five public middle schools and engaged 15 teachers and just over 900 students with state-of-the-art wireless communication tools and lab content. The number of schools is expected to more than double by the end of the academic year. We think it's quite remarkable to have internationally renowned faculty working together with middle school teachers to bring the exciting field of advanced communication, electro-magnetic spectrum, signal strength processing, and antenna design to the middle school level. These technologies and content areas are the guts behind the "toys" our pre-teen and teenagers grow up with. The subject supports the content standards and is made relevant by means of its exciting applications.

We are encouraged by the State's commitment to STEM learning and look forward to extending the pipeline through the postsecondary level.

Entering the next century Hawai'i faces a serious shortage of engineers required to support our high technology, construction, and infrastructure related State and City agencies. The shortage of engineers and technical talent is a national crisis and one which is being addressed by major government and industry stakeholders. Locally, the high demand for engineering graduates at the College's twice-yearly career fairs is a key indicator that the shortage is real and current.

In closing, I'd like to take a moment to also remind you that our top priority this year is addressing the urgent repair and maintenance of our facilities. If Mānoa is to continue to blossom and support program such as this, we must have support to repair and maintain our facilities. We must enhance our efforts to become a destination of choice for student, faculty, and staff, the citizens of Hawai'i and beyond. We look forward to a productive partnership.

Thank you for the opportunity to testify. We appreciate your interest and support for Hawai'i's premier institution of higher learning.

I am writing to express strong support for SB2480 - Relating to Technology Workforce and Development.

My name is Charleen Ego, and I have been the digital media teacher at Kawanānakoā Middle School for over 12 years. I teach about 250 students every year, and this year I have an after-school Technology Club with over 30 students. For the past five years, my students have placed first or have been in the top five positions in local and national video contests. This includes the Island Movie Contest, Olelo Youth Xchange Video Contest, HMSA Teen Video Award, Student Television Network Convention, Hawaii Student Film Festival and Scholastic Art Award.

The reason SB2480 is so important to Hawaii is that the legislature has an opportunity to make a positive impact on education. Especially at the middle school level where students have short attention spans, are developing the ability to think abstractly and generalize, are beginning to think about their future, and are willing to attach themselves to activities that motivate and interest them, digital media production has become a powerful and effective learning experience for learners of all types and ability.

The impact on student learning is already being felt with all existing media programs. Recently, students from Student Television Network (STN) affiliated high school and middle school media programs in Hawaii attended the STN Convention in Anaheim, California. Campbell, Kapolei, Maui, Moanalua, and Wai'ānae high school as well as middle school students from Chiefess Kamakāhele, Wai'ānae and Kawanānakoā represented Hawaii very well placing students in the top five nationally in many of the video competition events.

Unfortunately, the digital media program does come with a price. Every year we and other existing media programs are short of computers, camcorders, video cameras, digital cameras, rechargeable batteries, microphones, tripods, printers, toner ink and software. We also lack funds to travel to the Student Television Network Convention. We spend many hours fundraising, taking away valuable time that should be spent on teaching the students.

By passing SB2480, you can help build a program that will prepare the students for future jobs. I would like to thank all of the committee members for considering this testimony.

Charleen Ego
Digital Media Teacher
Kawanānakoā Middle School
49 Funchal Street
Honolulu Hawaii 96813
(808) 587-4430 ext. 285

KAWANANAKOA MIDDLE SCHOOL Multimedia Class Awards

Contest Title	Project Name	Student(s)	Standing
School Yr 2004-2005			
Scholastic Art Award	Saving the Nguyen Brothers	Mitchell Abraham, Kasey Kam, Sean Matsumoto, Jarenn Nagaishi-Choi, Wiliam Peng	Silver Medal
Olelo Youth Exchange	Saving the Nguyen Brothers	Mitchell Abraham, Kasey Kam, Sean Matsumoto, Wiliam Peng	Finals-Narrative
Olelo Youth Exchange	Kicking Stress	Julice Kaina, Fassion Page	Winner Middle School Short Category
Olelo Youth Exchange	Why Can't It Change	Krystina Clark, Robyn Vea, Racheal Aweau, Tayler Manriki	Winner Music Video
Olelo Youth Exchange		Shelby Ishida, Jenny Yanagihara	Finals-Mini Documentary
Island Movie Contest	Saving the Nguyen Brothers	Mitchell Abraham, Kasey Kam, Sean Matsumoto, Wiliam Peng	Final "Tell Me A Story"
Island Movie Contest	Science Safety Tips	Sarah Fang, Jarenn Nagaishi-Choi	Winner Middle School, Final "Show Me

			Something"
HiTech Quest	Drive to Save Lives - Video	Mitchell Abraham, Kasey Kam, Sean Matsumoto, Wiliam Peng, Gary Xu	1st Place - High School Division Using Technology to Communicate Digital Video
HiTech Quest	Drive to Save Lives - Webpage	Mitchell Abraham, Kasey Kam, Sean Matsumoto, Fassion Page, Wiliam Peng, Shane Phan, Gary Xu	1st Place - Junior Web Page
HiTech Quest	Hawaii Mixed Plate	Sarah Fang, Danica Fernandez, Shelby Ishida, Julice Kaina, Tayler Manriki, Jarenn Nagaishi-Choi, Jenny Yanagihara	3rd Place - Junior Web Page

School Yr 2005-2006

Scholastic Art Award	Basic Organization Tips	Nicolas Ayabe, Zachary Mau	Gold Medalist
Scholastic Art Award	Climax	Jun Li, Kai Yoshioka	Gold Medalist
Scholastic Art Award	Anorexia Nervosa: A Battle Within"	Brandon Manzoni, Megan Lawson	Silver Medalist
Olelo Youth Exchange	Walk and Talk Program	Jun Li Zhong	Finals-News
Olelo Youth Exchange	Basic Organization Tips	Nicolas Ayabe, Zachary Mau	Finals-Short

Olelo Youth Exchange	Don't Do It	Charles Siu, Christopher Liang Nicolas Ayabe, George Delos Santos, Kai Yoshioka	Winner Music Video
Olelo Youth Exchange	My Dream		Finals-Music Video
HMSA Video Award Contest	Staying Fit and Eating Healthy	Connie Nip	Finals- Health
HMSA Video Award Contest	Addicted	Charles Siu	Final Anti-drugs
HMSA Video Award Contest	Killer in Town	Brandon Marzan	Finals - Anti-underage Drinking
School Yr 2006-2007			
Student Television Convention Video Awards	"STN Convention"	Tashiyka Campbell, Zachary Mau, Daralyn Yee Reese Akamine, Micah Maio, Zachary Mau, Delin Yang, Ryan Young	First Place Nationally In- Camera Competition
Island Movie Contest	"Newton's 3 Laws of Motion"		Winner Middle School Island Movie
Olelo Youth Exchange	"Goodness of Fruit"	Evon Le	Winner Middle School Best Healthy Movie
Olelo Youth Exchange	"Drugs Are Crazy"	Pono Patoc, Matthew Lono, Jason Li	Winner Middle School Best Music Video
Olelo Youth Exchange	"Drug Math"	Sherri Bolosan	Finalist PSA Category
Olelo Youth Exchange	"My Grades"	Richard Tran, Delin Yang, Ryan Young	Finalist Music Video
Olelo Youth Exchange	"This is How We Do"	Samantha Suzuki, David Tauanuu,	Finalist Music Video

		Christopher Timoteo	
Olelo Youth Exchange	"Making The Change	Reese Akamine, Micah Maio	Finalist News Category
Olelo Youth Exchange	"Last Minute Dilemma"	Richard Tran, Delin Yang	Finalist Short Category 3rd Place Health Category
HMSA Teen Video Award	"Goodness of Fruit"	Evon Le	Gold Medal Award
Hawaii Student Film Festival	"Goodness of Fruit"	Evon Le	Silver Medal Award
Hawaii Student Film Festival	"The War"	Andrew Chen	Bronze Medal Award
Hawaii Student Film Festival	"Paper Chase Dilemma"	Richard Tran, Delin Yang	
School Yr 2007-2008			
Student Television Convention Video Awards	"STN Convention"	Evans Ego, Joshua Paranada, Ty Toyozaki	2nd Place Laptop Commercial
Student Television Convention Video Awards	"STN Convention"	Evon Le, Johnson Leuong, Ridge Vuong	Honorable Mention In- Camera
Scholastic Art Award	"Food War"	Adrienne Lee, Keisha Watanabe, Lisa Yu	Silver Medal Award
Scholastic Art Award	"Living With Global Warming	Ashley Asahina, Christopher Li, Ridge Vuong, Weon Yuan	Silver Medal Award

Island Movie Contest	"The Lost Tresure of the GPS"	Evans Ego, Evon Le, Kyllie Kansaku, Jaxon Servies	Winner Middle school "Teach Me Something" category
Island Movie Contest	"Living With Global Warming	Ashley Asahina, Christopher Li, Ridge Vuong, Weon Yuan	Winner Middle School, "Environmental/Social" Category

Statement of Art Kimura, Education Specialist, Hawaii Space Grant Consortium, University of Hawaii at Manoa, 1680 East West Road, POST 501, Honolulu, HI 96822, phone (808) 934-7261, email: art@higp.hawaii.edu

before the

HOUSE OF REPRESENTATIVES
THE TWENTY-FOURTH LEGISLATURE
REGULAR SESSION OF 2008

COMMITTEE ON HIGHER EDUCATION AND COMMITTEE ON HUMAN SERVICES & HOUSING

Tuesday, March 18, 2008
2:00 p.m.
State Capitol, Conference Room 309

in consideration of
Senate Bill 2480, S.D. 2, HD1
Relating to Technology Workforce and Development

Chair Chang, Vice Chair Bertram and Members of the Committee on Higher Education
Chair Shimabukuro, Vice Chair Rhoads and Members of the Committee on Human Services & Housing

I support Senate Bill 2480 SD 2, HD1 which appropriates additional funds for the support and expansion of existing scholastic robotics programs.

One of the outcomes in support of catalyzing student interest in science, technology, engineering and math in the 2007 legislative session was Act 111 which in part, established a pre academy program that provided project based learning using robotics. Scholastic robotics programs in Hawaii have significantly increased not only in the availability of a variety of programs from elementary through high school but in ever expanding participation by students statewide. Hawaii is host to a number of nationally affiliated scholastic robotics programs including FIRST, FIRST Lego League, Botball, and underwater remotely operated vehicles through regional tournaments held in Hawaii, with winners advancing to national tournaments.

Eight years ago, two Hawaii public high schools first competed in the FIRST robotics competition in regional tournaments held in California. In 2008, Hawaii will host its first FIRST Robotics Regional Competition at the Stan Sheriff Center, University of Hawaii, with 37 high school teams, including 25 from Hawaii. NASA has provided \$800,000 over four years to host the tournament and provide team scholarships. BAE Systems has donated \$107,000 to fund

College of Engineering scholarships for FIRST participating students and will be funding registration fees for up to six teams from the Hawaii FIRST regional to compete in the national FIRST tournament in Atlanta's Super Dome. Hawaii teams have demonstrated consistently their national competitiveness by winning first place, gold awards, and numerous other recognition for their web site design, their engineering of their robot, and their entrepreneurship.

The FIRST Lego League program has grown from less than 12 teams four years ago to over 80 teams in 2007 with an anticipated growth to 120 teams in 2008. The Botball robotics program in five years has grown to become the second largest regional tournament in the United States at 38 teams, and in 2007, Hawaii hosted a national robotics tournament (Botball) and the National Conference on Educational Robotics which drew the largest participation in that program's history at 65 teams including 45 from out of state.

In addition, a program to be introduced in fall, 2007, VEX, will provide a unique opportunity for Hawaii to host an annual world championship including as many as 90 teams from Asia and the mainland United States as well as Hawaii. Waiakea High School became not only the first high school from the United States to compete in the International Micro Robot Maze Competition in Nagoya, Japan, but returned after having competed against high school and college teams from Japan and Korea and winning three significant awards.

The mentor for this team, Riley Ceria, is a graduate of the University of Hawaii's College of Engineering who participated in a robotics program called Micro Mouse during his undergraduate study, which provided the foundation for his interest and expertise in mentoring the high school team. One of the team members, Kelson Lau, a junior at Waiakea High School, has designed and fabricated a bipedal robot which uses 8 motors (the Japanese bipedal robot used 3 or 4 motors) which was entered in the Big Island Science and Engineering fair; Kelson's project won 2nd place overall and he received an all expense paid trip to compete in the International Science and Engineering Fair in Atlanta in May 2008. In addition, his project received 8 other noteworthy awards as follows:

Best in Subject Category-Engineering: Electrical and Mechanical
Best Science and Engineering Award
Harold Sanders Outstanding Inventors Award
Best in Technology Award
HELCO Best in Engineering/Environmental Award
U.S. Air Force Award
Mauna Kea Observatories Outreach Committee Astronomy Research Award
Canada/France/Hawaii Telescope Award

The international competition provides us with a measurement of the quality of students and mentors that we have in Hawaii. If we expect our students to compete in a global environment, we need to continue to provide our students with the opportunity to compete in national and international competitions. He is applying for a NASA summer internship in engineering and robotics..

Why robotics in schools?

- Increases the technological literacy of students and adults by making abstract concepts concrete (standards).
- Is gender neutral and also is not dependent on unique physical attributes and athleticism to be successful, making the experience accessible to a wide range of student participants.
- Strong motivator for mathematics and science learning, leading to careers in science, technology and engineering with ultimate impact on national security, the economy, and leadership in development of future technologies (work force development).
- Catalyst for integrating knowledge from all disciplines, including mathematics, science, social studies, English language arts, art, etc.
- Sports like games and challenges with culminating tournament sports for the brain....keeps students engaged after school and on weekends (keeping them drug free).
- Develops team work, communication skills, critical thinking skills, problem/project/contextual based learning (DOE General Learner Objectives).
- The current and other programs provide a variety of opportunities in robotics for elementary and secondary schools, informal education.
- Potential for international participation, with Hawaii as the hub of robotics tournaments, exhibitions, and professional conferences on robotics (elevating expectations, technotourism for economic development). Inspirational professional development both locally, nationally and internationally.

Scholastic robotics is an integral part of the technical work force development pipeline which spirals from elementary to middle to high school and to undergraduate and graduate study at the university. It serves to provide a means to foster integration of research and development of robotics as applied to various fields of academic interest and applications to agriculture, medicine, engineering, homeland security, manufacturing, and the marine and aerospace environment. A two year member of the Farrington High School Botball robotics team was recently accepted to MIT to study engineering; he is already looking an internship in robotics at the undergraduate level. Through the resources made available to schools, students will continue to have access to cutting edge technology and learning opportunities by competing at the national and international level. We are now beginning to see the effect of offering programs that spiral from the elementary to the middle to the high schools; skills and content learned; for example, a freshman team member is the team programmer lead for her high school Botball team.

The outcomes are compelling: FIRST Robotics program

- * More than 3 times as likely to major specifically in engineering.
- * 10 times as likely to have had an apprenticeship, internship, or co-op job in their freshman year.
- * Significantly more likely to expect to achieve a post graduate degree.
- * More than twice as likely to expect to pursue a career in science and technology.

* Nearly 4 times as likely to expect to pursue a career specifically in engineering.

The outcomes are compelling: Botball robotics program

*93% of students surveyed stated that Botball was one of the best or better things they've ever done at school.

*89% of students participating in Botball feel more confident with technology after participating in Botball

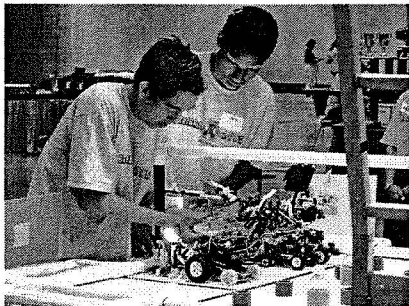
*50% of students feel that of all their academic/club experiences, Botball is one of the best things they've done, with an additional 43% indicating that it is one of the better things they have been involved with.

*31% of Botball students indicated that Botball influenced their career choice. Of these, *96% now wish to pursue a career in a technical or technically related field.

*36% of Botball students indicated that Botball had influenced their choice of what to study in college. Of those, 100% chose a technical or math field of study.

The availability of scholastic robotics in schools, in particular in after school periods, are largely dependent on teachers and other mentors who provide, without compensation, time and resources to provide these engaging activities for students. A common comment from the teachers is that the "students do not want to go home." When students are willing to stay not only after school but participate during vacation and weekend periods, sometimes, well into the evening, it acknowledges the unique rigorous academic experience that are provided through robotics. However, these programs are on a fragile level as they are dependent on the large commitment of these teachers and other volunteers; relieving them of having to take the time to do fundraising for registration fees, kits and travel would greatly reduce the stress on the teachers and provide even more opportunities for access to these programs.

With much appreciation to the legislature and our community for supporting our schools with resources and mentors, we are providing a means to inspire the next generation of explorers, scientists and engineers. Thank you for the opportunity to provide these comments.





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QUEST 2.0

**Testimony By Jim Shon, Executive Director - HiTech Quest
Before the House Committees on HIGHER EDUCATION and HUMAN
SERVICES AND PUBLIC HOUSING**

Tues March 18, 2008 2pm Room 309

**RE SB 2480 SD2 HD1 RELATING TO TECHNOLOGY WORKFORCE AND
DEVELOPMENT.**

HiTech Quest Supports MOST OF this bill.

Specific Suggestion: Hawaii already has the precedent in putting funds into a more autonomous non profit through the 3Rs program. We respectfully suggest that you utilize this model to reduce the bureaucracy inherent in a special fund. Criteria for the expenditure of these funds can be specified, AND you would have the advantage of attracting private funding that would not normally go to a government agency. It is not that a government home for the fund cannot work at all, but that a nonprofit home may have more advantages.

The Hi Tech community often expresses the need to move faster than many of our governmental and educational institutions, and a concern that government may not be able to move fast enough OR flexibly enough to take advantage of opportunities. The likelihood of restrictions on release of funds as an ongoing problem is just one example of this dilemma.

A recent meeting of STEM advocates explored the concept of a private foundation or an independent non profit that could complement existing programs and bring stakeholders together. There was considerable support for the idea that a non profit could be more effective, both in attracting private funds, and in moving quickly to support STEM initiatives and create the kinds of partnerships that are often more awkward and drawn out with government agencies that have larger and more pressing priorities and agendas.

At the risk of raising a sensitive issue, some of the funding in the bill is directed towards entities that are having difficulty in determining just what is intended, desired, or expected.

**Thank you for the opportunity to testify.
Jim Shon**

See Attachment

HiTech Quest is a non -profit organization whose mission is to use contextual and project-based learning experiences in conjunction with the secondary education and business communities to help build a strong technology workforce in Hawaii.

About HiTech Quest

Over the past five years HTQ has sponsored more than 250 projects involving 649 students from 33 schools (public, private and home school). More than \$100,000.00 in scholarship money and software prizes has been awarded in recognition of the student's accomplishments.

The 2007 HiTech Quest Strategic Plan calls for:

- Recruiting Teacher Coordinators with Project Learning Teams
- Coordination and execution of HTQ Project Showcase Technology-focused enrichment programs to enable youth to develop additional skills that will enable them to be successful in the technology industry.
- The technology-focused enrichment programs will challenge students to develop additional technical skills. Because the programs are project-based in a real-world context, the participants develop an understanding of what will take to be successful in a career in this highly competitive, ever changing industry.

In this context HiTech Quest serves as a “case manager” to facilitate partnerships between businesses, sponsors and foundations willing to invest in education, client organizations needing a service, a teacher with a student project learning team, and a business mentor for the learning team. Specifically, HTQ provides:

- Administration support and technical assistance for Project Learning Teams in High Schools
- Recruiting & coordination for Volunteer Business Mentors
- Funding for Teacher Coordinators
- Recruiting client organizations and sponsor organizations
- Recruiting Teacher Coordinators with Project Learning Teams
- Coordination and execution of HTQ Project Showcase
-

For High School Teachers and Learning Teams, HiTech Quest Provides

- Project-based, real-world, hands-on educational experiences
- Ties to local business community – the viability of a career in Hawai'i
- Leadership skills in technology
- Teacher Training in projected-based learning strategies and techniques
- Additional income
- Investment in technologies and capabilities for the classroom

HiTech Quest is a non –profit organization whose mission is to use contextual and project-based learning experiences in conjunction with the secondary education and business communities to help build a strong technology workforce in Hawaii.



hitech
QUEST 2.0

- Opportunities for after school and vacation engagement

HiTech Quest is a non-profit organization whose mission is to use contextual and project-based learning experiences in conjunction with the secondary education and business communities to help build a strong technology workforce in Hawaii.

Statement of Riley Ceria, Electrical Engineer, Caltech Submillimeter Observatory, 111 Nowelo St., Hilo, HI 96720, phone (808) 990-6582, email: rceria@submm.caltech.edu

before the
HOUSE OF REPRESENTATIVES
THE TWENTY-FOURTH LEGISLATURE
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COMMITTEE ON HIGHER EDUCATION AND COMMITTEE ON HUMAN
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Education

Chair Shimabukuro, Vice Chair Rhoads and Members of the Committee on Human
Services & Housing

I support Senate Bill 2480 SD 2, HD1 which appropriates additional funds
for the support and expansion of existing scholastic robotics programs.

As a graduate from the University of Hawaii at Manoa College of Engineering in
Electrical Engineering, I feel one of the reasons that I have enjoyed engineering was due
to my participation in a robotics competition called Micromouse. After participating in
Micromouse, I was hooked on robotics, and in science and technology. After graduation
I found a job with the Caltech Submillimeter Observatory, in Hilo, HI. Part of my job is
to conduct outreach with the local community. Having enjoyed robotics to such a great
extent in college, I decided to help mentor the students of Waiakea High School, my
former high school, in robotics.

As a Waiakea High Robotics mentor I was introduced to all the different robotics
opportunities that students have such as Botball, FIRST, Underwater Robotics, and Micro
Robots. A couple months after starting as a mentor and Waiakea High, I was introduced
to the International Micro Robot Maze Competition in Nagoya, Japan and asked if this
would be possible to compete in as it was very technically challenging. Looking it over
Waiakea decided to take on this challenge, and created 4 robots to take to Japan in
November 2007. This is the first robotics competition that a Hawaii High School
participated in that required many higher level concepts. As all other competitions come
with kits that can be built, the Micro Robot Competition only had rules that needed to be
followed. Students had to design and build their own electronics and electronic boards,

and even choose what components to use. They had to find suitable motors and ways to mount the robots together in a 1” cube. Finally after building, they needed to learn how to program a microcontroller that for the first time did not come bundled with precompiled libraries for them to use. As noted in Senate Bill 2333, Waiakea High School was the first high school from the United States to compete in the International Micro Robot Maze Competition in Nagoya, Japan, and returned with three awards after having competed against high school and college teams, including graduate level teams, from Japan and Korea.

The international competition provided us a ways to measure our students’ technological capacity against the world. After seeing their accomplishments after the competition, the students’ confidence grew as they now knew that they can do as well as other teams from around the world. Theses types of experiences are necessary if we want our students to be able to compete in the current global environment.

While in Japan, Waiakea High was able to enjoy a tour of science and technology. They visited a technical high school, and the robotics laboratories of Nagoya University. They were able to see how robotics is part of health care, surgery, military, space, automotive, and many other types of applications.

An Institute for Robotics at the University would serve to provide a means to foster integration of research and development of robotics as applied to various fields of academic interest and applications to agriculture, medicine, engineering, manufacturing, and the marine and aerospace environment. Further, it would be part of the work force development pipeline which spirals from elementary to middle to high school and to undergraduate and graduate study at the university. The Institute could also be the host for the current pre academy (robotics), thereby providing a statewide program that begins at the elementary level and provides opportunities through college study.

Thank you for the opportunity to provide these comments.

HEDtestimony

From: Robert_Widhalm/MOAHS/HIDOE@notes.k12.hi.us
Sent: Friday, March 14, 2008 7:33 PM
To: HEDtestimony; Rep. Jerry Chang; Rep. Joe Bertram III; Rep. Maile Shimabukuro; Rep. Karl Rhoads
Subject: Testimony related to Senate Bill 2480

I am Robert Widhalm, a teacher and the Robotics Club Advisor at Moanalua High School located at 2825 Ala Ilima Street, Honolulu, HI 96818, with email address robert_widhalm@notes.k12.hi.us and phone number 256-5430,

before the
HOUSE OF REPRESENTATIVES
THE TWENTY-FOURTH LEGISLATURE
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I support Senate Bill 2480 SD 2, HD1 which appropriates additional funds for the support and expansion of existing scholastic robotics programs.

Throughout the last two years as the Moanalua High School Robotics Club Advisor, I have been able to see the effects of robotics and project-based programs on students. I have been thoroughly impressed with how these programs have excited and motivated students to passionately pursue these activities while working long hours on top of formal schoolwork.

It should be duly noted that I DID NOT start the Robotics Club at Moanalua High School but was approached by students who wanted to compete in Botball during the 2006-2007 school year. I agreed to advise the club and took a somewhat distant role as the students took on the task to compete. After experiencing the competition and watching how motivated these students were, I continued to advise the club throughout this year, and was again amazed at the enthusiasm, passion, and desire to learn and compete. Because the students were willing to commit, the club was able to compete in four robotics competitions (often with multiple teams from our school because of high interest) this year. I personally have been sucked into the excitement giving up much of my personal time so the students would have the opportunity that THEY desired. These young men and women are learning such valuable skills that are often at the top of the list of what employers desire: commitment, perseverance, ability and willingness to learn new concepts, and ability to work with others and understand the benefits of collaboration.

Lastly, these project-based experiences provide a way to produce self-esteem and, more importantly, self-efficacy. Too many times have I seen students not attempt a task or accept a challenge because they lacked confidence in their abilities. Projects and opportunities like scholastic robotics programs provide a safe environment for students to truly experience real problem-solving. Additionally, they actually get to work with their teachers and other mentors and learn from them. This only happens because the students have a larger audience and venue to showcase what they accomplished. It is through this accomplishment that a true sense of

self-worth is developed (not from a "good try, Johnny"). When these students produce a robot (or a website or a video) that works, they gain the confidence in their abilities and are willing to take on and often seek more challenges.

Therefore, please consider a positive vote on Senate Bill 2480. Thank you.

March 18, 2008

Testimony of Candy Suiso and Searider Productions staff

Senate Bill 2480, S.D. 2, HD1
Relating to Technology Workforce and Development

Chair Chang, Vice Chair Bertram and Members of the Committee on Higher Education
Chair Shimbukuro, Vice Chair Rhoads and Members of the Committee on Human Services & Housing

We are writing this letter to express our strong and wholehearted support for Senate Bill SB 2480. We would first like to thank the committee members in advance for their time in considering our testimony.

As educators in the Searider Productions (SP) integrated journalism and digital media education program at Wai`anae High School, we feel compelled to describe in more detail why we believe the passage of SB 2480 is important for Hawaii.

Many of you are familiar with the success our program. We feel that we have validated the fact that digital media education programs can reach Hawaii's youth, even the most at-risk and disaffected, and prepare them for success in higher education and the workplace. We thank all of you who have helped us in the past with previous bills that have supported digital media education in Hawaii, and are again grateful that language has been added to this bill specifying support for after-school media programs.

One of the most important reasons for our success is our belief that all of our kids, like most humans, have an innate desire to tell stories. We harness that desire and involve students in projects incorporating the following activities:

- students must conduct research and capture their findings in writing, activities most similar to traditional academic disciplines such as Language Arts and Social Studies
- students must create final products using the latest digital media technologies with multimedia components including video, audio, web, computer-based design, animation, and motion graphics
- students must work in groups modeled on production-based teams like those found in print and broadcast journalism or creative media industries

We believe that by providing our youth these types of experiences, we are preparing them to become leaders in making Hawaii's diverse innovation-based economy a reality.

Every year we take our kids from Wai`anae to mainland conventions and competitions with kids from all over the US, many from schools in America's most affluent communities. This year, Hawaii was represented by Moanalua, Kapolei, Campbell, Aiea, Mililani, Maui, & Kamehameha (Maui campus) High Schools as well as Wai`anae Inter, Chiefess Kamakahele & Kawanakoa Middle Schools. Each year, our Hawaii students, many of whom are considered some of the most at-risk in the country, not only hold their own but often win. For our students, this is often an eye-opening, life-changing experience. They really come to believe that they are good at what they do and can perhaps make a career of it.

While our experience and successes have been with creative media production, we believe the same type of success can occur in engineering programs where students both explore problems and design solutions using technology, scientific inquiry, and mathematical analysis. In our case, we leverage the innate human desire to tell stories and share ideas with others. But we also believe that the innate human desire to solve problems and understand the world around us is just as powerful a motivator for success. We see many parallels between the successful technology-based engineering programs, such as robotics, and digital media production programs such as ours.

A true innovation economy allows a broad range of creative human endeavors to flourish, whether one is telling a story in a new way or coming up with an innovative solution to a vexing problem. And to build this diverse, strong economy for Hawaii in the 21st century, we must encourage our youth to leverage their creative interests, whether those interests involve creative media production, designing engineering solutions, or solving scientific problems.

We strongly support this bill because it encourages all students, no matter what their creative interest, to help create and become successful participants in Hawaii's innovation economy.

L. Candy Suiso
Program Director

Lorraine Gershun
Publications Adviser

Mike O'Connor
Digital Design Adviser

John Allen III
Video Production Adviser

March 18, 2008

Testimony of Lynne Sueoka and MoHS Productions staff

Senate Bill 2480, S.D. 2, HD1: Relating to Technology Workforce and Development

Chair Chang, Vice Chair Bertram and Members of the Committee on Higher Education

Chair Shimbukuro, Vice Chair Rhoads and Members of the Committee on Human Services & Housing

I am writing to express my strong and wholehearted support for SB 2480. My students and I would like to thank the committees for your time and consideration of our testimony.

I have been teaching classes in the media arts at Moanalua High School since 2001. Although our Media and Broadcast Journalism courses are part of the elective offerings of the school, much of the primary work and learning for the students continues well past the end of the school day and into the weekends and vacations.

Each year, for the past five years, we have taken student delegations from Moanalua to the Student Television Network national conventions. The investment for each delegate, in both time and finances, is quite daunting, yet, each year, most of my Broadcast Journalism students elect to participate.

In order that our student delegates gain the most from this experience, both students and teachers spend many hours after school, on weekends, and over our winter break, preparing to represent our school and our state on the national level. In the past years, we have held:

- after school and weekend delegate meetings to discuss goals and responsibilities and to organize the transport of video production equipment
- weekend sessions to simulate the onsite competitions
- overnight sessions (the last two years) to simulate the intense full staff marathon competition that is part of the STN pre-convention competition

Besides the time, student delegates and their families also take on the financial commitment of participation. This year, our total bill was approximately \$20,000, not including meals and incidentals. Most of the funds for our participation in this, the largest and most significant event each year for student video producers, is raised by the students themselves. And we are anticipating increasing costs as the convention moves to Florida in 2009.

Despite the tremendous effort and expense required of our young people and their families, each year, they say it's worth it:

I feel it was important to undertake the time, the expense, the stress of attending an STN convention because you will never in your life have an opportunity to be in a place as incredible as STN. –Shane Michael Tom, Junior, MoHS

All in all, the 2008 STN convention was probably the best 6 days I've ever experienced...It's a life learning event, you get to meet new friends, learn from the best broadcast experts, gain that confidence and that determination to want to do even better in the long run, you get the whole package at STN. –Meghan Cadaoas, Sophomore, MoHS

In the end, all of the time and money and tears spent and shed were all worth it. The competition has helped me prepare for future problems and has helped me learn new strategies to solve them. I've also learned that even though the stress does come with the job, that's exactly what broadcast journalism entails. The stress and the 200% quality work that follows. –Elyssea Diaz, Junior, MoHS

In addition to convention costs, there are the day to day costs of running a technology intensive program. Our DV100 cameras cost in excess of \$3,000 per camera and our editing systems, Final Cut Pro on Mac laptops and iMACs, run about \$3,000 with the software licenses. Professional grade lighting equipment, microphones, and tripods add to the bill. And the wear and tear on the equipment, handled by dozens of students as they shoot and edit their packages through the year, means that replacement costs add up, no matter how careful the use.

And in addition to time spent on convention preparation, our students invest many hours on all of the other tasks that are part of running the crew of a monthly feature news television series. Meeting their very real world deadlines, month after month, requires that students regularly conduct interviews, capture action footage, and edit their feature packages outside of the regular school day and work week. It is common to see broadcast teams headed out to cover their stories after the closing bell has rung, and we often schedule Saturday sessions to allow enough time for these student journalists to strive for industry standards in their work.

This past winter break, student teams came in on three separate vacation days, heading to the University of Hawaii, Moanalua and Salt Lake Elementary Schools, KITV, and the University Animal Hospital in Manoa, to cover their stories.

Our film students are completing their second year of training and mentoring students from Manoa Elementary in monthly after school sessions, planned and presented by the high school students themselves. The products of this after school program, as well as the work of the other students in our filmic and journalistic programs, comprise the Moanalua High School Film Fest, which showcases the work of our students for the families and community of Moanalua and Salt Lake.

Despite the money and time demanded by these programs our students and our media teachers invest, year after year, of their resources and their passion, to enable more and more of our students to value the “stress and the 200% quality work that follows.”

Thank you for considering our testimony for SB 2480...we wholeheartedly support it...for all of our students and the quality education that will follow!

Lynne Sueoka, Moanalua High School
2825 Ala Ilima Street
Honolulu, Hawaii
837-8455

Committees: Economic Development and Business Concerns
Tourism and Culture

Hearing Date: March 11, 2008

Testimony by: Broadcast Students & Alumni, Moanalua High School

Reflections on the Value of the Media Program by MoHS Alumni

Melissa Cadelina, c/o 2006

I am 18 years old. I graduated from MoHS in 2006. Now I am a freshman at Santa Barbara City College in California. I hope to get into the radiology technician program here in Santa Barbara by next fall.

After graduating even though I'm not in media production I look and view things in a different way when watching the news or a movie... One skill that I learned and I use now is not being afraid to approach different groups of people. I was really pushed out of my comfort zone when it came to having to talk to people who were not my peers. In college I am able to approach professors and other administrators without being afraid. I also learned the importance of meeting deadlines and being professional when it came towards work ethic and presentation. Today I still remember always rushing to meet deadlines and that you can't just slap things together and hope it will pass. It's also nice to know that if I have projects and we are freely to present it in any medium that we choose I always have the option of doing something different and creating a video or webpage instead of a poster.

Maureen Ditol, c/o 2005

I am 19 years old. I graduated from MoHS in 2005. I am a current sophomore at Occidental College in Los Angeles, CA. ... I officially declared my major: Diplomacy and World Affairs although I probably will change it to Economics or Sociology later.

The English-media integrated class was by far one of the most influential classes I've taken. Roll-in videos are visual essays, and understanding this concept has made think of writing differently. I present my evidence, whether it is an interview clip or a quote from a novel, and link it to my thesis by narration or analysis. Writing a video script was also a wonderful way to better my organization skills. Jumping too quickly from one idea to the next is very obvious while watching roll-ins so I had to learn how to do transitions. It is the same idea when I am transitioning from one paragraph to another in my college papers.

MeneMAC has taught me how to collect and understand data from a variety of databases. Because I spent four years looking through a lens to find a story, I learned how to observe and analyze things from different angles. I also have a lot of practice interviewing all types of personalities. It is pretty easy for me to strike up a conversation with anyone now because I know how to ask certain questions and make them feel at ease (something I had to learn if I wanted anyone to sit in front of a camera).

MeneMAC in general is very group oriented. As a producer, I have experience allocating job assignments to an entire staff. Managing time, equipment, and people are leadership skills that I can draw on in any situation beyond MeneMAC; I've actually used these experiences in job interviews. As a crew member, I'm used to taking orders from other students and working with different personalities/values. Although I was not always

successful with meeting deadlines, I at least have an idea of what it is like working under the pressure.

Reflections on the Value of Attending the Student Television Network Conventions

Fiona Munoz c/o 2006

Some of the moments that stand out the most happened during my competition. I participated in the anchoring competition, and I was pretty intimidated because it was a solo competition. Each time I thought about how the competition would be like, I thought to myself, *you're on your own*. The other competitors were dressed in their nice business suits, and I felt my stomach twist because I was the only person there wearing a sweatshirt, jeans, and a flower in my hair. I felt discouraged. Everyone there was beaming with confidence and looked so professional that I was almost to the point where I was going to withdraw from the competition. I went back to my hotel, changed into the suit I brought and when I saw my reflection in the glass doors, a huge wave of confidence swept over me. I said to myself, *So what if I look different from everyone else and so what if I speak moke and have a horrible stutter? I'm going to try, and that's all they are asking me to do*. And it wasn't that bad actually. My judges' comments were very positive, and they gave me high marks in areas I thought I did poorly.

What I learned...is that even though you may be a kid from a small town, you have to show the judges and everyone else there that you can blow the competition away.

Russell Vea c/o 2007

It's a great way to step up the production levels of broadcast journalism and/or film and it's an excellent way to get to know your classmates more.... The first year I went was the inaugural convention and I learned a lot in that one. Being a freshman, I learned a lot on how to film something and what shots are the best. I also learned various interview techniques that had helped me in Broadcast Journalism. The second trip was even more enlightening in that the sessions were even better. I learned about three-point-lighting and various ways to increase your production on set.

Mari Maeda c/o 2006

I'll never forget walking into the room filled with professional news reporter-look-alikes, complete with suits and all and feel intimidated and defeated already. However, with some time, I realized that I had the skill and *right* to be there and compete well, just as much as they did. When they showed faults in following simple directions, I gained confidence in myself....It took a rough competition in order for me to realize how important having this class was. I learned that all the simulations, lectures, and hours on end in the mene mac room not only improves your technique in your work, but also gives you the confidence to do so.

Chelsey Nabor c/o 2008

I think that STN was a valuable and important part of our broadcast learning because it strengthens our skills as Bjer's. It gives us ideas and teaches us about the real world and how to react with others around the world. It also gives us the opportunity to meet with pros that are in this field and we can be like a sponge and soak up all the information and teachings that they have for us. Just by going to STN I think that I have

gained a whole lot of skills that I can use for the future and if I go into this field I will be prepared for the challenges that may occur. The amount of learning that I got from this is worth much more than what it cost to go, it makes up for it and more.

Melissa Cantillo c/o 2007

Participating in this competition taught me to not be afraid to try something new, and not to be afraid of challenges that you may face, because as long as you know that you tried your best and gave it your all, you are still a winner. That's all that matters! Sure a trophy and a certificate would be nice, but the ultimate reward is having a renewed confidence and sense of accomplishment in yourself, and that is something no one can take away from you.

Committees: Economic Development and Business Concerns
Tourism and Culture

Hearing Date: March 11, 2008

Supporting Data: Activities and Achievements of Video Programs
Moanalua High School

HMSA Teen Video Awards

Kiinani Kala'au, Andrew Hignite

Alyssa Lugmao

Gerald Rojo II

Olelo Youth Xchange Video Contest

Spring, 2007: Sean Galera – Finalist, PSA

Spring, 2006: Gerald Rojo II – Finalist, PSA

Natasia Gascon, Jessica Bartolome – Winners, News Package

Spring, 2005: Marisa Kiethanom, Gerald Rojo II – Winners, PSA & News Package

Student Television Network Awards

Sports Challenge, 2005, 3rd Place Nationally

Spring Nationals, 2006

Documentary—Honorable Mention (Natasia Gascon, Russell Vea)

Monthly Show—3rd Place (Chelsea Acob, Chelsey Nabor, Sharlene Whang)

Fall Nationals, 2006

Monthly Show—Honorable Mention (Jessica Bartolome)

STN National Conventions

2004 Convention

Video Essay—Honorable Mention (Lorraine Pascual)

Music Video—Honorable Mention

2006 Convention

TV Graphics—First Place (Chase Hamano)

Video Essay—Honorable Mention (Gerald Rojo, II)

Collaborative Commercial—Third Place (Marisa Kiethanom)

2008 Convention

Collaborative Commercial—Third Place (Keith Champaco)

Music Video—Honorable Mention

Olelo Monthly Series

“Now Loading”—MoHS Video Magazine

2007 Western Region Award – Youth Production (Chelsea Acob, Chelsey Nabor, Sharlene Whang)

Hawaii Student Film Festival

2002 – 4 Finalist Awards

2003 – 2 Finalist Awards

Winner – High School Documentary

eCybermission Competition

2004 – 1 National Finalist
3 Regional Winners
2005 – 2 Regional Winners
2006 – 1 Regional Winners

“MiniMAC” Mentoring Project

During the school years 2006-2007 and 2007-2008, MoHS seniors have planned and implemented an eight month mentoring project with one of our feeder elementary schools. The high school students plan and conduct after school sessions on camera usage, tripod, shots, angles, storyboarding, editing: log and capturing, trimming, transitions, importing music, Live Type. The elementary students create videos for their school and also productions which are entered in the MoHS Film Fest.

Annual Moanalua Film Fest

In 2007, MoHS students planned, produced, and competed in the First Annual Moanalua Film Festival. This competition, to be held annually, provides a chance for students to share their unique perspective, their vision, of the world around them and to receive critiques from industry professionals to help them move from “class to world class.” The event is held in the evening and open to the students, their parents, and members of the Moanalua and Salt Lake community.

An added element is the actual design and production of the film festival itself. The senior project coordinators are in charge of the film fest: they set up the categories and criteria, contact and work with the media professionals who judge the event, and host the actual screenings and awards ceremony. The project engages their creative and management skills, involves them in authentic collaboration, decision making, and problem solving, and puts them in direct contact with industry professionals.

Monthly Video Magazine Series Airing on Olelo

Broadcast Journalism I & II students produce a monthly show featuring teen issues, which airs on Olelo Community Television on Sundays at 6:30 pm. From the series’ beginnings in 2005 through the current school year, the class has produced a total of thirty five video magazine shows, going through the production process that includes initial editorial conferencing to determine focus and packages, pre-and post-production of each package, host scripting and taping, and final line producing of the entire show.

Training and Community Video Production with Olelo

In 2006, Broadcast Journalism students also attended summer training at Olelo, certifying them for use of the field production equipment or “feather pack.” With this equipment, the crew taped and produced two segments that aired on Olelo, the MoHS Welcome Back Assembly and the MoHS Homecoming 2006 Assembly. Members of the broadcast journalism program also served as Olelo’s crew for field production for Hawaiian

Electric's Energy Expo on November 29, 2006 and were part of the crew for Olelo's coverage of the Legislature 2007, opening day events.

Student Television Network —Annual Convention and National Competitions

Since 2004, MoHS has sent 85 student delegates to the STN national conventions. These annual conventions bring together professionals from the broadcast industry and student broadcasters from all over the country in the nation's only scholastic convention designed just for video students and teachers. All members of the MoHS delegations participate in workshops and on site competitions. Preparation for delegate responsibilities and competitions is held entirely outside of school hours, usually on weekends or vacation days.

Video Production for MoHS PTSA Kina'ole Awards

Broadcast Journalism I & II students filmed and edit video documentaries for the MoHS PTSA Kina'ole Awards and fund raising dinner. This service learning project takes place almost entirely outside of school hours and often involves time during regular school vacations. It involves interviewing and creating documentaries for each of the three to four yearly honorees, videotaping the actual awards banquet, and putting together the documentary and PSA/commercial for that event. All videos are shared with the honorees and PTSA and aired on Olelo Community Television.

Broadcast Journalism Overnighter Training Sessions

Returning Broadcast Journalism students plan and carry out overnight training sessions for the new BJ students before the start of each school year. They start with community building activities to establish a sense of trust and collaboration among the new enrollees. After that, the returning students lead the new students through the entire magazine production process, producing a complete show within sixteen hours and replicating one of the onsite competitions for the STN national convention.

City and County of Honolulu Department of Environmental Services Documentary

During the 2006-2007 school year, sophomores in the Broadcast Journalism program produced a video for the City and County Department of Environmental Services. They shot and edited a package capturing the activities at the City's "Keiki Water Fest" Earth Month celebration on Saturday, April 28, 2007.

Video Production Services for the School

Students in the video program provided video production services outside of the regular school day, for the entire school community:

- Students film football games for the MoHS Athletic Department coaching staff
- Students produce slideshows for the Athletic Department banquets
- Students film the annual luau for the Business Department's Travel Industry Management Class
- Students produce videos and tape the proceedings of the annual Moanalua High School Professional Development Conference

Videoconferencing Project with Osaka, Japan, 2004-2007

Between fall, 2004 and spring, 2007, Moanalua media and fine arts students participated in six online videoconference projects, in collaboration with students from Osaka Gakuin University in Japan and with advanced art students from Molokai. Videoconferences took place after school, to accommodate the time difference with Japan.

MoHS Participation in MegaConference Junior, 2007

For the past five years, MoHS students have planned and carried out presentations for the international videoconference, MegaConference Junior. They practice before and after school with the Ohio University team that handles the videoconferencing technology for the participating schools from around the world. With the time zone difference, MoHS participants have come in as early as 1:00 am to catch the opening of the conference, setting up sleeping bags and snacks in the school library in order to be part of this global collaboration! MoHS has been the first and only Hawaii representative in this videoconference event for the five years of MegaConference Junior

**Testimony Presented Before the
Committee on Higher Education
and
Committee on Human Services & Housing**

March 18, 2008
2:00 p.m.
State Capitol, Conference Room 309

by

Judith Inouye
RET Teacher Coordinator

SB 2480, SD2 – RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT

Chair Rep. Jerry L. Chang, Vice Chair Rep. Joe Bertram III and Members of the Committee on Higher Education

Chair Rep. Maile S. L. Shimabukuro, Vice Chair Rep. Karl Rhoads, and Members of the Committee on Human Services and Housing

I appreciate the opportunity to provide testimony in strong support of SB 2480, SD2

I am Judith Inouye, recently retired Science / Math / Reading teacher from Kawanakoa Middle School. Throughout my teaching career, I witnessed first hand how middle school students learn and become motivated through meaningful curriculum. My last year of teaching (2004-2005 SY) was perhaps my most exciting year because of my participation in the RET project. Since my retirement in summer 2005, I have continued to participate in the RET project as a teacher coordinator. The curriculum generated through collaboration between classroom teachers and HCAC staff validates a strong focus in the STEM philosophy.

I would like to thank you for the passage of ACT 111. This legislation will allow HCAC to expand the program to additional schools and provide teachers needed classroom support. The curriculum generated through collaboration between classroom teachers and HCAC staff validates a strong focus in the STEM philosophy.

In the past three years some very effective project models have been developed. These models involve different organizational structures to provide students with meaningful curriculum. One model involved collaboration between a math and a science teacher to do field activities. Another model utilized the team approach where the core (math, science, language arts, and social studies) teachers met many times to develop and implement many standards based units. I believe that by empowering teachers with resources and support provided by ACT 111, more unique models will emerge.

In the various models, teachers used technology to teach fundamental science and math concepts as well as inquiry skills. It's a great way to motivate students! Rapid changes in technology make it imperative that teachers be provided with the means to be at the cutting edge.

Summer workshop seminars have been held to provide teachers with knowledge regarding research occurring in the various disciplines. These summer workshop seminars have also provided a very meaningful way by which teachers and HCAC staff could interact to share curriculum as well as to discuss problem areas.

For this school year 15 teachers on the Big Island, Kauai, and Oahu are impacting approximately 900 students. Participating students include regular education, special education, and the gifted & talented. At one school, five students were selected to receive special training from UH College of Engineering graduate students on the use of two kinds of PDAs (with and without sensors). They in turn will serve as peer teachers when they prepare for their water quality field study.

I believe that the RET Project can impact many more teachers and students. Please support SB 2480, SD2.

Thank you very much for the opportunity to provide testimony.

**Testimony Presented Before the
House Committees on Higher Education and Human Services & Housing**

March 18, 2008
2:00 p.m.
State Capitol, Conference Room 309

by

Jill S. Kobashigawa

Graduate Assistant, Hawaii Center for Advanced Communications
University of Hawai'i at Mānoa College of Engineering

SB2480, SD2, HD1 – RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT

Chair Jerry L. Chang, Vice Chair Joe Bertram, III and Members of the Committee on Higher Education

Chair Maile S. L. Shimabukuro, Vice Chair Karl Rhoads, and Members of the Committee on Human Services and Housing

My name is Jill S. Kobashigawa, Graduate Assistant of the Hawaii Center for Advanced Communications, University of Hawaii College of Engineering.

I appreciate the opportunity to provide testimony in strong support of SB2480, SD2, HD1 and the Legislature's commitment to STEM education and technology workforce development.

And these are the reasons why:

- I have been working with the teachers and students who participate in the RET program at Dole Middle School on Oahu for the past one and a half years assisting the students in their water quality field experiments.
- Additionally, I have helped teach the teachers and students the proper use of the electronic measurement probes and PDAs for data collection.
- From my interactions with the teachers, I have observed that they really express the drive to participate in the RET program and to implement the labs and the use of the PDAs, computers, and measurement probes into their curriculum.
- In working with the students, I have seen that they understand and appreciate the advantages and importance of having technology like the probes, PDAs, and computers to carry out their experiments and analyze their observations.

Thank you very much for the opportunity to share with you these thoughts and provide this supporting testimony.

**Testimony Presented Before the
House Committees on Higher Education and Human Services & Housing**

March 18, 2008

2:00 p.m.

State Capitol, Conference Room 309

by

Matthew Kilo Akama

Graduate Assistant, Hawaii Center for Advanced Communications
University of Hawai'i at Mānoa College of Engineering

SB2480, SD2, HD1 – RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT

Chair Jerry L. Chang, Vice Chair Joe Bertram, III and Members of the Committee on Higher Education

Chair Maile S. L. Shimabukuro, Vice Chair Karl Rhoads, and Members of the Committee on Human Services and Housing

My name is Matthew Kilo Akama, Graduate Assistant at the Hawaii Center for Advanced Communications, University of Hawaii College of Engineering.

I appreciate the opportunity to provide testimony in strong support of SB2480, SD2, HD1 and the Legislature's commitment to STEM education and technology workforce development.

And these are the reasons why:

- During my time working with the RET Program, I have visited several classrooms that participate in this program to assist the teachers with the use and setup of the computers and wireless networks.
- Myself, and a team of undergraduates, have worked on some curriculum and lab activities for the teachers to demonstrate electricity, magnetism, and the relationship between these two concepts called electromagnetics, and how antennas radiate electromagnetic waves. The teachers are always very impressed with the help we are willing to give them.
- Whenever a participating teacher has a question or concern, it has been my experience that they know they can call on us for help. This was reinforced during a visit I recently made to Kapaa Middle School, a current participating RET school. Kapaa Middle School was having trouble with their wireless set up. Myself, and one other Graduate Assistant flew to Kauai and fixed the problems they were having and demonstrated the lab presentations to the teachers. This is an excellent example of how RET Hawaii continues to support their teachers, once they are involved in the program.

Thank you very much for the opportunity to share with you these thoughts and provide this supporting testimony.

Dear Legislators;

My name is Blaine McCammack and I am a 1st year student at H. P. Baldwin High School. I would like to thank you for supporting the EAST programs in Hawaii.

I am a freshman and I have been given the task to maintain the school webpage. Project based classes like EAST allowed me to learn about responsibility and dedication. I also learned to take criticism and work collaboratively with others.

I was selected to attend this year's EAST Conference in Hot Springs, Arkansas. The experience gave me a chance to see what other schools outside of Hawaii are doing to help their community. Please support SB2480.

Thank you,

Blaine McCammack

Dear Legislators;

My name is Keonaona Ventura and I am a student at H. P. Baldwin High School. I would like to thank you for supporting the EAST programs in Hawaii.

I am in my second year of the program and I have learned a lot more in this type of program than I did in the traditional classroom setting. By being in a project based class I am able to share my ideas openly and be more assertive.

I organized a school coffee program for teachers to help build teacher morale. It was my way of creating a positive environment for everyone. When teachers are happy we are all happy.

Please support SB2480.

Thank you,

Keonaona Ventura

Dear Legislators,

Thank you for your support last year, but please continue to fund our program because EAST opens up many great opportunities, and helps you to get involved with whatever you're most passionate about. Please support us in 2008 - 2009.

Because of the program, I've been able to construct a robot for the FIRST competition being held in Oahu, HI in march. It's really fun and a really great experience.

Thank you,

Jess Walker
Student
Maui High EAST

Dear Legislators,

I'd like to thank you very much for funding the EAST Program. We really do appreciate it. Money provides us with repairs for our equipment, computers, and trips for us to learn more about the different programs we use here at EAST. In EAST, we are provided with all kinds of technology to help aid us in our projects that benefit the community. That's why I think the EAST Program is so important, we help and benefit our community.

Thank you,

Danny Rhey C. Acidera
Student
Maui High EAST

Dear Legislators,

My name is Edel Bolosan and I am a senior from Maui High School. I would just like to thank you for your support for last year. We really appreciate that you provided the funds for Project EAST. It would really mean a lot to us students who enjoy EAST if we would be able to get your support this year as well.

I really enjoy EAST, not because we make videos & work with different software, but because many students have benefited from this class in so many ways. Some of us entered competitions that had to do with technology, videos, and posters. This being my second year of EAST, I've learned so much. EAST has benefited me by showing me different things because we don't only do projects for ourselves or for a good grade but we help others. Also, I've learned a lot about many different software and how to use them. Since I am a college bound student, I can bring the things that I have learned or done in EAST with me rather than just forgetting about it. Thank you very much for your support.

Sincerely,

Edel Bolosan
Student
Maui High EAST

January 31, 2008

Dear Legislators,

Thank you all very much for your support and generosity for Project EAST. The bill that was approved from last year providing funding for the EAST program has helped the students including myself tremendously. It would be of great help if you could be a part of our learning experience in this program again this year. EAST has given me the opportunity to be in a Project Based learning environment which allowed me to get involved with my community. The purpose of our projects is to help different organizations and provide information to other people about important issues that are needed to be noticed. I have never thought I would gain so much in one class. I have learned to use many different software that help me to continuously help others in the community with whatever they want me to do. Learning about different people and what their story is, is really what makes me look forward to each day with a smile. With the EAST program you're part of something more than just a class full of students, but caring and loving individuals who come together to form a "family." Thank you very much for everything you've done.

Sincerely,

Kristy Inamasu
Student
Maui High EAST

Jeanel Acob
Cheifess Kamakahele Middle School
4431 Nuhou Street
Lihu'e, HI 96766
March 10, 2008

Hawaii State Legislator
In regards to: Senate Bill SB2480
Honolulu, Hawaii

Dear Hawaii State Legislator,

Thank you for your support in our EAST program and providing funds for our program. Without your support, EAST wouldn't be here right now. EAST is important to me because in EAST class we get to learn how to use new technology and what we can do with it for our projects. Also the projects we do in EAST help our community become a better one. What I learned in this class is how to use different technology like voice recorders and video cameras and also how to use programs like Adobe Photoshop and Soft Image to make animation and pictures for our class. Also in EAST I learned facts about what we can do to save our community and what's going on in our community too. This program helped me to know that teamwork gets the job done faster and helps you make new friends and get along with each other. We also did a project about drinking and driving which got me interested in helping people to stop this habit and how their friends can help them to stop it and keep them safe. I also learned a lot in this project. For example, while doing this project I learned that every 5 minutes someone dies from a car accident and that when passengers are inside a car with a drunk driver the passengers mostly die instead of the drunk driver. So from this project it could help the kind of people who are doing this. East will also help the students learn new things and that's why EAST should keep on continuing in the future. Once again thank you for supporting EAST.

Sincerely,
Jeanel Acob
East student of C.K.M.S

To Whom It May Concern,

Thank you for supporting our program last year and we would greatly appreciate your continued support through bill SB2480.

I strongly would like the continuing support of the EAST Programs statewide because of the many benefits that the program provides students. As a current EAST student I have been introduced into the application of community-based issues with the many software and resources that computers and the Internet provide. I also came to know various amounts new software that helped me in preparation for a possible career in the technology career pathway. Having the EAST program in Keaau High School not just benefited me but all of the students in the program. Thanks to EAST, we learned basic working skills. Besides our work with computers, EAST students learned about teamwork, critical thinking, quality work production, and community service. In conclusion, EAST programs should continue to operate in schools and continue providing the benefits that it gave to me.

Sincerely,

Rogemson Albano

EAST Student

*** This Email was sent by a student at Keaau High School in Hawaii Department of Education.

March 10, 2008

To Whom It May Concern,

Hello my name is Conor Almeroth and I am a student in the EAST program at Lahainaluna. I'm very happy that I've been a part of this program. And I would like to thank you for letting us continue this program in our schools.

EAST has taught me a lot of things and improved on a lot of my own skills. When I first entered this class I had no idea how to use many of the programs that we have in the lab. This class has taught me that our society is becoming engulfed in technology and that by knowing how to use a computer and that society will come to point were we all will need how to use a computer. I feel that programs like EAST should be offered at every school. I think that having the ability to use a computer is intelligence in itself. EAST has also helped me with skills I already have.

It has taught me about teamwork and people. I'll be the first to admit that I'm not the smartest guy or best looking but I've always enjoyed working with people. I've worked with a lot of different kinds of people in this class and I've learned how to work with them. It's nice seeing people of different people working together. I've seen the pretty girl work with the geeky guy, the weird one with the jock, or the anti-social with the social. I think that if we want to improve our society we need to work like this.

I run track and cross country and my coach always tells me that we are social dependent creatures and I always understood him but never believed him. Being in EAST truly showed me that. EAST isn't here to learn about computers but to help each other, help mankind. I think we need to come together and work as one rather than individuals. I think we can start this through the EAST program.

I would like to thank you again for helping us improve ourselves and our communities. I hope that you will keep supporting this program. I hope that soon every school will have this program. Thank you very much for reading this letter and I hope that this letter will show you why EAST is an important program.

From,
Conor Almeroth

To Whom It May Concern

Aloha Ka Kou, my name is Justin Barlahan I am a sophomore at King Kekaulike High School. I was in EAST for two years and am planning on taking EAST for the rest of my high school years. This year I got the chance to attend the 2008 National EAST conference all thanks to your support. At the conference I learned about the awesome projects students are doing in their EAST labs that help their community. Through these projects I got inspired to start a new project which is mapping out different emergency evacuation routes for our school. For example if a propane tank was to blow up I would have to figure out how far of a radius the explosion would be and then come up with a safe evacuation route. I will have to collaborate with the Maui Fire Department and other organizations to complete this project.

Thanks to EAST we got the chance to tour the University of Arkansas at Little Rock (UALR). This visit inspired me to work and study harder in high school if I want to take my education to the next level.

EAST changed my life a lot. I am now a self directed learner and if I get stuck on a problem I will sit there until I figure it out. EAST made me a better person and student and I just want to say *Mahalo Nui Loa* for your on going support.

Mahalo,
Justin Barlahan



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TESTIMONY BY FAX: 1 PAGE IN TOTAL

**REGARDING: SB 2480, SD2, HD1 RELATING TO
TECHNOLOGY WORKFORCE AND
DEVELOPMENT**

COMMITTEE: House Committee on Higher Education and
Committee on Human Services & Housing

HEARING DATE & TIME: Tuesday March 18, 2008, at
2:00 p.m.

HEARING LOCATION: Room #309 at the State Capitol

TESTIMONY SUBMITTED BY: Nelson Kanemoto,
President & CEO, Referentia Systems Incorporated

Aloha Chair Chang, Vice Chair Bertram, and Members of the Committee on Higher Education; Chair Shimabukuro, Vice Chair Rhoads, and Members of the Committee on Human Services & Housing;

I strongly support Senate Bill 2480 SD 2, HD1 which appropriates additional funds for the support and expansion of existing scholastic robotics programs. These programs are instrumental in building interest in Science, Technology, Engineering, and Math (STEM) disciplines among students at an early age. Without building that interest early, these students will be less likely to study and excel in STEM topics later in their education, and may never choose to pursue STEM related careers. Our economic and cultural sustainability requires ongoing innovation, and without a strong base of STEM education our workforce may fail to meet demands of the future workplace. I salute your efforts to promote robotics, Research Experiences for Teachers, and other programs that will increase student participation in STEM topics. I urge you to pass these measures and show that this state recognizes the importance of workforce development and STEM education.

Thank you for the opportunity to testify.

Sincerely,

Nelson Kanemoto
President & CEO
Referentia Systems