Principal Investigator: Tseng, Rose Y.
Organization: U of Hawaii at Hilo
Submitted By:
Cabanilla, Jazzmin - Other Authorized User
Title:
LSAMP: Islands of Opportunity Alliance

Project Participants

Senior Personnel
Name: Tseng, Rose
Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Smatresk, Neal
Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Ploeger, Bernard
Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Perez-Frayne, Carmen
Worked for more than 160 Hours: Yes
Contribution to Project:
Ms. Perez-Frayne currently serves as the IOA-LSAMP Program Manager. Responsibilities include the overall supervision of the Alliance and operation of the centralized office and on-going planning, coordination and implementation of the Alliance activities.

Name: Brown, Dan
Worked for more than 160 Hours: Yes
Contribution to Project:
Mr. Brown currently serves as the IOA-LSAMP Program Director.

Name: Ching, Moana Ulu
Worked for more than 160 Hours: Yes
Contribution to Project:
Ms. Ching currently serves as the IOA-LSAMP Program Assistant. She works directly with and assists the Program Manager in management of the IOA-LSAMP program. She receives 50% salary support from the IOA-LSAMP.

Name: Lipe, Daniel
Worked for more than 160 Hours: Yes
Contribution to Project:
Mr. Lipe currently serves as the IOA-LSAMP Program Specialist. He coordinated the inaugural 2007 IOA-LSAMP 'Discovery Days' held at the four partnering institutions in the State of Hawaii offering STEM baccalaureate degrees. He receives 100% salary support from the IOA-LSAMP.

Name: Ganesathasan, Menaka
Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Cabanilla, Jazzmin
Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Anguay, Cornelia
Worked for more than 160 Hours: No

Contribution to Project:

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Other Participant

Name: Kasarski, Sharyl
Worked for more than 160 Hours: No
Contribution to Project:
Ms. Kasarski is the Project Development Specialist with the University of Hawaii at Hilo fiscal administrative office. She has provided the IOA-LSAMP program with grant administrative support during the proposal and initial set-up process.

Name: Gealon, Paula
Worked for more than 160 Hours: No
Contribution to Project:
Ms. Gealon is a specialist with the University of Hawaii at Hilo fiscal administrative office. She has created and will create future dispersing accounts for partnering institutions. She is also a valued resource on the proper management of such accounts.

Name: Hinshaw, Virginia
Worked for more than 160 Hours: No
Contribution to Project:
Ms. Hinshaw has taken on the role of new Co-PI, replacing Neal Smatresk.

Name: Franco, Bob
Worked for more than 160 Hours: No
Contribution to Project:
Mr. Franco currently serves on the IOA-LSAMP Governing Board as well as the campus coordinator for Kapiolani Community College. Establishes and/or oversees LSAMP activities including tutoring programs, summer-bridge programs, and other STEM-related activities.

Name: Tellei, Patrick
Worked for more than 160 Hours: No
Contribution to Project:
Mr. Tellei currently serves on the IOA-LSAMP Governing Board as well as the campus coordinator for Palau Community College. Establishes and/or oversees LSAMP activities including tutoring programs, research opportunities, and other STEM-related activities.

Name: Dykstra, Doug
Worked for more than 160 Hours: No
Contribution to Project:
Mr. Dykstra currently serves on the IOA-LSAMP Governing Board.

Name: Satele-Galeai, Adele
Worked for more than 160 Hours: No
Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Hess, Don
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Brezinsky, Laura
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Keaton, Glenn
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Yuzi, Vernice
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Six, Janet
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Takahashi, Francis
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Turner, Helen
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Krupp, David
Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: James, Spensin

Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Santos, Michelle

Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Cabral, Manny

Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Kaakua, Josh

Worked for more than 160 Hours: Yes

Contribution to Project:
Mr. Kaakua serves as the campus coordinator for the University of Hawaii at Manoa. He also coordinates the Native Hawaiian Science & Engineering Mentorship Program, which works collaboratively with the IOA-LSAMP.

Name: Raymond, Kiope

Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Lynch, Brian

Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Jenkins, R. Bud

Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.

Name: Helsham, Irene

Worked for more than 160 Hours: No

Contribution to Project:
Coordinated LSAMP activities at their respective campus. Activities included tutoring programs, research opportunities, and other STEM-related activities. Served as the point of contact for Alliance activities and acted as an information source for campus projects as well as a mentor for students on his or her campus for these activities.
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Name: Bertelmann, Pelika

Worked for more than 160 Hours: Yes
Contribution to Project:

Name: Yamamoto, Brian

Worked for more than 160 Hours: No
Contribution to Project:

Name: Torres, Dr. Alfredo

Worked for more than 160 Hours: No
Contribution to Project:

Research Experience for Undergraduates

Organizational Partners

Hawaii Volcanoes Observatory
The Hawaii Volcanoes Observatory (HVO) hosted an IOA-LSAMP student as a research intern during the summer of 2007. The student conducted independent research on volcanic flow within the Hawaii Volcanoes National Park under the mentorship of a HVO researcher.

Pac. Internship Prg. for Expl. Sciences
The Pacific Internship Programs for Exploring Sciences (PIPES) is an umbrella group that houses four different undergraduate and teacher research experiences for students in Hawaii. PIPES and IOA-LSAMP staff work collaboratively on recruitment, program logistics, and implementation of IOA-LSAMP activities. In 2008, PIPES provided research experiences for six LSAMP students.

Pac. Aquaculture & Coastal Res. Ctr.
Pacific Aquaculture & Coastal Resources Center (PACRC) formerly housed the IOA-LSAMP main office. PACRC also hosted four IOA-LSAMP students in 2007/08 in various research assistantship positions under the mentorship of PACRC researchers Dr. Maria Haws and Dr. Kevin Hopkins.

Adopt an Ahupua’a

Alaska Native Science & Engineering Prgm

Aloha Medical Mission

American Heart Association

American Cancer Society

ASCC Land Grant

Behler Chelonian Center

Belau National Museum

Blood Bank of Hawaii
Castle Medical Center
Northern Marianas Dept of Environmental
Palau Coral Reef Research Foundation
Department of Fish and Wildlife Agencies
Diamond Head Clubhouse
Epilepsy Foundation of Hawaii
Family Promise of Hawaii
Hawaii Medical Center East/West
Hawaii Council of Teachers of Mathematic
Hui Aloha Kiholo
Hui Malama o Mo'omomi
Institute of Pacific Island Forestry
Ka 'Imi 'Ike
Ka 'Umeke Ka'eo Charter School
Kaiser Permanente Medical Center
Ka'upulehu Interpretive Center at Kalaem
Ke Ola Mamo
Leahi Hospital Community Garden
Lyon Arboretum
Na Kalai Wa'a
Na Pua No'eau
Native Hawaiian Education Association
National Oceanic and Atmospheric Administration (NOAA)
National Department of Forestry
Organization for Tropical Studies Inc

Palolo 'Ohana Learning Center

Papahanaumokuakea Marine National Monume

Partners in Development

Pacific American Foundation

Puanui Project

Sea Life Park

Social Sciences Research Institute

The Andrew Sabin Family Foundation

The Desert Tortise Council

The Kohala Watershed Partnership

TRIO Upward Bound Program

Spatial Data Analysis Labs

US DOE STEM Scholars Program

US Forest Service Laupahoeohoe

Waikiki Aquarium

YMCA Hawaii

Palau International Coral Reef Center

Palau Environmental Quality Protection B

Palau Division of Marine Resources

Palau Division of Agriculture

Palau Conservation Society

Palau Environmental Health/Sanitation Of

Palau Office of Envio Research Center
Palau the Nature Conservancy

UH Sea Grant

HawCC Forest TEAM Program

HawCC Service Learning Program

Maui CC TCUP Ho'okahua Project

UH Manoa: Native Hawaiian Mentorship Program

UH Manoa: Kokua a puni Student Program

UH Manoa: Ka Papa Lo'i Kanewai

WCC Pacific Center for Environmental Studies

Other Collaborators or Contacts

'Ahahui Mālama I Ka Lā - Dr. Charles Pe'ape'amakawalu Burrows & Dr. Clyde Tamaru
Australia Institute of Marine Science - Dr. Eric Wolanski
Melanae Joy Cheung
Polynesian Voyaging Society - Mr. Richard Ka'imilii Scudder
Waikalua Loko Fishpond Preservation Society - Mr. Herb Lee
Chaminade University of Honolulu - Gary Livernoches - Mathematics lecturer
Chaminade University of Honolulu - M.J. Lewis - Communications lecturer
Chaminade University: Ms. Sheryl Dohm, M.S. (lecturer in Mathematics)
Hawaii Community College: HawCC Forest TEAM Program
Hawaii Community College: HawCC Service Learning Program
Maui Community College TCUP Ho'okahua Project Director Kahele Dukelow; Pookela Project Director Kaleikoa Kaeo, Liko Ae Project Director Malia Davidson, Ulu Ae Project Director Wini Chung, and many MCC Administration, Faculty, and Staff
Researchers at Palau International Coral Reef Center - Yimnang Golbuu & Steven Victor
Researchers at Palau Community College Cooperative Research Extension - Dr. Nelson Esquerra & Dr. Aurora Del Rosario
University of Guam - Dr. Chris Lobban
University of Hawaii Kewalo Marine Lab - Dr. Robert Richmond & Dr. Michael Hadfield
UH Hilo: Dr. Kevin Rhodes

Activities and Findings
Research and Education Activities:
The Pacific region has a rich treasury of people from diverse backgrounds who are unfortunately underrepresented in the sciences, but who have great potential to contribute to society in STEM areas. The Islands of Opportunity Alliance (IOA)-LSAMP program was developed to help staunch leaks in the STEM pipeline through the development of targeted support programs and efforts with the ultimate goal of increasing the number of underrepresented students receiving baccalaureate degrees in STEM disciplines. Many things were learned in our first four years that we look forward to applying to future years.

In year 4, fourteen institutions within the Island of Opportunity Alliance requested and received funding to support LSAMP activities. According to recent annual reports submitted by the fourteen partners, all programs continue to meet one or more of the four main objectives of the Alliance. All members of the IOA-LSAMP are active in providing various research experiences and educational opportunities in the STEM fields to university, community college and high school students.

Educational opportunities offered at Alliance institutions include research internships, academic support services, and summer bridge programs.

Current data show that six (6) of the fourteen institutions that requested and were awarded in year 4 used the funds to support student research internships, research projects and related activities; eight (8) of the universities and community colleges provided academic support to students interested in STEM by providing tutoring in the STEM 'gateway' courses; and three (3) institutions offered summer bridge programs for incoming freshman.

There are a total of four universities that are members of the Islands of Opportunity Alliance. The universities are UH Manoa, UH Hilo, Hawaii Pacific University and Chaminade University.

During the 2009-2010 academic year a total of forty (40) students participated in LSAMP activities at the University of Hawaii at Manoa. These activities included; research and internships, tutoring and advising sessions, mentoring, attending presentations/lectures, and active participation in training lessons and workshops.

A total of eight (8) LSAMP scholars at UH Manoa worked on research projects with university faculty and professors. Examples of individual research projects included: Investigating Costal Erosion in the Northern Shores of Oahu, Survey Modeling Analysis of MS4 Highway Storm Runoff on Oahu, and Biomass filters.

To increase academic support for LSAMP students and provide scholars with a sense of community, the LSAMP program at UH Manoa established the ‘Ohana mentorship program. The program focuses on developing a tight knit relationship between upper classmen, incoming freshmen and existing sophomores. It was found that establishing and developing a relationship between upper classmen and undergraduates within the LSAMP program strengthened the support system for both new and existing LSAMP scholars within STEM disciplines and provided participants with the ability to network with fellow peers and access valuable resources.

As participants of the LSAMP program, scholars at UH Manoa were encouraged to attend academic advising sessions that included a review of each scholar's academic plan as well as mid-semester grade checks.

At UH Hilo, the IOA-LSAMP Program has partnered with the TCUP Program to strengthen the existing Keaholoa STEM Scholars Program (KSP). The collaboration between the two programs was established to; 1) provide underrepresented undergraduate students a comprehensive support program to ensure academic success in STEM degree programs; 2) increase graduation rates of those students; and 3) foster the development of successful student researchers, so that upon graduation they can competitively enter the workforce or pursue graduate studies.

According to UH Hilo's year 4 report a total of thirty (30) students participated in research and educational experiences and opportunities during 2009-2010. LSAMP scholars participated in research projects, bi-weekly program meetings, academic lectures/workshops, retreats, semester ho'ike (poster and oral presentations) and scientific and culturally based excursions.

During the 2009-2010 academic year a total of twenty (20) LSAMP students at UH Hilo participated in research projects with UH Hilo faculty or local researchers. Examples of student research include: Alien and Native Plant Interactions in Anthropogenically Disturbed Wet and Dry Forest Habitats on the Big Island, Coral Resource Index: Papahanaumokuakea, and the Cultural Effects of Habitat Fragmentation on Tropical Bird Species.

To foster the sense of an 'academic community' and strengthen the support system for LSAMP scholars within the Keaholoa STEM Scholars Program, all student were encouraged to attend and participate in all program activities and events.
Hawaii Community College (HawCC) in collaboration with the Hawaii Community College Forest TEAM Program and Hawaii Community College Service Learning Program, offered community college students opportunities to work in summer environmental internships.

During the summer of 2010 at total of four (4) HawCC students received stipends to participate in summer environmental internship experiences. Student interns worked on twelve (12) environmental Service-Learning projects with various community, county, state and federal agencies.

One HawCC LSAMP student received stipend support to work directly with LSAMP Coordinator, Laura Brezinsky to assist with coordinating LSAMP activities, including organizing environmental projects, providing leadership and guidance for student participants, and facilitating outreach programs.

During the 2009-2010 academic year a total of two (2) Maui Community College (MCC) LSAMP students participated in research projects. Research projects focused on monitoring the affect of effluent seeps on the growth of seaweed (limu) at Kahekili Beach on Maui, and 'auwai (water system) restoration in Kaua'ula valley.

The LSAMP Program at Maui Community College (MCC) also partnered with the TCUP Program (Ho'okahua Project), to plan and execute two campus visits for eight (8) community college students interested in majoring in STEM and transferring to UH Manoa and UH Hilo. During both campus visits, students were able to connect with programs of interest in STEM fields, meet with STEM program representatives, visit with different student support services, and speak with Admissions and Student Housing representatives. The campus tours and educational outreach activities assisted students in preparing for and transferring to the Universities.

Honolulu Community College (HCC) used its LSAMP award to provide academic support services in the form of tutoring. During the 2009-2010 academic year at least four (4) LSAMP scholars were provided stipends to work as tutors in both the College Skills Center and the Native Hawaiian Center. The centers provided both drop-in and by appointment tutoring services specifically for students needing assistance in the areas of mathematics, science and technology.

Chaminade University continued to use LSAMP funding to facilitate their 'LSAMP STEM Summer Bridge' program. Recent data show that a total of sixty-two (62) students participated in the science bridge program at Chaminade in 2010. The six-week summer bridge program that focuses on Math and Science was designed to counteract under-preparedness of incoming students with an interest in the STEM fields including: Forensic Science, Pre-Medical Studies or Biology.

During the summer of 2010 the Chaminade Summer bridge program was divided into two tracks; 1) Math Bridge (non-science majors); and 2) IOA-supported Science Bridge (projected science majors). Both tracks were developed to assess the initial level of math competency in incoming students and to provide intensive preparation for the study of mathematics at the college level, as well as address deficiencies in math skills that would preclude success in their chosen majors.

Palau Community College (PCC) currently has three programs that are directly involved in IOA-LSAMP activities. The three programs include: 1) Environmental/Marine Science Program (EMS), 2) Information Technology Program (IT), and 3) Agricultural Science Program (AgSci). A total of sixty-one (61) students participated in LSAMP activities at PCC. The students enrolled in LSAMP programs at Palau Community College were active participants in various activities including: research, internships and mentorships, attending conferences, conducting workshops for upward bound students, and participating in presentations and surveys.

During the 2009-2010 academic year a total of two (2) Environmental Marine Science students received short term contracts to work as lab assistants to assist science instructors. One student participated in the Organization for Tropical Studies, Native American and Pacific Islander (OTS-NAPIRE) Undergraduate Research Experience and Cultural Exchange program in Costa Rica, and another EMS student was awarded the Undergraduate Research Mentoring (URM) scholarship from the University of Hawaii at Manoa.

Northern Marianas College (NMC) LSAMP students continued to develop the Carnegie Learning Online Developmental Mathematics Program. The goal of implementing the Online Mathematics program is to test the program's software and determine the software's viability for use in developmental and college courses at NMC.

During the 2009-2010 academic year several new programs and activities were initiated at the college including: 1)the Natural Resource Management Student Club/Volunteer Outreach program; 2) the Faculty Modular and Curricular Development activities, and 3) the Faculty/Student Field Works/Investigations/Case Reports/Studies activities.

NMC LSAMP students were also provided stipends to work as science lab aids, work assistants, and math/science tutors. During the 2009-2010 academic years NMC was able to hire science lab aids to assist science instructors in maintaining labs, materials and equipment.
Kapiolani Community College (KCC) highlighted two (2) students in their annual report; Ms. Nicole Mederios and Mr. Dane Runsewe. Both LSAMP students were involved in the Student Leadership- Environmental and Health Service Pathway Activities at KCC during the 2009-2010 academic year.

Ms. Nicole Medeiros coordinated the Environmental Service-Learning Pathway at KCC for the 2009-2010 academic year. Over 140 students completed Service-learning in the Environmental pathway during the stated period. Ms. Medeiros also provided strong support to the College's Adopt an Ahupua'a program which connects Anthropology, Biology, and Botany students at KCC and UH Manoa with environmental stewardship opportunities throughout the island of O'ahu. The Student Leadership-Environmental Service Learning Pathway at KCC focuses on: 1) the recruitment and support of Native Hawaiians and all students in the KCC Environmental Service-Learning Pathway; 2) conducting research on environmental processes and issues; and 3) presenting research findings at the Western Region Campus Compact Consortium on Service-Learning in Indigenous Communities.

Mr. Dane Runsewe coordinated the Health Service-Learning Pathway at KCC for the entire 2009-2010 academic year. The Student Leadership-Health Service Pathway at KCC focuses on: 1) the recruitment and support of Native Hawaiians and all students in the KCC Health Service-Learning Pathway; 2) conducting research on health processes and issues; and 3) presenting research findings at the Western Region Campus Compact Consortium on Service-Learning in Indigenous Communities. Mr. Runsewe led the implementation of Kapiolani Community College's World AIDS Day events that were held on December 1, 2009.

College of the Marshall Islands (CMI) used LSAMP funds to provide stipends for tutors in the ‘gateway courses’, including Mathematics, Science and Writing. During the fall 2009 and spring 2010 semesters, tutoring was conducted at the CMI tutoring center facilitated by the Developmental Education Department and Student Life. During year 4 it was discovered that students attending CMI were lacking technical writing skills and data suggested that technical writing especially among enrolled students were below the average standard. Due to the lack of technical writing skills among students interested in the STEM fields, the directors of the Writing Center at CMI started to work cooperatively with Math and Science Faculty members on implementing special Science-Math Writing tutorials in the Writing Center for the next academic year.

Hawaii Pacific University (HPU) continues to use LSAMP funds to conduct its Summer Bridge program and provide role-model LSAMP student tutors to work with students who are having difficulty in math courses below the pre-calculus level.

The summer bridge program at HPU was designed to prepare incoming freshmen for college level mathematics courses. A total of three (3) LSAMP student tutors were hired to work with small groups of students during the 2009 summer bridge program. The purpose of the student tutors is to serve as role models and assist students working on problems during class.

Role-model LSAMP student tutors were assigned to mathematics lab courses that included MATH 0981, MATH 0991 and MATH 1106. Tutors worked with students individually, as well as in small groups; they also helped students with the understanding of mathematical content, computer-assisted learning modules, and technology.

A total of twelve (12) student tutors worked in both the tutoring center and drop-in center to provide additional help to the students enrolled in Math lab classes. Tutoring was also offered at military bases through the Military Campus Program. Approximately 131 students received tutoring support services from role-model LSAMP student tutors during the 2009-2010 academic year.

American Samoa Community College (AMSCC) used LSAMP funds to provide research internships and stipends for math and science tutors. During the 2009-2010 academic year a total of six (6) students participated in research projects both locally and off-island. Student scholars worked with AMSCC faculty and various local and government organizations including the Department of Education, the Marine and Wildlife Reserves, the National Park Service, and the Coral Reef Advisory Council. Ten (10) students also attended the Annual Marine Biology/Tropical Ecology REU on Comparison of Coral Reef Viability Between the Islands of Tutilla, Ofu and Manua.

Tutoring services were also offered at AMSCC during the 2009-2010 academic year. A total of (10) student tutors were hired to provide tutoring services in lower Mathematics courses, Biology, Chemistry, and Physical Science courses.

Guam Community College facilitated a mentorship program that promoted academic achievement by providing assistance to students in classroom and on fieldtrips. The main objective of the program was to have LSAMP students, who are identified as Success Facilitators, to serve as tutors who work closely with instructors and assist students in lower level Math and Science courses. According to Guam Community College's recent report a combined total of 175 students received tutoring assistance in Mathematics and Science courses during the 2009-2010 academic year.
Findings:
From the implementation of the new Islands of Opportunity Alliance (IOA)-LSAMP program much has been established, many obstacles have been addressed and much has been learned. To begin, bringing the new program to fruition warranted a successful review of non-University of Hawaii partners' financial abilities to manage National Science Foundation funds and the development of subcontract procedures for each. With this now established, we hope our non-UH partners are better positioned to be competitive for future NSF funding opportunities.

Since year 1 the administrative staff has changed and the Project Manager and Project Associate position has been combined into one full time position. Mrs. Carmen Perez resigned in February 2009, Ms. Ulu Ching also resigned in February 2009. Mrs. Cornelia Anguay was hired to temporarily fill the Project Manager position between the months of February to mid July until the new Project Manager, Ms. Jazzmin Cabanilla was hired in mid July 2009.

The IOA-LSAMP held its first and second annual Governing board meetings on January 29, 2007 and September 14, 2007, both on O'ahu Island. These meetings proved essential to the establishment of our funding procedures and built a solid foundation for our overall Alliance goals and communication network.

In year 3 the IOA LSAMP Governing board met during the 2009 IOA-LSAMP Summit that was held on February 16-18, 2009. The highlight of discussion at the 2009 Annual Governing board meeting was the content of the preliminary external evaluation report that was presented by Dr. Carol Murry at the Summit.

In addition to the Governing board, the administrative staff worked diligently to establish an IOA-LSAMP website: http://www.uhh.hawaii.edu/affiliates/ioalsamp as part of an efficient communication network. This proved critical given our expansive distance between alliance member institutions. An interactive web page was also created through: http://www.PBworks.com, and is geared to improve communication between the administrative team within the alliance including campus coordinators, principal investigators and the program director. Access to the interactive web page is gained through an invitation process and is limited to the administration team. UH Hilo is currently working on creating a web page via http://www.facebook.com to establish an interactive site for LSAMP students to communicate amongst one another and keep up to date with the IOA-LSAMP program and program related activities.

In year 3 an External Evaluator was hired to evaluate the Island of Opportunity Alliance program. Dr. Carol Murry conducted the evaluation between the months of October 2008 thru March 2009. A preliminary report of the evaluation was presented by Dr. Carol Murry during the 2009 Islands of Opportunity Alliance-LSAMP Summit in February 2009. The evaluation is intended to assist IOA members and leaders to maximize the impact of the grant by providing conclusions and recommendations based on qualitative data obtained from structured interviews with IOA campus leaders, site coordinators, other staff and IOA students.

Unfortunately, the University of Hawaii at West O'ahu terminated its partnership with the IOA LSAMP alliance in the 2008-2009 academic years because the institution did not offer majors within the STEM fields.

Despite the loss of UH West O'ahu, every institution within the alliance continues to meet at least one of the four main objectives of the LSAMP program. Data collected from the partners within the alliance suggest that LSAMP students and students that participate in LSAMP activities are benefitting academically. There are multiple examples of: 1) LSAMP students who have successfully completed their two-year degrees and have transferred to four year universities within the alliance; 2) LSAMP students who have received academic scholarships; 3) LSAMP students continuing research with research projects beyond graduation; and 4) LSAMP students presenting research, coordinating programs and providing outreach activities for not only the academic world but the community at large.

The institutions within the alliance provide STEM students with access to different resources so that they are successful in their educational and career endeavors. By participating in LSAMP activities students are equipped with the experience and knowledge that are often needed to succeed in the real world.

The application of different educational/academic activities, such as research and internship opportunities, tutoring services, etc. varies from institution to institution but the findings and results of the LSAMP programs at the individual universities and colleges are consistent and suggest that providing students with educational opportunities and support outside of the classroom is beneficial to their academic growth. Some examples are provided below.

The University of Hawaii at Hilo provides its LSAMP students with internship and research opportunities. By placing scholars with professional mentors LSAMP students are able to obtain both field and lab experience. By providing research and internship opportunities for students, those students are able to gain hands on experience in their STEM fields of choice and work along side professional mentors. LSAMP students also gain public speaking skills by presenting their research to classmates, faculty, staff, family, and at local and national conferences.
Students also participate in outreach activities that include field trips and attending lectures. Attending and participating in extracurricular activities broadens scholars' perspectives of how their education and interest in STEM applies to their everyday life as well as the community at large.

At Chaminade the ability to successfully pilot a new summer bridge program for intended science majors has: 1) provided insights into the characteristics of the program most likely to result in successful students; 2) provided a first insight, as to the level of interest and participation from students in such a program; and 3) provided another level of contribution to the mission of engaging under-prepared and under-represented students in the STEM fields.

The success of LSAMP activities at Palau Community College can be measured by the increase of student graduation of LSAMP students in the STEM fields and programs. In the 2009-2010 academic year there were a total of sixty-one (61) students who were active LSAMP participants. A total of four (4) students graduated from the AG Science Program; one (1) student received the URM scholarship from UH Manoa; and fourteen (14) graduated from the Information Technology program.

Kapiolani Community College highlighted two students in their annual report. Ms. Medeiros and Mr. Runsewe. The two students coordinated the Service-Learning Environmental and Health Pathways at KCC during the 2009-2010 academic year. Ms. Medeiros transferred to UH Manoa in the spring of 2010 and Mr. Runsewe transferred to UH Hilo in Fall 2010, to major in Biology.

The College of the Marshall Islands and Hawaii Pacific University continue to provide tutoring services for students who are unprepared for college level math and science courses. Data from both institutions show that students who engaged in tutoring services with LSAMP student tutors did better in the 'gateway courses' than students who did not take advantage of tutoring activities.

As to be expected, establishing a new Alliance didn't happen without some obstacles. The program has worked hard to address each obstacle and find working solutions for all involved. We are proud to report that after our first four years, we have made great progress and have appropriately addressed many of our concerns. For example in Year 1, in order to help alleviate reporting discrepancies and to ensure the successful completion of the WebAMP survey requirements, as the lead institution, UH Hilo asked each IOA-LSAMP Alliance member to complete the data entry off-line on the provided spreadsheets and then the administrative staff at UH Hilo entered the data on their behalf. This was appreciated by our member institutions for this first year; however for year two we asked each institution to directly enter the data themselves. In thinking through this process we felt it was imperative to provide WebAMP training to help our partners appropriately prepare their data collection throughout the year and be in the best position possible to enter their data more efficiently as the time approaches. Early in 2008, we provided support for a representative from QRC to come to Hawaii and work with our staff to prepare a WebAMP training CD. This CD has been used to provide WebAMP training for all our Campus Coordinators and will hopefully make the reporting process more transparent and efficient. Having this CD has also allowed us to conserve travel funds by enhancing our electronic dissemination efforts.

Another example of success is that at the beginning of our program, the IOA-LSAMP Governing Board established guidelines for awarding funding to partner institutions such that on an annual basis partners submit Project Activity Plans and Budgets to the Governing Board for review. After working closely with our fiscal administrative office, and each participating institution, we successfully established a sub award process. We continue to work with the NSF LSAMP administration team to expedite this process, for one of its final steps entails receiving NSF re-budget approval.

Another issue we continue to address is that the IOA-LSAMP Program spans the largest geographic area of any LSAMP program; in fact it spans distances greater than the entire continental United States. The distance, and inability to drive between partner locations, has put a great demand on our travel budget. As a new LSAMP it is helpful, if not essential, to meet face to face with our partner institutions, but unfortunately this is not possible with our current travel budget. In addition, the limited travel funds have presented other challenges as we work to establish our new Alliance. For instance, our Governing Board is only able to meet annually, making it difficult as we establish IOA-LSAMP guidelines, procedures and problem solve issues that inevitably arise for any new program. Additionally, one of our biggest challenges is the lack of face-to-face communication.

The Islands of Opportunity Alliance-LSAMP program continued its mission during the 2009-2010 academic year to specifically address and develop solutions regarding the geographic and communication barrier that exists within the alliance. In a direct effort to address the communication barrier that exists within the Islands of Opportunity Alliance, a website was designed for the IOA-LSAMP program. The website is a critical resource that can be effective if utilized correctly. Therefore the IOA-LSAMP program has focused its attention in re-designing and updating its current web site: http://www.uhh.hawaii.edu/affiliates/ioalsamp to be user friendly and more interactive. The website will serve as an information source for all the partners within the Alliance so that every partner has access to general program information including, but not limited to; program objectives, program timelines, program reports, program deadlines, etc.

During spring 2010, the Islands of Opportunity Alliance also launched its first e-newsletter; The Wayfinder. The objective of the e-newsletter
is to increase communication between the partners within the Alliance and provide the administrative team, campus coordinators, and student scholars with another outlet to access important program information, keep up to date about program activities and events, highlight individual program accomplishments and outstanding scholars, share program information, and address concerns.

**Training and Development:**
The IOA LSAMP program hosted and sent representatives to attend a number of different events this year that would be considered training and development activities for both students and faculty. These events include:

1) The 2009 Islands of Opportunity Alliance Student Conference hosted by the University of Hawaii at Hilo from August 3, 2009 to August 6, 2009,
2) The 2010 PPEC (Pacific Postsecondary Education Council) Meetings,
3) The 2010 NSF Jam Session that was held during the summer in Washington D.C. and
4) The 2010 LSAMP B/D Poster Session on the Hill Conference in Washington D.C.

The 2009 Islands of Opportunity Alliance Student Conference was held at the University of Hawaii at Hilo from August 3 to 6th, 2009. Students and staff representing seven of the fourteen institutions attended the conference and conducted presentations on a wide array of STEM topics. The goal of the student conference was to provide an avenue for underrepresented undergraduate science, technology, engineering and/or mathematics (STEM) LSAMP students to present their recent research and internship experiences to fellow LSAMP students and to obtain information and insight on the various STEM programs and educational opportunities throughout the Pacific region, the continental United States and internationally. By bringing students together, the IOA-LSAMP Program hopes to enhance communication between the partners of the alliance, strengthen inter-campus and inter-student relationships, and most importantly, strengthen the academic STEM pipeline to increase the number of underrepresented students receiving baccalaureate degrees in the STEM fields. To continue the mission of strengthening the alliance, the IOA-LSAMP program plans to hold a Student Conference at different partner Universities and Colleges within the state of Hawaii on a yearly basis.

The 2010 PPEC (Pacific Postsecondary Education Council) meetings are conducted on a quarterly basis. The PPEC council includes Presidents and Chancellors of several institutions within the Islands of Opportunity Alliance. IOA-LSAMP Program Director, Dr. Daniel Brown attended the PPEC meetings during the 2009-2010 academic year and received positive feedback from partners with regard to improving articulation agreements between institutions within the Alliance and working with each university and community college's Institutional Research officers in implementing an improved student tracking system.

The National Science Foundation Jam Session hosted by NSF has been an invaluable opportunity to bring together the many NSF HRD funded program staff from Hawaii. IOA-LSAMP Principal Investigator Rose Tseng and Program Director, Dr. Daniel Brown attended the Joint Annual Meeting of the National Science Foundation in Washington, D.C., from June 6 to 9, 2010. Principal Investigators and Program Directors were invited to gather in Washington, DC for training and to discuss, present, leverage expertise, and create connections to the other research and education awards funded within each of the HRD programs, the EHR divisions, and in the co-sponsoring BIO and GEO directorates.

During the summer of 2010 the LSAMP program held a Bridge to Doctorates Poster Session on the Hill Conference in Washington D.C. Students from all LSAMP programs were invited to attend and present research at the conference. Three representatives from the Islands of Opportunity Alliance attended the conference; Program Manager, Ms. Jazzmin Cabanilla, and two student scholars, Mr. Nakoa Goo and Ms. Haunani Kane. Both scholars presented research to their fellow peers, LSAMP staff, Congresswoman Mazie Hirono and her staff.

Individual institutions within the Alliance also held a variety of training and development activities for both students and staff.

At UH Manoa faculty and staff sent representatives to the Alaska Native Science and Engineering Program's Dissemination Conference from January 27-30 in Anchorage, Alaska. Conference participants participated in developing comprehensive recruitment, retention and placement plans aimed at effecting a systematic change in the hiring patterns of indigenous Americans in the engineering and science professions.

At UH Hilo the Keaholoa STEM Scholars Program (KSP) hosted a Mentor Madness workshop. The main objective of the workshop was to provide potential and existing mentors an opportunity to connect or re-connect with their peers, exchange stories, share information about past and current research experiences, learn more about the Keaholoa program and how to become a mentor for KSP scholars.
During the 2009-2010 academic year, UH Hilo campus coordinator Mrs. Pelika Bertelmann attended a two-day GIS Education workshop. Mrs. Bertelmann works directly with student scholars, and because many scholars utilize GIS technology for their projects, it was beneficial for Mrs. Bertelmann to attend the workshop to better her understanding of GIS technology and its potential in education, project possibilities, and career aspirations.

Northern Marianas College requires LSAMP tutors to enroll in MA 192, a Math/Science Tutoring course that was designed to train new tutors by developing their proficiency in teaching and tutoring methods that directly address math/science anxiety, phobias, fears, and negative attitudes toward math and/or science. Faculty at NMC also participated in Faculty Modular and Curricular Development Activities as well as Faculty/Student Field Works/Investigations/Case Reports/Studies activities. Having lab aids to assist instructors has resulted in positive feedback from both students and science instructors. The lab aids helped science instructors in labs and lectures, serving approximately 200-300 students in one year.

College of Marshall Islands Math and Science Instructors started working closely with the Writing Center to determine why technical writing at the college is well below standard and is in the process of implementing special Science-Math Writing Tutorials at the Writing Center. The Writing Center is also collaborating with the science faculty at the institution to provide faculty development for 'Western' instructors to better address the concerns of its students.

At Palau Community College, two (2) science faculty members initiated a project to review and revise SC249 (science) curriculum, and create an online SC249 course.

Outreach Activities:

November 1, 2006 marked the official start date of the newly awarded Islands of Opportunity Alliance-LSAMP program and to assist UH Hilo and the other Alliance member institutions kick-off the start of the new program, NSF LSAMP Program Officer, Dr. A. James Hicks visited Hawaii in late October to be present during a press conference convened in Honolulu to formally announce the commencement of the Alliance. Representative from some of the 19 member institutions, along with five current LSAMP students from UH Manoa, gathered to celebrate the formation of the new Alliance. As IOA-LSAMP PI Dr. Rose Tseng, UH Hilo Chancellor, stated, the Islands of Opportunity Alliance-LSAMP is 'the start of something exciting'.

The IOA-LSAMP, the Governing Board, and Alliance Administration felt it would serve in the best interest of the Alliance and its partners to schedule campus visits during the early years of the new award. Therefore in early February 2008, Carmen Perez-Frayne (at the time the IOA-LSAMP Project Manager), Moana Ulu Ching (IOA-LSAMP Program Assistant) and Joshua Kaakua (UH Manoa Program Manager) set forth on a eleven day 'voyage' to visit the partner institutions out west: Palau Community College, Guam Community College, University of Guam, Northern Marianas College, College of Micronesia-FSM, and the College of Marshall Islands.

The main goals of this trip were to not only visit each campus and meet with the Campus Coordinators and Presidents, but also to engage in face to face dialog to learn more about the culture of each institution and its students, as well as learn more about the issues/challenges each institution faces in their effort to increase their underrepresented student enrollment and graduation of STEM majors. In addition, these meetings provided our partner institutions the opportunities to not only meet some of the core IOA-LSAMP administration in person, but to also learn more about other STEM initiatives throughout the Alliance and the greater National LSAMP program.

Immediately it was evident from the overwhelmingly gracious welcome the group received and the discussions that ensued, that this trip was a successful effort to connect and strengthen relationships with our Western Pacific partners. For a new initiative such as the IOA-LSAMP, and for culturally necessary reasons, the opportunity to meet face to face has proven invaluable and pays the essential respect to the value of establishing trusting relationships that exists within the island cultures. The Alliance looks forward to a long term relationship with its partners and the inevitable successes that lie ahead for the institutions, but most importantly, for the students.

Throughout the year, UH Manoa's LSAMP students attended Career Days and were guest speakers at informational nights at local middle and high schools to create excitement and awareness of the field of Engineering. LSAMP students serve as key role models for future college students and are an essential part of the recruitment efforts of the universities Engineering department. The program also offered two (2) summer bridge programs that allowed students to participate in internships as well as prepare for college life.

In an effort to recruit potential students and encourage interest within the STEM fields at UH Hilo, the Keaholoa Scholars Program (KSP) hosted several outreach activities for High School students as well as the community at large. Outreach activities included; 1) managing
a information booth about the Keaholoa Scholars Program at Ka Waimea Makahiki; 2) development of the Ka 'Umeke Ka'eo High School Strategic Plan; 3) providing GPS workshops for High School students participating in the Puanui project; 4) integrating science and cultural knowledge to create educational curriculum based on sweet potato propagation at Ka 'Umeke Ka'eo; and 5) reef talk curriculum building in East Hawai'i.

Hawaii Community College (HawCC), LSAMP scholars worked on twelve (12) environmental Service-Learning projects with community based organizations; including Malama o Puna.

Palau Community College (PCC) students are actively involved with the Dugong Awareness Project. The goal of the project is to raise local awareness about the Dugong to the community of Palau and increase conservation efforts of its habitats. PCC Environmental Marine Science (EMS) students continue to assist the project by performing interviews and gathering data with regard to the Dugong. The data gathered by EMS students will be compiled into a informational booklet that will be published this year.

During the week of March 16, 2010, Palau Community College held an outreach activity focused on STEM education. The PCC Science, Technology, Engineering, and Mathematics - Career and Technical Education (STEM-CTE) Fair; combines the functions of the Career and Technical Education week and the Palau National Science Fair. Fair activities included; 1) a science project competition for K-12 grade students, 2) a campus tour, and 3) presentations and demonstrations of EMS research projects to campus visitors. The goal of the fair is to introduce PCC programs to prospective students.

During the months of April and May 2010 PCC EMS students and faculty conducted two workshops for Upward Bound students. The first workshop was geared toward recruiting students to major in the Environmental Marine Science program at PCC and also to inform students about the indigenous Dugong animal. The second workshop involved mentoring of High School students by current PCC EMS students. During the workshop PCC students were able to share with high school students, their perspective of the 'college experience'. The workshop also allowed Upward Bound students the opportunity to learn more about the EMS program at Palau Community College.

Northern Marianas College (NMC) started to utilize different media in their recruitment efforts. NRM radio ads and brochure disseminations have been used to promote the different academic programs offered at the college.

Kauai Community College hosted tours of their new Cognition building for K-12 grade students. Kauai Community College LSAMP students served as mentors and facilitators for the outreach activity.

Journal Publications

Books or Other One-time Publications

Web/Internet Site

Other Specific Products

Contributions within Discipline:

In reflection on all the accomplishments from the first four years of the program, the establishment of the Islands of Opportunity Alliance-LSAMP program is by far the foremost highlight to mention. The formation of the IOA-LSAMP program meant securing Campus Coordinators for each participating member institution therefore ensuring everyone's engagement on some level or another. After convening the Governing Board, funding procedures were established in order to distribute funding support for LSAMP activities. In Year 1, eleven institutions requested and were awarded LSAMP funding to support various activities, in Year 2, this increased to sixteen institutions requesting and receiving LSAMP funding support, in year 3, a total of seventeen institutions were awarded funds, and in year 4 fourteen institutions were funded. Based on all of these efforts and because of the relationships we've built amongst Alliance partners based on mutual
trust and respect, the overall establishment of the Alliance in the first four years has been a success.

Additionally, the IOA-LSAMP program was able to use the first annual report to establish critical baseline data for all our Alliance member institutions which we can use to gauge our growth in the coming years, allowing us to show significant contributions to the increase in under-represented students receiving baccalaureate degrees in STEM disciplines throughout the greater Pacific Basin. We look forward to seeing the progress and results once Year 4 data collection and entry for WebAMP is completed.

**Contributions to Other Disciplines:**
Through the various STEM faculty involvement with IOA-LSAMP activities our efforts have either directly, or indirectly, impacted other disciplines than our own. Faculty participation in IOA-LSAMP activities has increased their knowledge and provided a better understanding of their student population and how to best serve them, increased their commitment to the success of under-represented students in STEM degree programs, as well as provided an avenue to discuss issues and concerns.

**Contributions to Human Resource Development:**
The IOA-LSAMP program, as with all LSAMP programs, directly contributes to human resource development by increasing the quantity and quality of under-represented STEM graduates to help diversify and enhance the workforce of today and the future.

**Contributions to Resources for Research and Education:**
The formation of IOA-LSAMP program has garnered institutional support by engaging upper administration and key faculty, helping to focus attention and resources to support for recruitment and retention of underrepresented STEM majors.

With funding support for the IOA-LSAMP program, partner institutions have begun to establish 'STEM Centers' and/or 'Math Centers' to provide tutorial and academic support for LSAMP students.

As a result of participating in the IOA-LSAMP Program Northern Marianas College has returned to is efforts to revive their Natural Resource Management Program in collaboration with the Department of Environmental Quality, Coastal Resource Management, and the Department of Fish and Wildlife in Saipan.

**Contributions Beyond Science and Engineering:**
The formation and activities of the IOA-LSAMP program has increased local, state and regional attention to the needs of our target population and STEM education support in general. The formation of the IOA-LSAMP program is very timely because the State of Hawaii is currently focusing attention and increasing support for STEM education within the state. The Alliance is working to collaborate efforts with the State's to further the institutionalization of common efforts.

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**Conference Proceedings**

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**Special Requirements**

**Special reporting requirements:** None

**Change in Objectives or Scope:** None

**Animal, Human Subjects, Biohazards:** None

**Categories for which nothing is reported:**

Any Journal
Any Book
Any Web/Internet Site
Any Product
Any Conference