An Update

Dr. Frank Schowengerdt, Director of PISCES

Presented to a Joint Meeting of the Higher Education and Economic Development and Technology Committees, Hawai`i State Senate
January 28th, 2009
VISION

An International Research and Education Center Dedicated to Sustaining Life on the Moon and Beyond
GOALS

• To Become an Intellectual Leader of Thought Enabling Human Settlement of Space, Focusing on Lunar Human Ecology: Consumables, Energy, Materials

• To Promote STEM Education

• To Engage in Public Outreach

• To Conduct Tests, Demonstrations and Astronaut Training

• To Build Three Major Facilities: Base, Test Site and Analog Lunar Outpost
Major Developments

• International Testing Program
• Research Proposals
• National Student Design Competition
• National Space Seminar
• Prototype UHH Space Curriculum
• Public Outreach
Testing Program

- NASA, CSA, DLR, JAXA, L-M, Others
- November 2008 – 3 weeks, over $700K
- Involved over 80 scientists, engineers
- Produced Oxygen and Water
- Many lessons learned
Proposals


In collaboration with UHH College of Agriculture, University of Houston, Colorado School of Mines and Lockheed Martin

$ 4.249 million over four years (not funded, but will be resubmitted)
Proposals

“Ua Ao Hawaii: The Dawning of a New Era In Human Exploration”

In collaboration with Aha Punana Leo and `Imiloa Astronomy Center

~$ 1.6 million over four years (pending)
Proposals

“Using a mixed reality collaborative framework for sortie planning, training and execution”

In collaboration with UH Manoa

$1.287 million over four years (pending)
Proposals

• New Submissions:
  – Moon and Mars Analog Mission Activities (MMAMA)
    • Excavation ($75K)
    • Drilling ($75K)
    • Remote Robotic Control ($75K)
    • NASA-Glenn/Honeybee Robotics ($75K)
    • Honeybee Robotics/Oceaneering ($75K)
  – NASA/Steckler Space Grant
    • Research and Education for Lunar Colonization
      – thru Hawai`i Space Grant Consortium (~$1M)
Student Design

2008 Winners
Honolulu Community College
Colorado School of Mines
University of Colorado

2009 Winners
Virginia Polytechnic Institute
Massachusetts Institute of Technology
National Space Seminar

- George Raiche
- Dan Rasky
- David Morrison
- Peter Schultz
- Pete Worden
- Kathy Olsen
- Paul Graziani
- George Nield
- Scott Hubbard
- Tom Crabbe
- Jim Ryder
- Lori Garver
- Elon Musk
- Yvonne Cagle
- Steve McLean
- Gary Payton
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<tr>
<th>Course Code</th>
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<td>Physics/Astronomy 111</td>
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Public Outreach

Kamehameha Schools
Public Outreach

PISCES-NASA Day at `Imiloa
Public Outreach

PISCES-NASA Day at `Imiloa
Other PISCES Outreach Events in Hilo:

- Onizuka Day
- Journey Through the Universe
- JTTU Family Science Day at `Imiloa
- Hawaii Science and Engineering Fair
- Hawaiian Family Affair Day
- Merrie Monarch
- Astro-Day
- Robo-Fest
Public Outreach

State and National PISCES Outreach Events:

- Discovery Channel (upcoming)
- NPR Interview
- Channel 9 Morning Show
- Associated Press Interview and Article
- NASA Press Releases
- Pacific Business Journal
- Honolulu Advertiser
- Star Bulletin
- National Geographic
- MSNBC
- Over 60 lesser national outlets
Benefits

• Attract High-Tech Industry

• Create Space-related Jobs, Which Pay Twice The National Average

• Strengthen Higher Education At UH Hilo

• Inspire K-12 Students To Study STEM Disciplines

• Involve Local Community

• Publicize Hawai`i As Space Leader
Summary

• PISCES is a reality, currently Funded by the State of Hawai`i and NASA, attracting attention from all across NASA, JAXA, CSA, DLR and international industry.

• PISCES is a long-term proposition, with a 10-year Strategic Plan to grow into a major force for global space exploration.

• Education and Public Outreach are PISCES priorities

• PISCES depends on partnerships.
Thank You!

From the PISCES Community