

Connecting Communities

Outreach to Native American Schools, Students and Teachers

Education and diversity are two themes that run through all the activities of CMMAP. As CMMAP looks to improve education in science and climate science at all levels, CMMAP scientists and educators are also looking at fresh and novel ways to connect with a diverse range of students, teachers, schools and communities.

The connection with CMMAP is allowing the crew of the Little Shop of Physics (LSOP) to develop a range of innovative instructional materials, while fostering the development of connections with Native American communities that are traditionally underrepresented in math and science fields.

Each week of the academic year, the LSOP team of undergraduate interns and professional science educators takes a van of hands-on instructional materials to schools. Over school breaks, the team makes extended trips to the Navajo, Southern Ute, Mountain Ute, Shoshoni, Arapaho and Lakota reservations.

These trips are conducted in partnership with Colorado State University's Native American Cultural Center (NACC). The LSOP team presents school programs in concert with a group of NACC students, when ever possible, including students from the local area. In addition to sharing hands-on science, NACC staff provide information on admissions and scholarships to students and teachers.

The school programs are just the first step in the development of partnerships with the communities we visit. In summer 2009, LSOP staff returned to the Pine Ridge reservation to present a three-day teacher workshop in cooperation with the local Oglala Lakota College (OLC). This workshop was a true exchange of ideas, cultures and expertise. LSOP staff presented lessons and activities, and teachers along with OLC staff shared their ideas and insights on cultural issues relating to classroom teaching, the process of science, and the question of mitigating and adapting to climate change.



Sheila Ferguson, Teacher in Residence with the LSOP, presents a lesson on radiant heating to a group of teachers at the 2009 "Sun, Clouds and Weather: Science of the Sky" summer workshop at Oglala Lakota College.



Derek Benally of NACC does an angular momentum activity with a student at Red Shirt Table School during a January 2010 visit.

During May 2010, students and staff from visited Colorado State University to work with the LSOP to develop their own hands-on science program that is adapted to the needs and interests of their community. Students from OLC worked with LSOP and students from Native American Student Services and developed take home kits to be used with teachers on the Pine Ridge Reservation.

This two-way communication is something that will continue in future years as CMMAP refines its diversity mission. At CMMAP, rather than simply seeking to attract a diverse range of current and future scientists, we are seeking to expand this mission by posing an interesting and far-reaching question: What can different communities offer us *now*, in terms of how we teach students, and also in terms of how we do science?