**Institute Dates:** May 30, 2012 – June 10, 2012, 8:30-12:30 p.m., including weekends.

**Mandatory Pre-Institute Workshops:**
Potential participants must attend a pre-institute workshop on either March 1, 2012, 5:30-6:30 p.m. at UHWO Room B106 or March 2, 2012, 11:30-12:30 p.m. at UHWO Room B106. The application deadline is Friday, March 16, 2012 by 5:00 p.m.

**Cost:** Free (by competitive application). All current University of Hawaii’s students who have passed Math 100 Survey of Mathematics or equivalent are invited to participate. Students have the option of enrolling in MATH 296 for three elective credits.

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**In Partnership With:**
- Hawai’i Council of Teachers of Mathematics
- State of Hawai’i Department of Education
- Polynesian Voyaging Society
- Kalaupapa National Historical Park
- Hawai’i Institute of Marine Biology

**With Support From:**
- Hawai’i - Pacific Islands Campus Compact
- National Science Foundation
- University of Hawai’i Office of Student Equity, Excellence, and Diversity
- U.S. Department of Education, Title III, Part A
- University of Hawai’i - West O’ahu

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The resulting research and practicum-based product will be a textbook with lesson plans. The textbook may be used by University of Hawai’i mathematics faculty and State of Hawai’i Department of Education mathematics teachers to supplement curriculum, supplement mathematics activities, and enrich teacher training materials.

**For More Information:**
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Now in its fourth year, the Ethnomathematics Summer Institute will allow University of Hawai‘i faculty, staff, and students to design and implement mathematics grounded in the ethnic, historical, and cultural diversities of our state. Past publications include: “Ethnomathematics Curriculum Textbook: Precalculus, Trigonometry, and Analytic Geometry” (2011) and “Ethnomathematics Curriculum Textbook: Lesson Plans in Algebra, Geometry, and Number Foundations” (2010). These were featured in print, online, and on the air at the Mathematical Association of America, UH Mālamalama Magazine, UH Systemwide News, Hawai‘i Herald, Hawai‘i Public Radio, and Honolulu Star Advertiser.

2012 brings an expansion to include components that prepare students for advanced-level mathematics and STEM-related studies. According to the National Council of Teachers of Mathematics’ Statement on Equity (2008), "When we respect all students’ inventions, experiences, and applications of mathematics, we provide them with equal opportunity for access and achievement." There has never been a more important time to cultivate sustainable conditions that advance student success in college.

Students will create and carry out individual projects, based upon selected mathematics topics. Examples include navigation calculations with geometric properties, number foundations in the environment, and reawakening pride in fishing traditions and sinusoidal curves.

Field Studies

All institute scholars will participate in four field studies: Hawai‘i Institute of Marine Biology’s Coconut Island in Kane‘ohe Bay, Mokaua Island Fishing Village in Ke‘ehi Lagoon, sailing with the Polynesian Voyaging Society around O‘ahu, and hiking to Kalaupapa on the island of Moloka‘i. Service learning and giving back to the community is a critical aspect of the institute.

HIMB Coconut Island

The Hawai‘i Institute of Marine Biology is a world-renowned research institute located on Coconut Island and surrounded by 64 acres of coral reef. Students will learn about intersections of natural resources, environmental conservation, tropical marine science, and mathematics in their Hawaiian backyard.

Mokaua Island Fishing Village

Mokaua Island is the site of O‘ahu’s last Hawaiian fishing village, and one of only two left in Hawai‘i where hundreds of villages thrived in pre-European times. Through a values-based, experiential learning environment, students will take an active role in preserving, protecting, and caring for our marine life. Students will help restore the fishing village, and in the process learn about mathematical skills and the perpetuation and practice of fishing, seafaring, and maintaining healthy viable oceans.

Polynesian Voyaging Society Sailing

With a legacy of ocean exploration as its foundation, the Polynesian Voyaging Society is committed to undertake voyages of discovery; to respect, learn from, and perpetuate heritage through practice; and to promote learning which integrates voyaging experiences and values into quality mathematics education. Through sailing on the Noa Noa around O‘ahu by traditional, celestial navigation (i.e., sun, moon, stars, tides, etc.), we will learn how mathematics is a tool to learn about real-world applications, share knowledge, and foster living well on our special islands.

Kalaupapa National Historical Park

Kalaupapa, Moloka‘i was once a leprosy community in isolation, and now serves as a place for education and contemplation. Here, past suffering has given way to personal pride about accomplishments made in the face of great adversity. Kalaupapa is a place where we can reconsider our responses to people with disabilities or illnesses. Moreover, it is a place where the land has the power to heal - because of its human history, natural history and stunning physical beauty. Through first-hand mathematical experiences, we will learn about how these themes impact present and future generations.