



Hot Air from EEOP – A Newsletter

Environmental Education Outreach Program (EEOP)
Volume 4, Issue 1 (September 2008)

Web version @
<http://www.nau.edu/eeop/newsletter>

The Newsletter

This newsletter is a service of the Institute for Tribal Environmental Professionals (ITEP) Environmental Education Outreach Program (EEOP). The EEOP staff created this newsletter for K-16 students, educators, and tribal professionals that are interested in learning more about environmental issues. You are welcome to use information from our newsletter in classrooms or in your own newsletter. We welcome suggestions for topics. We also welcome articles from our readers. The focus of this newsletter is to provide an overview of the services available from the EEOP staff.

Summer Scholars 09

The EEOP Summer Scholars has provided a valuable educational experience for Native American students in middle school and high school since 1999. The Summer Scholars program provides Native American students a one-week, on-campus pre-college experience with emphasis in applied mathematics, science, and technology focusing on local environmental issues.

The EEOP staff is currently recruiting schools to participate in the Summer Scholars 2009 program. The majority of the funding for the program is provided by the US Environmental Protection Agency and the Science Foundation Arizona, but we also need a small cost share from the school. The school staff selects the students and sponsors (teachers) that will participate in the program. The EEOP staff develops and facilitates the one-week program.

Indoor Air Quality (IAQ) Building Assessments

The EEOP staff is available to work with students and teachers to complete an IAQ assessment of their school building. The staff has an IAQ Kit to facilitate air quality measurements such as carbon dioxide, radon, carbon monoxide, relative humidity, air movement, surface temperature, and moisture. The staff will also help students and teachers use the USEPA IAQ Tools for Schools kit to identify potential air quality issues in the building.

There are three key components of the IAQ Building Assessments:

- Science education - students learn basic scientific principles about air and air pollution.
- Science - students are doing science by taking basic scientific measurements on air quality and interpreting the information collected.
- Student learning and health - students will make recommendations that will improve the health of all building occupants and improve the conditions for learning.

The data and observations collected during the IAQ Building Assessment will be provided to the school administration for their information and action. This is an educational program, not a regulatory program. Only the school staff receives the assessment reports.

Air Quality Education

The EEOP staff is available to work with students, educators, and tribal professionals to create more awareness of the career opportunities in protecting human health and ecosystems from air pollution. Some lessons and activities available are:

- Air quality and the Global Positioning System (GPS)
- Protection of air quality
- Atmospheric monitoring (GLOBE)

Engineering Outreach Program (EOP)

The EEOP staff is available to work with students and teachers in order to increase awareness of opportunities in engineering. Although engineering is applied science, mathematics, and technology, many students are not aware of the career opportunities for this fascinating field. The purpose of the Engineering Outreach Program is to increase awareness of engineering as a potential career and help students understand how they can prepare for an exciting and rewarding career in engineering.

Wildlife In Native Schools

The EEOP staff is working with the US Forest Service Rocky Mountain Research Station with a focus of “More Children in the Woods”. During forest visits to the Fort Valley Research Forest (near NAU campus) students will be introduced to forest management, ecology, wildlife and environmental issues through hands on activities. Topic areas will focus on forest management, biodiversity, land stewardship, wildlife management, basic ecological principles, related career opportunities, and the effects of good or poor air, water, and soil quality on ecosystems. Middle schools and high schools from Northern Arizona are invited to participate in this program.

American Indian Mobile Educational Resources (AIMER)

The AIMER classroom is a mobile computer laboratory that is used to teach concepts of physics, astronomy, and engineering to K-12 students. The EEOP staff will be available to conduct hands on classroom presentations on topics such as:

- Telescopes, how do they work
- Basic principles of rocketry
- Constellations and their origins
- Stars and different types of light
- Scientific method
- Planetary movements

Community Star Parties allow the community members to get involved in the AIMER program. Star Party participants will have an opportunity to view stars, planets, and moons through several different telescopes.

Water Education and Outreach

The EEOP staff provides activities and classroom presentations to increase hydrological literacy and spark interest of students in hydrological careers. Some lessons and activities available are:

- Water quality
- Ground water
- Drought and water conservation
- Water cycle
- Watershed protection
- GLOBE – Water Quality Monitoring

The EEOP staff also has water education supplies available on a loan basis.

Climate Change Education

The EEOP staff provides activities and classroom presentations to increase understanding of global warming and climate change. The program encourages students to seek engineering and science careers that can address climate change. Students are also encouraged to take action in their local communities to address climate change through adaptation or mitigation.

Campus Visits

The EEOP staff will facilitate visits to the Northern Arizona University (NAU) campus. A focus of campus visits is to encourage students to consider post-secondary education in preparation for careers in science, engineering, and technology. The staff can organize a variety of agendas. Week-day visits will typically include presentations from NAU faculty and staff. Saturday visits will typically include activities from the various program described in this newsletter.

Family Math Night

The EEOP staff provides “Family Math Nights” in cooperation with schools and communities. The focus of a Family Math Night is to give parents ideas on how to prepare their children for science, technology and engineering careers. Mathematics skills are often a barrier for students interested in science, technology and engineering careers. Families can help students overcome these barriers.

Services for Educators

The EEOP staff can support the implementation of several environmental education curriculums. This support could be a workshop inviting several teachers or responding to teachers on an individual basis. The EEOP staff is currently supporting the following curriculums and programs:

- Problem Based Learning
- Indoor Air Quality / Air Quality
- Global Learning and Observations to Benefit the Environment (GLOBE)
- Global Warming and Climate Change
- Family Math and Science
- Energy Education
- Water Education
- Wildlife Education
- Engineering Education
- Astronomy

- Uranium and Radiation Education

Internships for Teachers

Educators are also eligible for a professional internship. The EEOP staff can arrange for a one-week internship for educators working in a tribal environmental office. One purpose of the internship is to encourage collaboration between tribal environmental professionals and educators. Educators will be encouraged to take what they learn about tribal environmental issues back to the classroom.

Professional Assistance Requests

The EEOP staff will respond to requests for assistance. The requests can range from simple questions to small projects or training courses. Examples of requests include: a student asking a question about an environmental career; a teacher requesting assistance with curricular materials; a tribal environmental professional asking for assistance with outreach to the community.

Communications

The EEOP staff offers a variety of communications. The EEOP website provides information about programs. We also have a list-serve for sharing information on internships, programs, scholarships, as well as EEOP services and projects. If you would like to join the list-serve send an email to mansel.nelson@nau.edu. We encourage educators and tribal environmental professionals to use the articles in this newsletter in their own newsletters and communications.

Future Issues

In the next issue we will provide articles on wood stoves and burning yard-waste.

Credits and Contacts

The US Environmental Protection Agency (USEPA) Office of Air and Radiation provides part of the funding to make this newsletter possible. The newsletter is disseminated on various list serves, however, if you would like to join the newsletter list serve, contact Mansel.

Our staff looks forward to providing new services and developing new programs, as well as continuing existing programs. We especially look forward to hearing from you. So please visit our website at <http://www.nau.edu/eeop> or contact us via telephone or email.

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Service Requests

The EEOP staff looks forward to serving your school and students. In order to best use our limited resources we offer the following guidelines:

- Please plan in advance. Usually we need several weeks or even months advance notice.
- To facilitate communications, we appreciate being able to use email, however we may also suggest a conference call to work out the details of our visit.
- The EEOP staff should NOT be left in the classroom to supervise students without a teacher present from the school. We want to work with both students and teachers.
- In general, our services are available at no cost to schools that serve Native American students, however for some projects we may ask for a cost share from the school.
- With occasional exceptions, we prefer that you NOT combine classes for our presentations and projects. We generally prefer working with smaller groups.
- If significant travel is required to get to your school, we need to schedule several presentations to justify the travel time and expenses.
- Information about your school and classes will help us prepare for your group. The purpose of the Service Request form is to help us deliver better services for your students.

Summary of Programs and Services Available

Program	Region	Grade Levels	Locations
Summer Scholars 09	Arizona	6 th to 11th	NAU Campus
Indoor Air Quality (IAQ) Building Assessments	National	Elementary Middle School and High School Tribal Colleges	School Site
Air Quality Education	National	Elementary Schools Middle Schools High Schools	School Site NAU Campus
Engineering Outreach Program (EOP)	Arizona	Middle School High School	School Site NAU Campus
Wildlife in Native Schools	Arizona	Middle School High School	NAU Campus
American Indian Mobile Educational Resources (AIMER)	Arizona New Mexico Utah	Elementary Schools Middle Schools High Schools Community Events	School Site NAU Campus Community Site
Water Education and Outreach	Arizona California New Mexico Utah	Elementary Schools Middle Schools High Schools	School Site NAU Campus Field Trips
Climate Change Education	National	Elementary Schools Middle Schools High Schools	School Site NAU Campus
Campus Visits	Arizona New Mexico	Middle Schools High Schools	NAU Campus
Family Math Night	National	Elementary Schools Middle Schools	School Site

Service Request

The more information you are able to provide, the better we will be able to serve you and your students. **FAX to 928 523 1280 or email to mansel.nelson@nau.edu**

Dates Requested (Range of dates works better)	
Contact Name	
Email	
School / Office Name	
School / Office Mailing Address	
School / Office Physical Location	
Work Phone Work FAX	
Home Phone (optional)	
Cell phone (optional)	

Services and Programs Requested

*Indoor Air Quality Building Assessments	**Summer Scholars 09
*Air Quality Education	**Campus Visits
*Engineering Outreach Program	**Family Math Nights
*American Indian Mobile Educational Resources	**Wildlife in Native Schools
*Water Education and Outreach	**Services for Educators
*Climate Change Education	**Internships for Teachers
	**Professional Assistance Requests

*Describe the classes or groups

Period	Start Time	End Time	Grade Level	Subject	Number of Students
1					
2					
3					
4					
5					
6					
7					

**Additional Comments: