

Pre-Academy:

Fostering Inspiration and Relevance through Science and Technology

Hawaii Broadband Task Force

August 20, 2008

Vassilis Syrmos, Associate Vice-Chancellor for Research and
Graduate Education

for

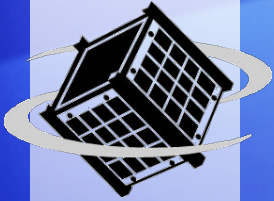
Peter Crouch, Dean
College of Engineering, University of Hawaii at Manoa

Innovation in Education

January 2007 - Governor Lingle includes the Pre-Academy: Fostering Inspiration and Relevance through Science and Technology in her newly introduced....

Innovation in Education Package.

ACT 111



2007 - State of Hawaii 24th Legislature passed ACT 111 to establish the Pre-Academy committing \$1.4 M for FY07-08 and FY08-09 including 9 FTE positions.

Pre-Academy: Summary of Goals

- Serve middle school students with **experiences in Science, Technology, Engineering, and Mathematics (STEM)**
- **Encourage partnerships** with other relevant programs within the UH system, DOE, and public and private agencies
- Motivate and **engage students in STEM**
- Support the development of additional problem-based and applied learning experiences in STEM for **middle school teachers**
- Develop **evaluation measures**

Major funding areas:

- **Pre-Academy**
- Research Experiences for Teachers – Middle School
- Robotics and Problem-based Applied Learning Program

Pre-Academy

- Provides **Administration/Management, Fiscal, and Personnel support**
- Examines strategies to leverage the research strengths and expertise at UH Manoa to create a **sustainable Pre-Academy Model**
- Currently developing the **STEM Intercommunity Portal** with support from the Office of the Vice Chancellor for Research and Referentia Systems

STEM Intercommunity Portal (SIP)

Home Calendar Organizations Resources Forums Search

SIP
STEM INTERCOMMUNITY PORTAL
Science, Technology, Engineering, Mathematics.
Advancing STEM outreach through Hawaii.

YOU ARE HERE

Add New Resource

- **ACTE STEM Branch**
http://www.acteonline.org/members/techniques/science_clusters.cfm
The Association for Career and Technical Education (ACTE) is the largest national education association dedicated to the advancement of education that prepares youth and adults for careers. This area offers information about the history, mission and structure of ACTE, as well as details on our annual awards program.
- **Bot Ball News**
<http://www.botball.org/botnews/blog/botnews.atcm>
 This is an RSS feed
Get ready for a high-tech, high-energy approach to education! The Botball Educational Robotics Program integrates science, technology, engineering, and math with robotics to keep your students on the cutting edge of technology!
- **C-MORE - Education & Outreach**
<http://cmore.soest.hawaii.edu/education.htm>
C-MORE's Education and Outreach site.
- **C-MORE - Events**
<http://cmore.soest.hawaii.edu/events.htm>

USER LOGIN

Username: *

Password: *

Log in

Create new account
Request new password

College of ENGINEERING
UNIVERSITY OF HAWAII
MANOA

referentia

Transforms the pre-academy into a network of networks by engaging the involvement of stakeholders from the university and its affiliates and the community including teachers and eventually students.

Cultivates relationships of exchange and collaboration, encourages a relevant global perspective, enables new opportunities for enrichment, and attracts the interest and commitment of young people to join the growing STEM workforce.

sip-hawaii.org

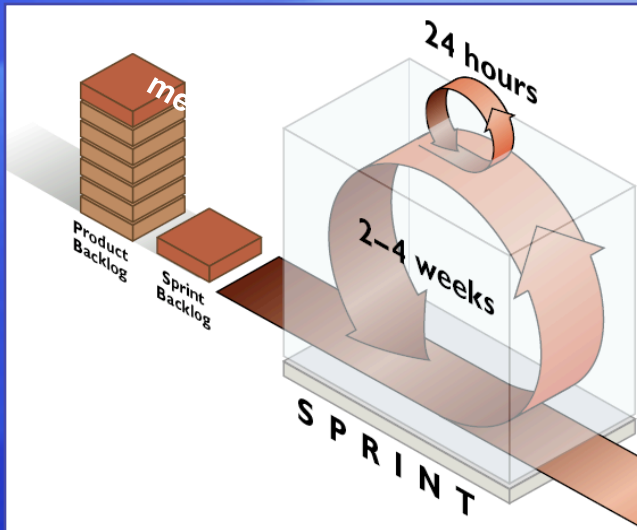


Web Portal tools and priorities are driven by Stakeholder developed “use cases.”

Stakeholder group evolves as site is developed.

Site launched – June 2008

SIP Stakeholder “User Stories”:



Source: Referentia Systems, Inc.

Approach: AGILE “Scrum”

Incrementally develop useful tools

Stakeholders help prioritize and focus requirements each month

Stakeholder “user stories” include:

- “Invite other people to join SIP”
- “to be able to create my own content and view on site”
- “be able to ‘attach myself’ to content and be notified of changes”
- “to easily collaborate with others”..over 100 user stories will be incorporated.”

Research Experiences for Teachers – Middle School

Coordinated and Managed by the
**Hawaii Center for Advanced
Communications**

RET- Hawaii



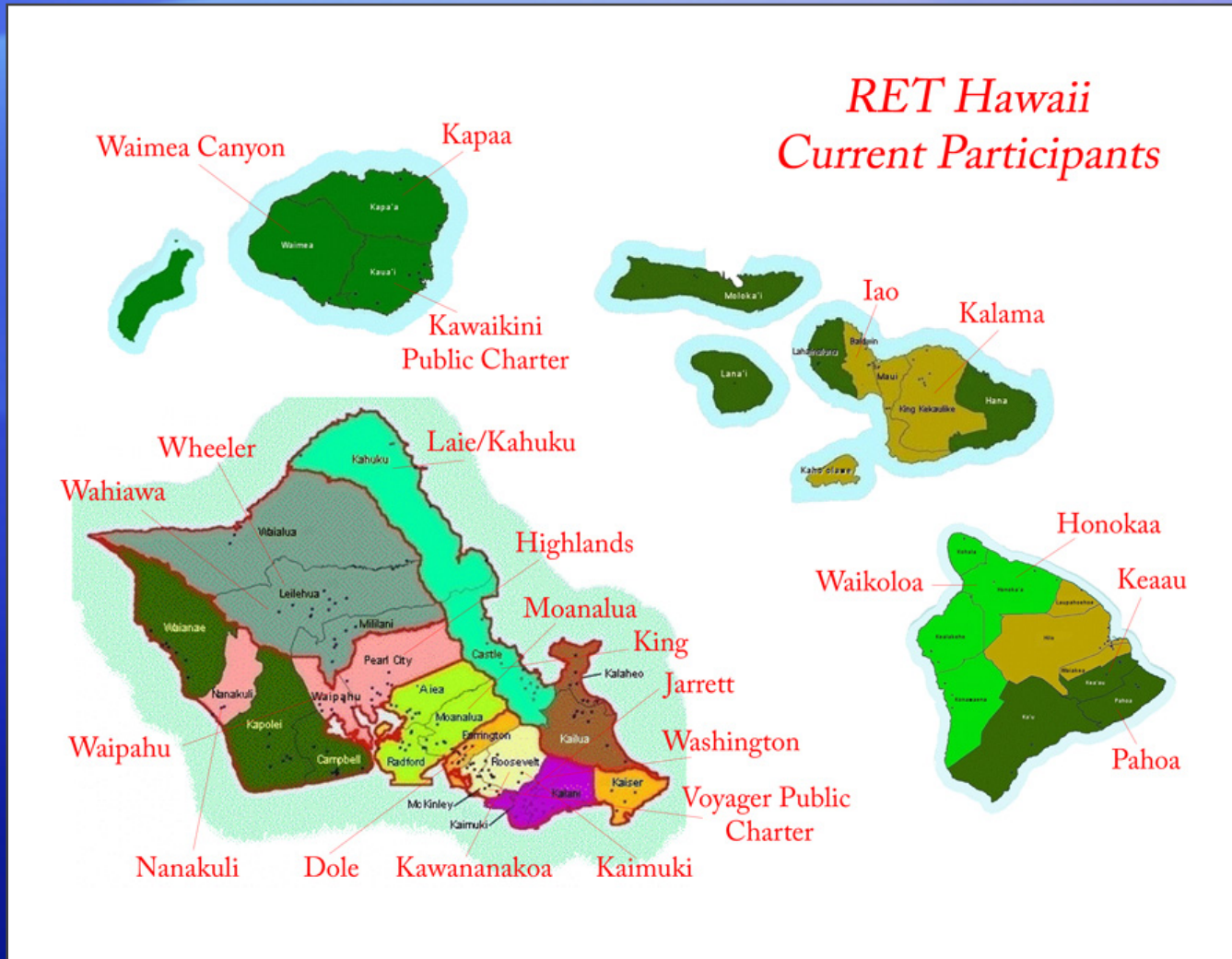
Supports the development of **middle school teacher skills and knowledge**, and the development of curriculum and materials in STEM subject areas with focus on wireless communications.

A teacher driven model brings the knowledge of engineering and leading-edge technology into the classroom

2007-2008 Outcomes

1. **Participating schools** increased from 5 to 23 representing 6 districts
2. **RET Teacher Workshop**: 36 RET Middle School teachers from 4 islands participated in a 2-day workshop
3. **Kids On Campus**: robotics day camps for 100+ middle school students
4. **In-class support** to teachers
5. **Installed wireless networks** in classrooms at 9 participating schools.
6. **Field activities** incorporated teacher developed lessons.
7. **Expanded partnerships** with academia, industry and technical community
8. **Virtual Organization** enables heightened interaction

18 New Schools will implement program starting Fall 2008



Approximately 5000 students will be impacted.

 The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to

Hybrid Virtual Organization

The screenshot displays the RETHAWAII website interface. At the top, there is a navigation bar with links for HOME, My RET, MEMBERS, GROUPS, ASSETS, EVENTS, FORUMS, POLLS, and CHAT. Below this, a large banner reads "WELCOME TO YOUR VIRTUAL RET Educational Assets & Tools". The main content area is divided into several sections:

- NEWS & UPDATES:** Features articles such as "Kids get aleft-brain workout" and "Science Alliance".
- LATEST ACTIVITIES:** Lists recent events like "Com-Tech Fair" and "Electromagnetism".
- Table of Educational Assets & Tools:**

Multimedia Content	Hardware Assets & Tools	People Training & Support
Electric Current and Voltage	Laptops	Training Support
Magnetism	PDAs	Training Resources
Electromagnetism	Routers	Online Forum
Circuits	Lego Mindstorm kits	Online Collaboration
Pendulum Motion		Wireless Network
Antenna		
Spring Wave		
Wireless Man		
- Recent Activities:** Lists recent posts and videos, such as "Francis Kupa'alea post video of recent class project" and "Darcy Lum post her first blog".
- New Upcoming Assets:** Lists upcoming resources like "New STEM modules" and "PDAs available in the spring".
- TEACHER BLOGS:** A section featuring a photo of a man and the text "TEACHER BLOGS >".

At the bottom of the page, there is a footer with links for HOME, ABOUT, ONLINE PROGRAM, REGISTER, SPONSORS, CONTACT US, PRIVACY POLICY, and TERMS OF SERVICE.

Website (under development)

- Collaborative forum for middle school teachers and students program wide
- Links participants to university faculty and students
- Shared access to distributed resources

Robotics

Presented by

Art Kimura

- Students develop STEM skills through robotics and problem-based applied learning projects and competitions.
- Enlists, encourages, trains and supports teachers and mentors to conduct and sustain robotics programs.