

Engineering at the Tribal Colleges and Universities

Because of support from the National Science Foundation, ANLSAMP has made great strides in gaining support from other federal agencies to further the goals of our program. In an effort to increase substantially the number of Native Americans who graduate with degrees in engineering, Salish Kootenai College-ANLSAMP approached NASA's Johnson Space Center (JSC) for loan of an individual to serve as Dean of Engineering. Their primary goal would be to develop and implement a four-year engineering curriculum. JSC responded by loaning one civil servant, Lee Snapp, a senior engineer with prior undergraduate teaching experience, for a two-year tour of duty from October 1, 2002, through September 30, 2004. Under the terms of an Intergovernmental Personnel Agreement (IPA) SKC and JSC agreed that the Dean of Engineering will have the following three principal duties:

- 1) Develop a curriculum for SKC that will lead to an accredited degree of Bachelor of Science in engineering,
- 2) Develop a model for a school of engineering that can be and exported to at least six other TCUs, and
- 3) Act as a role model to attract and motivate potential engineering students.

In October 2002, the tribal colleges began a concerted effort to build their capabilities to offer engineering studies. Initially, six tribal colleges offered to work together to develop individual courses, course sequences, pre-engineering curricula, and at least one bachelor's degree program to be offered as a pilot program at one of the partner schools. In January 2003, the group began drafting a prospectus to submit to various Federal Agencies and other potential fund sources giving an overview of the program.

This prospectus resulted in the number of interested colleges to nearly doubled and now stands at eleven, almost one-third of the nation's tribal colleges. (continued on page 2)




Memorials in reverence of Space Shuttle Columbia STS-107 at the main entrance to Johnson Space Center in Houston, Texas.

ANLSAMP Activities at the AISES National Conference



SKC Students attending the conference in 2003

American Indian Science and Engineering Society (AISES) provides an avenue for reaching students in the Science, Technology, Engineering, and Mathematics (STEM) fields through their contacts and their annual conference. ANLSAMP has continued participating in the AISES conference to offer scientific poster and oral presentation competitions to promote and provide students with professional development opportunities in STEM fields. At the November 2003 conference in Albuquerque, New Mexico, 27 students participated in the scientific poster presentation and 11 students participated in the scientific oral presentation. Thirteen of the student participants were from Tribal Colleges. ANLSAMP also continues supporting AISES Chapters at our partner institutions by providing \$1,000 for chapter support. AISES offers students opportunities for scholarships through their organization and opportunities for professional and leadership development.

ANLSAMP Partner Institutions	Contact Information	Website	Listserv
	<p>PI : Joseph McDonald Department Head : Zetra Wheeler Editor: Jule Kenmille Information: Jaymee Johnson-White Phone (406) 275-4800</p>	<p>http://www.skcc.edu (programs link) http://www.anlsamp.org http://www.skcc-rsi.org</p>	<p>http://listserv.skcc.edu/cgi-bin/lyris.pl?site=amplistserv</p>
<p>Any opinions, findings and conclusions or recommendations expressed in this material are those of the authors(s) and do not necessarily reflect the views of the National Science Foundation (NSF). This material is based upon work supported by NSF under Grant No.HRD-0000305.</p>			

The current participating tribal colleges in the Engineering program are:

Blackfeet Community College, Browning, MT
 Chief Dull Knife College, Lame Deer, MT
 College of Menominee Nation, Keshena, WI
 Crownpoint Institute of Technology, Crownpoint, NM
 Fort Berthold Community College, New Town, ND
 Haskell Indian Nations University, Lawrence, KS
 Northwest Indian College, Bellingham, WA
 Salish Kootenai College, Pablo, MT
 Sitting Bull College, Fort Yates, ND
 United Tribes Technical College, Bismarck, ND
 White Earth Tribal and Community, Mahanomen, MN

ANLSAMP AIHEC Activities

ANLSAMP attends American Indian Higher Education Consortium's (AIHEC) annual conference and maintains a valuable relationship with the organization as it encompasses 32 of the tribal college partners of ANLSAMP. ANLSAMP conducted the scientific poster and oral presentation competitions and the annual "Science Bowl" at the spring 2003 conference in Fargo, ND. ANLSAMP has been managing these student-focused competitions since 1996. These competitions have increased American Indian student interest in pursuing science degrees and professional development. Last spring 9 students participated in the scientific poster presentation, 5 students participated in the scientific oral presentation and 57 students (15 teams) participated in the science bowl. We will be supporting these activities at the upcoming AIHEC conference March 20-23, 2004 in Billings, MT. Participation in these activities promotes educational inquiry in the STEM fields.



Upcoming Conferences

American Indian Higher Education Consortium (AIHEC)
 Conference Dates – March 20-23, 2004
 Location - Billings, MT
www.fpcc.edu

Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)
 Conference Dates – October 21-24, 2004
 Location - Austin, TX
www.sacnas.org

Ecological Society of America (ESA)
 Conference Dates – August 1-6, 2004
 Location - Portland, OR
www.esa.org/meetings/

American Indian Science and Engineering Society (AISES)
 Conference Dates - November 11-14, 2004
 Location - Anchorage, AK
www.aises.org

Engineering at the Tribal Colleges and Universities (continued)

Joining the partnership requires only that a tribal college be interested in offering some or all of the studies in the basic sciences, mathematics, and engineering that lead students to an undergraduate degree in engineering and a willingness to participate in the effort with the rest of the partners. Though each partner will offer something different in terms of the scope of its coursework, it is the group's desire to work together, develop common standards, share resources, and share lessons learned. The partners intend to create a common baseline among themselves such that a student could begin an engineering education by taking basic sciences and mathematics at a tribal college near his or her home, transfer to a pre-engineering program, if desired, and then transfer again to complete an undergraduate degree at the pilot school, all seamlessly and all without leaving the tribal college system. By permitting the student to remain within the tribal college system until the bachelor's degree has been obtained, the partners hope to increase substantially the number of Native American students attracted to engineering as a profession and then to increase substantially their retention and graduation rates.

This activity directly supports ANLSAMP's goals of increasing the graduation rates of Native Americans in STEM and increasing STEM degree fields available directly at the tribal colleges.

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ANLSAMP Funding Article

Each year, approximately 50% of the funds received from the National Science Foundation under the ANLSAMP Grant go directly to supporting subcontracts at our partner institutions. The chart below shows the distribution by activity focus in 2003. As shown, the results of the proposals submitted to our program indicate that most of our partners are interested in improving and expanding their science, technology, engineering and mathematics (STEM) programs through curriculum development.

