



Mentoring Pacific Island Students for Conservation Careers

UH Hilo PIPES 'Ohana

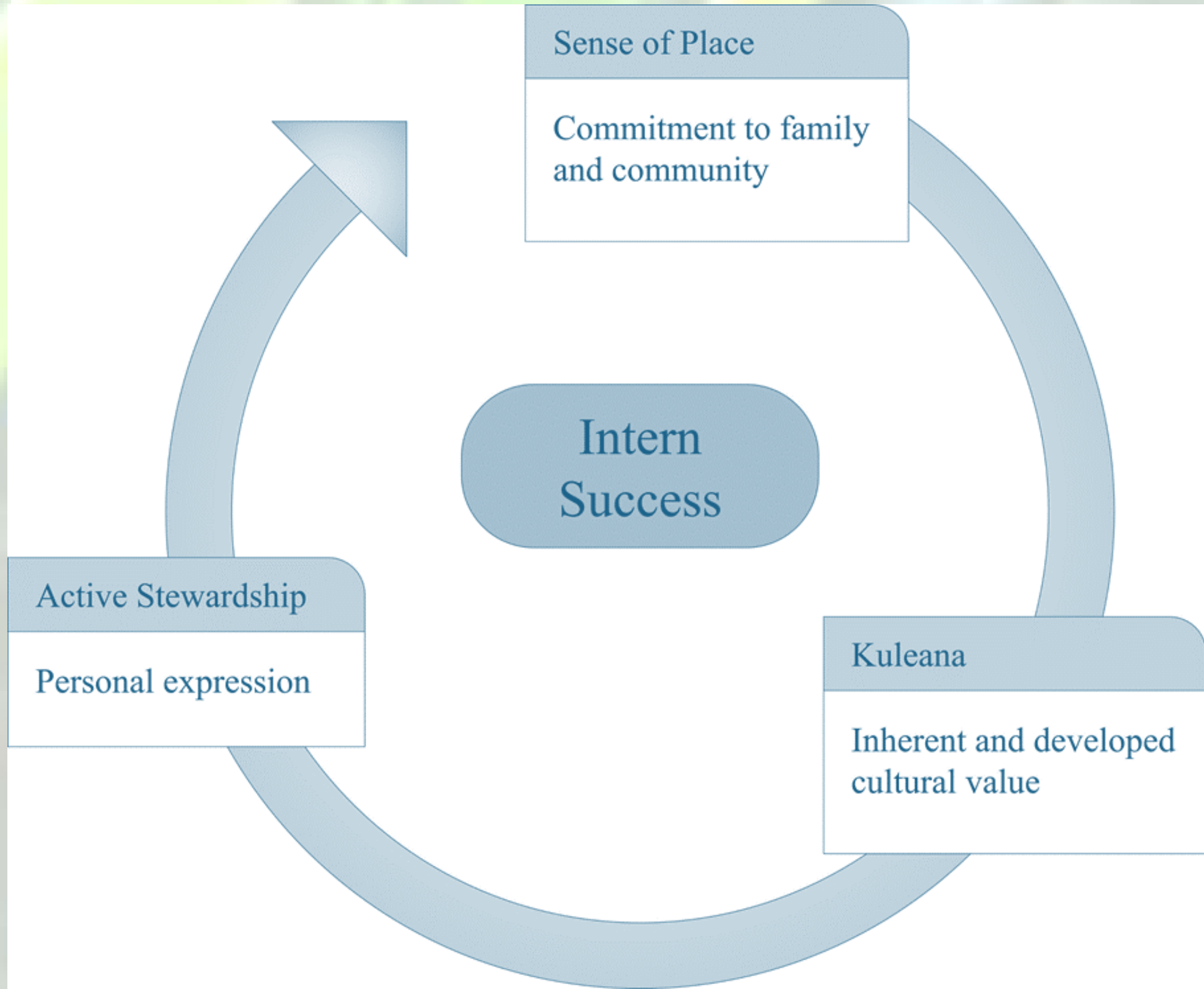
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Abstract: The Pacific Internship Programs for Exploring Science (PIPES) links undergraduates to environmental careers and mentors the next generation of scientists, educators, and managers for Hawai'i and the Pacific. PIPES utilizes formal and informal educational frameworks to explore and deepen interns' sense of *kuleana* (responsibility) to their place, and provides them opportunities for engagement in research and conservation practices in a higher education setting. Each summer, 30 to 40 students participate in an intensive, full-time, paid internship and program for 10 weeks; over 600 undergraduates have completed at least one of the PIPES programs. These immersive experiences in science, natural resource management, environmental education, and Hawaiian values help ground interns in the intent of their daily work and provide rich opportunities to develop a deep connection to field sites and organizations. This successful experiential model develops technical skills and networks but also grounds the program in the values of reciprocity and responsibility in relation to the natural environment. The cultural component of the PIPES model is the essential glue that binds the students and staff to the stewardship of these islands and communities, and is key to the effort's long-term standing success.

Elements of the PIPES Program	
Program Components	Philosophy
SELECTION (October- January) <ul style="list-style-type: none">Recruit applicants from across the state, region, nationIn-person and online informational sessionsIdentify, recruit, and select mentors and projectsSelection through application and interview reviewPair students with appropriate mentors and projects	SELECTION: Foremost selection criteria is a student's sense of <i>kuleana</i> or engagement in caring for the land (<i>mālama 'āina</i>). Also students with limited exposure to these ideals but who demonstrate a strong potential to feel <i>kuleana</i> toward the environment.
IMPLEMENTATION (Summer) <ul style="list-style-type: none">Mentor training and orientationFour-day intern orientationWriting assignments – proposal to final paper<i>Māhūahua</i> (professional development sessions)<i>Huaka'i</i> (field trips)Attendance at Hawai'i Conservation Conference in HonoluluOral presentations closing ceremony and celebration	IMPLEMENTATION: Exposed to the concept of <i>pono</i> (righteousness, integrity) in resource management by working with their host mentors. Develop independence and leadership skills through reflections and conversations. <i>Kuleana</i> developed by completing assignments in professional manner. Demonstrate values of <i>laulima</i> (cooperation) and <i>kokua</i> (helpfulness) during group activities. Program activities let them witness others' sense of professional and personal <i>kuleana</i> to develop own definition of personal <i>kuleana</i> .
ASSESSMENT AND SUSTAINABILITY: The program undergoes numerous forms of internal and student evaluation. <ul style="list-style-type: none">Evaluation by student and mentorsSynthesizing evaluation results into retooled programmingRecruiting strategy adjustmentsLongitudinal tracking of alumni	ASSESSMENT AND SUSTAINABILITY: The program performs continuous formative and summative evaluation of its effectiveness. The sense of 'ohana (family) is continued post-internship through a listserv, alumni events and when former interns become mentors. Many former interns self-identify as stewards undertaking <i>mālama 'āina</i> , which they practice in their personal and professional lives.

Programs of PIPES			
	Who?	What?	Where?
REU Research Experience for Undergraduates	All undergraduates	Research-focused internships	University of Hawai'i Hilo
UHHIP University of Hawaii Hawaiian Internship Program	Local undergraduates	Research Resource mgmt Outreach Sustainability	Hawai'i, O'ahu, Kaua'i, Maui
MASSIP Micronesian & American Samoan Student Internship Program	Micronesian and American Samoan undergraduates	Research Resource mgmt Outreach Sustainability	Hawai'i and select locations in the Pacific

- Challenge**
- In 1994 local islanders were underrepresented in conservation, especially in leadership. Island students lacked recognition that connection to place and relationship to the environment could be translated to careers.
 - The core Hawaiian value, *kuleana*, is extremely important to underrepresented students (Kaomea 2001; Kawelu 2014). *Kuleana* can be translated as "doing work that is meaningful and useful to your community," that incorporates connection to place and reciprocity with the natural and community.
 - Being responsive to family and community needs often limits students' pursuit of higher education and their range of majors and academic careers (Maunakea 2016).



Model of Intern Success Based on Developing and Reinforcing a Sense of Place, the Expression of Kuleana, and the Active Role of Stewardship

- PIPES Model - Integration of Hawaiian Values into Workforce Training**
- Interns' sense of *kuleana* to the environment is driven by their worldviews and Hawaiian cultural beliefs (Ching 2015). Through applying their *kuleana* via active stewardship, they are inspired to maintain cultural values and practices to deepen their sense of place, reinforce shared cultural values, and achieve success professionally and personally.
 - PIPES embraces and incorporates the *kuleana* concept, framing the program to meet students' *kuleana* to the human and natural community, thus serving both students and the islands
 - PIPES staff, many of whom are of native Hawaiian descent and all with a strong sense of *kuleana* to conservation and to Hawai'i, have worked together to iteratively develop the PIPES model.

- Success through the Individual and the Collective**
- By focusing on *kuleana*, program accomplishments come in many levels.
- Self-authorship:
 - Individual success can be defined by a student's personal growth, completion of the internship, or attainment of either graduation or a job.
 - PIPES results reflect Magolda's (2008) three important elements of self-authorship: trusting one's internal voice, building an internal foundation, and establishing internal commitments to oneself, the world, and relationships.
 - PIPES focuses on empowering individuals to succeed in their studies, careers, and communities.
 - Diverse workforce:
 - PIPES influence is seen in the increased diversity of the natural resource management workforce and, beyond that, in the improvement of Hawai'i's conservation landscapes and the health of the Hawaiian people.



Kahale Pali: "I've been able to learn, experience and internalize conservation to the point that it is a part of my everyday life. These words that...cannot begin to describe what UH-HIP has done to propel me along my road of self-discovery." (Intern 2002, 2003; Natural Resources Management Coordinator, Pacific Cooperative Studies Unit)



Chandra Legdesog: "During PIPES, the importance of culture and community were highlighted and has since inspired me to continue forward in research that benefits my community and my culture." (Intern 2008), graduate student, University of Guam.



Candice U'i Miner-Ching: "By participating in PIPES I have gained a deeper sense of appreciation for our environment, for life, and a deeper, more rooted *kuleana* to this place, our lands, and our environment as a whole." (Intern 2016, 2017, graduate student, University of Hawaii at Hilo)



Emily Cadiz (Intern 2012, 2013, 2014) became activated by her *kuleana* to the people and places of Halele'a Kaua'i through her undergraduate internship experiences that then led to her Master's thesis working in the same communities, where she now works as a program coordinator.



- Broader lessons**
- Many underrepresented minority students struggle to fit into higher education due to misaligned value systems. With careful and intentional planning, value systems of target audiences can be incorporated into the philosophic underpinnings of an undergraduate internship or research program to foster self-identity as a professional, which is often a precursor to career attainment.
 - Successful efforts require engaging staff and partners with direct connections to the place and value systems of target audiences to guide and link program elements to both the individual and their communities.

This poster was adapted from the following publication:
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