



# The Cosmic Serpent ~

Bridging Native Ways of Knowing and  
Western Science in Museum Settings.

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[www.cosmicserpent.org](http://www.cosmicserpent.org)

## PI'S WELCOME

*Nancy C. Maryboy, Ph. D.*

Siyo! Welcome to the second issue of the Cosmic Serpent Newsletter! I am happy to extend a warm welcome to all of you who have joined our Cosmic Serpent network. I especially want to welcome our Cosmic Serpent Fellows, participants in the workshops we have put on in 2008 and 2009. This includes our Pilot Workshop in Santa Fe (Spring 2008), our first full workshop for the Southwest, at the Institute of American Indian Arts, also in Santa Fe (Spring 2009). Our first full workshop for the Northwest took place at Semiahmoo, in Blaine, Washington (Summer 2009). We are looking forward to three workshops this year (2010). The first full workshop in California (February 8 - 12, 2010) will be held at the Barona Cultural Center and Museum, near San Diego, with a site visit to Balboa Park, at the Museum of Natural History and the

Taos, NM. The first follow-up NW workshop is scheduled for September 20 - 23, 2010. Many exciting partnerships are beginning to emerge, spreading the Cosmic Serpent message near and far. It is wonderful to see these little seeds begin to take root and grow. Best wishes to you all.



*Nancy C. Maryboy, Ph. D.*



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Fleet Science Center. The California workshop will honor maritime navigators including Native Hawaiians and costal Californian Natives. The first follow-up SW workshop will be held April 26 - 29, 2010, at

## UPCOMING WORKSHOPS:

- Southern California, Barona, CA  
February 8-12, 2010
- Southwest Follow-Up, Taos, NM  
April 26-29, 2010
- Northwest Follow-Up:  
September 20-23, 2010



Cosmic Serpent is a Collaborative project led by Indigenous Education Institute and UC Berkeley Space Sciences Laboratory. Cosmic Serpent is funded by the National Science Foundation under grants No. DRL-0714631 and DRL-0714629.

## COSMIC SERPENT NORTHWEST WORKSHOP

Cosmic Serpent hosted a five days workshop in the beautiful Pacific Northwest, in August, 2009, located at Semiahmoo Resort near Blaine, Washington and at Northwest Indian College. The workshop was opened by Swinomish elders and cultural specialists Joe McCoy and Larry Campbell, of La Connor, WA. Participants included museum personnel and educators from Alaska, Oregon and Washington.



We continued with traditional Indigenous introductions and panels which explored the archetype of the cosmic serpent and examples of possible workshop outcomes in museum settings. We explored Indigenous ways of knowing and differences and similarities with western science. Break-out sessions deepened participants' knowledge of the two ways of knowing the universe. Some break-out sessions focused on experiencing western science, presented by OMSI personnel Vicki Coats, Kyrie Kellett, Brett Kiser, and Lori Erikson. Some sessions went more deeply into Indigenous ways of knowing through direct observation and relational thinking. Ann Riordan highlighted aspects of the creation of the Alaskan exhibit on Yupik survival implements, "Yuungnaqpiallerput (The Way We Genuinely Live): Masterworks of Yup'ik Science and Survival."

We spent one day at Northwest Indian College, on the Lummi Nation, near Bellingham, where we were welcomed by President Cheryl Crazy Bull. We were grateful to Susan Given-Seymour for all her organization to make our experience

so memorable. Roger Fernandes began the sessions with a talk on Science in an Oral Tradition. The participants then divided into smaller groups to experience hands-on activities and traditional knowledge,



*Ashley Teren, weaving a cedar bark bracelet, NWIC.*

interwoven with botanical science. Sessions included Salish Weaving and Ethnobotanical trails, a popular workshop presented by Theresa Parker of the Makah Museum. Theresa presented a hands-on activity of how to make cedar bark bracelets, along with ethnobotany of the cedar tree. Valerie Seacrest from NWIC taught us about native foods gathered from traditional lands and how they are still gathered today. Vanessa Cooper from NWIC demonstrated how to blend traditional medicine with western medicine and gave a presentation on how to make a healing salve. At the end of the workshop participants received a jar of the salve. Dr. Terry Maresca, an Indigenous physician, spoke to us about how she combines traditional and western medicine in her practice at Snoqualmie Family Practice.

At the end of the day, NWIC put on a lovely dinner with traditional foods. We were treated to traditional dances by an Aleut group of young traditional dancers (NW Unangax Culture, Snagagim Axasniikangin) from Alaska. Many of the participants joined in the dancing.



*Beach break-out session Semiahmoo*

Another day we visited the museum under construction at Tulalip. This will be a showcase museum when it opens in 2010. We were privileged to hear from elder and spiritual leader Hank Gobin, who is directing the construction of the museum. Everyone was fascinated by the talk and a the tour of the site. Mr. Gobin shared some of the history of how the mu-



“The Cosmic Serpent project is a personal and professional development experience for informal educators that seeks to increase participants’ capacity to enrich their practice by exploring the mutually beneficial relationship between indigenous knowledge and western science paradigms.” Laura Huerta Migus



*Visiting Construction site at Tulalip, for Hibulb Museum*

seum was coming into being and the challenges of preserving traditional ways of knowing while working with western architects and designers.

We went on to Seattle and visited the Pacific Science Center where we were greeted by Director of Education

Heather Gibbons. After spending several hours touring the museum, including the amazing hall of butterflies, we had dinner at Ivar’s and headed back to Blaine.

Traditional elder Dr. Lloyd Pinkham, Yakama Nation, and Thomas Morning Owl, Umatilla Confederated Tribes, spoke and sang to us about informal traditional science, importance of Indigenous languages, and living one’s culture. Dr. Pinkham conducted a cultural session on the beach, which was very moving for those who attended.



*Thomas Morning Owl, Presentation at Semiahmoo*

Later we had more

break-out sessions. One featured local and traditional foods and how they impact our health, presented by Dr. Jo Jenner, Naturopathic Doctor, and Charlene Krise, Director of the Squaxin Island Museum. Another popular session was led by Joel Halvorson and Jim Rock from Minnesota, who presented a show on astronomy in a digital portable planetarium. Ruth Ludwin, a geologist from the University of Washington presented her ground-breaking research on earthquakes, tsunamis and landslides as discovered through NW Native Tradition and rock art.

There were opportunities for reflection during walks along the beach. Relationships were built among participants, educators and Cosmic Serpent staff. Everyone agreed that a good foundation had been laid for collaborative partnerships and future networking.



*Charlene Krise, Squaxin Museum, at Pacific Science Center in Seattle*



*Dr. Lloyd Pinkham. Beach break-out session Semiahmoo*

## COSMIC SERPENT SOUTHWEST WORKSHOP

The first full SW workshop was held in Santa Fe, NM in the spring of 2009. We held most of our meetings at the Institute of American Indian Arts (IAIA) in South Santa Fe. It is an inspiring location and is where many of our most distinguished Native American artists have trained. We had a site visit to Poeh Museum, a tribal museum of the Pojoaque Pueblo. There we experienced break-out sessions on basket making and pottery making by renowned artists, who talked about their art and the science that could be understood in the plants and soils that are used to form the baskets and statues and pots. We learned how many Indigenous artists see their work as highly interconnected with the natural forces of a relational universe and how they gather and work with their materials in a way that promotes sustainable ecology. Touring the museum was a highlight for many participants as they experienced how an Indigenous people could tell their own story in their own words with their own images, which were very different from most non Indian museums. We visited the Planetarium at the New Mexico Museum of Natural History in



Laura Ladwig, Sky City

Albuquerque where we had a dinner, a Navajo star show, and hands-on activities related to Maya math and science. The following day, we had a guided tour of Sky City, at Acoma Pueblo, visiting a site that has been continuously occupied for over a 1000 years. Shelly Valdez, one of



Sky City at Acoma Pueblo

our evaluators, hosted us at Laguna Pueblo, where we were privileged to view ceremonial dances and dine in family homes and visit with the Governor in his home. We also visited the tribal council chambers and heard from tribal officials. We had a representative from the Maya community of Palenque, Mexico, Alonso Mendez, who presented with Isabel Hawkins from the Exploratorium on Maya math, using sticks and beans. Alonso demonstrated how to measure physical and solar alignments on the IAIA campus. There were many other wonderful presentations and activities, too numerous to mention here, but in all events and during every day, there were discussions of how one could find science in Indigenous culture and arts, and in observation-based Indigenous research, and also of how western science practices could infuse and support Indigenous museums.

## FEATURED PARTICIPANT

Cheryl Hinton has been Director/Chief Curator of the Barona Cultural Center and Museum since 1999 and helped open the facility for the Barona Band of Mission Indians. She received her MA in Anthropology from San Diego State University and is a member of Phi Beta Kappa, American Anthropological Association, the American Association of Museums, and is the Vice President of the Western Museums Association and has been an IMLS Peer Reviewer. In 2007, Cheryl was named Woman of the Year in Art and Culture by the



Cheryl Hinton



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San Diego/ East County Chamber of Commerce Women in Leadership Program. Her former museum experiences include Museum Anthropologist at the Palm Springs Desert Museum, first Curator of the Agua Caliente Tribal Museum in Palm Springs and Southwest Curator at the San Diego Museum of Man. As adjunct faculty at University of San Diego and Grossmont College in Anthropology and Cross-Cultural Studies, Cheryl specializes in Southern California Indians, from archaeology to contemporary culture; American Indian stereotypes; and repatriation (NAGPRA). (Her publications also appear under the name Cheryl Sanders Jeffrey). She and husband, folk musician Jim Hinton have developed and teach a class in “Irish Folksongs and the Stories They Tell.”



*Barona Rock Art*

## **PARTICIPANT REPORT FROM THE SOUTHWEST:**

*Linda Deck, Director, Bradbury Science Museum, Los Alamos, NM.*

The NM Museum Association annual meeting was held in Santa Fe, in October 2009. David Begay, Cosmic Serpent project PI, was joined by roundtable presenters and project participants Amy Grochowski (Curator of Education, Maxwell Museum), Conlin Chino (Educator, Explora!), and Linda Deck (Director, Bradbury Science Museum) to discuss how this NSF-funded initiative is proceeding in New Mexico. Also at the table were Julia Hansen (Volunteer Coordinator from City of Las Cruces Museums and also a Cosmic Serpent participant), Lisa Pugh (Museum Manager, Las Cruces Museum of Art), and Adrienne Booth (graduate student in Media Arts at NM Highlands University). Presenters began with a review of the genesis of Cosmic Serpent and its progress to date, why they were drawn to the program, and what they hoped it would lead to. Each gave examples of how Cosmic Serpent has already affected their programming and partnerships with other institutions. The availability of Cosmic Serpent conference presenters as resources, and that

Cosmic Serpent is as much about culture as science, was reinforced. A discussion about how to extend indigenous knowledge into art museum programming suggested interpreting the materials used to make art (e.g. clay for pottery, brushes to apply pigment). The fundamental question of what the Cosmic Serpent project does for its participants ended up with a communal discussion of what all the New Mexico participants could jointly do. This revolved back to an idea put forth by Mimi Roberts (Director of Media for the NM Department of Cultural Affairs) to create an exhibit and programs about the long heritage of scientific discovery in New Mexico to coincide with the New Mexico Centennial. All discussants agreed that this would be an excellent topic that could employ Cosmic Serpent ideas by ensuring that the indigenous knowledge tradition was well integrated into the content. The participants intend to keep in touch about this idea as it develops; all others are also welcome to be involved. Contact Linda Deck at [ldeck@lanl.gov](mailto:ldeck@lanl.gov) for more information.

## **THE COSMIC SERPENT TEAM**

- **PI:** Nancy C. Maryboy, Ph.D. (IEI)
- **Co-PI's:** David Begay, Ph.D. (IEI), Laura Peticolos, Ph.D. (UC Berkeley Space Science Lab)
- **Project Managers:** Ruth Paglierani (UCB), Renee Frappier (UCB), Ashley Teren (IEI)
- **Evaluators:** Jill Stein (ILI) Eric Jones (ILI), Shelly Valdez (Native Pathways)
- **Partners:** Laura Huerta Migus (ASTC), Pam Woodis (NMAI)





## EVALUATORS CORNER

The Cosmic Serpent evaluation team is a joint collaboration between Native Pathways and the Institute for Learning Innovation (ILI), and is designed to foster the kind of cross-cultural relationship that is at the heart of the Cosmic Serpent community. Evaluation efforts for Cosmic Serpent focus on including the voice of participants in the planning and growth of the project, supporting an ongoing reflective process by the Cosmic Serpent leadership team that is emergent and responsive, and documenting the effectiveness and success of the project over time.

We would like to share some recent activities from the evaluation team:

- This summer, we launched an audience study designed to better understand how visitors to science, natural history, and tribal museums perceive Western science and Indigenous knowledge, as well as their interest in exhibits and programs that juxtapose multiple worldviews. Members of the evaluation team conducted interviews with visitors to the New Mexico Museum of Natural History and Science (Albuquerque, NM) and the Oregon Museum of Science and Industry (Portland, OR). We would like to thank those institutions for hosting us. The study will continue over the next several months, and a final report will be available to Cosmic Serpent participants in Spring 2010.
- An evaluation team member from ILI, Dr. Martin Storksdieck accepted a new position this summer as Director of the Board on Science Education at the National Research Council, National Academies of Science, in Washington, DC. Martin will miss working with the Cosmic Serpent team, but hopes to continue work in understanding how Native and Western science can come together in formal and informal education settings.



Art by Jason Gobin

•Cosmic Serpent welcomes Dr. Eric Jones to the evaluation team. Eric is an ILI research affiliate based at the University of North Carolina-Greensboro. With a background in ecological anthropology, Eric focuses on understanding the role of social networks in how

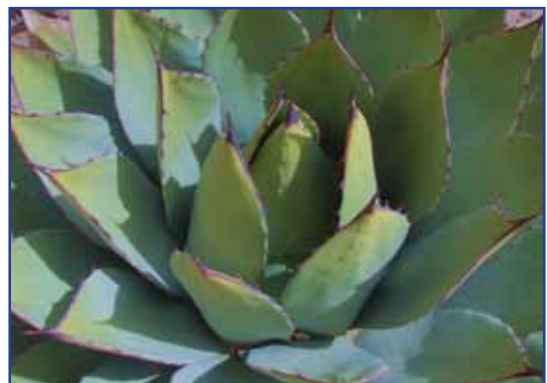


Dr. Eric Jones

communities respond to change. Raised in Montana, a state with several large reservations, Eric is excited about evaluating and assisting this effort to juxtapose Western scientific approaches and Indigenous ways of knowing. He likes to spend his free time playing with his two young children and gardening.

- We have been following up with participants from the Southwest workshop, to better understand how participants have stayed involved in Cosmic Serpent and what the project could do to better support participant's needs. We appreciate the time everyone has taken to talk with us, and look forward to our conversations with those we have not reached yet.

If you have any questions about the Cosmic Serpent evaluation, feel free to contact Jill Stein ([stein@ilinet.org](mailto:stein@ilinet.org), 410-956-5144), Shelly Valdez ([shilaguna@aol.com](mailto:shilaguna@aol.com), 505-550-4189), or Eric Jones ([ecojones@uncg.edu](mailto:ecojones@uncg.edu), 336-334-4133)



## BUILDING OUR COMMUNITY - REPORT FROM LAURA HUERTA- MIGUS OF ASTC



The informal science education community is well-supported through a number of online communities, which are generally open to anyone who wishes to join. Below are some ways to continue the experience of the Cosmic Serpent project.

- **ASTC Roundtables for Advancing the Profession (RAPs):** Cosmic Serpent is organized regionally to facilitate sustainable connections between tribal museums and science centers. Cosmic Serpent Fellows don't need to wait for the next Cosmic Serpent workshop to meet – convene a RAP instead! For a list of current RAPs and information on convening a RAP, visit <http://astc.org/profdev/raps/index.htm>.
- **ISEN-L Listserv:** ISEN-ASTC-L is an e-mail discussion list that links more than 1,200 informal science professionals from around the world. Many ISEN-ASTC-L subscribers work in science centers and museums as educators, exhibit developers, evaluators, and in the area of visitor services. Visit <http://astc.org/profdev/listserv.htm> for instructions on subscribing to the listserv.
- **InformalScience.org:** InformalScience.org, an ongoing project of the University of Pittsburgh's Learning in Out-of-School Environments (UPCLOSE), is a growing online community site that strives to support knowledge-sharing, collaboration and the growth of innovation among diverse professionals in the field of informal science education. Educators and anyone interested in informal science education are encouraged to join this community to share their own



*Walking at Poeh Museum*

projects and learn from others' projects. Visit <http://www.informalscience.org/member/new/0/4492> to join.

- **ExhibitFiles.org:** ExhibitFiles is an online community of exhibit practitioners building a shared collection of exhibition records and reviews. Visit <http://www.exhibitfiles.org/user/new> to join.



*Alonso Mendez and Isabel Hawkin explore solar alignments at LALA*

The Cosmic Serpent program will serve practitioners at 96 science centers/museums and tribal/cultural museums in the U.S. Southwest, California, and Northwest through three full workshops, three follow-up workshops, continuing communication, regional networks, with a culminating conference at National Museum of American Indian in Washington, D.C. Participants will gain awareness of diverse cosmologies and epistemologies and thus an increased understanding of the nature and cultural roots of science (Western, Native, or otherwise).