

# Hawai'i Tsunami Education Curriculum Program



## **PROGRAM SYNOPSIS**

The Hawai'i Tsunami Education Curriculum Program (HITEC) is a program of the Pacific Tsunami Museum. The purpose is to improve Hawai'i student's academic and technology skills which inform them about tsunami science, climate change, and disaster preparedness with the aim to save lives and encourage local action about the impacts of global climate change. The Program is funded by a three-year grant from the U.S. Department of Education, Native Hawaiian Program. See the website: <a href="http://discovertsunamis.org">http://discovertsunamis.org</a>

#### Activities:

- · Curriculum development
- Teacher training and professional development
- Field testing with students at selected schools
- On-line multimedia resource and booklets
- Preparedness consultations with schools to enhance their tsunami evacuation plans and preparedness.

#### Curriculum:

"Kai E'e – Mounting Seas: Pacific Tsunami and Climate Change," is the new place-based curriculum for grades 4, 6, 8 and 9 by the Pacific American Foundation for the Museum. The lessons are aligned to the new national common core standards for language arts, math, and the draft Science standards. The lessons are also aligned to  $N\bar{a}$  Honua Mauli Ola, Hawaiian Cultural Pathways for Healthy and Responsive Learning Environments. The lessons include literacy building skills and hands-on activities. Students will demonstrate their academic gains through culminating activities which inform their families, communities, and schools about being prepared for the impact of tsunamis and sea rise caused by global climate change. The final curriculum version will contain student journals and logs translated into the Hawaiian language for immersion students.

Teacher Training, Professional Development, and Field Testing: As of June 2012, the Program has trained 32 teachers who are now field testing the lessons with their students at 12 schools on five islands, (Hawai'i, Maui, O'ahu, Moloka'i, and Kaua'i). Schools are selected with priority going to schools located in tsunami evacuation zones with high numbers of Native Hawaiian students. Teachers attend several trainings during the school year and provide critiques to improve the lessons. Teachers also participate and earn professional credits in an on-line course developed and provided by the University of Alaska Fairbanks, Geophysical Institute.

<u>Multimedia Resources and Booklets</u>: The University of Alaska Fairbanks, Geophysical Institute is also developing a program website that includes the lesson plans, appendices, and multimedia interactive features. The website also serves as a teacher resource clearinghouse, communication hub and portal to the online course. The website will serve as the permanent archive for the Pacific Tsunami Museum collection of Pacific tsunami survivor stories, photographs, and videos.

<u>Tsunami Evacuation Plan Consultations:</u> The Museum provides informal consultations to Principals and their safety committees to assist schools to enhance their existing tsunami evacuation preparedness plans and procedures in cooperation with the DOE and County Emergency Management. Schools are assisted in making their plans more robust in meeting a range of contingencies based on lessons learned around the Pacific.



<u>Partnerships</u>: The Pacific Tsunami Museum is working with its partners in the scientific, university, and disaster preparedness communities to critique and review instructional materials and resources to ensure scientific accuracy. The committee is led by University of Hawai'i at Hilo Professor Emeritus Walter Dudley. The HITEC Program partners includes:



The Pacific Tsunami Museum (PTM) is a private, nonprofit founded in 1994 with assistance from the University of Hawai'i at Hilo. Located in Hilo, the Museum develops exhibits, outreach programs, and

archives to disseminate public education about tsunamis for the safety of people in the Pacific Region. It serves as an international center for fostering tsunami research, education, and cultural exchange, and serves as a living memorial to those who have lost their lives to tsunamis.



**The Pacific American Foundation (PAF)** serves PTM as a subcontractor and is a nonprofit organization dedicated to improving the lives of Pacific Americans.

Established in 1993, the PAF has created a variety of culturallybased and place-based curricula and teacher trainings for public schools.



**Geophysical Institute (GI), University of Alaska Fairbanks** serves PTM as a subcontractor and is a leading arctic and geosciences research center. The GI

has also conducted a similar project, the "Alaska Tsunami Education Program," for Alaska students.

#### For more information:

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# PROGRAM TEAM

## Pacific Tsunami Museum - Grantee

Donna Saiki, Executive Director, HITEC Principal Investigator Dr. Walter Dudley, HITEC Chief Scientist, Emeritus Professor, University of Hawai'i-

Marlene Murray, Program Manager Barbara Muffler, Archivist Roxane Kapuaimohalaikalani Stewart, School Evacuation Planning Specialist Tim O. Bryan, Video Production Jan Zulich, External Evaluator Michele Ebersole, External Evaluator Jennifer Hamilton, Fiscal Consultant

#### Geophysical Institute, University of Alaska Fairbanks - Subcontractor

Kathy Berry Bertram, HITEC Program
Consultant /Education Director
Glenda Findlay, HITEC Administration
Director/Management Consultant
Melina Draper, Online Resource Developer
Sam Norlin, Online Resource Developer
Eric Muehling, Multimedia Developer
Stanley Rillon, Illustrator

#### **Pacific American Foundation - Subcontractor**

Herb Lee, Jr., Executive Director Program Consultant Maura O'Connor, Curriculum Team Leader/

Ka'ōhua Lucas, Curriculum Writer
Norbert Larsen, Curriculum Writer
Kapono Ciotti, Curriculum Writer
Joylynn Paman, Curriculum Writer
Walt Mahealani Keale, Curriculum Writer
Brook Kapūkuniahi Parker, Illustrator
VerlieAnn Malina-Wright, Ed.D., Culturebased Education Advisor
Doug Knight, Training Manager
Dr. Anna Ah Sam, Evaluation Advisor

# Contributors

Colleen Murakami, Environmental Education Specialist, Hawai'i Department Of Education Joseph Ciotti, Professor, Windward Community College

Virginia Branco, NOAA Mokupāpapa Discovery Center

Kapua Keliikoa-Kamai, Wai'anae Valley Homestead Association

Sharlette Poe, Wai'anae Neighborhood Board Mark Stege, Marshall Islands High School Joachim deBrum, Marshall Islands High School

## **SCIENCE ADVISORS AND REVIEWERS**

Dr. Walter Dudley, Professor Emeritus, Chair of HITEC Advisory Committee, University of Hawai'i at Hilo

Dr. Gerard Fryer, Geophysicist, Pacific Tsunami Warning Center, Ewa Beach, Hawai'i

Ms. Cindi Preller, Tsunami Program Manager, National Weather Service Headquarters, Anchorage; and West Coast and Alaska Tsunami Warning Center Mr. Andy Bohlander, Hawai'i Department of Land and Natural Resources, Shoreline Specialist

Dr. Bruce Richmond, U.S. Geological Survey, Pacific Coastal and Marine Science Center, Santa Cruz, California

Dr. James Goff, Director, Australia-Pacific Tsunami Research Centre (APTRC), University of New South Wales, Sydney, Australia

Dr. Darren NT King, Climate Research Scientist, Taihoro Nukurangi, National Institute of Water and Atmospheric Research (NI-WA), Auckland, New Zealand

Dr. Art Sussman, Sr. Project Director, WestEd

Dr. Marylin Low, Sr. Language and Literacies Specialist, Pacific Resources for Education and Learning

Dr. Chip Fletcher, Associate Dean, University of Hawai'i, School of Ocean, Earth Science and Technology (SOEST)

# HAWAI'I EMERGENCY MANAGEMENT REVIEWERS

Bob Collum, Civil Defense Staff Specialist, Maui County Civil Defense Agency

Quince Mento, Past Administrator, Hawai'i County Civil Defense Agency

Bill Hansen, Hawai'i County Civil Defense Agency

Mark Marshall, former Emergency Management Officer, Kaua'i County Civil Defense Agency

John Cummings, Public Information Officer, City & County of Honolulu Department of Emergency Management

Kevin Richards, Tsunami Planner, Hawai'i State Civil Defense

# PARTICIPATING SCHOOLS (as of Aug. 2012)

Chiefess Kapiʻolani Elementary, Hilo

Connections Public Charter, Hilo

Ka Waihona o ka Na'auao, Nānākuli

Ke Ana La'ahana Public Charter, Keaukaha

Ke Kula Ni'ihau o Kekaha Learning Ctr., Kekaha

Kahakai Elementary, Kailua-Kona

Kamaile Academy Public Charter, Wai'anae

Ke Kula 'O S.M. Kamakau, LPCS, Kane'ohe

Kekaha Elementary, Kekaha

King Kamehameha III Elementary, Lahaina

Kua O Ka Lā Public Charter, Puna

Lā'ie Elementary, Lā'ie

Moloka'i High, Ho'olehua

Nānāikapono Elementary, Nānākuli

Wai'alae Elementary, Kahala

Wai'anae High, Wai'anae

West Hawai'i Explorations Academy PCS, Kona

#### FIELD TEST TEACHERS (Years 1-2)

Chiefess Kapiʻolani Elementary Joy Hirayama Kim Springer

Connections Public Charter School (PCS) Bill Ebersole Kate Wines

Ke Ana La'ahana PCS Roxane Kapuaimohalaikalani Stewart

Ka Waihona o ka Na'auao PCS Kelii Marrotte Puanani White Frances Victorino Micah Ah Sui

Ke Kula Ni'ihau o Kekaha Learning Ctr. PCS Tia (Jamie) Koerte

Ke Kula 'o S. M. Kamakau LPCS Ululani Victor

Kua O Ka Lā NCPCS Teresa Reveira Puanani Wilhelm

*Lā'ie Elementary* BarbaraJean Kahawaii Valerie Pula

Moloka'i High Gandharva Mahina Hou Ross

Nānāikapono Elementary Krystal Kaleinani Tim Sing Keala Nunuha Elliena Inoue Josette Germano Mila Bradley Errin Sandobal Nichole Montague Mahealani Kiyan

Wai'alae Elementary Norbert Larsen

Wai'anae High Marcie Balatico Eric Burgie Richard Salboro Kristen Sarah Bright Jason Bray Kevin Bray

West Hawai'i Explorations Academy PCS Scott Voorhies Rita Calvan

As of August 2012