National Council of Space
Grant Directors’ Meeting

Washington, D.C.
March 15-18, 2006

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Changes since October 2005 meeting

- **New** 2006 NASA Strategic Plan
- **New** NASA Education Goals
- **New** NASA Education Outcomes
- **Ongoing** approach to earmark management within the Office of Education – earmarks provide Congressional direction to spending in Office of Education
- **New** NASA Education Strategic Coordination Framework under development
- **New** Creation of the Education Coordinating Council (ECC)
- **NASA FY 07 Budget Request** Space Grant requested at $28.76M, EPSCoR at $10M
Federal and University Partnerships

1862 - Land Grant
1966 - Sea Grant
1978 - NSF EPSCoR
1988 - Space Grant
1992 - NASA EPSCoR
Goal:
Contribute to the nation's science enterprise by funding education, research, and public service projects through a national network of university-based Space Grant consortia.

Objectives:
1. Establish and maintain a national network of universities.
2. Encourage cooperative programs among universities, aerospace industry, and Federal, state, and local governments.
3. Encourage interdisciplinary education, research, and public service programs related to aerospace.
5. Promote a strong science, mathematics, and technology education base from elementary through secondary levels.

Space Grant is primarily a Higher Education Program with K-12 and Informal Components
The Space Grant Approach

NASA Mission And Vision
Mission Directorates
- Aeronautics
- Exploration Systems
- Science
- Space Operations

State Interests and Needs
- Workforce Development priorities
- Education goals
- Economic growth
- Science and Technology goals

The Space Grant Network:
Education Research Public Service
The First Five Years

Formation

1987 – Public Law 100-147
1989 – Initial 21 Designated Consortia Selected
1991 – Growth to 52 Consortia
  • 21 Designated - $325K/consortia
  • 14 Program Grant - $150K/consortia
  • 17 Capability Enhancement - $150K/consortia
  • Woods Hole Conference/First Strategic Plan

Building the National Network – Objective 1
Fellowship & Scholarship Program – Objective 4

Fellowship Award Demographics
• 19% Underrepresented Minority
• 39% Women

Space Grant Funding History

- FY89
- FY90
- FY91
- FY92

Millions

$0.0
$4.0
$8.0
$12.0
$16.0
Years 6-10

Evolution, Expansion, Flexibility of State Efforts

Programmatic
- Grant Types
  - 21 Designated - $325K/consortium
  - 14 Program Grant - $205K/consortium
  - 17 Capability Enhancement - $205K/consortium
- 2nd Strategic Plan developed
- Formation of Regional Consortia

NASA Connections
NASA Leveraging the Network
- First GLOBE Training Sites
SG Reaching out with the Network
- NASA Academies
- KC-135 and Moonbuggy

Special Emphasis
- Tribal College Involvement
- Industry Expansion

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Building partnerships – Objective 2
Establishing Interdisciplinary Programs – Objective 3
Refining Precollege Programs – Objective 5
Years 11-15

Realization of National Network

Programmatic
- Grant Types – Funding per consortium
  - 25 Designated - $475K/consortium
  - 12 Program Grant - $256K/consortium
  - 15 Capability Enhancement - $256K/consortium
- Formation of Topical Consortia
- Geospatial Interagency Initiatives (USDA, NOAA)
- Initial Congressional Interest

NASA Connections
NASA Leveraging the Network
- FIRST Robotics Competition

SG Reaching out with the Network
- SMD Broker Facilitators (2)
- USRP

Special Emphasis
- Re-Focus on Diversity
- Initial STEM Workforce Development Awards
- Emergence of Student Satellite Initiatives
- State Government Involvement
- Undergraduate Research Opportunities
- Focus Precollege on Educators

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Progression from 52 State Entities to National Entity
Workforce Development

Programmatic
- Grant Types (FY 06) – Funding per consortium
  - 35 Designated - $580K/consortium
  - 8 Program Grant - $403K/consortium
  - 9 Capability Enhancement - $403K/consortium
- Initiate Longitudinal Tracking
- NASA Workforce Development

NASA Connections
- NASA Leveraging the Network
  - ISS Engineering Outreach
  - Corporate Recruiting
  - Center-based internships
- SG Reaching out with the Network
  - NSIP
  - E/PO for SMD programs
  - Education Associates Program
  - AERO Institute

Special Emphasis
- Expanding NASA ties
- Development of Hands-On Experiences
- Industry Ties

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Space Grant is the Pump in the Pipeline
Partnerships Comprising the National Network

- 850+ Affiliated Organizations
  - 550+ Colleges and Universities
    (including 42 HBCUs, 24 HSIs, 25 Tribal Colleges, 7 OMUs)
  - 80+ Industry Affiliates
  - 40+ Government Affiliates
  - 180+ Non-profit & Other Educational Organizations

Programmatic Highlights

- 2,500+ Fellowship/Scholarship Awards annually
  - 450 Students with significant awards ($\geq 5,000$/year) in 2004
- 1:1.5 Leveraged funding (includes other Federal) (recent average)
- 19 Patents in the past five years
- 320 Publications – (annual average for past five years)
- $27.4 Million in funded proposals due to Space Grant involvement
- 600+ Research Programs annually
- 475+ Public Service Programs
Workforce Development & Partnerships

Evidence of Success

Industry Partnerships

Characteristics of Industry Partnerships

Percentage of Consortia

94% of Consortia Report Partnerships with Industry

Source: March 2006 Survey of Space Grant Directors

NASA Workforce Development

Student Placements

Space Grant consortia support approximately 360 students annually to engage in an internship-type opportunity at a NASA Center.

Space Grant consortia support approximately 178 students annually to engage in an internship-type opportunity with industry.

Most Space Grant Consortia place and support up to 4 students annually at NASA Centers, with some consortia supporting 10 or more.

Faculty Placements

Space Grant consortia support approximately 41 faculty members annually to engage in an on-site research opportunity at a NASA Center.

Space Grant consortia support approximately 20 faculty members annually to engage in an on-site research opportunity with industry.

*Average number of placements over a three year period for all consortia.
How does Space Grant benefit NASA?

• Builds human capital and research expertise to support NASA programs and missions.

• Expands NASA’s expertise and educational networks.

• Brings knowledge and awareness of space to a broad range of constituents in every state.
Next Steps – Where to from here?

NASA Education Strategic Framework

Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA’s strategic goals, through a portfolio of investments.

Outcome 2: Attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers and faculty.

Outcome 3: Build strategic partnerships and linkages between STEM formal and informal education providers that promote STEM literacy and awareness of NASA’s mission.

Principles/Criteria
- Relevance
- NASA Content
- Diversity
- Evaluation
- Continuity
- Partnerships/Sustainability

Cultivate Diversity of Workforce Disciplines and Practitioners
On the Horizon

• ECC-chartered team to look at Space Grant and EPSCoR within the environment of the new NASA Education Framework