



Hot Air from EEOP – A Newsletter

Environmental Education Outreach Program (EEOP)
Volume 2, Issue 3 (January 2007)

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

The Newsletter

This newsletter is a service of the Institute for Tribal Environmental Professionals (ITEP) Tribal Environmental Education Outreach Program (TEEOP). 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 TEEOP programs and activities.

National IAQ Conference

Two students from Northern Arizona received a standing ovation from over 300 adults after making a presentation during the National IAQ Conference about their efforts to improve indoor air quality in tribal buildings.

Representatives of the Tribal Environmental Education Outreach Program (TEEOP) attended the annual Indoor Air Quality (IAQ) Conference hosted by the US Environmental Protection Agency (EPA) in Washington DC. The TEEOP group included the TEEOP Senior Program Coordinator, Mansel A. Nelson, a science teacher, Steve Zientek and student, Apphia Grisham, from the Shonto Preparatory High School, located on Navajo Nation, and a student, Elyse-Rae Perez, from Fredonia High School, near the Kaibab-Paiute Tribe.

The students shared what they had learned about Indoor Air Quality (IAQ) and making air quality measurements while participating in TEEOP programs. The Navajo student participated in the Summer Scholars program learning about Indoor Air Quality (IAQ) through the Oregon State University (OSU) IAQ Hydroville curriculum. The curriculum uses a Problem Based Learning (PBL) approach to introduce students to building science careers. In addition to Summer Scholars, the Kaibab-Paiute student also participated in the Short Internship Program (SIP). The internship program started with a workshop conducted by Rich Prill from Washington State University (WSU).

Both students were involved in completing IAQ building assessments in their community. Using a combination of the EPA Tools for Schools, the OSU curriculum, and WSU protocols the students made observations and measurements on the tribal buildings. They were able to provide recommendations to the building managers and building occupants to improve air quality and comfort.

The health and comfort of students and teachers are among the many factors that contribute to learning and productivity in the classroom, which in turn affect performance and achievement. Good air quality, including proper ventilation, leads to a better learning environment.

The TEEOP staff is interested in working with educators and students to gain a better understanding of air quality and to improve the air quality in school buildings. The staff is combining science education with science to create a meaningful educational experience for students. For more information contact the TEEOP staff.

Climate Change

A recent Associated Press (AP) news release revealed that the United States is ranked near the bottom for efforts to address climate change. There are 56 countries that were part of the 1992 climate treaty or contribute more than 1 percent of the world's greenhouse emissions. Out of the 56 countries the United States is ranked number 53 by the environmental group called Germanwatch. Only China, Malaysia and Saudi Arabia are ranked lower than the United States. The ranking is based on emissions levels, emissions trends and climate policy.

The United States and Australia are the only major industrialized countries that rejected the 1997 Kyoto Protocol, which calls for mandatory cuts in greenhouse gases. Most scientists believe that the recent rise in average global temperatures can be partially blamed on the accumulation of carbon dioxide, methane and other heat-trapping greenhouse gases in the atmosphere. Carbon dioxide is a byproduct of power plants, automobiles and other fossil fuel-burning sources.

One of the EEOP staff recently attended the Tribal Climate Change Conference held in Somerton, AZ. During this conference the tribes were discuss the effects of global climate change and the impacts that it has on their ways of life, throughout the nation. Tribes in the artic are seeing the most drastic effects such as: melting ice causing erosion; unthawed permafrost affecting forests; and the spread of invasive plants due to a warmer climate. Some of the native villages are being so impacted by erosion that they are being relocated to inland sites. This and many other impacts facing tribes are evidence that climate change is here today, and not just something we will face in the future. This conference allowed many stakeholders to come together and work on solutions and steps that can be taken to reduce the effects of climate change, and preserve our future.

One of the best outcomes of this conference was the sharing of materials and ideas on how to slow down climate change. Alaska Youth for Environmental Action ([AYEA](#)) gave a great presentation on the outreach work they have been doing through out the nation. This group talked about the 3-2-1 project, were they encourage everyone to: replace 3 incandescent light bulbs with compact fluorescent ones; turn down your thermostat 2 degrees in the winter; and unplug 1 appliance while not in use. Each of these simple actions saves energy and in turn reduces our carbon emissions.

The EEOP staff uses Global Warming curriculum from Great Expectations in Math and Science (GEMS) to teach about climate change and global warming. Climate change was the theme for Summer Scholars 2005. The staff used the Problem Based Learning (PBL) approach, in combination with the curriculum, to help students explore climate change issues. Educators interested in learning about curriculum and pedagogy for learning about climate change can contact the EEOP staff for more information.

Rainfall Monitoring

Precipitation amounts can be highly variable across Northern Arizona due to topography and seasonal weather patterns. During the monsoon season thunderstorms can be very localized. The TEEOP staff is working with the University of Arizona Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA) program to promote the Rainlog Project. Rainlog is a cooperative rainfall monitoring

network for Arizona. Data collected will be used for watershed management projects and drought planning. Volunteer rain watchers interested in joining can register at the rainlog.org site.

The TEEOP staff will be doing a presentation on the Rainlog during the Bioregional Outdoor Education Project (BOEP) Conference, which is scheduled for March 2, 3, 4. For more details about the conference go to <http://www.boep.org/>. If you need a rain gauge or you are interested in more information, contact the TEEOP staff.

Internship Programs at EEO

Several students have recently taken advantage of the TEEOP Short Internship Programs (SIP). The TEEOP staff is interested in working with educators and tribal environmental professionals to create a positive internship experiences for high school and college students. The Short Internship Program (SIP) experience is a 40 to 80 hour work experience to address tribal air quality issues.

Several students completed Indoor Air Quality (IAQ) Building Assessments of tribal buildings. Information from the assessment was provided to the building occupants so that corrective actions can be taken. The TEEOP staff provided training for the interns and various instruments to make IAQ measurements. Tribal environmental professionals participated in the training program and were mentors for the students.

Two students worked with the Navajo Nation Lighting Auditor to conduct an energy audit of several tribal buildings. Information from the audits will help improve lighting for the occupants, while conserving energy. The Navajo Nation Lighting Auditor provided training for the students. After the training the students completed several lighting audits and entered data into a database in order to provide information on energy costs and savings.

In addition to internships for college students and high school students the TEEOP staff is interested in creating short internships for tribal environmental professionals, with a focus on education and outreach. Perhaps you would like to conduct a summer youth program for your tribe. The TEEOP staff could place you with another tribe that is conducting a summer program so that you can gain experience and information from their tribal staff. For more information on short internship programs contact the TEEOP staff.

Indoor Air Quality (IAQ) – Workshop for Teachers

The TEEOP staff conducted a teacher workshop on Indoor Air Quality (IAQ). Vivian Craig of the Navajo Nation Environmental Protection Agency helped out by presenting information on radon, which is the second leading cause of lung cancer. The workshop introduced teachers to the basics of Indoor Air Quality (IAQ) and ideas for teaching IAQ in the classroom using hands-on, inquiry-based activities.

The teachers learned that working on Indoor Air Quality (IAQ) issues is an excellent way to engage students in inquiry based science instruction. Additionally, improving air quality can lead to improved health for students and staff, followed by improved academic performance by students.

Each teacher received a curriculum on indoor air quality, the EPA Tools for Schools kit, and a CO alarm. Each teacher will also have access to the TEEOP IAQ Monitoring Kit and assistance from the TEEOP staff to conduct a building assessment. Anyone interested in conducting building assessments in their school building contact the TEEOP staff for additional information.

Paying for College

In a previous issue of this newsletter there was an article about selecting a college. What about paying for your college education? After high school students are generally expected to help pay the expenses of their education. Generally students are paying only a small portion of the costs. For example, public universities are supported by taxpayers in the state. However, the student is still responsible for a significant portion of the expenses of a college education. There are several options for funding your college education, such as personal and family finances, grants, scholarships, and loans.

Planning for funding a post-secondary education should start early. For example, good performance in high school can lead to scholarships to help pay for your education. Completing applications also takes time and effort.

One important source of funding that all students should investigate is the Free Application for Federal Student Aid (FAFSA) program. Information about the program can be found at <http://www.fafsa.ed.gov/>. The FAFSA program is a grant program, which means you won't have to pay the money back. This program is not based on academic performance, but on financial need.

There are a wide variety of scholarships. Good academic performance can increase your opportunities for scholarships; however don't give up just because you don't have excellent grades. There are many different types of scholarships, based on various criteria. The Internet can be a rich source of information on scholarships. You can also talk to the financial aid office at the colleges you are considering. The financial aid office will help you identify various financial resources. If you are a tribal member, you should also contact your tribal education office to find out about tribal scholarships and grants.

- <http://www.fastweb.com/>
- <http://www.scholarships.com/>
- <http://www.onnsfa.org/>
- <http://www4.nau.edu/finaid/Tribal/TribalSchol.html>

A college education is an investment in your future. Finding funding for your college education is worth some time and effort. If you need assistance getting started, contact the TEEOP staff.

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.

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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