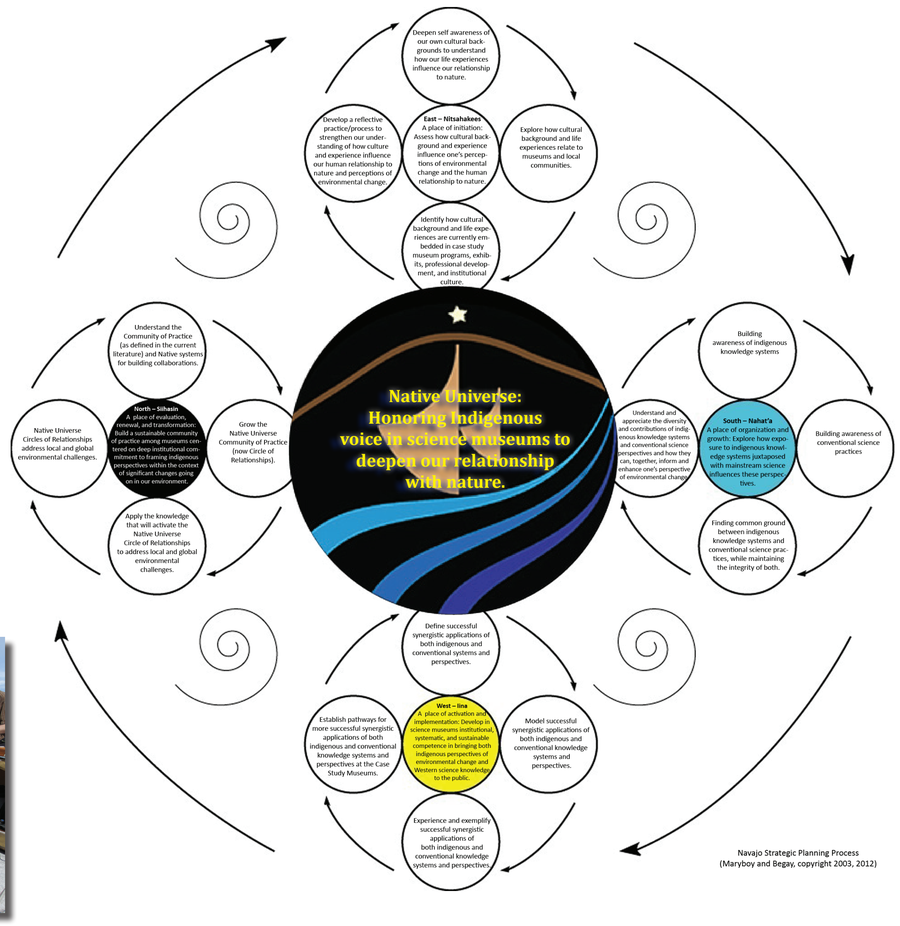
Native Universe...

Honoring Indigenous voice in science museums to deepen our relationship with nature.



Lessons Learned from Native Universe

Native Universe: Indigenous Voice in Science Museums is a full-Scale Development Project designed to build institutional capacity in leadership and practice among science museums in order to increase public understanding of environmental change and the human relationship to nature from indigenous perspectives, while also providing access to science as practiced in the established scientific community.

Through a series of intensive long-term residencies at three Case Study Museums, project investigators will work with museum staff and volunteers, indigenous communities, and informal learning researchers to understand how cultural perspectives impact science learning about environmental change. The project will document the extent to which it is possible to transform institutional culture and museum learning opportunities to incorporate indigenous voice in a deep and sustained way.

Research to deepen our knowledge of how science museums can engage visitors in discourse around environmental change through cross-cultural perspectives will address overarching questions of interest to the ISE field.

Collaborators include the Indigenous Education Institute (IEI)—a nonprofit directed by Native leaders dedicated to the preservation and contemporary application of indigenous knowledge to science; `Imiloa Astronomy Center, University of Hawai`i, Hilo (`Imiloa)—a pioneer in addressing cultural relevance to science at the institutional level; and the Center for Science Education, U.C. Berkeley (UCB)—a leadership group of interdisciplinary scientists and educators invested in Native perspectives.

Through close partnerships with the Arizona-Sonora Desert Museum, the Museum of the North in Alaska, and the Oregon Museum of Science and Industry, Native Universe will help these science museums build their capacity to educate the public on issues of environmental change as well as the human relationship to nature from Indigenous peoples' perspectives. Also joining the project team is the Institute for Learning Innovation (ILI), a non-profit organization focused on understanding and promoting lifelong learning in science museums and other out-of-school settings. ILI will conduct research focused on understanding what components and processes support the inclusion of Indigenous voice throughout a science museum, as well as evaluation to support the successful development of the project. The project builds on the previously NSF-funded and successful Cosmic Serpent collaboration between IEI, CSE@SSL and ILI. The Cosmic Serpent project explored commonalities between native and western science and enabled participants from both perspectives to use science, technology, engineering, and math (STEM) as an entry point for museum programs and exhibits that also highlight longstanding Indigenous knowledge.

Deliverables include: 1) Museum Case Studies at the Oregon Museum of Science & Industry, Arizona-Sonora Desert Museum, and Alaska's Museum of the North featuring a one-week intensive experience at `Imiloa, 9-month residencies by the project team at each of the three museums, and video documentation; 2) Public Experiences for museum visitors; and 3) Native Universe Community of Practice among museums committed to indigenous voice in informal science education.

In keeping with the cross-cultural nature of Native Universe, the research and evaluation components will draw upon multiple perspectives to ensure cultural validity for project stakeholders and participants. Dr. Shelly Valdez of Native Pathways (Laguna, NM), specializing in Indigenous evaluation and science learning, and Jill Stein and Dr. Joe Heimlich of the Institute for Learning Innovation (ILI), work collaboratively to create an evaluation and research process that reflects both Indigenous and conventional research methods and frameworks. In this way, the team models the type of collaboration the project itself is designed to support, and uses participant-observation and reflective practices to continually inform the project pathway.

Co-authors & Their Institutional Affiliations:

Nancy Maryboy - Indigenous Education Institute
David Begay - Indigenous Education Institute
Laura Peticolas - Space Sciences Laboratory, UC Berkeley
Kalepa Baybayan – 'Imiloa Astronomy Center
Ka'iu Kimura – 'Imiloa Astronomy Center
Dan Zevin - Space Sciences Laboratory, UC Berkeley
Ashley Teren - Indigenous Education Institute
JIll Stein - Institute for Innovative Learning (ILI)
Shelly Valdez - Native Pathways
Joe Heilmich - Institute for Innovative Learning (ILI)

'IMILOA Astronomy Center of Hawai'i
UNIVERSITY of HAWAI'I HILO

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