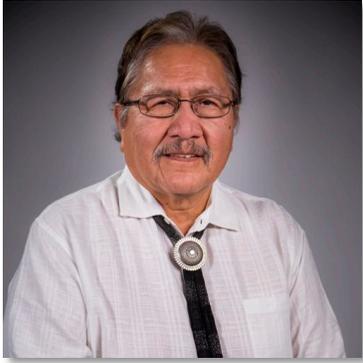




Born and raised in Lahaina, Maui, **Chad Kālepa Baybayan** first sailed on Hōkūleʻa in 1975 and has sailed on all major Hōkūleʻa voyages since. Kālepa has served as captain on Hōkūleʻa as well as voyaging canoes Hawaiʻiloa and Hōkūalakaʻi. He was the Site Director of Honuakai, the Exploration Sciences Division of the ʻAha Pūnana Leo, which teaches the Hawaiian Language to participants that crew aboard the Hōkūalakaʻi. He currently serves as the Navigator in Residence at the ʻImiloa Astronomy Center of Hawaiʻi developing wayfinding activities, curriculum materials, and conducting outreach. In 2007, Kālepa was initiated into the order of Pwo, the two-thousand-year-old society of deep-sea navigators in Micronesia, along with four other Hōkūleʻa navigators by their teacher Mau Pailug on the island of Satawal in Micronesia.

Abstract:

The legendary Polynesian voyaging canoes Hōkūleʻa and Hikianalia are sailing across Earth's oceans to join and grow the global movement toward a more sustainable world. Using traditional wayfinding navigation, the Mālama Honua Worldwide Voyage has been hailed as an international model for cultural revitalization and education. During the Hōkūleʻa's port in Washington, D.C., captain and senior navigator Kālepa Baybayan will give a presentation about the voyage at the Smithsonian's Center for Folklife and Cultural Heritage. The Smithsonian additionally celebrates the worldwide voyage with a [film screening](#) (May 27) and the "[Mālama Honua: Hōkūleʻa Worldwide Voyage Celebration](#)" at the National Museum of the American Indian (May 28-29).



**David Begay, Ph.D.**, is a member of the Navajo Nation. He received his B.A. and M.A. from the University of Arizona, Tucson, in Political Science with a concentration in Policy Analysis and Indian Policy and Law Studies. He received his Ph.D. from the California Institute of Integral Studies, San Francisco, CA, with a concentration in Indigenous Science Education and Application of Traditional Knowledge. David is Adjunct faculty at NAU, Flagstaff, in the Department of Physics and Astronomy. He is VP for the Indigenous Education Institute, Friday Harbor, WA and works with the University of California, Berkeley, Space Sciences Laboratory through a grant from the National Science Foundation. He also works with NASA, JPL and Goddard Space Flight Center. He is currently Associate Research Professor with UNM, Albuquerque, in the College of Pharmacy. David is a cultural consultant to many organizations and corporations both in the United States and internationally.



**Alicia Bitler** is a Master Teacher in the GWTeach program at George Washington University. Prior to joining GWTeach she taught high school chemistry and physical science in Montgomery County public schools in Maryland. She also spent several years in the county as a science, technology and engineering content specialist and several years as a staff development teacher. Currently, she is working toward a doctorate of Curriculum and Instruction at GW. Her research focuses on gender discrepancies in science.



**Dr. Dorothy Castille** completed doctoral research in anthropology at the University of California at Berkeley and post-doctoral training in psychiatric epidemiology at Columbia University in New York. Her research includes characterizing unmet medical needs, the natural history of target diseases, treatment and patient reported outcomes in academia, government, and private industry settings, in the US and Mexico. She has managed state and federal government funded grant programs. In her position as Program Director at the National Institute on Minority Health and Health Disparities at the National Institutes of Health, manages grants focused on community based research, health risk factors and intervention in American Indian /Alaska Native (AIAN) populations, and immigrant health. She directs the Loan Repayment Programs and serves as Project Scientist on research on social determinants of health and prevention/intervention research in AI/AN communities.



**Kate Christen, Ph.D.**, is a Training Manager at the Smithsonian Conservation Biology Institute and Smithsonian-Mason School of Conservation. Kate is an environmental historian whose research focuses on the intersecting histories of conservation science and natural resources conservation, management, and development. Her scholarly and applied work and professional service reflect a focus on the essential connections among conservation sciences and

conservation humanities/social sciences. At Smithsonian, Kate develops and implements a suite of training programs and courses in conservation science and related human dimensions. Among her projects, she presently co-leads an applied/training program focused on sustainable local food systems. She is also closely involved with Smithsonian's new cross-institutional Conservation Commons initiative. Kate serves on the Board of Governors of the Society for Conservation Biology, and chairs its Strategic Planning committee. Kate also serves on the American Society for Environmental History's Advisory Board on Professional Development and Public Engagement, focused on expanding career and other opportunities for young history practitioners outside of traditional academic sectors.



**Vicki Coats** was hired by OMSI to teach science classes 30 years ago. After teaching for about a year, I moved on to developing exhibits, writing grants, running advisory groups, collaborating with other museums, designing and leading collaborative projects, and lately, collaborating with diverse Indigenous partners, communities and organizations. Most of these new things I learned by doing, making mistakes, and figuring things out along the way. In my recent collaborative work, I have been blessed to learn more deeply from amazing learning communities and innovative projects that bridge Indigenous knowledge and Western science, including *Cosmic Serpent*, *Native Universe* and *Roots of Wisdom*.



**Victor Z. Corpuz's** heritage is Laguna, Acoma, and Ohkay Owingeh. He is a member of the Laguna Pueblo Kitzit Dance Group and has established his own small business called "Maize" that produces skateboards with native designs. The purpose of his company is to encourage other native youth to pursue healthy choices through the excitement and good exercise of skateboarding. He has received several business scholarships to pursue his passion for skateboarding. Just graduated from Laguna-Acoma High School, he will attend college at the Institute of American Indian Arts. He is recipient of the Gates Millennium Scholarship. Victor is actively engaged in native farming, dancing, singing and speaking Keres (Laguna language). His long term goal is to become a lawyer or a business man and work with his Pueblo communities on issues of cultural revitalization.



**Marcia deChadenedes** (BLM): Marcia is the Manager for the San Juan Islands National Monument. An administrative folklorist, she came began working for the Bureau of Land Management (BLM) in 2003 as the Associate Director of the Camino Real International Heritage Center, representing the agency in partnership with the State of New Mexico. As one of the BLM partnerships cadre she has worked with programs requiring cooperation and collaboration, as the BLM national lead for the Continental Divide National Scenic Trail, Assistant Manager for the California Coastal National Monument, and the Colorado National Landscape Conservation System Program Coordinator.



**Dominique David-Chavez** is a member of the Taíno Indigenous community of Borikén in the Caribbean. She is pursuing a PhD in the Human Dimensions of Natural Resources department at Colorado State University, in Fort Collins, Colorado. Dominique earned her Bachelor of Science degree at Montana State University in Earth Sciences in May of 2014 becoming the first generation in her family to earn a college degree. Through community-based, participatory climate research and informal place-based science education she is empowering youth as researchers within her tribal community. She works to bridge Indigenous science knowledge held by elders and youth education using geospatial science technology to support local efforts for natural and cultural resource conservation. Dominique has earned the honor of becoming a National Science Foundation Graduate Research Fellow and is also working as a Graduate Fellow for the Center for Collaborative Conservation. Her long-term goals include increasing diverse student engagement in the sciences and she currently serves as a mentor for incoming graduate students through Colorado State University's Native American Cultural Center.



**Renee Frappier** has worked in the education field at UC Berkeley for over 20 years and has more than seven years experience working with NASA Education

and Public Outreach programs, including events in the Yucatan and Chiapas. Renee has a BA in Anthropology (with an emphasis on Maya archaeology) and a Masters in Public Administration.



**Maurice Godfrey** earned the Ph.D. in Pathobiology and Immunology from Columbia University in New York. Following a fellowship at Shriners Hospital for Children he joined the University of Nebraska Medical Center where he is now Professor in Munroe-Meyer Institute. Among his honors are: Basil O'Connor Scholar of the March of Dimes; Established Investigator of the American Heart Association; Antoine Marfan Award of the Marfan Foundation; Chief Standing Bear Organizational Award from the Nebraska Commission on Indian Affairs; Friend of American Indian Education from the Nebraska Department of Education; the UNeMed Corporation Research Innovation Award from the University of Nebraska; and the Friend of Science Award from the Nebraska Academy of Sciences. Since 2005 he has led an NIH program to bring science to schools and communities on Indian reservations in Nebraska and South Dakota. Dr. Godfrey also teaches courses in molecular biology, genetics, and molecular basis of human disease.



**Isabel Hawkins, Ph.D.**, is a bilingual and bicultural native of Córdoba, Argentina. Dr. Hawkins received her Ph.D. in astrophysics at the University of California, Los Angeles, in 1986. She worked for 20 years at the University of California at Berkeley as a Senior Fellow on several NASA satellite projects, and as the Director of Science Education at the Space Sciences Laboratory. Currently, she is Astronomer & Project Director at the San Francisco Exploratorium, and Faculty and Senior Advisor of the Indigenous Education Institute, Friday Harbor, WA. She joined the Friends of Chaco Board in 2009 to contribute to the stewardship of Chaco Culture National Historical Park in New Mexico. In 2005, she hosted a live, trilingual (Spanish, English, Yucatec Maya) webcast from Chichén Itzá, Yucatán, México, during the March Equinox, and was executive producer of the award winning book for the general public, and website, titled Traditions of the Sun, on the astronomy at Chaco Culture National Historical Park in New Mexico and at several Maya archaeological sites in the Yucatán. In 2011, Dr. Hawkins produced the bilingual (English and Hawaiian) Webby-award winning website Nalo 'Ole | Never Lost: Polynesian Navigation at the Exploratorium, which features the astronomical foundations of Native Hawaiian navigation. She worked with Maya curators to develop the website "Living Maya Time | Viviendo el tiempo maya" bilingual website for the Smithsonian National Museum of the American Indian. She is currently working with the Smithsonian National Museum of the American Indian to develop a poster and two educational modules on Inka Engineering to complement the museum's The Great Inka Road: Engineering an Empire exhibit opening in June 2015. Her work focuses on collaborating with integrity with indigenous knowledge holders and western scientists to broaden access to science and enhancing participation by all communities through the appreciation of the cultural roots of science. Dr. Hawkins received eight NASA awards between 2004 and 2008 for her work on NASA education and public outreach. In 2009, the Astronomical Society of the Pacific awarded Dr. Hawkins the prestigious Klumpke-Roberts Award in recognition of her outstanding contributions to the public understanding and appreciation of astronomy.

hawkins.isabel@gmail.com

ihawkins@exploratorium.edu

Cell: 510 384 8860

Links:

Living Maya Time | Viviendo el tiempo maya – <http://maya.nmai.si.edu>

Nalo 'Ole | Never Lost: Polynesian Navigation –

<http://www.exploratorium.edu/neverlost>

Traditions of the Sun – <http://traditionsofthesun.org>

Chichén Itzá webcast – <http://www.exploratorium.edu/ancientobs/chichen>



**Joe E. Heimlich, Ph.D.** is a Principal Researcher with the Lifelong Learning Group at COSI where he works on projects focusing related to informal learning and capacity building for zoos, nature centers, parks, gardens, science centers, and other museums. He is also Executive Director for the Center for Research & Evaluation at COSI, of which LLG is a part. As a Professor Emeritus with Ohio State University, he was an Extension Specialist in museums and organizational capacity building, served as Leader, Environmental Science for OSUE, and held appointments in the School of Environment and Natural Resources, the Environmental Science Graduate Program, and the College of Education and Human Ecology. Joe has been engaged in environmental free-choice learning for 34 years and is the author of over a hundred academic journal articles, chapters, and books, and has written more than 350 reports, fact sheets, bulletins, white papers, and popular publications.



**RDK Herman** is Senior Geographer for the Smithsonian National. He earned his doctorate in Geography from the University of Hawai'i in 1995. Herman is the creator of *Pacific Worlds*, a web-based indigenous-geography education project for Hawai'i and the American Pacific that focuses on place-based indigenous cultural knowledge and understandings. His scholarship addresses the representation of Indigenous cultures and the importance of Indigenous knowledge in posing more sustainable approaches to human-environment relationships. In 2013 he built his own outrigger canoe, and publishes and

lectures on traditional Oceanic navigation and what it teaches humanity about how to live on planet Earth.



**Ann Hernandez** is an educator, diversity advocate, and a virtual learning enthusiast. As a professional development staff member of the Association of Science-Technology Centers (ASTC) in Washington, DC, she oversees many grants and projects that hold core values of equity and inclusion in the science center world and surrounding communities. One of Ann's current projects is the NSF Native Universe grant, of which she gives technical support for the team's webinars and upcoming virtual conference. She also leads a flagship leadership and diversity fellowship program for ASTC, working with future leaders of the museum field. Ann holds a bachelors from Knox College in Elementary Education and the Performing Arts.



**Tim Hecox** is an Exhibit & Program Developer at the Oregon Museum of Science and Industry (OMSI) in Portland, OR. He works on grant funded projects focused on reaching underrepresented audiences in museum settings. In addition to his work at OMSI, he is currently co-chairing the American Alliance of Museums Diversity Committee. Tim has a Bachelor of Science in Natural Resources Planning & Interpretation from Humboldt State University and previous experience working in interpretation for the National Park Service.



**AMBER INWOOD** With a Bachelor of Science Honors in Hydrogeology and Geophysics my intended career was to be a scientist. However, realizing that this world was not for me, I then followed my childhood dream and became a Park Ranger in Aotearoa. It was during my time interacting with school groups and the public in this role that I found my true passion to be education. As a member of the Bishop Museum Education Department, Hawaii for 9 years I have developed and delivered education programs on-site and to schools and communities throughout the state of Hawaii. In more recent years I have had the privilege of being the Science Education Manager as well as project manager for the Science and Culture of Art program, the DOE Native Hawaiian Education program funded 'All Together Now' project and NASA 'Celestial Islands' project. Having recently relocated with my family to Virginia Beach, VA I continue to work for the Bishop Museum remotely while also completing my graduate studies in Science and Mathematics Education with a focus on Free Choice Learning through Oregon State University. My research interests lie in a variety of educational areas including the intersection of western science and traditional ways of knowing via free choice learning.



**Eric J. Jolly, Ph.D.** President and CEO of Minnesota Philanthropy Partners In his role as president and chief executive officer of Minnesota Philanthropy Partners, Eric J. Jolly, Ph.D., continues his lifelong work to educate, elevate, and give voice to people in his communities.

Minnesota Philanthropy Partners matches donors' charitable resources with community solutions via The Saint Paul Foundation, Minnesota Community Foundation, F. R. Bigelow Foundation, Mardag Foundation, and a statewide network of more than 2,000 charitable organizations and donor funds. Together, The Saint Paul Foundation and Minnesota Community Foundation, with assets of \$1.3 billion, represent the 14<sup>th</sup> largest community foundation in the country. Jolly began leading Minnesota Philanthropy Partners in August 2015 and has declared his intention to create a philanthropic arc to serve donors at all stages of life who are committed to strengthening their communities.

Jolly serves on a number of local and national boards, including the Bush Foundation, Capella University, Cornell Laboratory of Ornithology, and the National Academy of Engineering (Committee on Guiding Implementation of K-12 Engineering). He was appointed by President Obama to the Institute of Museum and Library Services board. He is a member of honor societies, including Sigma Xi, Phi Eta Sigma, Mortarboard, and Golden Key. He is also a life member of the Society for Advancement of Chicanos and Native Americans in Science.

Widely recognized for his work with communities and policy makers, Jolly has published articles and books and has lectured around the world about the importance of STEM (Science, Technology, Engineering, and Math) education.

Before joining Minnesota Philanthropy Partners, Jolly was president of the Science Museum of Minnesota for a decade. It is one of the nation's largest and most esteemed science museums, serving more than 1.3 million people annually. Under his leadership, the museum hosted provocative, educational and highly successful exhibitions such as *Body Worlds*, *RACE: Are We So Different?*, and *Tutankhamun: The Golden King and the Pharaohs*. During his tenure, the Science Museum increased visitors, membership, funding, training, programming, and its national standing.

Jolly came to Saint Paul after serving as vice president and senior scientist at the Education Development Center in Massachusetts. Before that he worked in successive academic roles at several colleges and universities, including professor, dean, assistant chancellor, and director for Affirmative Action and Diversity.

Jolly has a doctorate in psychology and a master's degree in psychometrics from the University of Oklahoma.



**Andrew Johnston** oversees the Adler Planetarium's astronomy research and engagement, history of astronomy research, management of museum collections, space visualizations, and near-space exploration. Dr. Johnston has worked in museums for 30 years, conducting science and history research, authoring books, curating exhibitions, developing planetarium programs on traditional sky knowledge, and developing museum programs on earth and space science.



**Dr. Robin Kimmerer** is a mother, scientist, writer and Distinguished Teaching Professor of Environmental Biology at the SUNY College of Environmental Science and Forestry in Syracuse, New York and the founding Director of the Center for Native Peoples and the Environment whose mission is to create programs which draw on the wisdom of both indigenous and scientific knowledge for our shared goals of sustainability. Her research interests include the role of traditional ecological knowledge in ecological restoration and the ecology of

mosses. In collaboration with tribal partners, she and her students have an active research program in the ecology and restoration of plants of cultural significance to Native people. Robin is an enrolled member of the Citizen Potawatomi Nation.

Her best known writings include "Gathering Moss" which incorporates both traditional indigenous knowledge and scientific perspectives and was awarded the prestigious John Burroughs Medal for Nature Writing in 2005. Her second book "Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants" was honored with the Sigurd Olson Nature Writing Award. She speaks widely on issues of indigenous environmental philosophy and its application to sustainability, from a TED talk to an invited address to the United Nations General Assembly in commemoration of International Mother Earth Day.

Robin earned her B.S. in Botany from the SUNY College of Environmental Science and Forestry and her M.S. and Ph.D in Botany from the University of Wisconsin, Madison. She has taught widely in the disciplines of plant ecology and botany and currently teaches courses in ethnobotany, moss ecology and indigenous issues and the environment.

As a writer and a scientist, her interests in restoration include not only restoration of ecological communities, but restoration of our relationships to land. She lives on an old farm in upstate New York, tending gardens both cultivated and wild.



**Kaiu Kimura** is the executive director at the Imiloa Astronomy Center of Hawaii. She manages and oversees all aspects of the astronomy center operations including the planetarium, exhibit hall, gift shop, restaurant operations and educational outreach. Kaiu has held previous positions at the Imiloa Astronomy Center, working first as the curriculum coordinator, then experience coordinator and associate director. She earned a bachelor's degree in Hawaiian studies and a master's degree in Hawaiian language and literature from the University of Hawaii at Hilo. Kaiu is on the boards of Hawaii Island Workforce and Economic

Development Ohana, Aha Punana Leo and the Hawaii Island Chamber of Commerce.



As Director of Programs for The Wild Center, **Jen Kretser** oversees education and interpretive programs. This includes developing professional and effective partnerships at the local community, regional, state, national, and international level. Projects include: Adirondack Youth Climate Program which was recently highlighted by the White House Office of Science and Technology as a model program, the Community Maple Project, Visual Thinking Strategies, and Children and Nature, NY. Last December, Jen represented the Wild Center and the Association of Science Technology Centers at the UN COP 21 climate talks in Paris. Prior to her work with The Wild Center, Kretser served as Director of Education for the Adirondack Mountain Club for 7 years focused on educating for responsible recreation, stewardship, and interpretive planning. Past experiences includes teaching and developing programs at the Cincinnati Zoo, the Aspen Center for Environmental Studies, the Adirondack Park Visitor's Interpretive Center, and Zoo New England in Boston. Originally from Saranac Lake, Kretser is active in the regional arts community – having served on the founding board of BluSeed Studios; coordinated community artists events and showing her own work (printmaking and mixed media) both regionally and in Mexico. Through her strong interest in international work, Kretser has participated in multiple professional exchanges to Finland to help create the first Finland Youth Climate Summit, the Altai Region of Siberia to work with park officials on creating education programs for their National Park system; and an artist exchange to Mazatlan, Mexico. Jen is a member of numerous professional organizations including: Association of Science Technology Centers, American Association of Museums, National Association of Interpretation, North American Association of Environmental Education, and is a Climate Reality Leader. She has traveled extensively in Central America, Australia, New Zealand, Nepal and India – exploring parks and meeting people. Kretser graduated from Cornell University with a BS in Wildlife Ecology & Art and an MS in Environmental Science and Education from Antioch University.



**Dr. Britt Lundgren** is an astrophysicist specializing in studies of galaxy evolution, the intergalactic medium, and large-scale structure in the Universe. After completing her Ph.D. at the University of Illinois Urbana-Champaign, Britt held postdoctoral positions at Yale University and the University of Wisconsin-Madison. Now an AAAS Science and Technology Policy Fellow in the National Science Foundation's Division of Undergraduate Education, Britt is working to increase participation and outcomes for traditionally under-represented students in science, technology, engineering, and mathematics. This Fall she will begin as an Assistant Professor of Physics at the University of North Carolina - Asheville.



**Nancy C. Maryboy, PhD.** is the Founding President and Executive Director of the Indigenous Education Institute (IEI) whose mission is preserving, protecting, and applying Indigenous knowledge in current settings. The focus of IEI is on using Indigenous knowledge to create pathways to sustainable ways of living.

She was the Principal Investigator (PI) for the Cosmic Serpent: Bridging Native Ways of Knowing and Western Science in Museum Settings, an informal science education project funded by the National Science Foundation (NSF). She is now PI for Native Universe: Indigenous Voice in Science Museums, a four-year project funded by NSF. Native Universe worked with three science centers to engage with Indigenous ways of knowing: Oregon Museum of Science and Industry (OMSI), Arizona Sonora Desert Museum and Durango Powerhouse Museum.

She is Co-PI for Navajo Sky, a NASA funded project that has developed digital modules for planetariums, juxtaposing Navajo and Western astronomy. She is Co-PI for Generations of Knowledge, an NSF funded project of OMSI, which has just produced the exhibit "Roots of Wisdom" highlighting sustainable traditional practices of four tribes: Restoration of River Cane – Eastern Band Cherokee, Restoration of the Lamprey Eel – Umatilla Tribe, Restoration of Medicinal Plants – Tulalip Tribes, and Restoration of Traditional Native Hawaiian Fish Ponds – Hawai'i.

She is a Co-PI for Imagine Mars Through Native Eyes, a NASA funded project, which works with native schools to develop and teach western space science in a relevant and useful way to tribal schools and museums.

She is also a Co-PI for I:WISE – Indigenous Worldviews in Informal Science Education: Integration, Synthesis and Opportunity.

She is a consultant in areas of indigenous science, indigenous astronomy (specializing in Navajo and Cherokee astronomy), film-making and strategic planning. She is adjunct professor in the Department of Physics and Astronomy at Northern Arizona University, where she teaches an online course in Indigenous Astronomy.

She was a faculty member and administrator at Dine College, the Navajo Tribal College, for 13 years. She studied at Smith College, Stanford University and Goddard College. She has a Ph.D. in Native Science from the California Institute for Integral Studies. She is Cherokee/Navajo and comes from a family of traditional and medical healers. She lives in Friday Harbor, San Juan Island, WA and Santa Fe, NM.

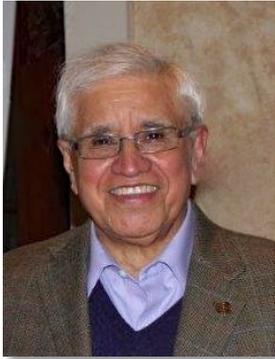


My name is **Angelo McHorse** and I am a proud native of Tuah-Tah (Taos Pueblo) here in Northern New Mexico. I have a passion for growing food and guiding youth in the development of their agricultural heritage that was gifted to us by our ancestors. My education consists of an agricultural science degree and a business administration degree that were both earned from Fort Lewis college back in 2012. I had managed my tribe's agricultural demonstration site for two years and then moved on to develop and facilitate my own youth programming independent of any tribal organizations. Today I am living in my family homestead with my wife and raising all types of poultry, water fowl, growing traditional crops utilizing our ancient irrigation techniques, and breaking two mustangs.



**Dr. VerlieAnn Malina-Wright**, Strategic Vision Kupuna, is Board Chair of Pacific American Foundation, and Hawaii Maoli Board Chair. She has over 50 years of education experiences in teaching, administration, and leadership in the economics of aloha (prosperous sustainability, interconnectedness and collaboration). She has been recognized for her education advocacy efforts in indigenous education and continues to serve a wide range of diverse populations. She is a global leader who has been able to vision the coherence of Native Hawaiian values and traditions as an asset in contributing to improving a more peaceful, sharing and competitive global environment. She graduated from U. of Hawaii at Manoa, and earned her doctorate in Business-Economic Education at UCLA. She volunteers her skills and strengths to serving the needs

of diverse communities in Hawaii, Asian Pacific Islanders, First Nations, Alaskan Natives, American Indians and Saami. She is currently retired from The Kamehameha Schools, Hawaii State Department of Education, and adjunct faculty to the University of Hawaii at Manoa.



**Ernest D. Marquez, Ph.D.** Director of Science Policy and Native American Affairs [Ernest@sacnas.org](mailto:Ernest@sacnas.org) Dr. Marquez teaches at Johns Hopkins University, and is a past President of SACNAS. His careers include those at the National Institutes of Health and working in the biotechnology industry. Prior to entering the biotech field, he served as a tenured Associate Professor in the Department of Microbiology, The Pennsylvania State University College of Medicine. In recognition of his commitment to science education, he has received merit awards from the National Institutes of Health and an Honorary Doctor of Science from The Trustees of the California State University system. Before returning to graduate school, he achieved the rank of Lieutenant Commander in the United States Navy. His passion is to provide opportunities for underrepresented scientists to achieve degrees and positions of leadership in the US scientific workforce.



**Patricia (Patty) Montano** is the Program Manager for the Center for Advancement of Informal Science Education (CAISE). She has master's degrees in Biology and Museology, and a certificate in Nonprofit Management. Patty has worked as an educator and evaluator in art, history, and science learning environments. She is also involved with the Visitor Studies Association as a member of the Membership Committee, and Co-Chair of Bridging Communities -- a focused interest group dedicated to issues of diversity and inclusion in visitor studies, and cultural competence in evaluation and audience research. To enjoy her love of plants and gardening, she currently volunteers with master gardeners in the District of Columbia.



**Dr. Laura Peticolas** is a Senior Fellow at the Space Sciences Laboratory at the University of California, Berkeley, and Director of Multiverse, the Space Sciences Laboratory's education group. Multiverse focuses on multicultural education in earth and space sciences to meet the needs of the diversity of cultures in the United States who are not currently participating actively in science. Dr. Peticolas received her B.A. in mathematics and physics at the University of Oregon Honors College and her Ph.D. in physics studying the aurora at the University of Alaska, Fairbanks. She spent 3 years as a post-doctoral fellow at the Space Sciences Laboratory continuing her study of Earth's aurora with some efforts computer models of the Martian aurora before transitioning to primarily the profession of education and outreach. She continues to be involved in scientific research involving the transport of electrons in atmospheric phenomena and has had over 10 years of experience in the education and outreach profession. She currently leads several national education programs that provide professional development and supports communities of practices to educators who primarily teach in out-of-school settings. Specifically, she is a Co-PI and Institutional PI of an NSF informal science education grant working to engage Native American and science center educators in science and indigenous ways of knowing, is the co-lead of the education program for a NASA's Mars mission, MAVEN; and she leads the NASA's Heliophysics Education and Public Outreach Forum. Dr. Peticolas' passion for equity and inclusion in all aspects of society and

for the knowledge gained through scientific practices has led her to these cross-disciplinary efforts.



**Dr. J. Daniel Rogers** is Curator of Archaeology and is former chair of the Department of Anthropology at the Smithsonian's National Museum of Natural History. He received a Ph.D. in Anthropology from the University of Chicago where he studied the history and archaeology of the Great Plains. Over his career he has conducted field research in the Southwest, the Great Plains, the Caribbean, Mexico, Peru, and eastern Asia. Since 2002 he has studied the early empires of Inner Asia and developed computational models to analyze the social implications of climate change. His research topics also include the role of colonialism, culture contact, and the origins of complex societies.



**Robert Russell Ph.D.**, Program Director, Education and Human Resources at National Science Foundation.

\*Program Director, Lifelong Learning Cluster, Division of Research & Learning, Education & Human Resources, National Science Foundation

\*Senior Education Associate, National Center for Interactive Learning (2010-present)

- \* Principal, Informal Learning Solutions: Help organizations plan, evaluate, and develop grant funding for informal education projects. (2001-present)
- \* Science and Health Director, Acceso Hispano/Self Reliance Foundation: Developed and direct major science and health education initiatives for Latinos. (2007-2009)
- \* Interim Executive Director, Acceso Hispano (2001-2002, 2005-2007)
- \* Informal education consultant providing project development, management, grant development, and evaluation services.
- \* Developer of major science education initiatives targeting Latinos, including Celebra la Ciencia (multi-site initiative organizing local coalitions of science education organizations targeting Latinos), ConCiencia (weekly science news service).
- \* Consultant to science centers, IMAX film producers, science radio programs, community youth organizations.



**Margaret Shiba** (Director of Institutional Advancement, 'Imiloa Astronomy Center) has worked at the University of Hawai'i at Hilo in a private fundraising capacity since 2004. Before moving to Hawai'i, Margaret worked for 33 years in the field of international education in New York City, including serving as Executive Director of Metro International (now One to World), a membership organization offering programs and services to 50,000 international students and Fulbright scholars in the greater New York metropolitan area. Born and raised in Atlanta, Georgia, Margaret earned a bachelor's degree in anthropology at Bryn Mawr College and a master's degree in East Asian/Regional Studies at Harvard University. She studied in Japan during both high school and college and traveled to South Korea on a Fulbright grant in 2000.



**Kyle "Shpeyah" Swimmer**

**Kyle Swimmer** was raised on the Laguna Pueblo reservation by his grandparents and, through his grandfather, his passion for culture, caretaking, and protection of the emerged and continues to evolve. Kyle works with youth from the pueblo, engaging them in farming, dancing, singing and speaking Keres (Laguna language). He has started his own dance group that travels across the country, sharing and educating people about pueblo culture. Along with being an active member in his community, Kyle currently attends New Mexico Institute of Mining & Technology, where he is a fourth year Environmental Engineering student, focusing on water treatment for low-income communities.



**Dr. Shelly Valdez** is a member of the Pueblo of Laguna Tribe, located in central New Mexico, and Hispanic descent. Shelly's educational background includes a Bachelor of Arts degree in Elementary Education, Master of Arts in Bilingual Education, and Ph.D. in Multicultural Teacher Education focusing on research in the area of Science Education.

Shelly has worked in the area of education for 29+ years and currently owns & manages an educational consulting business, Native Pathways, (NaPs), located in central New Mexico. An important component of NaPs focuses is in the area of world views in science education, primarily focusing on indigenous science. Shelly's interest and passion of indigenous science has influenced her approaches in the field of education, evaluation and partnerships she works with. As part of her work, she is honored to be invited to join various educational boards, committees and supports educational programs at local, state and national levels. Her greatest moments in life are spending time with her son, Shpeyiah (Kyle) Swimmer, who is attending New Mexico School of Mining and Technology, (NM-TECH), in Socorro, NM.

Why Indigenous Science in education? Shelly grew up with a rich environment filled with learning from a cultural environment and the outdoors. Her father, the late Robert C. Valdez, was her mentor and her true teacher, in that he was able to take her school book learning to a deeper level. It was her father that helped her understand the connection of school learning to her own worldview, giving her a culturally rich community-based education. This environment and the gifts of knowledge her father shared with her influenced her decision to pursue the field of education, and advocacy in cultural relevancy in education. She feels that the educational systems in America have failed significantly because they

have left out the richness of community knowledge that could greatly benefit the academic growth our youth. Additionally, tribal communities have embraced western academia so much, that they themselves have bought into the dysfunctional systems of western education. Shelly believes that we as tribal communities must 'unschool' ourselves from the so called 'American or Mainstream Educational Systems in order to truly provide a meaningful educational experience that is filled with rich learning and cultural relevancy for our youth to be successful within our tribal communities and mainstream society. Until we are willing to create these paradigm shifts, we will continue to repeat the failures of the past that research perpetuates. Shelly's vision for the future is to continue to be an active participant and an advocate for influencing Worldviews in evaluation and educational opportunities for indigenous people.

#### EXCELLENCE AND INNOVATION IN QUALITY LEARNING RESOURCES

Dr. Shelly Valdez

Owner

Native Pathways (NaPs), Educational Consulting

P.O. Box 248

New Laguna, NM 87038

shilaguna@aol.com

505-550-4189



**Jill Stein** is one of the lead evaluators for the I-WISE conference. She is a principal researcher at the Lifelong Learning Group (COSI, Columbus, OH), a research, evaluation and consulting group focused on learning in informal settings, and has been in the field of museum audience research for more than a decade. She has been honored to participate in multiple projects related to Indigenous worldviews in STEM learning, including the NSF-funded *Cosmic Serpent*, *Native Universe*, and *Roots of Wisdom*. Jill holds an M.A. in Folklore and Anthropology, and currently lives in Corvallis, OR.



**Martin Storksdieck PhD**, is the director of Oregon State University's Center for Research on Lifelong STEM Learning and a professor in the College of Education and the School of Public Policy. Prior to joining OSU, Martin directed the Board on Science Education at the National Research Council of the National Academy of Sciences. There he oversaw studies that addressed a wide range of issues related to science education and science learning in formal and informal environments, and provided evidence-based advice to decision-makers in policy, academia and educational practice. His own research focuses on what and how we learn when we do so voluntarily. This includes connections between school-based and out-of-school learning. Martin's research also focused on the role of science-based professionals and science hobbyists in communicating their passions to a broader public. He has previously worked for education research and environmental policy non-profits in Germany and the United States, and served as environmental science educator and producer at a planetarium. He holds Master's degrees in biology and policy, and a Ph.D. in education.



**Ashley Cottrell Teren** (Cherokee/Swedish) is a project manager/videographer/curriculum designer for Indigenous Education Institute. Ashley has lived a multi-cultural life: she spent much of her youth on the Navajo reservation, graduated from high school in Pakistan, traveled the sub-continent extensively, and lived in Hawaii for ten years as a college student and later as a K-12 teacher. Ashley has immersed herself in Cherokee, Hawaiian, Urdu, Hindi, Thai, and Lao languages. She received a BA in English, a minor in linguistics, and a TESL certification from University of Hawaii at Hilo. She holds a M.Ed in secondary education from the University of Phoenix. Ashley is passionate about native language retention, backcountry skiing, and the preservation of wild places.



**Chris Teren** has been working with the Indigenous Education Institute for over 15 years, providing technical support, photographic, video, and website production, and book layout and design. Chris has lived in the San Juan Islands of Washington State for 20 years, photographing all that the Salish Sea Region has to offer - while flying, boating, hiking, and diving, and is the owner/operator of a technology consulting company and photo / video production studio.



**Yvonne Vizina** is a PhD Candidate in the School of Environment and Sustainability at the University of Saskatchewan. Her research is examining sustainability education practices and policies in Aboriginal post-secondary institutions and how these processes may influence community-based conservation as well as environmental decision-making at local, national and international levels.

Yvonne earned a Bachelor of Education Degree with Great Distinction from the Saskatchewan Urban Native Teacher Education Program / University of Saskatchewan. She has a double major in Biology and Native Studies. In 2010, she completed a Master of Education Degree with a thesis on Métis Traditional Environmental Knowledge and Science Education. She worked at the U of S as the Associate Director of the Aboriginal Education Research Centre, managing local and national research projects involving Aboriginal communities.

Yvonne is Métis, and has worked for Métis organizations at the regional, provincial, and national levels on environmental issues. As Director of Environment and Policy Analyst for the Métis National Council, she worked on national and international environmental issues such as species at risk, biodiversity, climate change, mercury pollution, and other environmental issues. She has spent many years learning from Aboriginal Elders and traditional knowledge keepers as well as professional colleagues within Aboriginal communities. Since 2011, Yvonne has worked with the International Indigenous Forum on Biodiversity to advance Indigenous perspectives within the United Nations Convention on Biological Diversity.

She believes that to protect the Earth for future generations, traditional and contemporary forms of knowledge are necessary to ensure human society can respond appropriately to challenges emerging from our rapidly changing environment.



**Shirley Williams** (KASTLMUT) Community Medicine RN is a member and resident of the Lummi Nation. She is employed by the Lummi Tribal Health Clinic and has been working at the Lummi Youth Academy since 2008. She will be presenting her reflection on Indigenous Public Health, as she has come to assess the needs of the youth and community she serves and the public health issues that have affected the individual and community across the Transboundary International connection

LUMMI - <http://nwtreatytribes.org/lummi-nation-members-honor-traditions-at-historical-fishing-site/>

SAANICH - <https://www.youtube.com/watch?v=vTQk1IR9ibc>

SAFE PASSAGE IN THE SALISH SEA -

<https://www.youtube.com/watch?v=nvYgKS14-bU>

Spirit of the Sxwo'le/ SXOLE: "May the Spirit of the Sxwo'le/ SXOLE and our children be surrounded by all that is positive as we return to the ancestral lands of our people."



**Pam Woodis** is a member of the Jicarilla Apache Nation located in the beautiful mountains of Northern New Mexico. Her early years were spent in Shiprock, NM on the Navajo Reservation and in Dulce NM with her mother's people the Apaches. She received her undergraduate degree from Ft. Lewis College in Durango, CO and her Master's from the University of NM in Albuquerque. Pam has been at the Smithsonian's National Museum of the American Indian since 2002 working as a museum program specialist with the Office of Education. She has worked on numerous projects and programs at the NMAI. She has served as a project advisor for several projects that focus on Native Knowledge the NSF funded Cosmic Serpent, Native Universes, Roots of Wisdom exhibition with the OMSI. She is committed to Native Knowledge, and Native ways of knowing.



**James R. Zimbelman** is a planetary geologist at the Smithsonian's Center for Earth and Planetary Studies, National Air and Space Museum, a position he has held since 1988. He has published more than 90 peer-reviewed manuscripts, over 450 published abstracts for conferences and workshops, and he was co-author of "Dune Worlds: How windblown sand shapes planetary surfaces" (with Ralph Lorenz; Springer) in 2014. He has traveled to Iceland, Greenland,

Antarctica, and countries in South America, Africa and Europe as a Study Leader on Smithsonian Journeys trips. His research interests include analysis of high resolution imaging data of Mars, geologic mapping of Mars and Venus, studies of lava flows on planetary surfaces, and sand transport processes on Earth and Mars. Prior to coming to the Smithsonian, he was a staff scientist at the Lunar and Planetary Institute in Houston, Texas. Dr. Zimbelman received his B.A. in Physics and Mathematics (1976) at Northwest Nazarene University, an M.S. in Geophysics and Space Physics (1978) at the University of California at Los Angeles, and his Ph.D. in Geology (1984) from Arizona State University.