Pre-Academy:
Fostering Inspiration and Relevance through Science and Technology

Hawaii Broadband Task Force

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

Innovation in Education Package.
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)

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.
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”:

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.”

Source: Referentia Systems, Inc.
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.
Hybrid Virtual Organization

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.