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

- 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

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

“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).
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

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

2002 Workforce Development - cont’d

BalloonSats in-flight during AET Workshop
Nebraska’s Initiatives

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

2003 Workforce Development
Nebraska’s Multi-State Leadership

- Nebraska led a successful proposal effort engaging a seven state consortium 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

- **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.
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
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