Testimony Presented Before the Committee on Economic Development and Taxation Committee on Education Committee on Human Services and Public Housing

February 2, 2008 9:00 a.m. State Capitol, Conference Room 224

by

Judith Inouye RET Teacher Coordinator

SB 2480 – RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT

Chair Carol Fukunaga, Chair Norman Sakamoto, Chair Suzanne Chun Oakland, Vice Chair Will Espero, Vice Chair Jill Tokuda, Vice Chair Les Ihara, Jr., and Members of the Committee on Economic Development and Taxation, Committee on Education, and Committee on Human Services and Public Housing

I appreciate the opportunity to provide testimony in strong support of SB2480

I am Judith Inouye, recently retired Science / Math / Reading teacher from Kawananakoa 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.

I believe that the RET Project can impact many more teachers and students. Please support SB2480.

Thank you very much for the opportunity to provide testimony.

Testimony By Jim Shon, Executive Director - HiTech Quest Before the Senate Committees on ECONOMIC DEVELOPMENT AND TAXATION, EDUCATION and HUMAN SERVICES AND PUBLIC HOUSING

RE SB 2480 RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT.

HiTech Quest Supports this bill.

For a number of years HiTech Quest has been involved in facilitating project-based learning in Hawaii's schools. (Please see attached sheet for a summary of our activities.) We have observed that the time and financial constraints on schools inhibits efforts to bring innovative programs to students that are often best delivered outside of the traditional school scheduled day.

Recently, the State of Hawaii embarked on an ambitious effort to promote Science, Technology, Engineering and Math (STEM) in our public schools and college campuses. The following table lists the specific items and their appropriations.

Act		
number	FY 08	FY 09
Act 111		
(SB 885)	\$1,402,230	\$1,402,230
	<u> </u>	
Act 111	\$287,750	\$287,750
Act 111	\$110,000	\$110,000
Act 111	\$110,000	\$110,000
Act 111	\$175,000	\$175,000
Act 111	\$175,000	\$175,000
Act 271	\$1,100,000	
Act 267	\$5,000,000	
Act 213	\$125,000	
Act 149	\$500,000	
Act 213	\$3,634,725	\$3,953,817
Act 213	\$830,000	\$830,000
Act 213	\$250,000	
	Act 111 (SB 885) Act 111 Act 111 Act 111 Act 111 Act 111 Act 271 Act 267 Act 213 Act 149 Act 213 Act 213	number FY 08 Act 111 \$1,402,230 Act 111 \$287,750 Act 111 \$110,000 Act 111 \$110,000 Act 111 \$175,000 Act 111 \$175,000 Act 271 \$1,100,000 Act 267 \$5,000,000 Act 213 \$125,000 Act 213 \$3,634,725 Act 213 \$830,000

In order for this to bear real fruit in the near term, there is the need for an agency to facilitate, coordinate, and broker the partnerships between schools, colleges, client organizations, and the business community. We have found that while continued growth in STEM-related school activities is expected, there may be many schools, teachers and students who do not have the contacts, time or knowledge of how to

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.



reach out and partner with local business and technology mentors and project sponsors.

HiTech Quest has found that the assistance of third party facilitators can be a welcome component to these initiatives. HiTech Quest is currently exploring opportunities to incorporate project based learning into the Senior Project, as well as to assist in the State's efforts to promote STEM learning. The following is the Board of Education policy for the senior project.

Board Policy 4540, High School Graduation Requirements and Commencement, establishes that a Board of Education Recognition Diploma shall be issued to students who meet the course and credit requirements for graduation and attain a cumulative grade point average (GPA) of 3.0 or higher. Completion of the Senior Project (one credit) as well as the Personal Transition Plan (0.5 credit) is included as part of this requirement. This is effective with the Graduating Class of 2010.

Overview

Successful completion of the Senior Project provides the student with the opportunity to demonstrate advanced proficiency in the attainment of the General Learner Outcomes (GLO). The Senior Project must demonstrate a "learning stretch" and be personally useful and relevant for that student. Career and life skills demonstrating workplace readiness will be showcased in this three-phase process.

The opportunity to complete a Senior Project should be made available to all students. Information about the Senior Project and its requirements should be shared with all students and parents/legal guardians.

Any additional resources that can enable our schools to add these innovative educational strategies to the school curriculum and to engage a larger percentage of students is to be commended.

A brief review of participation in the State level science fair provides some indication of the challenges that many schools may face in evaluating their ability to add STEM experiential learning programs to already overburdened efforts to comply with NCLB.



DOE High School Participation in the 2007 State Science Fair

Complex	Participating	Not
		Participating
Central	2	5
Hawaii	4	5
Honolulu	2	4
Kauai	2	1
Leeward	3	4
Maui	2	5
Windward	2	2
TOTALS	17	26

DOE Intermediate/Middle Participation

Complex	Participating	Not
		Participating
Central	2	3
Hawaii	4	4
Honolulu	0	9
Kauai	3	0
Leeward	2	4
Maui	4	2
Windward	1	3
TOTALS	16	25

We would suggest that one important strategy for limited funding is to focus on those schools that already have thematic academies to encourage their further development and enhancement. The DOE can provide you with this list, as it did to the Senate Committee on Education last year.

A recent report by the Hawaii Educational Policy Center on the teacher shortage includes a comprehensive list of hard to staff schools. These should also be considered in targeting your resources.

Thank you for the opportunity to testify. Jim Shon

See Attachment



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 Technologyfocused 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
- Opportunities for after school and vacation engagement

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.

I am writing to express my strong and wholehearted support for Senate Bill SB2480 relating to Technology Workforce and Development.

As Program Director of Searider Production's (SP) integrated journalism and digital media education program at Waianae High School, I feel compelled to describe in more detail why I believe the passage of SB2480 is important for Hawaii. By encouraging the development of digital media industries here in Hawaii, the legislature has an historic opportunity to make a positive and far-reaching impact on Hawaii's future, both in economic and educational terms.

1. Digital media education programs are effective at reaching Hawaii's youth, even the most at-risk and disaffected, and can prepare them for success in higher education and the workplace.

Through our experience and success at Searider Productions, we know that communications and media-based educational programs can create powerful and effective learning experiences for youth, even those who are most at-risk or those for whom success in traditional academic settings has been elusive. In our program, we have no entry requirements for kids and accept students from diverse academic backgrounds, ranging from those considered academically gifted to those with multiple special needs. We expect all of our students to succeed, and tell all of them that each and every one of them can go to college and be successful. One of the most satisfying validations of our program is when graduates who, when they originally started at SP had no college aspirations, come back after their college graduation and thank us for making higher education a reality for them.

2. Expanding Existing Creative/Digital Media Programs will strengthen K-12 education in Hawaii.

Never before in my combined five decades of working in the Hawaii DOE have I seen such determined outreach efforts by my digital media colleagues from other schools throughout the state. Many of these teachers have visited our program personally, again offering to work in partnership to ensure a seamless pipeline of digital media transition from high school to college.

I am convinced that SB2480, can help support and strengthen the education of all of Hawaii's kids, from K-12 and beyond. I really mean this.

I strongly believe that today's students in Hawaii schools and colleges will lead Hawaii into a prosperous 21st century, where more of our kids can pursue lucrative careers in digital media while staying here in Hawaii where they will be able to purchase homes and raise happy, healthy families.

By passing SB2480 to include expanding Creative/Digital Media, you can help create a thriving, world-class digital media industry.

Again, my colleagues and I would like to thank all of the committee members for considering this testimony.

L. Candy Suiso Program Director Searider Productions Wai`anae HIgh School L. Candy Suiso
Program Director
Wai`anae High School - Searider Productions

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To Whom it may concern:

Last year, a friend and i had a brilliant idea. We decided we had to make a movie. The plot for the movie was genius. It was about a dart player who wasnt the most academically based student in college and was in danger of losing his scholarship. Long story short, he finds a way to get back on the dart team and fights his way to the top. Its a comedy and i was to be the leading role of billy "bullseye" billingsworth.

Now before we even started we had a problem. We had no video camera and no home base to cut and edit our movie. After contemplating on whether to continue our quest on making a movie we were told by classmates about a wonderful class called EAST. In that class we could cut and shoot our movie as class work! We quickly signed up for that class, but had to wait till the next year of highschool to have it.

Finally the year came and we began working on our dream film. I have learned alot on how to cut movies and shoot movies, but thats not all i learned. I learned how to use photoshop, media flash player and many other things.

However, we did not have enough computers and software to do all that i wanted to do. The computers were terribly slow and I couldnt accomplish all that i wanted too.

Thanks for supporting our program and we would greatly appreciate your continued support through bill SB2480. Now kids next year can accomplish what i have dreamed.

Sincerly, Keane Carlin To Whom It May Concern:

Thanks for supporting our program last year and we would greatly appreciate your continued support through bill SBZ480

The EAST program has benefited me by having me learn more about technology. I'm trying to learn the GIS software on my own. I have only one computer to work on and I also need software to teach me about the GIS program. I know I have to attend a class to learn about the GIS program, but most of the programs and class are off the Hawaiian Island. I really don't have the money to go all the way to the mainland to learn about the GIS program. I really wish there was a class that I could attend on the Big Island of Hawaii. Hopefully a teaching program will be offered on the Big Island soon. The fact that us in Hawaii have to travel all the way up to the mainland to learn a program is disabling us in Hawaii on our education on technology.

Sincerely, Nicole Hayashida To Whom It May Concern,

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

The EAST program has benefit me in learning about different opportunities about technology. I'm trying to learn how to do animations, graphic designs with slide shows. This program had thought me how to use this type of technology. Like the illustrators, G.P.S., slide shows, etc. I want to be able to learn more at HCC. I don't want to go to the mainland to learn this because where I'm going to get the money. This program will be good for students who are interested in doing this, as their career for Hawaii students, Hopefully this program will teach me and other students what this kind of this program can do.

Sincerely, Nathan Palakiko To whom it may concern,

Thanks for supporting our program last year, and we would appreciate your continued support through bill SB22480.

I am a junior attendee at Kea'au High School and this is my second year in the EAST program. I have learned how to create flash documents as well as pictures in photoshop. I've applied myself with my work and I have made projects that benefit the community. All of my flash documents are for the community and they teach people ways to help the environment. We were able to aquire some hogwire and make recycle bins for our campus and since then we have seen much improvement in the pollution of the school grounds. This program that we have going is one of the best things that has happened to me because now I would like to pursue a career in computer technology.

Sincerely, Patrick Understeller



DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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Statement of

THEODORE E. LIU Director

Department of Business, Economic Development, and Tourism

before the

SENATE COMMITTEES ON ECONOMIC DEVELOPMENT & TAXATION, EDUCATION, AND HUMAN SERVICES AND PUBLIC HOUSING

Saturday, February 2, 2008 9:00 a.m. State Capitol, Conference Room 229

in consideration of SB 2480

RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT.

Chair Fukunaga, Vice Chair Espero, and Members of the Senate Committee on Economic Development & Taxation, Chair Sakamoto, Vice Chair Tokuda and Members of the Senate Committee on Education, and Chair Chun Oakland, Vice Chair Ihara, and Members of the Senate Committee on Human Services and Public Housing.

The Department of Business, Economic Development & Tourism supports the concept of SB 2480, 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. As you know, many of the measures in Act 111 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. 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.

Thank you for the opportunity to offer these comments.

LATE TESTIMONY

UNIVERSITY OF HAWAI'I SYSTEM LEGISLATIVE TESTIMONY



SB 2480 Relating to Technology Workforce and Development

Testimony Presented Before the
Senate Committee on Economic Development and Taxation
Senate Committee on Education
Senate Committee on Human Services and Public Housing

February 2, 2008 at 9:00 a.m.

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

Testimony Presented Before the Senate Committee on Economic Development and Taxation Senate Committee on Education Senate Committee on Human Services and Public Housing

Saturday, February 2, 2008 9:00 a.m. Conference Room 229

by Virginia S. Hinshaw, Chancellor

Presented by
Peter Crouch, Dean
College of Engineering
University of Hawai'i at Mānoa

SB 2480 - Relating to Technology Workforce and Development

Chair Fukunaga, Chair Sakamoto, Chair Suzanne Chun Oakland, and Members of the Committees:

Thank you for the opportunity to testify. The University of Hawai'i at Mānoa supports the intent of SB 2480, which would expand the initial commitment to supporting science, technology, and education that were appropriated in ACT 111, Session Laws of Hawai'i 2007. We don't yet have a complete understanding of the impact of other provisions of the bill, or what the financial sources are, but we welcome the opportunity to explore these opportunities as the objectives become clearer.

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 hundreds of teachers and students with state-of-the-art wireless

communication tools and lab content. 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 Hawaii 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.



Testimony Presented Before the Committee on Economic Development and Taxation Committee on Education Committee on Human Services and Public Housing

February 2, 2008, 9:00 a.m. State Capitol, Conference Room 224

by Magdy F. Iskander

Professor and Director, Hawaii Center for Advanced Communications
College of Engineering
University of Hawai'i at Mānoa

SB 2480 - RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT

Chair Carol Fukunaga, Chair Norman Sakamoto, Chair Suzanne Chun Oakland, Vice Chair Will Espero, Vice Chair Jill Tokuda, Vice Chair Les Ihara, Jr., and Members of the Committee on Economic Development and Taxation, Committee on Education, and Committee on Human Services and Public Housing

My name is Magdy Iskander, Professor and Director of the Hawaii Center for Advanced Communications of the University of Hawaii, College of Engineering.

I appreciate the opportunity to provide testimony in support of SB2480 And here are the reasons why:

- The Hawaii Center for Advanced Communications is grateful for the Administration and legislative vision which culminated in the ratification of Act 111 in support of STEM education in Hawaii's schools. I am pleased to share with you the positive results that resulted, thus far, from this RET program.
- ➤ Research Experience for Teachers Middle Schools, originally supported by seed funding from the National Science Foundation, provides public middle school teachers and students with technical support and collaborative opportunities with UH scientists on the cutting edge of technological advances. When the Hawaii Center for Advanced Communications started working on the RET part of ACT 111, it was clear that this great vision would have a long lasting impact on our kids, and on preparing the future work force in our State. It has powerful educational value, and as a proponent of STEM principles will have significant positive impact on the State's economic development by emphasizing interest in STEM areas of study, and bringing highly qualified individuals into Hawaii's technological workforce.
- Our goal is to achieve lasting change on a statewide level. Though still in its infant stages of development, the success of the RET initiative is manifest, and is already bringing much deserved recognition to the State of Hawaii. NSF is recognizing the vision of the State's *Innovation in Education Initiative* as one of the "Best Practices" in the nation, An article to this effect has been written and

will be published on the Internet and in the National Science Foundation's congressional report. The Hawaii Center for Advanced Communications is pleased to participate from the ground level of this program which will bring esteem, independence, and sustainability to our state.

- > We urge you to support the bill, and help us see this effort through to fruition.
- > Thank you very much for this opportunity to provide testimony.

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

I have been teaching integrated media and Broadcast Journalism in the MeneMAC learning center at Moanalua High School since 2001. Besides the integrated media core (English, Social Studies, and Science), our learning center offers electives in Digital Media, TV Production, Film as Art, and Broadcast Journalism I and II. Our students strive for excellence in all their projects and have been recognized with awards in various competitions, including the Olelo Youth XChange, HMSA Teen Video Awards, Western Regional WAVE Awards, and the Student Television Network awards for news features, monthly show, video essays, commercials, monthly show, and TV graphics. These opportunities have been funded through the learning center, CTE, and grant writing.

One of our major expenditures each year is the Student Television Network annual convention. 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. It is a huge financial burden for these young people and their families but, 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

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

STN was worth the time, money, pressure and stress. Going is the best thing that you can do. You will definitely learn a lot, whether it's from lighting to editing or from writing to scripting, or even getting to know your classmates as family.

—Melissa

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

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, 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, mean that replacement costs add up, no matter how careful the use.

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 introducing SB2480...we wholeheartedly support it...for all of our students and the quality education that will follow!

Lynne Sueoka, MeneMAC Learning Center, Moanalua HS 2825 Ala Ilima Street Honolulu, Hawaii 837-8455