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The Science Around Us: Partnerships to foster interest and competency in science among middle school students in rural NM

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ABSTRACT

The New Mexico SEPA project engages rural Hispanic and American Indian middle school students in the science around us, through curricula, summer camp, field trips, career days, school gardens, nature hikes and other learning opportunities in and out of the classroom. Emphasis is placed on role models, health careers, healthy living, and natural history. Learning activities are inquiry based, culturally appropriate and educationally sound. Frequent “think tanks” ensure teacher input and guidance. Professional development is aligned with the program objectives and needs of the teachers.



CURRICULA AND EDUCATIONAL ACTIVITIES

UNM SEPA develops curricula and educational activities within the theme THE SCIENCE AROUND US, which includes students’ health (nutrition, exercise, and the environment which fosters those decisions), the students’ natural environment of rural northwestern New Mexico, and STEAM-H careers.

The UNM SEPA team develops lesson plans, consulting the expertise of UNM researchers, UNM community partners, and online resources. Then, teachers pilot test the lesson plans in their classroom and provide feedback to UNM SEPA.

UNM SEPA works closely with teachers to choose field trips based which reinforce science curricula. Previous field trips have included the University of New Mexico’s Health Science Center, the New Mexico Museum of Natural History and Science, the Explora Science Center, the Petroglyph National Monument, and Chaco Culture National Historical park.

Lastly, UNM SEPA coordinates resources from the local area as well as Albuquerque and UNM to arrange an annual Science Summer Day Camp for middle school students. Camp activities reinforce science curricula and encourage students to be active and healthy.

EVALUATION

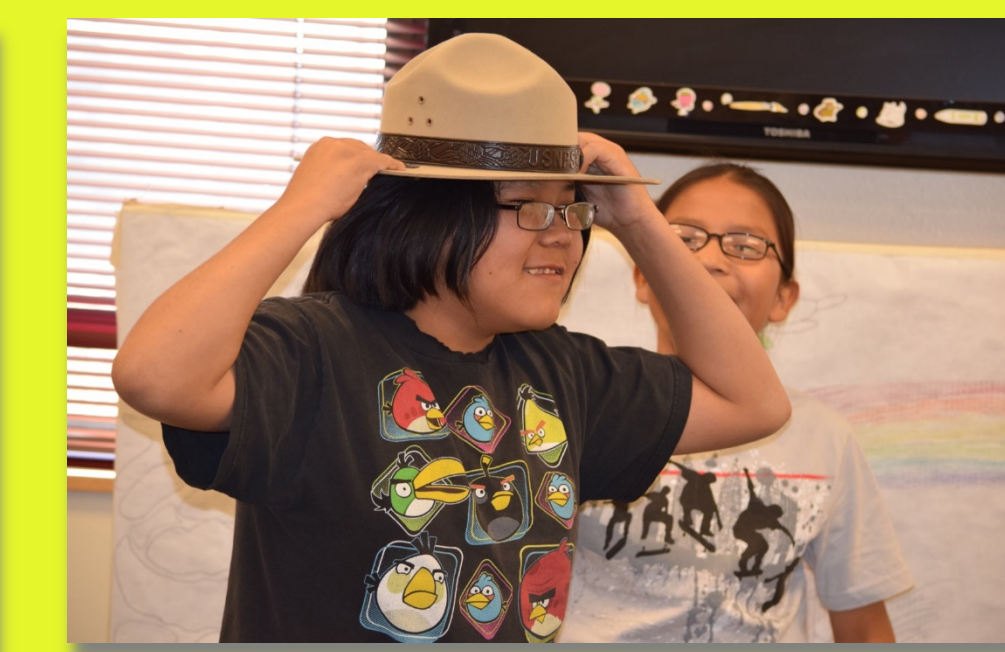
Biological Science Curriculum Study, based in Colorado Springs, CO conducts evaluation of UNM SEPA activities.

ROLE MODELS AND MENTORSHIP

UNM SEPA arranges for annual career days where UNM students (graduate and undergraduate) and science professionals travel to participating middle schools to share the joys of discovery, science, and knowledge. Additionally, UNM SEPA coordinates with UNM students and science professionals to share with middle school students during the students’ field trips to Albuquerque.

Potential speakers are considered on their 1) willingness to travel to school sites, 2) friendly and accessible disposition towards young people, 3) passion for their STEAM-H field, and 4) a similar ethnic, socio-cultural, and/or economic background of the students at the school sites.

We believe that fostering these relationships will influence students’ career choices and increase their understanding and comfort with the academic environment.



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SCIENCE TEACHER COLLABORATION

UNM SEPA coordinates and conducts several “Think Tanks” each semester with school administrators, teachers, and key community members. The Think Tanks are held at a location central to all participating schools where participants brainstorm and refine THE SCIENCE AROUND US curricula ideas, field trip options, and career/education role modeling ideas, based on teachers’ understanding of the needs and interests of students.

SEPA coordinates with the NM Informal Science Education Network, the NM Public Education Department, and the Santa Fe Institute to provide teachers with opportunities for professional development.

COMMUNITY OUTREACH

Rooted in the socio-ecological model, UNM SEPA seeks to reinforce students’ learning of scientific concepts and students’ formulation of educational career goals, UNM SEPA coordinates and delivers educational material to students’ families and broader community at large events.

Last year, UNM SEPA collaborated with teachers and community members in order to support science, nutrition, exercise, and career education at the Rio Arriba County Fair, the Sandoval County Fair, the Cuba Farmers’ Market, Jemez Mountain School District’s (JMSD) Culture Day, JMSD’s Fit Day, Cuba’s National Trail’s Day, and Cuba’s 4th of July Community Celebration.



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UNM SEPA Team Members:
Alejandro Ortega BS, Kathryn Peters MA MCRP

Participating Middle Schools: Coronado Middle School, Cuba Middle School, Lindrith Area Heritage School & Lybrook School