9-4-2004

Addressing NASA's Workforce Development Initiative - Slides

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Addressing NASA's Workforce Development Initiative:

Intensifying Outreach and Collaborations in Nebraska's Native Community

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Introduction

…to inspire the next generation of explorers…

- There is a need for emerging leadership to meet the nation's demand for aeronautics and aerospace professionals.
- There are several key issues that the aeronautics/aerospace industry must solve in order to achieve success.
  - Decline of workforce entrants
  - Career tracks outside of *traditional space*
- NASA's approach to recruit and retain:
  - NASA Space Grant College and Fellowship Program
    NASA Nebraska Space Grant Consortium (NSGC)
    NativeView Connections Program

Current State of the Workforce

"If the aerospace industry cannot attract and retain the best and the brightest, then the industry does not have a future" (Aerospace Commission Member Tillie Fowler).

- Forecasts through the year 2015 reveal a dwindling workforce
- Inadequate training measures
- Transportation Research Board (TRB) workforce planning process
  - Four key issues identified regarding workforce
    - Composition and content
    - Capability gaps
    - Preparing, recruiting and training
    - Outsourcing

NASA's Workforce Goals

- To meet these challenges, NASA, through the National Space Grant College and Fellowship Program, developed an Aerospace Workforce Development Competition.

- Additionally, NASA has identified a five-step National Workforce Development Education & Training Process to aid planning and implementation.

Nebraska's Initiatives

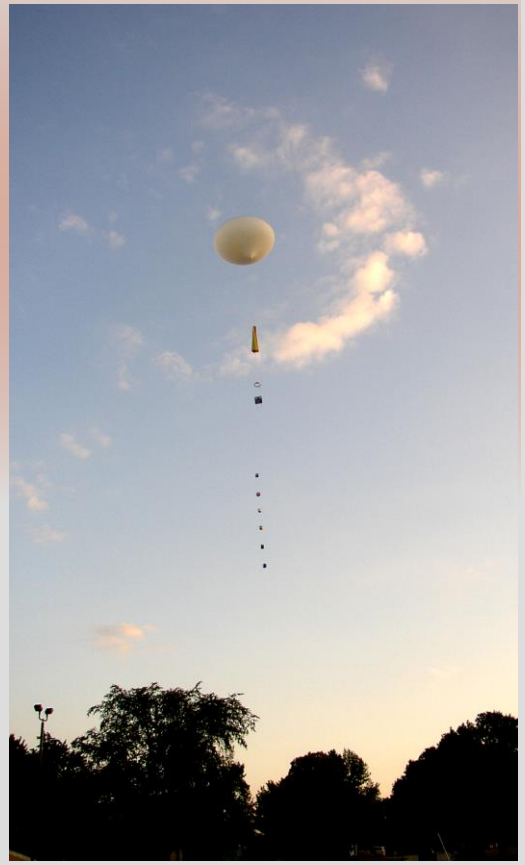
2002 Workforce Development

- Nebraska received a Space Grant Workforce Development Award which funded several NASA geospatial and student satellite initiatives.
- A three-phase program was developed to implement these initiatives, with the first phase focusing on Native American communities throughout Nebraska.
- Nebraska Indian Community College and Little Priest Tribal College - Geographic Information Systems (GIS) and Global Positioning System (GPS) training

Nebraska's Initiatives

2002 Workforce Development - cont'd

- National Student Satellite Program (NSSP)
- Aerospace Education Teacher Workshop
- Results and potential



BalloonSats in-flight during AET Workshop

Nebraska's Initiatives

2003 Workforce Development

- Developed partnerships impacting Nebraska's workforce in the science, technology, engineering and mathematics (STEM) competencies
  - Project goals
- Continued implementation and collaboration of workforce development programs in the geospatial research and extension program
  - Infusion of geospatial applications (GIS / GPS / remote sensing) into tribal communities
- Consistent mentoring by NASA Center personnel and Nebraska's Technical Advisory Committee ensure program content quality

Nebraska's Multi-State Leadership

NativeView Connections

- Nebraska led a successful proposal effort engaging a seven state consortia entitled NativeView Connections (*Connections*).
  - Unifying concept: Involvement of Native American groups with tribal lands to develop expertise in geospatial sciences.

Nebraska's Multi-State Leadership

Collaboration Plan

- *Connections* builds upon the successes of Native IMAGE (Institute for Managing Applications in Geospatial Extension).
- Native IMAGE serves as a model foundation and provides geospatial technology, data and training.

Native IMAGE
Founding Team at EROS

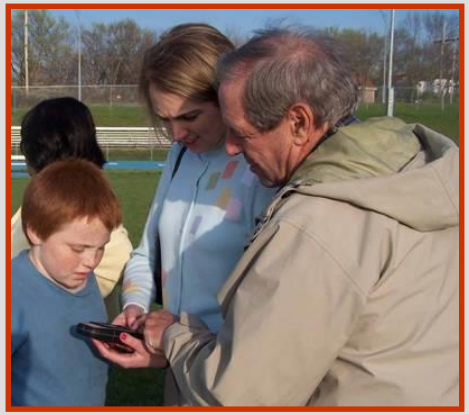
The Native IMAGE Three-Legged Stool

- Community Outreach
- Curriculum Enhancement
- Workforce Development

Nebraska's Multi-State Leadership

Program Delivery: Conceptual Plan

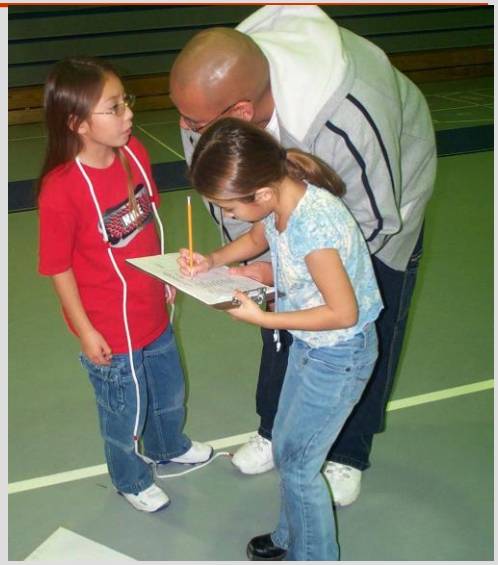
- *Connections* decentralized management plan
- *Connections* goals:
  - Support higher education research capabilities and opportunities
  - Increase diversity in STEM
- *Connections* ultimate points of delivery
- Sustainability



Major Initiatives

- Increase Geoscience awareness in the Winnebago Public Schools and at Little Priest Tribal College
- Present the results of our programs to regional and national audiences
- Enhance the partnership between IMAGE and Winnebago tribe
- Add as much geospatial material into the LPTC STEM curriculum as possible

Family Geoscience



- By 8th grade, students will be able to:
  - Accurately plot course on maps and charts
  - Operate a GPS receiver
  - Use geospatial computer software such as ESRI ArcExplorer
  - Relate basic Remote Sensing Concepts to reservation land planning and agricultural use

Nebraska's Multi-State Leadership

Evaluation and Technical Validation

- Validation of Connections' results
- Synchronization / facilitation with NASA's mission and needs

Conclusions

- Investments
- Long-term results
- Workforce diversity
- Mentoring and collaboration
- Involvement
- Mission
- Self-sustaining future
- Nebraska's workforce efforts may be adapted in other states
- Contact nasa@unomaha.edu for additional information

Acknowledgments

Workforce Efforts funded through NASA Grant

NGT5-40104

Presentation prepared by M. Jeremy Nielson