

STATE OF HAWAII

HAWAII PROJECT EAST (ENVIRONMENTAL AND SPATIAL TECHNOLOGY) PROGRAM



ANNUAL REPORT TO THE TWENTY-FIFTH LEGISLATURE

2007-2008

This report is in fulfillment of Chapter 302A-1314[(r)], Hawaii Revised Statutes, and can be found on the internet at:

<http://hawaii.gov/dbedt/main/about/annual>

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Background

In 2007, the Hawaii State Legislature approved several measures supporting Innovation in Education and Workforce Development. These measures incorporated several important components of Science, Technology, Engineering and Mathematics (STEM) skill development for Hawaii's youth. One of these measures was the passage of Act 271, funding the expansion of a successful STEM program known as Project EAST operated by the Maui Economic Development Board since 2000. The EAST (Experimental and Spatial Technology) Initiative model has been nationally recognized as a relevant, innovative and dynamic approach to education. EAST is a project-based, service-learning oriented class that provides students with opportunities to work on creative tasks to better their communities.

Act 271 directed funding towards the umbrella organization of the Economic Development Alliance of Hawaii (EDAH) through the 3Ts Program established in 2006 (Chapter 302A-1314, HRS). Although the Governor valued the EAST program, there were strong reservations concerning the funding mechanism as indicated in the 3Ts statute. Therefore, it was decided that funding would be provided through a contract entered into by the Department of Business, Economic Development & Tourism (DBEDT) and EDAH. Currently, EDAH is still under contract with DBEDT for Project EAST expansion statewide. This contract will run through June 30, 2009.



EAST students meet Legislators (2007)

Project EAST Schools Statewide

To date, there are 13 schools participating in the EAST program statewide. Currently, EAST serves 600 students annually, with over 2,400 students served since 2000. Student evaluations are administered annually. Results indicate that students who have participated show significant career intent in STEM-related fields:

- **over 76%** showed increased interest in STEM due to Project EAST
- **71%** plan to pursue a STEM related degree

Listed below is the breakdown of participating EAST schools by county:

Maui County

- Baldwin High School
- Kihei Charter High School
- King Kekaulike High School
- Lahainaluna High School
- Maui High School
- Molokai Middle School
- Molokai High School

Hawaii Island

- Keaau High School

Kauai

- Chiefess Intermediate School
- Kauai High School

Oahu

- McKinley High School
- Mililani High School
- Farrington High School



Maui High School EAST students

EAST Competencies

Project EAST is unlike any other computer course being offered in today’s high school curriculum. EAST is a project-based, service-learning program, which allows students to select projects, based on their interests, as well as the needs of the community. Students are provided with the most current computer software programs through the national EAST organization.

Listed below are a few of the key competencies students who attend this program develop:

- Self Directed Learning
- Problem Solving Strategies
- Collaboration and Teamwork

- Research and Evaluation
- Communication
- Using Technology
- Student Confidence

In addition to key competencies, students master skills in the following areas:

- Global Positioning Systems (GPS)
- Geographical Information Systems (GIS)
- Computer Generated Animation
- Database Design
- Webpage Design
- Programming
- Office Automation
- AutoCAD
- Computer Aided Design
- Visualization



National GIS Day, 2007

Progress

What makes EAST unique is that each class is led by a facilitator who guides the students in their own self-driven learning process. Each student team works with at least one technical advisor/mentor from the community who acts as a role model, while providing the students with insights into the application of the technology to the local workplace and community needs. In the process of solving these problems, they learn to become creative, intuitive, adaptable learners who can solve unpredictable, real-world problems.

The following is a brief summary of the Project EAST activities to date as reported by the statewide Project EAST program manager:

- **Project EAST Summer Seminar:** Existing Hawaii Facilitators came together on July 7-8, 2008, to participate in the annual summer seminar.

- The two-day training sessions were designed for facilitators to discuss the school year, lessons learned, best practices, and suggestions for the upcoming school year.
 - EAST National team members also spent time highlighting new technologies and possible uses in the EAST labs.
- **GIS Summer and 3D AutoCAD Software Camps:** High school students interested in the latest GIS and AutoCAD 3D technologies were encouraged to sign up for two exciting summer software camps scheduled in Kahului this past July.
- Designed to help students experience the same cutting-edge technology used by major community projects, the Geographic Information System (GIS) workshop was conducted by Diana Papini Warren. In addition, students took a field trip to gather Global Positioning System (GPS) data to input into their GIS maps.
 - The objective of the AutoCAD training workshop was to introduce the power of industry-standard 3D modeling and 3D Computer Aided Design (CAD) to middle and high school students.
 - Using project-based learning, students gained an in-depth understanding of the principles of CAD and how it can be applied to engineering, design, scholastic robotics and other technology programs. Students also visited a local high tech company utilizing the CAD software.



King Kekaulike High School student at GIS training

- **Project EAST Day:** EAST students from five Maui and Molokai high schools were given a relevant look into real world technology at the second annual Project EAST Day, September 30, 2008, at the Maui Cameron Center.
 - During the half-day event, students heard firsthand how the software programs they use in their labs apply to the real world – from engineering design to computer-aided design, geographic information systems to 3D imaging, global positioning systems to webpage graphics.
 - Industry representatives from different sectors of Maui’s tech community offered a valuable overview of 21st century careers and software applications to over 100 students and school facilitators.
 - Representatives from 3D Innovations, Pacific Disaster Center, Akimeka, the Maui Economic Development Board and Sae Design talked about the software they use, presented examples of their work and discussed career preparation and options. Each also gave a little background on his or her own career path.
 - Similar events will be held on Kauai, Oahu, and the Big Island during the 2008-2009 school year.

- **Oahu EAST:** Four Oahu EAST schools signed up to participate in the Project EAST Oahu expansion. The schools were Kapolei High, Farrington High, Mililani High, and



Lahainaluna High School EAST students at 2007 National EAST Conference

McKinley High. All four schools were invited to a Maui EAST site visit (Mililani was invited, but unable to make it). The tour provided an opportunity for the new schools to visit, and have access to successful EAST programs. Kapolei High has since withdrawn and recruitment is ongoing to add another school.



Maui High School student at GIS training

- The teachers had a chance to visit both Maui High and King Kekaulike High. EAST students provided an informative presentation about EAST and their experiences while participating. In addition, the EAST facilitators were able to learn from experience facilitators. It was an exciting and energizing day.

 - The teachers returned to Oahu feeling motivated, and had a much clearer vision of the program.
- **Project EAST Site Visits:** Statewide site visits to the existing schools are an important time to touch base and ensure the school needs are being met. The site support is designed to maintain and build upon the successful existing schools' infrastructure.
- Site visits took place to all of the existing schools – Kauai's Chiefess Middle, Kauai High, Molokai Middle and High, Kea'au High, Lahainaluna High, King Kekaulike, Maui High, Kihei Charter, and Baldwin High.

 - In addition to site visits, an all island EAST meeting was held in August. The meeting addressed community projects, software training needs, and lab support.
- **Software Training:**
- GIS software training was held on Molokai at Maui Community College for both the middle and high school EAST program. Trainer Diana Papini-Warren provided both GIS and GPS training.

 - GIS software training was held on the Big Island. Students from Kea'au High participated in the training provided by the University of Hawaii GIS specialist, Cynthia Phillips.

- AutoCAD training was held on Maui and Kauai. Students had an opportunity to learn the cutting edge software from Collin Kobayashi of 3D Innovations.
 - Additional software training workshops are being scheduled on all islands during the third and fourth quarter of the school year.
- **National GIS Day:** Project EAST students from Maui, Molokai, and Kauai participated in this year's National GIS Day held on November 19, 2008. Celebrating the countless benefits of geographic information system (GIS) technology, the EAST students provided exciting presentations to over 150 elementary and middle school students. The students were provided with a GIS presentation, Google Earth activities, a GIS coloring book, and a hands-on GPS scavenger hunt. The event is part of the National Geographic Society's Geography Awareness Week.
 - **New Facilitator EAST training:**
 - Facilitators from Mililani, McKinley, Farrington, Lahainaluna, Molokai Middle and Kauai's Chiefess middle school gathered together at Mililani High for Phase I of their EAST facilitator training (December 2 – 5, 2008).
 - EAST National trainers provided an intense four day training session designed as an introductory training session for all new facilitators. Facilitators were immersed in the EAST pedagogy: Inquiry based teaching methodologies, hands-on software activities, and networking opportunities. Phases II and III will take place in early 2009.



Maui H.S. student at 2007 EAST National Conference

Summary

Traditionally, Hawaii has relied on tourism, the military, and agriculture as the main drivers of its economy. However, it is important for Hawaii to diversify to an economy that is based on human capital rather than on finite resources. Hawaii will need an educated workforce if it is to compete in the global marketplace. A recent study by the Hawaii Science and Technology Council shows that careers in science and technology fields earn a higher average income than

those in traditional industries. Programs such as Project EAST generate interest in STEM-related fields and establish students in the STEM pipeline from middle school onward.

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