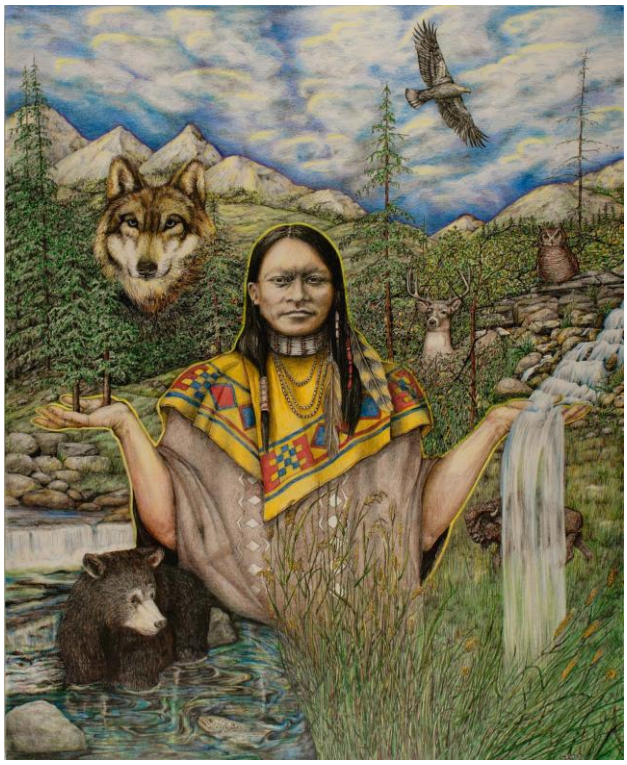
National Partnership for Environmental Technology Education *(National PETE)*

A National Science Foundation ATE Project

"A National Collaboration to Strengthen the Advanced Environmental Technology Education Programs at Tribal Colleges"



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Strategic Project Partner: Advanced Technology Environmental and Energy Center (ATEEC)

Project Website: www.ateec.org/profdev/tribal

Project Mission

The mission of this project is to strengthen environmental science and technology programs at Tribal Colleges consistent with the unique needs and traditions of these communities. More specifically, this project will strengthen STEM (science, technology, engineering and mathematics) education at Tribal Colleges while acknowledging that there is a critical cultural component to the study of environmental science by Native Americans.

Background

In Native American communities, the importance of humankind's relationship to the environment and respect for the land has been recognized for centuries and is deeply connected to Native American culture and history. Members of Native American communities view life as a whole emphasizing the interconnections that exist among all things (Crazy Bull, 1997). This cultural concept has been translated into an interdisciplinary curricular emphasis (Pease-Windy Boy, 1995; Schmitz, 1992) that is now viewed as an asset for students grappling with the highly complex problems of today's rapidly changing world. Community lies in the heart of traditional Native education. Therefore, as educators look to make strategic moves both addressing power imbalances and consistent with an ethic of care, their focus will move to the formation of linkage with tribal communities. There is a widespread acknowledgement and understanding of the need to strengthen environmental technology education at Tribal Colleges. Many Tribal governments are striving to identify economic development and employment opportunities for their sovereign lands that are consistent with and supportive of their culture and heritage.

Indian reservations are home to some of the most polluted and environmentally degraded sites in the country. Reservations contain a disproportionate share of superfund sites, Brownfield's designated areas, and toxic military sites. These sites are the legacy of misguided activities by non-Native American firms and government agencies. People living on reservations have some of the highest incidences of environmentally-related health problems. These reservations also remain the most geographically, economically, and educationally isolated areas in the nation, and because of a lack of resources, are least able to cope with the complex environmental challenges that they face. There are 565 federally recognized Tribes controlling 55 million acres of land. The current Native American population of 2.3 million is expected to exceed 4.6 million by 2050. There are 36 Tribal Colleges, most of which are located on reservations throughout the United States.

The development of high quality, specialized environmental education and technical training has been recognized as necessary for economic development. Many Tribal Colleges have developed environmental science and technology programs. However, there is currently no comprehensive sustainable program to accomplish this or link Tribal Colleges to each other or the broader environmental technology education community.

This project will seek to promote and acknowledge and motivate Native American students to develop an interest in environmental science and to choose environmental careers.

Project Goals and Objectives

1) Ensure that project activities and outcomes of this STEM project reflect historic/cultural beliefs and contributions of Native Americans. A project steering committee represented by both Tribal Colleges and Native Americans working in industry (see page 4) helps ensure the integrity of the project through continuous involvement and communication. In addition, any technical assistance requested by a

Tribal College from this project first calls upon local Native Americans in their area to provide the assistance.

2) Ensure Tribal Colleges have ready access to a full range of technical assistance to strengthen their Environmental Science/Technology Programs. The Advanced Technology Environmental and Energy Center (ATEEC) and PETE have extensive experience in the areas of facilitating the creation of new environmental programs, program improvement, curriculum development and professional development. We can provide additional means of assistance online through various distance delivery methods as well. In addition to simultaneous interaction with the Tribal Colleges, we provide a section of the ATEEC website that is dedicated to the Tribal Colleges (www.ateec.org/profdev/tribal). Information about the project, a project listserv, case studies and discussion boards have been developed so Tribal Colleges can interact and learn from each other online. Finally, a series of Mini-Grants have been made available to individual Tribal Colleges to assist in program improvement or implementation based on their needs.

3) Develop a Tribal College Environmental Fellows Institute which will serve as a vehicle to strengthen environmental science/technology education at the nation's Tribal Colleges. The three-year project offers two (2) annual Fellows Institutes for Tribal high school and Tribal college faculty beginning the summer of 2009. ATEEC and PETE have a long history of providing professional development opportunities for faculty in the environmental sciences (see the website www.ateec.org). The main objectives of this project are to provide rich faculty development experiences aligned to the needs of Tribal College STEM education. By conducting field exercises and field-based learning activities, Tribal faculty can transition those experiences back into their classrooms where their students can benefit. In addition, the Fellows Institute offers faculty the opportunity to network with other Tribal College faculty from different institutions. Faculty attending the Fellows Institute are provided with the opportunity to apply for Mini-Grants which assist in the implementation of enhanced STEM curricula.

The first year of the Tribal College Environmental Fellows Institute focused on *Water on the Reservation* and was held at Sitting Bull College in Fort Yates, ND. The second Institute theme was *Water Management/Pollution Prevention*, and was held at Salish Kootenai College in Pablo, MT. As new experiences are made, they are shared freely on the ATEEC website and through ATEEC's Best Practices for Establishing a Successful Environmental Technology Program CD-ROM. Tribal Colleges not able to attend or selected for the project as a whole can still learn from the experiences of other Tribal Colleges through the website.

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NSF ATE Project

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