NAES Communique

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Background

On Saturday, December 8, 2001 the NASA Nebraska Space Grant (NSGC) & EPSCoR Program and the Aerospace States Association sponsored the first Nebraska Aeronautics Education Summit (NAES) Meeting, which was held in South Sioux City, Nebraska near the state’s tribal lands. This event was organized to seek a common vision between educators of students in grades K-12 from four Native American high schools and two tribal colleges (see Attachment 1 for a meeting agenda). Dr. Henry Lehrer, the NSGC Native American Outreach liaison, began the discussion with an overview of the many activities that have taken place since the inception of Nebraska’s Native American Outreach program five years ago. Numerous presentations have been made, interfacing between schools has begun, administrative leadership conferences have been held, and NASA data and models have been utilized to improve mathematics and science programs in Native American public schools.

A variety of enrichment activities have taken place at Nebraska’s two Native American colleges, Little Priest Tribal College and the Nebraska Indian Community College, to support their students, faculty and staff. The Native American Outreach Program has assisted in faculty development, aided administration in enhancing curriculum, and developed institutional guidelines for better preparation of students in the sciences. This team of motivated individuals has already begun taking steps toward assisting these colleges in better equipping their science labs.

However, achievements have not been limited to the college level. Nebraska’s Native American school systems, comprised of Omaha Nation, Walthill, Winnebago, and Santee, have also participated in many educational events and activities. Those include:

- Eight teachers have attended the annual two-week NASA Ames Summer Workshop;
- Nearly 1,000 5th grade students have been involved in the annual Aeronautics Day at Sioux City Airport;
- Santee students attended the annual Aviation Career Education (ACE) Academy sponsored by the Nebraska Department of Aeronautics; and
- The Family Science program has been introduced and will be functioning at all schools in 2002.

The accomplishments that this program has achieved provide the guidelines for implementation of such programs in other states throughout the nation.

Technique

A variety of disciplines and institutions were represented at the Saturday event. Those present included educators and administrators from Nebraska’s four Native American public schools and two tribal colleges, university faculty from several Nebraska institutions, researchers, and industry
representatives, among others (see Attachment 2 for a list of participants). This diverse group of individuals provided a unique opportunity to gather information regarding the effectiveness of the NSGC Native American Outreach program. This was done by employing a focus group research technique. Those present were divided into three groups led by Dr. Ed Zendejas, Ms. Michaela Schaaf, and Ms. Mary Fink. Each group provided valuable opinions and suggestions for refining this extraordinary program. Dr. Henry Lehrer served as overall focus group moderator.

The four questions that each focus group was asked to answer were stated as follows:

1. Is the use of NASA-based aeronautics and space to teach mathematics, science, and technology a viable motivator of Native American youth, particularly at-risk students?
2. Can Family Science make a difference and how can the concept be streamlined? Has the ASA sponsored Family United (FUN) in the Discovery of Mathematics, Science, and Technology initiative been effective?
3. Should there be a continuous NASA-based science and mathematics track from elementary/secondary to tribal college?
4. How should the UNO Aviation Institute and the Nebraska NASA Space Grant & EPSCoR proceed in the coming years to better serve the students, faculty, and staff of the state’s 4 reservation schools and 2 tribal colleges?

Results

After all questions had been addressed by the focus groups, the summit was reconvened and recommendations from each group compiled (see Attachment 3 for the complete Focus Group Data Set). A variety of superior suggestions were brought to the table for discussion. The following is a list of key recommendations that were offered and that the Native American Outreach program is now addressing.

NAES Focus Group Recommendations:

1. Staff development could be increased in Native American schools by addressing scope and sequence through training and regular faculty and staff meetings.
2. Engage teachers in research and inquiry to involve them in the gathering of information and to allow them to experience tangible results.
3. Integrate Native American culture and values into the NASA sponsored programs to ensure not only that the students are aware of their heritage, but also to provide consistency between school and home.
4. Cultivate and promote Native American administration and partnerships with NASA as advised by the Presidential Executive Order.
5. Develop a partnership format between the Native American schools and the grant agency that will promote equally beneficial outcomes.
6. Create a Space Grant facility to be staffed by professionals in the Native American community.
7. Communicate the importance of Native American Outreach program awareness to teachers and administrators through promotion and visibility.

After a post-facto review of the recommendations, these results were released to the public, media, and all interested organizations and individuals.
Elaboration

The Native American elementary schools, secondary schools and colleges with which our Outreach Program is working, are in need of many resources for technological and educational advancement. Additionally, the need for integration between all levels of schooling is imperative to ensure reinforcement of educational information and to provide a tracking process for students interested in mathematics and science. The Native American culture is one that promotes community involvement and awareness. The Family Science program integrates this involvement into the schools by providing a positive environment for families to learn together through science-based activities. The primary focus of this program is to get students to become more interested in mathematics and science through the use of airplane and rocket Study units. This program, which is already in place in many of the Native American public schools, is flourishing. The NSGC & EPSCoR Program seeks to continue such programs and provide the development and enhancement of additional community-wide educational opportunities. Future plans include:

- Developing elementary and secondary school mathematics and science courses as “feeder programs” for colleges and universities;
- Using distance education to reach non-traditional collegiate students;
- Creation of a summer mathematics institute for recent high school graduates;
- Providing science field trips and summer science camps;
- Designing a Native American Aeronautics Education Outreach website; and
- Increasing community involvement and awareness through a unique banner program.

Resulting Vision

The Native American Outreach Program is focused on making Native American students more competitive in mathematics and science. Whether this is done through providing additional scholarships and fellowships or through cultivating the relationships being established between educators and NASA, the program is a prime example of prophetic thinking and planning. Those involved in the Nebraska Aeronautics Education Summit meeting participated in this forward thinking by offering their ideas and contributing their expertise. Although the culmination of the first five years of this successful program has taken place, the collaboration provided by the summit participants gives vision for many years to come. Those in the ASA, the NSGC & EPSCoR program, the Native American schools and the community look forward to experiencing the same high level of achievement in the future.