



National Science Foundation

**Programs and Activities that
Support Native Americans**

**Directorate For Education And
Human Resources**

**NATIONAL SCIENCE FOUNDATION
DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES
PROGRAMS AND ACTIVITIES THAT SUPPORT NATIVE AMERICANS**

The National Science Foundation (NSF) has a sizable portfolio of program initiatives that focus on the educational and research needs of underrepresented groups. One of these groups is the Native American population. The number of Native Americans who receive baccalaureate degrees in science, mathematics, engineering, and technology (SMET) and who go on to earn doctoral degrees in SMET fields is still alarmingly small. One major issue includes the sheer lack of Native American students to make some projects feasible and cost effective.

Several representative program activities follow below and illustrate EHR's commitment to a quality education for all students:

I. Division of Educational Systemic Reform (ESR)

A. Rural Systemic Initiative (RSI) Program

1. The Utah-Colorado-Arizona-New Mexico (UCAN) Initiative. This initiative coordinates activities in nine local coalitions that represent geographic and cultural entities located in four states, the Navajo Nation, and several other reservations and tribes. The Implementation Initiative provides catalytic support to targeted rural school districts for comprehensive programs that lead to improvements in science, mathematics, and technology.
2. The Alaska Native/Rural Education Consortium (ANREC) was formed to document indigenous knowledge systems of Alaska Native people and to develop policies and practices that effectively integrate indigenous and Western knowledge into educational programs for this population.
3. The High Plains Rural Systemic Initiative (HPRSI) brings together 17 American Indian tribal colleges and other entities involved in science, mathematics, engineering, and technical education in Montana, Nebraska, North Dakota, South Dakota, and Wyoming. This initiative identifies and coordinates efforts to remove impediments to exemplary student performance in science, mathematics, engineering, and Technology (SMET) among American Indians.

II. Division of Undergraduate Education (DUE)

A. NSF Collaboratives for Excellence in Teacher Preparation Program

1. Systemic Teacher Excellence Preparation (STEP) Project – One focus of this Project, under the sponsorship of Montana State University, is strengthening the preparation of mathematics and science teachers from Native American communities.
2. New Mexico Collaborative for Excellence in Teacher Preparation - This project, managed by New Mexico State University, is designed to increase diversity in the

teaching profession through innovative recruiting, retention, and instruction that serve diverse groups, particularly American Indians, and includes the dissemination of novel educational materials.

B. Course and Curriculum Development Program

1. Curriculum for Chemistry in a Large Urban University - This project provides support to improve opportunities for minority groups by using concepts adopted from our existing Native American, Women in Science and High School outreach programs at the University of Washington.
2. AT-SLICE: Advanced Technologies and Simulations for Learning about Interactions in Complex Environments – Among other things, this project, located at Northern Arizona University, has created an across-institution infrastructure of professional development and collaborations through curriculum seminars and practical workshops for faculty, especially for Native Americans and Hispanic Americans.
3. Course and Curriculum Design of Environmental Science Baccalaureate Degree Program Incorporating Native American Wisdom, Traditional Knowledge and Scientific Technology – Project is at Haskell Indian Nations University.
4. Environment and the Curriculum – Project is at Salish Kootenai College.
5. An Interdisciplinary Approach to Enhancing Mathematics and Science Curricula – This project is located at Southeastern Oklahoma State University, in which approximately 30 percent of the students are Native American. Less than twenty percent of these students major in science or mathematics. This institutional reform project was split funded with the Division of Human Resource Development.

C. Undergraduate Faculty Enhancement Program

1. Improving Introductory Economics Education by Integrating the Latest Scholarship on Women and People of Color – Project, located at the University of Southern Maine, focuses on methods for integrating the new scholarship on the economics of women and minorities, including Native Americans, into economics courses.
2. Undergraduate Faculty Workshop: Environmental Management – this project, located at Utah State University, is involved in minority and Native American retention and training efforts at their institutions.
3. A Workshop to Enhance Native American Faculty/Teacher Aides in the Use of Calculators in Teaching (ENACT) – This is a 30-month project for teacher enhancement for 30 tribal college mathematics faculty members and 50 American Indian teacher aides. This project is under the sponsorship of the Mathematical Association of America.

D. Instrumentation and Laboratory Improvement Program

1. **A Multidisciplinary Computer Integrated Freshman Level Circuits Laboratory with Practical Applications** – This project at Northern Arizona State uses the laboratory as a learning center for significant populations of Native American students.
2. **Undergraduate Instructional Laboratory in Phonetics and Speech Science** – This project is an expansion of an existing collaboration between the University of Kansas and Haskell Indian Nations University.

E. Advanced Technological Education Program

1. **Native American Environmental Technology Program** – The Northwest Indian College, in collaboration with three other postsecondary institutes within the Pacific Northwest region, is implementing the development, testing, and transfer of an advanced technical education program for Native Americans.
2. **Northwest Center for Sustainable Resources (A National Center for Advanced Technology)** – Project, under the sponsorship of Chemeketa Community College, is a collaborative effort between Northwest high schools, community colleges, higher education institutions, private industry, governmental agencies, and Native American tribes that focuses on ecosystem restoration and natural resource management.

III. Division of Human Resource Development (HRD)

A. Alliances for Minority Participation (AMP) Program

1. **All Nations AMP (Montana)** – This large-scale project is designed to substantially increase the quantity and quality of students, particularly American Indians, receiving baccalaureate degrees in SMET disciplines. The lead institution for this AMP project is Salish Kootenai College. The participants in this project are 67 percent Native American.
2. **New Mexico State University AMP** – The project serves a population that is 22 percent Native American.
3. **Oklahoma State University AMP** – This project serves a population of students that is 55 percent Native American.
4. **Southern Rocky Mountain AMP (Arizona)** – The student population of this AMP project is 27 percent Native American.

B. Presidential Awards for Excellence in Science, Engineering, and Technology Mentoring (PAESMEM) Program

1. American Indian Science and Engineering Society (AISES) - This project received a \$10,000 award and a presidential citation for excellence in mentoring of Native American students (FY 1997 Awardee)
2. Scientific Knowledge for Indian Learning and Leadership (SKILL) project received an institutional PAESMEM award and presidential citation in FY 1997. Oglala Lakota College in South Dakota manages the award.

C. Program for Persons with Disabilities

- Enhancement of Mathematics and Science for First Through Sixth Grade Native American Students with Disabilities - Project is designed to increase the awareness of parents, school personnel, college faculty, and students about the educational and career options in mathematics and science open to Native Americans. The University of North Dakota is the lead institution.

D. Program for Women and Girls

- The Rural Girls in Science project at the University of Washington focuses on giving girls in eight rural high schools, that have high Native American and Hispanic populations, a sense of self-esteem in the realm of science through summer science camp experiences.

IV. Division of Elementary, Secondary and Informal Education (ESIE)

A. Teacher Enhancement Program

- Native American Science Outreach Network (NASON) – The project, managed by the University of Washington, provides training for 25 teachers who are either Native Americans or teach largely Native American students on or near the reservations. Four-week enhancement activities are conducted in chemistry and other disciplines within the context of current environmental issues of importance to the tribal communities.

B. Instructional Materials Development Program

- Native Science Connections – The Native Science Connections (NSC) project develops culturally relevant science and mathematics modules that complement the existing science curricula in grades four through six. This project is managed through Northern Arizona University.

V. Division of Research, Evaluation, and Communication (REC)

- **Native American Mathematics and Science Technology Project** – This project, which is managed by the National Indian Telecommunication Institute, provides interested Native American communities and schools with: relevant technology infrastructures; training for use of the technology in the community and in mathematics and science education; training to maintain the hardware; and technology needs assessment assistance through school alliances. The project is also in the process of establishing and maintaining a plethora of databases and bulletin boards.