



## EEOP Newsletter

Environmental Education Outreach Program (EEOP)  
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Web version @  
<http://www.nau.edu/ecop/newsletter>

### **The Newsletter**

This newsletter is a service of the Institute for Tribal Environmental Professionals (ITEP) Environmental Education Outreach Program (EEOP). We've created this newsletter specifically for K-16 students, educators, and tribal professionals that are interested in learning more about environmental issues with a focus on air quality. The newsletter will also contain information about other EEOP programs and activities.

### **EEOP Services for Students, Educators, and Communities**

The EEOP staff offers a variety of services in partnership with educators. An online services request form will soon be available on the EEOP website. Please contact us via email to request services.

**Classroom Visits.** The EEOP staff is available to make classroom presentations and lead activities in several career areas. The primary purpose of these presentations is to provide students and educators information on career options and guidance on preparation for post-secondary educational opportunities.

- **Indoor Air Quality (IAQ).** The EEOP staff is interested in working with small groups of students to conduct Indoor Air Quality (IAQ) Assessments for the school building. The staff can also make classroom presentations on IAQ and conduct IAQ classroom activities. Students learn about air quality, while practicing scientific inquiry. The air quality measurements and observations will help identify improvements that can be made to ensure good air quality in school buildings. Good air quality can reduce illness among the students and staff and improve conditions for learning.
- **Water Education.** The EEOP staff is interested in working with students and educators to increase awareness of our water resources and the importance of protecting our water resources. The staff can bring ground water models and water quality measurement kits to the classroom.
- **Engineering Education.** The EEOP staff is interested in helping educators and students understand more about engineering careers and how to prepare for an engineering career. There are several hands-on engineering projects available for the classroom.
- **Astronomy and Physics.** The EEOP staff can bring a small computer lab to the school that has various computer simulations to help students understand and appreciate the universe. The staff can also conduct classroom activities to develop a better understanding of physics and astronomy.
- **Wildlife Education.** The EEOP staff will work with students and educators to learn about bird identification and bird habitat.

**Teacher Workshops.** The EEOP staff will also conduct teacher workshops. The teacher workshops can help teachers bring relevant science education to their students.

- Indoor Air Quality (IAQ). The staff will work with educators and building administrators to identify improvements that can be made to ensure good air quality in school buildings. Good air quality can reduce illness among the students and staff and improve conditions for learning.
- Water Education. The EEOP staff can deliver water education curriculum materials to educators. Many of the curricular materials are aligned with the Arizona State Education standards.
- Wildlife Education. The EEOP staff will work with educators to learn about bird identification and bird habitat and ways to engage students in learning about wildlife.
- GLOBE (Global Learning and Observations to Benefit the Environment). The GLOBE program is an environmental monitoring program. Student measurements on the atmosphere and water can be shared on an international data base.

Community Events. The EEOP staff is also available to conduct community evening events.

- Family Math and Air Quality Nights. Since the lack of math skills are a major barrier for entering science and engineer careers, the EEOP staff would like to introduce a program that will allow the entire community help students improve their math skills. We ask for a small cost share from the school to help cover expenses of the event.
- Star Parties. The EEOP staff can bring several telescopes to your community and help with viewing the stars.

Information Services. The EEOP staff provides information about scholarships, internships and other EEOP activities via listserves and the EEOP webpage.

- Listserves. Information about scholarships, internships, summer programs, and teacher workshops are available via the EEOP listserve.
- Webpage. Additional information is available at <http://www.nau.edu/eeop>.

Campus Visits. The EEOP staff is happy to organize a campus visit for your students. We focus on science and engineering, as well as preparing for post-secondary education. We can arrange to visit various facilities on campus, meet faculty and staff, and participate in learning activities.

### **Air Toxic - Mercury**

We previously reported on mercury – a toxic heavy metal – in the February 2006 EEOP Newsletter. A recent article in the Time magazine reported more bad news related to mercury. Recent scientific studies have revealed that mercury is showing up in even more places than previously realized. For example, mercury is showing up in over 40 species such as songbirds, polar bears, loons, and bald eagles. The concentrations are still low in most species, but some species are showing signs of behavioral and reproductive changes associated with mercury poisoning.

The largest source of mercury in the US is from power-plants. Another large source is chloralkali plants, which manufacture chemicals used in soaps, detergents, and other consumer products. Additionally, over 25% of the US mercury is estimated to blow in from overseas. The Clinton Administration had proposed to reduce mercury emissions by 90% in power-plants by 2008. However, the Bush Administration relaxed the emission standards and slowed down implementation of the emission standards.

Scientific studies have also identified additional sources of mercury, not previously recognized. Wetlands are mercury time bombs; if hit by wildfire, they can release large accumulations of mercury in a short amount of time. Marshes in Alaska and northern Canada are natural sinks for mercury. As long

as the marshes are stable, this accumulation is not a problem. However, with global warming there are more droughts and droughts lead to wildfires, which release large amounts of mercury in a short time.

As a nation we need to address the issues with mercury – meanwhile how can you protect yourself? A common source of mercury is through the consumption of fish. The EPA recommends limiting the consumption of fish that might contain mercury. Women of child-bearing age and youth children should be particularly careful about how much mercury they intake. More detailed information is available on the EPA website at <http://www.epa.gov/waterscience/fishadvice/advice.html>. Of course this is not a very popular solution for tribal communities that traditionally consume large quantities of fish.

### **Student Summer Interns**

The TEEOP staff has started recruiting for the 2007 Student Summer Internship (SSI) program. Mansel went to the Society for Advancement of Chicanos and Native Americans in Science (SACNAS) Conference to recruit college students and Matthew went to the American Indian Science & Engineering Society (AISES) Conference to recruit college students for the SSI program. The staff will be using a variety of methods to conduct recruitment, but we know one of the most important approaches is “word of mouth”. We appreciate your help with finding host sites and student interns.

The deadlines for applications have been changed this year. Recruitment for the host sites has already started. Host site applications are due by January 30, 2007. Information about the host sites will be posted on the EEOP website so that the intern applicants can review the potential host sites before they apply. Internship applications are due by March 1, 2007 and intern selections will be completed by April 1, 2007. The internships will be scheduled for 10 weeks starting in June and ending in August.

If you would like more information about the ITEP Student Summer Internship program please contact Matthew or visit the EEOP website.

### **Indoor Air Quality – Workshop for Teachers**

The TEEOP staff is organizing a teacher workshop for December 2, 2006. The workshop will introduce teachers to the basics of Indoor Air Quality (IAQ) and ideas for teaching IAQ in the classroom using hands-on, inquiry-based activities. Working on Indoor Air Quality (IAQ) issues is an excellent way to engage students in inquiry based science instruction. A cross-walk with the state educational standards will reveal that IAQ activities can also be used to achieve the state education standards. Even more important than meeting educational standards is that improving air quality can lead to improved health for students and staff, followed by improved academic performance by students.

Participants will receive a stipend of \$150 after completing an IAQ assessment of their school building and preparing a report for the building principal. The EEOP staff will help with the IAQ assessment by working with both students and educators to conduct a building walk through. The EEOP staff will also provide access to an IAQ Monitoring Kit. For more details contact Mansel or visit the EEOP website.

### **Selecting a College**

It is time for High School seniors to be considering their future beyond High School. For many High School seniors their future will include time attending college. If you are one of those future college students, you may be wondering which college to attend and how to get into the college of your choice. The USA Today newspaper recently published an article with advice on selecting a university and getting admitted. The article outlined five key steps.

Research thoroughly. Good research includes information from lots of sources. Your high school counseling office is a good place to start. A lot of research can be done on the Internet. One website that students may want to investigate is Peterson's at <http://www.petersons.com/>.

Think about your needs. Entrance into a college is "a match-making effort, not a prize to be won." The questions you need to ask will vary for each student. Some sample questions might include:

- Do I want to be able to go home for week-ends?
- Do I want a school with a high population of Native Americans already attending?
- Does the college offer fields of study interesting to me?
- What are the costs of attending – don't forget to include basic living expenses?

Visit the college. You are making an importance decision. You probably shouldn't base your decision on just brochures or a website. Look beyond the buildings. Talk to the students about their experiences. Talk to faculty about your interests. A personal visit is also a signal to the college that you are interested.

Tailor your application. You want to explain to the admissions staff why you are interested in their college. This means doing good research and understanding why that particular college is a good match for you.

Follow-up. You want to establish a good relationship with the admissions office. It is also a good idea to make contacts with faculty and staff at the college. If you are interested in music, contact someone in the music department. If you want to pursue a science degree, talk to a faculty member doing research in an area of interest to you.

### **Future Issues**

We are also interested in publishing articles from you. We are interested in articles sharing stories from students, teachers, or tribal professionals influenced by ITEP or EEOP activities.

### **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.nelson@nau.edu](mailto:mansel.nelson@nau.edu).

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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