APR 30 2009

EXECUTIVE CHAMBERS
HONOLULU

LINDA LINGLE
GOVERNOR

April 29, 2009

The Honorable Colleen Hanabusa, President
and Members of the Senate
Twenty-Fifth State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

Dear Madam President and Members of the Senate:

For your information and consideration, I am transmitting herewith two (2) copies of the report "Efforts to Increased the Number of High-Skilled Jobs in Targeted Industry Clusters" (Act 148, SLH 2003). Pursuant to Act 231, SLH 2001, I am also informing you that the report may be viewed electronically at http://www.hawaii.gov/dbedt.

Sincerely,

LINDA LINGLE

Enclosure

c: Senator Donna Mercado Kim, Chair
Committee on Ways and Means

Senator Carol Fukunaga, Chair
Committee on Economic Development and Technology

2008 Annual Report to the Legislature

On

Efforts to Increase the Number of High-Skilled Jobs in Targeted Industry Clusters

Pursuant to HRS 201-16
(Act 148 SLH 2003)

Department of Business Economic Development
& Tourism

February 2009

HRS 201-16 requires that "*The department of business, economic development, and tourism shall submit an annual report to the legislature on the department's efforts to increase the number of high-skilled jobs in targeted industry clusters consistent with the efforts of the workforce development council.*" The Department is pleased to submit its 2008 report under this provision.

1. DBEDT and Workforce Development

The Department recognizes that a key foundation of a strong economy is human capital. This necessitates maintaining and building a strong workforce as a key factor in diversifying and stimulating new and high-valued industries.

Throughout 2007 - 2008, DBEDT worked closely with the education and training community, the Department of Labor & Industrial Relations (DLIR) and the Workforce Development Council (WDC) (in which the Director of DBEDT is an ex-officio member) to achieve an alignment of education, workforce and economic development goals. These efforts include supporting STEM ("Science, Technology, Engineering and Math) educational programs in schools and kick- starting programs under the Innovation Initiative. At the Federal level, the National Governor's Association and other Federal Agencies are advocating that states align these basic keystones to produce strong economic foundations.

2. The Workforce Development Council (WDC)

Over the last several years, DBEDT, DLIR and the WDC have created joint agency programs in an effort to align workforce and economic development.

In 2006, 2007 and 2008, DBEDT coordinated with the WDC on several efforts to better identify the state's emerging workforce needs and provide for a higher- skilled workforce to meet the needs of emerging industries. DBEDT helped organize and participated in the first- ever WDC Workforce Development Forum in September 2006 and assisted the WDC with the 2008 WDC Workforce Development Forum. The Department continued initiatives begun in 2004 to assist knowledge-based industries in attracting skilled workers and expanding opportunities for Hawaii's overseas *kama'aina* to return. In addition, the Department spearheaded development of the Governor's Innovation Initiative, which proposed more than 20 measures to shift Hawaii's economy from land-based economic development to innovation industries.

WDC Priorities

In 2004 to 2005, the National Governors Association (NGA) sponsored the project, "Pathways to Advancement" which assessed Hawaii's workforce development challenges and identified a number of priorities to remedy problems. A presentation of that assessment and recommendations can be found at:
http://hawaii.gov/labor/wdc/pdf/Hawaii_Critical_Workforce_Issues_Jan_07.pdf.

Subsequently, DBEDT has worked with the WDC to monitor workforce conditions and establish priorities for WDC actions. As reported in its *2008 Report to the Governor*, the WDC focused on these priority areas in 2008:

1. Improve the delivery of timely education and training to prepare current and future workers for high-skilled occupations.
2. Focus more attention on upgrading the skills of incumbent workers.
3. Pursue efforts to expand the labor pool in the face of a long-term labor shortage as the baby boom generation retires.

2008 WDC Forum

The WDC held its second forum on January 15, 2008. This forum focused on the re-imagining and re-tooling of the workforce and training system to meet the skills of a competitive economy. This would build common ground and awareness of individual systems and the needs and roles of various stakeholders in the workforce development community. The overall goal was to introduce the community to the idea of changing the system and point out best practices of other states:

- Georgia – Certified Work- Ready Community Program.
- Washington State – I-Best program (integrated basic education and skills training).
- Kentucky – (utilizing the community and technical college system to create career pathways programs to grow local industry).
- Massachusetts – Extended Care Career Ladder Initiative (designed to meet the long-term care industry needs, employer programs to develop career pathways and related training with local community colleges).
- Pennsylvania-- industry partnerships (working with local industries to train entry-level and incumbent workers).

As a result of the WDC Forum, a new focus was placed on the alignment of policies and restructuring the Hawaii workforce system.

Committee work

Staff from DBEDT actively participated in the WDC committees:

State Workforce Strategic Plan

During the 2008 year, DBEDT actively participated in the WDC to prepare the Council for the development of the five-year State Workforce Strategic Plan. The process involved a detailed look at workforce gaps, past recommendations, current and projected workforce needs, and the coordination of agencies and private- sector members to provide guidance to the plan. The background, plan focus and structure are to be presented to the Council for approval in early 2009. The objective is to develop a five-year plan to deliver to the Governor and the Legislature. DBEDT staff from its Research and Economic Analysis Division (READ) provided data support to this effort.

Evaluation team for WIA county reports

DBEDT participated in the evaluation and approval of County reports submitted by local area

Workforce Investment Boards for the use of WIA funding during the FY 2007 year. The reports were evaluated as to the results and achievement of WDC priority areas.

Cooperative Grant applications

During the 2007- 2008 year, DBEDT and the WDC started working together on applying for several grant programs offered by the National Governors Association Centers for Best Practices – State Sector Strategies in an attempt to develop alternative sources of assistance for workforce development. While these applications were not successful, the two organizations gained a better understanding of some of the inner dynamics of the workforce system in Hawaii, and developed a closer working relationship among staff.

WIRED III Grant

In early 2007, DBEDT, the WDC and the DLIR spearheaded development of the State's proposal to the U.S. Department of Labor for funding under the third phase of the grant: "Workforce Initiatives for Regional Economic Development" (WIRED-III). Under this grant, 13 regions in the country were awarded $5 million for three years to fund innovative workforce development projects in support of regional economic transformation. Hawaii's proposal focused on defense/dual-use activity as a catalyst for regional transformation. Unfortunately, the proposal was unsuccessful.

NGA Policy Academy for State Sector Strategy

In a joint effort by the DLIR, DBEDT and WDC in April 2008, the workgroup was again unsuccessful in applying to the NGA Policy Academy for State Sector Strategy for program support. It was rejected, in part, because it lacked an overall workforce development strategy. The application focused on the Tourism Workforce Development Plan, but in its presentation, it was too broad and did not offer sufficient focus and detail to identify specific-sector strategy goals where Federal assistance would be needed. In addition, it did not focus on both high-wage job opportunities and address the needs of low-skilled, low-income workers.

Technology-Based Learning Initiative Grant

This U.S. Department of Labor, Employment and Training Administration grant was applied for in cooperation with the WDC, DBEDT and the University of Hawaii – School of Nursing. The State proposed to utilize a DOLETA grant for technology-based learning (TBL) to address the severe nursing shortage due to the increased demand for registered nurses, expansion of health care, aging population and pending retirement of the present nursing workforce. Across the nation, the field of nursing has reached a "crisis" situation where the demand for nurses in hospitals, clinics and doctors' offices far exceeds the number of nurses produced by colleges and universities. It is estimated that by 2020, the United States will be short one million nurses, one-third of the needed workforce.

An important component of the grant proposal was partnering with e-Colorado to utilize its portal to alleviate this shortage by enhancing distance learning, producing online courses, and connecting new and incumbent workers with job opportunities. The eventual goal was that

Hawaii would establish its own "e-Hawaii" portal that would not only service the state, but link with other states across the nation.

Unfortunately, this grant was not awarded to the State. This will not deter the partnership team from applying for future grants.

3. Activities with the Department of Labor and Industrial Relations (DLIR)

Staff at DBEDT have also participated with the DLIR and local area WIBs to go to national conferences to gather information on best practices for workforce development.

National Governors Association – Workforce Development Policy Forum December 10 -12, 2007, Washington DC.

Staff attended the 2007 NGA Workforce Development Policy Forum along with representatives from DLIR, DBEDT and the UH Community Colleges. The Forum was sponsored by the NGA Center for Best Practices, in cooperation with the Corporation for a Skilled Workforce (CSW). It presented an opportunity to listen to, and interact with experts in the workforce development field who addressed the theme of ***Competing in an Innovation Economy.*** Plenary and break-out discussion sessions examined the realities of economic, global, demographic and structural trends and the effect on the nation's workforce and employers. Many of the highlighted states share similar problems with Hawaii in regard to workforce training needs and have shown remarkable progress with programs designed to align workforce development with education and economic development. We are hopeful that these ideas can be applied in related areas to help reshape Hawaii's economy. Some of the notable speakers from this Forum were invited to speak at the Workforce Development Council forum held on January 15, 2008.

In addition to the Forum activities, meetings were held with NGA officials, Hawaii's congressional delegation and representatives of the National Science Foundation.

Workforce Innovations Conference – July 15-17 2008, New Orleans, LA

DBEDT attended (with the DLIR and local area WIBs) in the Innovations Workforce conference held in New Orleans June 2008. This conference helped generate valuable networking with other states, Virginia and Colorado, which have provided assistance and partnerships in recent efforts to launch workforce reform efforts in the state and in an application for a USDOL TBL grant as part of a state network. The conference provided the impetus and information to launch some innovative programs, such as Shared Network Access Points and Skills Panels development. DBEDT and the DLIR will be working to develop these program efforts. Also, a networking partnership was developed with the State of Colorado to apply for a USDOL / ETA grant program during 2008.

Strategic and Policy Planning

DBEDT assisted the DLIR in drafting policy and activity plans for the next biennium to align economic development priorities, especially In the areas of Green Industry development. DBEDT initiated the process of establishing industry, occupation and job baseline information,

to define this cluster of industries and formulate an information-gathering process that will enable the agencies to track and measure progress.

Workforce Restructuring

As a result of contacts made at several NGA-sponsored meetings in Washington, DC, DBEDT initiated discussions with the State of Virginia to explore and examine the process they went through to initiate and implement workforce system reforms. Discussions were held with Kathy Thompson from Governor Kane's office. The effort sparked interest from the Governor's Policy Office to look more closely at more efficient ways to utilize and coordinate Federal funding coming into the state for education and workforce development.

4. STEM and Other Programs to Stimulate Science and Technology

The WDC and DBEDT recognize the important foundation that STEM education provides for a skilled workforce. Over the last year, DBEDT has worked closely with agencies and organizations, including the Department of Labor and Industrial Relations (DLIR), the Department of Human Services (DHS); County Workforce Investment Boards (WIB); the Workforce Development Council (WDC); the Department of Education (DOE); and the University of Hawaii System. From this interaction, it is evident that even more interaction among entities in the area of policy and planning that complements and leverages workforce / education programs needs to be encouraged. The current economic situation emphasizes the importance of collaboration as resources shrink.

We have come to recognize that with STEM education, there are skillsets that are universally-needed in all occupations and really mean: "Skills That Excite, Empower and Employ Me."

To build this foundation, the Hawaii State Legislature, State agencies and educational institutions have provided support for programs that are promoting STEM skills to students. Programs like these help to develop critical thinking skills in all of Hawaii's students. But it is not only about building STEM skills, it is building and encouraging a generation of people to think globally and to develop collaborative networks around the world. STEM has garnered widespread support from all parts of the government, community, business, legislature, and educational institutions. The combined effort has drawn upon resources from various sources: the Legislature (Act 111), DBEDT, DLIR, WDC, DHS (TANF), National Science Foundation (EPSCoRE), National Science Board, et al.

School Programs

These programs have involved thousands of students throughout the public and private school systems (K-12) and the college system. To mention a few:

- FIRST Robotics
- VEX Robotics
- Underwater Robotics
- Botball
- Lego League

- Micro Robotics
- HiEST Academies (Hawaii Excellence in Science and Technology)
- Business internships development
- STEM teacher training
- Music Enterprise Learning Experience program
- Academy for Creative Media
- STEM Leadership Initiative
- Project EAST
- Space Camp
- Creativity Academies

National Science Foundation Day

DBEDT initiated contact with various officials from the National Science Foundation during 2008. This led to Governor Lingle's meeting with Dr. Ardent Bement, Director of the NSF in early 2008, and an agreement to host NSF day in Hawaii. In coordination with the Governor's office, DBEDT co-hosted, with the Hawaii Technology Development Corporation, the University of Hawaii, and the Community College system, the National Science Foundation (NSF) Day in a series of workshops held on December 3, 4, & 5, 2008, at Maui Community College, Honolulu Community College and the Hawaii Convention Center.

Hawaii is one of six states the NSF selected to host an NSF Day in 2008. The NSF is charged with keeping our nation's science and engineering enterprise healthy, dynamic, and relevant and with advancing science, mathematics, engineering, and technology education at all levels from pre-K through postdoctoral. In addition, NSF plays an important role as a supporter of research, technology transfer and education programs in Hawaii, as well as supporting programs that have a focus on workforce/STEM education training and development directed at students and faculty. It is hoped that events, such as this, will stimulate new interest in NSF programs at institutions that have not been among our traditional customers, as well as at premier research institutions.

Supporting Human Capital Development Through EPSCoR Programs

- *The National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research.*
- *(EPSCoR) in Hawaii promotes the development of science and technology resources throughout the University of Hawaii (UH) System and the State.*

In 2008, DBEDT continued its partnership with the University of Hawaii (UH) in support of workforce development projects statewide. In 2001, the University of Hawaii became an EPSCoR state and received its first 3-year Research Infrastructure Improvement (RII) grant focused on the fields of Ecological and Evolutionary Genetics, Ecosystem Responses to Environmental Change, and Cyber-infrastructure for Environmental Research and Education. The State, through DBEDT, provided matching funds for the second RII to work cooperatively with UH to enhance the economic development role of the University through increased interaction between it and industry and to help build a STEM workforce to meet growing demand.

As the project passes the midpoint of its second RII grant, it continues to emphasize collaboration among and across disciplinary and institutional boundaries. Faculty hired during the first project are building research programs and collaborating with faculty already at UH. Post-doctoral fellows are assisting with this, augmenting research capacity within focal areas. Technicians and equipment at shared-use core facilities continue to contribute to project goals. Hawaii EPSCoR staff is working closely with DBEDT to bring outreach, education, and human resource development into the mainstream of the research culture of the state. The highlights of NSF Hawaii EPSCoR program 2007-2008 appear below.

EPSCoRE support of UH Research

- The UH System experienced an overall increase in the amount of funding awarded from $180.9 million in 2000 to $355.8 million in 2007.
- UH received most of its Federal funding from DOD, NSF and NIH ($105.7 million in 2007).
- A dramatic increase in funding at UH Hilo ($3.2 million to $18.0 million) and UH Community Colleges ($8.1 million to $22.3 million).
- EPSCoR - associated faculty increased research funding from $1.6 million to $25.2 million from 2000 to -2006.

In 2007, these faculty members were awarded $13.4 million in funding for a total of 40 awards to date, with 31 proposals under review.

Research Programs

- Focal Areas of Evolutionary and Ecological Genetics (EEG), Ecosystem Responses to Environmental Change (EREC) and Cyber-infrastructure for Environmental Research and Education (CERE):Continued to operate core genetics, analytical, GIS/remote sensing and field station facilities at UH Manoa and UH Hilo with laboratory managers at each facility for sustained operations.
- Continued to enhance the environmental monitoring capacity in Hawaii.
- Established the Hawaii Permanent Plot Network in association with the US Forest Service's Hawaii Experimental Tropical Forest.
- Engaged four post-doctoral researchers in EEG and EREC to enhance collaboration among faculty throughout the UH System.
- Continued the Research Enhancement Activities Program (REAP) to promote UH System- wide collaborative research programs.

Outreach, Education and Human Resources Development (OEHRD) programs

- The OEHRD program continues to expand through partnerships with other education and workforce development programs.
- EPSCoR partnered with the LSAMP and the PIPES programs to enhance STEM education throughout Hawaii and the Pacific.
- The UH and DBEDT supported the *Akamai* Internship Program that provides high tech workforce training for students at Maui, Hawaii and Kauai Community Colleges.

EPSCoR State Administration

EPSCoR Committee Co-Chairs: Dr. Rose Tseng, UH Hilo Chancellor; Co-Chair to be elected in March 2008 at the next Statewide Committee meeting. Principal Investigator: Dr. James Gaines; UH System Interim Vice President for Research Co-Project Directors, Dr. Donald Price and Dr. Kenneth Kaneshiro; UH System Managing Director, Mr. Kevin Kelly; Project Administrator, Ms. Terrilani Chong.

The National Science Board

In June, 2007, the State of Hawaii and the National Science Foundations' governing board, the National Science Board, entered a cooperative partnership to develop programs and initiatives as part of the Lingle-Aiona Administration's Hawai'i Innovation Initiative. The partnership is designed to explore opportunities to promote (STEM education programs in Hawaii's schools, universities and community colleges.

5. ACT 111

STEM programs and initiatives have received support from the Legislature from funding provided through Act 111 during 2008. DBEDT strongly supported the passage of ACT 111. In 2007, the State Legislature passed SB 885 SD2 HD3 CD1 which, under Act 111, appropriated funding to the Department of Education to collaborate on the establishment of a Hawaii excellence through science and technology academy pilot program. The desired outcome of Act 111 was: "...to increase the readiness and motivation of Hawaii high school graduates to pursue post-secondary training and career options in science, technology, engineering, and mathematics disciplines." The purpose of this Act was to:

- Support and enhance the career and technical education efforts of both the Department of Education and University of Hawaii system, as well as other public and private business efforts, to prepare Hawaii's students for further education and employment;
- Broaden the agriculture education program of the Department of Education to offer educational opportunities in the fields of farming, diversified agriculture, landscaping, and related fields, such as market development and science and technology, and require its coordination with culinary arts programs;
- Provide contextual learning experiences, such as participation in robotics;
- Make an array of experiential learning opportunities available to students to afford them experience in the working world, improve their career choices, and provide opportunities for local employers to network with the future workforce; and
- Improve the quality of teaching in STEM at Hawaii's public schools by providing professional development opportunities for practicing teachers, as well as attracting to the teaching profession highly qualified individuals who hold degrees in these subject areas.

Appropriated for the FY 2007-2008 was a sum of $1,402,230 to establish the Fostering

Inspiration and Relevance through Science and Technology (FIRST) pre-academy program, including nine full-time equivalent (9.00 FTE) positions in the University Of Hawaii College Of Engineering. Funding was allocated as follows:

- $314,925 for fiscal year 2007-2008 and the same sum for fiscal year 2008-2009 for the robotics and problem-based, applied learning program; and
- $734,805 for fiscal year 2007-2008 and the same sum for fiscal year 2008-2009 for the Research Experiences for Teachers program.

According to the 2008 report from the University of Hawaii on Act 111 activities, the formation of Kauai County and private- sector partnerships initiated planning discussions among Kauai Community College, the Kauai Complex Area superintendent and high school principals, Chief among the current activities are the products of the Kauai Team Tech effort. In June, 2003, the late Mayor Bryan Baptiste convened a group of community people representing the high tech industry, including PMRF and its contractors; K-12 education; and higher education and government, to form Team Tech. From that initial meeting, the group developed the Adopt-A-School plan and the Kauai Economic Development Board (KEDB), one of the major partners in the effort, established the Aloha 'Ike Fund to support innovations in learning K-12. This fund helped establish the EAST video production capability at Chiefess Kamakahelei Middle School and supported local participation in the Botbal competition.

Its objectives were:

- Encourage teachers and administrators to expand the education enrichment opportunities for their students;
- Facilitate the application of academic concepts through innovative project-based learning; and
- Develop partnerships with participating companies, institutions of higher learning, and other members of the community.

Another activity involving KEDB, high tech companies and the Kauai Workforce Investment Board (KWIB) is the High Tech Career Fair, held annually in February, 2007 on the Kauai CC campus. A particularly successful collaborative effort is the summer internship program that pairs graduating seniors and college undergraduates with high tech companies and provides them with college credit, as well. KEDB has partnered with the Maui Economic Development Board to fund Women in Technology summer programs to encourage high school girls to explore tech fields and the College has utilized Carl Perkins funds through Alu Like to set up similar summer programs for Native Hawaiian students. Finally, General Dynamics established an "Engineering Week" event for all local high schools. This is held at the College.

These "pipeline" efforts have contributed to an increase in electronics programs from 18 majors in Fall 2003 to 31 majors in Fall 2007, despite slightly decreasing enrollment overall. In Fall, 2006, 27% of the majors were female, 31% were Filipino and 24% were Native Hawaiian.

UH and DOE Curricular Alignment Activities

A second set of partnerships also currently underway will become a part of the pilot project. The

Kauai CC math faculty and high school math faculties have reviewed the content and learning objectives of algebra courses in the high school with the equivalent courses (Math 24, and 25) at the college. They had already completed this alignment of the courses before Act 111 provided these new resources. They are now proceeding with articulation and common assessment and reviewing pre-algebra, Math 22. This alignment itself built upon a similar curricular review done by Maui Community College and its partner high schools, supported by the UH- system Gear Up program. In addition, all UH Community College math instructors have articulated Math 24 and Math 25 across the UHCC system. As part of a system-wide articulation effort support by Federal Carl Perkins funding, all UH Community Colleges and partner DOE high schools are working on other career pathway articulation efforts aimed at creating better transitions from high school to college programs. Kauai Community College and the three Kauai high schools have completed a preliminary matrix matching high school courses with specific Career and Technical Education (CTE) programs.

Act 111 STEM Coordinator Activities

One of the tasks that the measure asked for was the establishment of STEM portal. During the 2008 calendar year, a site was designed and published and is currently under development; (it can be found at: www.mystemhawaii.org). In addition, the STEM Coordinator, Mr. Jeff Bloom, is developing an inventory of STEM programs, a mentorship database and website, and a survey of students regarding internships. Mr. Bloom a former member of the WDC, has actively participated with DBEDT in focusing on education and workforce issues, as well as looking at needs to address related to building Hawaii's emerging industries, such as those associated with the Clean Energy Initiative.

National Governors Association STEM Center Grant

In support of the Act 111 activities, DBEDT in partnership with the DOE, UH System and the private sector, applied for (in May 2007) and was awarded a NGA STEM Center grant. Its purpose is to complement State funding for the new STEM academies by helping to establish an Outcomes Accounting System (OAS) for the academies, as well as provide information and engagement of stakeholders in the implementation of the academies. These STEM academies are as follows:

- *Hawaii Excellence through Science and Technology* (HiEST) Academy pilot program. This pilot project will be run by the community college system on the campuses of at least two public high schools. The program will encourage participation of non-AP/IB students in rigorous science, math and technology courses, supplemented by contextual learning opportunities, such as robotics competitions, which will be integrated into the program. With the assistance of selected community college instructors, the courses will be taught by high school teachers after certification training by the community college system, so that the courses will also provide community college credit.

- *Fostering Inspiration and Relevance through Science and Technology* (FIRST) Pre-Academy program. This program is meant to develop the basic understanding and enthusiasm for STEM subjects among middle school and some elementary

school children-- particularly among girls. It consists of a menu of contextual learning opportunities and teacher training and support that can be integrated within the existing science, math and technology curriculum. The University of Hawaii College of Engineering will run the program at roughly 14 middle schools around the state, representing about a third of all middle schools.

To date, the program team has incorporated OAS best practices into the system plan; identified system criteria addressing needs; specified elements for the database curriculum for teacher training modules; and is developing a communications team that will develop a STEM Education Communications Plan and adopt the P-20 Initiative HI-PASS program / system into the project. As noted, the Outcomes and Accountability System approach was changed to accommodate the inclusion of STEM programs in the HI-PASS system, which is under development by the P-20 Initiative for the Department of Education and the University of Hawaii.

The first established HiEST academy started with a pilot program at Waipahu High School in March, 2008, which incorporated curriculum developed by the Center for Occupational Research and Development and taught by teachers who had received training and support from the University of Hawaii Community College system. The program emphasis was to include all students, especially those who would most likely not consider pursuing STEM education or careers. Successful in its launch, the DOE is planning to expand the program into six more high schools through support from the Department of Human Services (DHS), which recognizes that the program is an excellent way to improve the overall welfare of the family in the long term. The schools are: Henry Perrine Baldwin High School, James Campbell High School, Kahuku High School, Ka'u High and Pahala Elementary School, Olomana School, and Waialua High and Elementary School.

6. Additional DBEDT Support for STEM Initiatives

In addition to Act 111 funding, DBEDT redirected a portion of its program funding, as well as established a partnership with the Department of Human Services to direct Temporary Assistance for Needy Families (**TANF**) funding to STEM- related afterschool programs. These programs are helping to align the educational system with workforce and economic needs by promoting STEM skills to students.

Program	Resource
FIRST Robotics	Act 111 – $90,000, TANF - $100,000, Staff time
HIEST Academies	(Kauai Community College, DOE) - Act 111 - $327,750, TANF
MELE program	DBEDT $120,000
VEX Robotics Goodwill Tournament	DBEDT $47,000
Creative Academies	DBEDT $50,000
STEM Leadership Initiative	Staff time

7. ACT283 – Data sharing project

Pursuant to ACT 283, Session Laws of Hawaii 2007, the Legislature established the Educational Workforce Working Group to examine and address various issues relating to workforce needs

and methods for increasing the workforce supply in the state. The group prepared and submitted a report to the legislature, which included seven sets of recommendations with twenty-five action steps.

Supporting these recommendations, during the 2008 calendar year, DBEDT worked with the DLIR and the DOE to establish the data sharing between DLIR and the DOE for the P-20 HIPASS longitudinal program. Data-sharing between the educational system and the State's workforce data system has never been attempted before. It has been institutionally and regulatory separated, operating separately with rules that preserve confidentiality. Collectively, the team found ways to solve these obstacles. The ability to data-share will help in achieving the recommendations of the legislative working group by establishing a tracking system linking education and workforce data that will help to optimize learning pathways, skill assessment, and ultimately provide the basis to alignment of the education system with business and the community.

8. Comprehensive Economic Development Strategy CEDS Planning Grant

DBEDT is also coordinating with the WDC on implementing the 2008 - EDA – Comprehensive Economic Development Strategy CEDS planning grant. The second phase of funding was $133,360 to the DBEDT Office of Planning for development of a comprehensive economic development strategy for Hawaii, focusing on economically-distressed communities in the state. The strategy for each of Hawaii's four counties will be coordinated with the community partners and compose elements of the statewide regional strategic planning, with the means of implementation clearly mapped. Working closely with community partners (Hawaii's Economic Development Boards) in each county, the focus has been to identify and analyze community economic development problems, solicit programs from the communities and provide planning support to those selected that best fit the focus of the EDA – CEDS. The most recent grant (2008) is part of a $266,720 EDA project investment and further develops the programs proposed in the first round of funding through a process that will look at industry clustering of high- growth, high- demand industries. This most recent award requires a close working relationship with the local Workforce Development Council.

9. Related Legislative Activities from the 2008 Session on Innovation in Workforce Development Initiatives

The following measures were introduced in the 2008 Legislative Session and, again, despite overwhelming support, many measures introduced were unsuccessful as they came head-to-head against more pressing issues and budget concerns. During the Session, the Department continued initiatives begun in 2004 to assist knowledge-based industries in attracting skilled workers, assisting the DLIR in gaining support for Life Long Learning Accounts (LiLAs). In addition, DBEDT continued to pursue the development of the Governor's Innovation Initiative, which proposed more than 20 measures to shift Hawaii's economy from land-based economic development to development led by innovation industries.

These are some of the measures that DBEDT supported during the 2008 Legislative Session (but were not passed):

HB3076; SB2998;	RELATING TO WORKFORCE DEVELOPMENT. (Establishes a rapid response, custom- training program and revolving fund in DBEDT to facilitate rapid, custom training for emerging growth industry and high priority business investments.)
HB3162; SB3084	RELATING TO WORKFORCE DEVELOPMENT COUNCIL. (Transfers the Workforce Development Council from the Department of Labor and Industrial Relations to the Department of Business, Economic Development, and Tourism to assist in aligning Hawaii's workforce development policy with the State's economic development initiatives).
HB3169 SB3091	RELATING TO LIFELONG LEARNING ACCOUNTS. (Establishes a Lifelong Learning Accounts program and tax credit in the Department of Labor and Industrial relations to support upgraded training for the incumbent workforce, and encourages participation by employers and employees through tax credit incentives)
HB3401	RELATING TO AFFORDABLE HOUSING DEVELOPMENT. (Establishes the Incentive and Streamlining Grants Program to assist counties in streamlining the permit and approval process for construction and development of workforce housing)
SB2480	RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT. (Amends Acts 111 and 271, Session Laws of Hawaii 2007, to appropriate funds for the support and expansion of existing creative media education programs, such as robotics, research experiences for teachers, and project EAST programs, while supporting the recently-developed, Hawaii Excellence through Sciences and Technology Academy pilot program.

Additional supported bills introduced in the 2008 session are listed in Appendix A

Further information

The full scope of the initiatives underway by the Workforce Development Council and its partners is detailed in the 2008 annual report of the WDC, available at; http://hawaii.gov/labor/wdc/pdf/WDC_2008_GOV_REPORT.pdf

Appendix A

Workforce Development
DBEDT supported bills introduced in the 2008 session
Note: most of these measures did not pass.

HB2206	MAKING AN APPROPRIATION FOR THE WORKFORCE INVESTMENT BOARDS. (SB2182) (Appropriates Federal Reed Act money to the Department of Labor and Industrial Relations to assist the State's four local workforce investment boards.)
HB2959	RELATING TO WORKFORCE DEVELOPMENT. (SB3253) (Addresses workforce development issues within the State through various initiatives, programs, and appropriations. Extends the Educational Workforce Working Group two years.
HB3071	RELATING TO ENDOWED CHAIRS AT THE UNIVERSITY OF HAWAII. (BED-19) (SB2993) (Establishes an eminent scholars program to create endowed chairs in science, technology, engineering, and math disciplines in the University of Hawaii by appropriating State general funds to be matched by private donations. Appropriate $2,000,000 to be matched by private donations, for an endowed chair in power generation and distribution in the University of Hawaii college of engineering as the first STEM- endowed chair. The endowed chair would serve as the foundation of a new power program to support workforce needs at the Pearl Harbor Naval Shipyard and the growing renewable energy sector.)
HB3076	RELATING TO WORKFORCE DEVELOPMENT. (SMSD) (LBR-03) (SB2998; HB3162/SB3084) (SMSD) (Establishes a rapid response, custom training program and revolving fund in DBEDT to facilitate rapid, custom training for emerging growth industry and high priority business investments.)
HB3162	RELATING TO WORKFORCE DEVELOPMENT COUNCIL.(LBR-03) (SB3084; SB3076/SB2998) (Transfers the Workforce Development Council from the Department of Labor and Industrial Relations to the Department of Business, Economic Development, and Tourism to assist in aligning Hawaii's workforce development policy with the State's economic development initiatives.
HB3169	RELATING TO LIFELONG LEARNING ACCOUNTS. (LAB-24) (SB3091) (Establishes a Lifelong Learning Accounts program and tax credit in the department of labor and industrial relations to support upgraded training for the incumbent workforce, and encourages participation by employers and employees through tax credit incent)

HB3401	RELATING TO AFFORDABLE HOUSING DEVELOPMENT. (Establishes the Incentive and Streamlining Grants Program to assist counties in streamlining the permit and approval process for construction and development of workforce housing.
SB1931 ACT283-2007	RELATING TO EDUCATION. (Education; Workforce Development Establishes and appropriates funds for an Educational Workforce Working Group under the Department of Labor and Industrial Relations to examine and address workforce and workforce-related education issues. Requires the Department of Education to include in its strategic plan, plans for workforce-related needs. Requires the University of Hawaii to submit a report to the Legislature on its workforce development efforts. Appropriates funds for positions to assist the Department of Education with its workforce development efforts.) (CD2)
SB2182	MAKING AN APPROPRIATION FOR THE WORKFORCE INVESTMENT BOARDS. (HB2206) (Appropriates Federal Reed Act money to the Department of Labor and Industrial Relations to assist the State's four local workforce investment boards.
SB2480	RELATING TO TECHNOLOGY WORKFORCE AND DEVELOPMENT. (Amends Acts 111 and 271, Session Laws of Hawaii 2007; appropriates funds for the support and expansion of existing creative media education programs, such as robotics, research experiences for teachers, and project EAST programs, while supporting the recently-developed, Hawaii Excellence Through Sciences and Technology Academy pilot program.
SB2993	RELATING TO ENDOWED CHAIRS AT THE UNIVERSITY OF HAWAII. (BED-19) (HB3071) (Establishes an eminent scholars program to create endowed chairs in science, technology, engineering, and math disciplines in the University of Hawaii by appropriating State general funds to be matched by private donations. Appropriate $2,000,000 to be matched by private donations, for an endowed chair in power generation and distribution in the University of Hawaii college of engineering as the first STEM endowed chair. The endowed chair would serve as the foundation of a new power program to support workforce needs at the Pearl Harbor naval shipyard and the growing renewable energy sector.)
SB2998	RELATING TO WORKFORCE DEVELOPMENT. (SMSD) (LBR-03) (HB3076; HB3162/SB3084) (Establishes a rapid response, custom training program and revolving fund in DBEDT to facilitate rapid, custom training for emerging growth industry and high priority business investments.)

SB3084	RELATING TO WORKFORCE DEVELOPMENT. (SMSD) (LBR-03) (HB3162; SB3076/SB2998) (Transfers the Workforce Development Council from the Department of Labor and Industrial Relations to the Department of Business, Economic Development, and Tourism to assist in aligning Hawaii's workforce development policy with the State's economic development initiatives.)
SB3091	RELATING TO LIFELONG LEARNING ACCOUNTS. (LAB-24) (HB3169) (Establishes a Lifelong Learning Accounts program and tax credit in the department of labor and industrial relations to support upgraded training for the incumbent workforce, and encourages participation by employers and employees through tax credit incentives)
SB3253	RELATING TO WORKFORCE DEVELOPMENT. (HB2959) (Addresses workforce development issues within the State through various initiatives, programs, and appropriations. Extends the Educational Workforce Working Group two years.

TRAINING

HB2734	RELATING TO DIGITAL MEDIA. (SB2733) (Authorizes the Department of Labor and Industrial relations to implement and operate media production training programs. Amends the motion picture, digital media, and film production income tax credit to allow a tax credit on fifty per cent of wages paid to below-the-line crew who are Hawaii residents that meet certain training and certification requirements.
HB2986	MAKING AN APPROPRIATION FOR THE COMMUNITY COLLEGES. (OTL) (Requires community colleges to establish a pilot program in cultural sensitivity training for hospitality industry workers. Appropriates funding from the Tourism Special Fund.
HB3065	RELATING TO MUSIC ENTERTAINMENT LEARNING EXPERIENCE PROGRAM. (BED-13) (SB2987; SB2432/HB2817/HB3252) (Makes an appropriation of $4,800,000 for the music entertainment learning experience program at Honolulu Community College, and issues general obligation bonds for site development, renovation, facilities remodeling, and studio construction.
HB3066	MAKING AN APPROPRIATION TO ESTABLISH CREATIVITY ACADEMIES. (BED-14) (SB2988; HB2587) (Makes an appropriation of $1,629,474 to establish a digital media pilot program that builds upon the success of the science, technology, engineering, and

mathematics/Hawaii Excellence Through Science and Technology academies.)

SB2088	RELATING TO ADVANCED FLIGHT SIMULATOR TRAINING. (Adds businesses engaged in commercial aviation training for pilots, dispatchers, mechanics, or air traffic controllers to the definition of "qualified business" under the state enterprise zone law.
SB 2496	RELATING TO TAXATION. Provides a general excise tax exemption for an aircraft training facility that offers high technology simulator training.
SB2273	RELATING TO DIGITAL MEDIA. (HB2734) (Authorizes the Department of Labor and Industrial Relations to implement and operate media production training programs. Amends the motion picture, digital media, and film production income tax credit to allow a tax credit on fifty per cent of wages paid to below-the-line crew who are Hawaii residents that meet certain training and certification requirements.

Karen Yorimoto

From: Song K Choi [schoi@hawaii.edu]
Sent: Sunday, April 26, 2009 2:30 AM
To: Sen. Carol Fukunaga
Cc: Karen Yorimoto
Subject: answers to questions
Attachments: htdc.fukunaga.questions.090424.pdf

Aloha Senator Fukunaga,

Please find attached a PDF file with the answers to your questions from 4/21. Please do not hesitate to contact me if you need additional information. Thank you again.

Aloha a me Mahalo Nui Loa,

SKC

~~~~~~

Song K. CHOI, Ph.D.
Assistant Dean
College of Engineering
University of Hawaii at Manoa
2540 Dole Street #240
Honolulu, HI 96822-2382

+(808)956-8404 - office
+(808)956-2291 - fax
+(808)956-3333 - lab
http://www.eng.hawaii.edu
schoi@hawaii.edu

~~~~~~

College of Engineering

Song K. Choi, Ph.D.
Assistant Dean

UNIVERSITY of HAWAI'I
MĀNOA

25 April 2009

Senator Carol Fukunaga
Chair, Economic Development and Technology Committee
The Senate
State Capitol
Honolulu, Hawaii 96813

Dear Chair Fukunaga (Vice Chair Baker, and other Members of the EDT Committee),

Once again, thank you for allowing me to testify early last Wednesday with my pending flight schedule. I have recently received your request of April 21 and will provide answers to the best of my knowledge and involvement. My answers/testimony follows the original questions as you had provided them. They are:

Please identify specific program activities that you have undertaken in your capacity as the University of Hawaii's technical liaison to the various robotics programs statewide, with the Pre-Academy Robotics program under College of Engineering (CoE), and as a member of the Robotics Organizing Committee (ROC).

I am the interim director for ACT 111 – Robotics and function as an advisor and cheerleader for the various robotics programs in Hawaii – [chronologically] Micro Robotics (November 2008), VEX Robotics (December 2008), FLL/Jr FLL (January 2009), Robofest (March 2009), FRC Robotics (March 2009), Botball (May 2009), and Underwater Robotics (BIRR & HURC, May 2009). Due to my involvement with ACT 111, a funding source for many of the public schools in Hawaii, I have kept a neutral position and have not associated myself with any specific school or team and have refrained from team mentoring as I have with Waialua and McKinley in the past. Also in my capacity, I've had to create strict funding policies and rule, e.g. program funding amount is determined via a mathematical equation before distribution of funds to schools/teams via application and is limited to registration and kit fees. Funding for school/team travel is prohibited, as a general rule. I have also played a key role in disseminating event information to the University of Hawaii at Manoa and a recruiter for event volunteers as organizers, judges, inspectors, and helpers. In both my capacities at CoE and ROC, I've reported on the development of these programs to the Governor's office as well as to other interested entities.

What role do you envision playing on the High Technology Development Corporation board of directors with respect to initiatives involving tech companies that my be recruiting Hawaii graduates with STEM/robotics skills and experiences?

2540 Dole Street #240
Honolulu, Hawai'i 96822
Voice: (808) 956-8404
Fax - (808 956-2291

I envision being an integral part of assisting in developing the high technology industry in the State by providing innovative ideas in attracting startup companies that are specific to our region and environment. As I had mentioned during my testimony, the relationship between employment opportunities and STEM/robotics workforce is an unbreakable rubber-band relationship where opportunities will create interest among the youth of Hawaii, and hopefully, the reverse will also be productive. In conjunction with the CoE, I have also been exploring the possibilities of creating a more structured robotics curriculum which may be beneficial to students of the State's robotics initiative without having to strain our current budget. Sustainability of this type of program may require additional funding.

Please specify the nature of your role in the following STEM-related initiatives undertaken by the UH CoE's Pre-Academy Robotics program during 2007-2008: program development, training, program outreach to under-represented and underserved areas, introduction of web-based interactive resource (SIP), assessment and tracking systems for student outcomes, 2007-2008 Botball and FIRST robotics competitions, and other robotics events scheduled in 2009.

As the interim director of the ACT 111 – Robotics, I've had to keep a neutral position with the schools/teams but have been actively involved as organizing, planning, and advising member for each of the seven robotics programs as mentioned in the previous statement. This involvement has been at the initial participation level as well as breaking ground to a new competition, e.g. the Pan Pacific VEX Competition. Our next vision for the State's robotics programs are to 'fairly distribute' these competitions among the island – for example, FRC in O'ahu, VEX in the Big Island, FLL in Maui, and Botball in Kauai – to provide all students the opportunity to experience our whole State of Hawaii. I have been involved in STEM Intercommunity Portal (SIP) as an advisory committee member who has provided technical input during the initial creation and development phases. I have also created discussion groups that are relevant to the State's robotics initiatives and have provided data to these robotics events and programs.

Some of our funding, Temporary Assistance for Needy Families (TANF), which we should be getting in the near future, is specific to specific under-represented and underserved area. I believe this should be one of our key focuses in the use of the majority of these funds to provide an opportunity for students in these areas an alternative means to garnering interest in STEM programs. I've also made it my vision to have "at least one student representative from every high school in Hawaii" at the College of Engineering as I believe that we need to serve our State's needs before others and to have an alumni ambassador for each school. I have made several engineering and robotics outreach presentation including Molokai. The challenge is great as "acceptance" is necessary for success.

Please specify the nature of your role as a member of the Robotics Organizing Committee with respect to the development of the Academy system involving the HiEST Academy, FIRST Academy programs, Robotics Contextual programs, FIRST RET, and FIRST Contextual modules. Does the Robotics Organizing Committee oversee, coordinate and/or develop budget recommendations to implement

2540 Dole Street #240
Honolulu, Hawai'i 96822
Voice: (808) 956-8404
Fax - (808 956-2291
An Equal Opportunity/Affirmative Action Institution

robotics programs identified in questions 1-3 above? To what extent are members of the Robotics Organizing Committee aware of and actively involved in the identification of funding sources and private/public sector resources available to expand the reach of activities under the Academy umbrella?

My role as a committee member stems from my involvement in two aspects – first, as an organizing member of the VEX Robotics Tournament and second, as a contributor to the robotics education and robotics research. I am familiar with the HiEST (Hawaii Excellence through Science and Technology) as it was part of the original Higher Educational Bill and have heard updates. As for the FIRST (Fostering Inspiration and Relevance through Science and Technology) Academy, Research Education for Teachers (RET), and Contextual programs, the ACT 111 Robotics portion was not privileged to many of these programs, so my knowledge and understanding of these are very limited. As for development of Robotics education and programs specific to many of the State hosted events, I have provided specific funding and sponsorship for the venue and related expanses for workshops and special education sessions, e.g. CNC (Computer Numerical Control) and AutoCAD (Computer Aided Design) workshop at Waialua High School to assist with robotics design and fabrication. These have been exceptionally popular, and considerations are being made for this year.

As a member of the ROC, my role has been more limited to the technical and personnel issues. I am aware of the initial organization budget but have not been involved in the budgeting new items. As for funding sources, I am only aware of industry involvement; however, I believe there should be additional efforts made to solicit other public and private funds.

Are you aware of the funding sources and amounts expended for the programs under the Academy system (e.g. HiEST Academy, FIRST Academy programs, Robotics Contextual programs, FIRST RET and FIRST Contextual modules) in 2007 and 2008? If yes, please explain how you became aware of the funding sources and amounts expended for Academy system programs.

I was aware of the three ACT 111 funds (Robotics, Pre-Academy, and RET) that was marked for CoE last year, but for this year, I am only aware of the funding for Robotics ($314,925). As for the funding for other programs, I am unaware of the funding sources or amounts for these programs.

What is your understanding of the relationship between the Academy system programs and the State of Hawaii's accomplishments under the National Governors Association (NGA) grants to DoE and DBEDT ($500,000 funded in 2007, Gates Foundation)?

I am unaware of the specific relationships or the accomplishments between the Academy system programs and the State through the NGA grants to the DoE and DBEDT. I do not recall the Robotics program having ties to the NGA grants.

Are you aware that the original contract for the NGA grant was between the NGA Foundation and High Technology Development Corporation's High Technology Innovation Corporation (HTIC), a

2540 Dole Street #240
Honolulu, Hawai'i 96822
Voice: (808) 956-8404
Fax - (808 956-2291
An Equal Opportunity/Affirmative Action Institution

non-profit entity? The HTIC contract management function was one of the sources of concern that led to the Legislature's 2008 adoption of SCT 112, SD2, and audit of DBEDT procurement and expenditure practices.

I became aware of the NGA grant being managed by HTDC only in the last month upon my nomination to be on the board of directors for HTDC.

How will your appointment to the High Technology Development Corporation's board enable the Legislature to provide appropriate oversight over the activities and operations of HTDC to assure that the agency is fulfilling its statutory mission?

As I had mentioned during my testimony and in a prior statement on this communication, I believe an established entity needs to adhere to the original objective, goal, and mission. I also believe in transparency and accuracy in tracking of specifically designated funds, irregardless of origin. Through a HTDC advisory committee consisting of various members related to HTDC, the current processes, procedures, documentation, and reviews should be carefully re-evaluated. Upon the conclusion of the evaluation, the suggestions, recommendations, and modifications should be considered for implementation if they are deemed to be beneficial in attaining the entity's original mission.

Thank you very much for this opportunity to provide my views and opinions for the nomination for the board of directors for High Technology Development Corporation. If you have additional questions or require clarification, please do not hesitate to contact me via e-mail or phone.

Sincerely,

Song K. Choi, Ph.D.
schoi@hawaii.edu

2540 Dole Street #240
Honolulu, Hawai'i 96822
Voice: (808) 956-8404
Fax - (808 956-2291
An Equal Opportunity/Affirmative Action Institution