2014 Southeast Regional Space Grant Consortia Meeting
Hosted by: Florida Space Grant Consortium
Cocoa Beach, Florida

NASA Space Grant Program Update

Lenell Allen, Ph.D.
Program Manager
October 24, 2014
Overview

- Introduction of the new Office of Education Associate Administrator
- What’s New at NASA?
- NASA’s and Office of Education (OE) Vision
- NASA’s Strategic Objective 2.4 – Advance the Nation’s Science, Technology, Engineering and Mathematics (STEM) Education and Workforce Pipeline
- Aerospace Research and Career Development (ARCD) Vision
- Strategies to Advance the Nation’s STEM Education and Workforce Pipeline
- Co-STEM Priority Areas and Strategic Goals
- Alignment of Space Grant Program Objectives with NASA’s Lines of Business (LOBs)
- Space Grant 2013 Office of Education Performance Measurement (OEPM) Data
- 2014 Space Grant Community Colleges Solicitation Update
- On the Horizon
- Fiscal Climate
- No Cost Extensions (NCEs) Guidance
- Space Grant National Evaluation Update
Donald G. James was appointed NASA's Associate Administrator for the Office of Education, effective Sept. 8, 2014.

Prior to his appointment, James was the director of the Strategic Communications and Education Directorate at NASA's Ames Research Center in Mountain View, California.

James began his NASA career in 1982 as a Presidential Management Intern at the Goddard Space Flight Center in Greenbelt, Maryland. In 2002-2003 he was the senior advisor and executive officer for the NASA Education Enterprise at NASA Headquarters.

James received an undergraduate degree in international relations from the University of Southern California in Los Angeles and a Master of Arts degree in economic development and public administration from the American University in Washington. He has participated in numerous executive development education programs at Cambridge University in England and Harvard University in Cambridge, Massachusetts.
What’s New at NASA?

- Boeing and Space Exploration Technologies (SpaceX) Selected to Return Astronaut Launches to American Soil

“Today, with the selection of Boeing and SpaceX to be the first American companies to launch our astronauts to the International Space Station, NASA has set the stage for what promises to be the most ambitious and exciting chapter in the history of human space flight.... Our destiny is set. Our course is laid out before us. And we are following it. We hope the American people will be inspired to join us on this next great, ambitious leg of humanity’s journey farther into our solar system than ever before.”

Charlie Bolden
September 16, 2014
NASA’s and Office of Education Vision

NASA’s Strategic Goal 2 and Objective 2.4

**NASA’s Vision:** *To reach for new heights and reveal the unknown so that what we do and learn will benefit all humankind.*

**NASA’s Office of Education Vision:** *To advance STEM education using NASA’s unique capabilities.*

**NASA’s Strategic Goal 2:** *Advance understanding of Earth and develop technologies to improve the quality of life on our home planet.*

**Objective 2.4:** *Advance the Nation’s STEM education and workforce pipeline by working collaboratively with other agencies to engage students, teachers, and faculty in NASA’s missions and unique assets.*
Aerospace Research and Career Development (ARCD) Vision

- Maximize the impact of Space Grant and Experimental Program to Stimulate Competitive Research (EPSCoR) Programs
  - **Maximize** - To increase to the greatest possible amount or degree, to use (something) in a way that will get the best result.

- Moving Forward....
  - Implement NASA’s and Office of Education Visions and Goals

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NASA Education Vision: To advance STEM education using NASA’s unique capabilities

Inspire Engage Educate Employ
Strategies to Advance the Nation’s STEM Education and Workforce Pipeline

Objective 2.4: Advance the Nation’s STEM education and workforce pipeline by working collaboratively with other agencies to engage students, teachers, and faculty in NASA’s missions and unique assets.

- Utilize Existing Institutional Resources
  - Comprehensive Holistic Strategies
  - Involvement of Student Affairs, Student Professional Societies (NSBE, SHPE, AISES, SWE, etc), Admissions, Financial Aid, Enrollment Management, Office of Sponsored Research, Grants Administration Professional Staff and other Federal Agencies STEM Programs

NASA Education Vision: To advance STEM education using NASA’s unique capabilities
Inspire Engage Educate Employ
# Strategies to Advance the Nation’s STEM Education and Workforce Pipeline

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• PreCollege Summer Institutes</td>
<td>• Proactive Recruitment of Space Grant Students</td>
<td>• Proactive Recruitment of Space Grant Graduates and Post-Docs</td>
</tr>
<tr>
<td>• Live-In Weekends</td>
<td>• Comprehensive Fellowships</td>
<td>• Faculty Mentoring (Nobel Laureates &amp; MacArthur Fellows)</td>
</tr>
<tr>
<td>• Competitive Scholarship Packages</td>
<td>• RAs &amp; TAs (3rd/4th Yrs.) Graduate Transitional Program/Acclimation to</td>
<td>• Portable Start-Up Packages (Lab Supplies, Travel, etc.)</td>
</tr>
<tr>
<td>• Early Warning Systems for “Gate Keeper” Courses</td>
<td>Research Lab</td>
<td>• Release Time for Research &amp; Publications/Curriculum</td>
</tr>
<tr>
<td>• Intrusive Advising</td>
<td>• Annual Department Reviews/Early Warning Systems</td>
<td>• Workshops on Grant Writing, Promotion &amp; Tenure</td>
</tr>
<tr>
<td>• Mentoring</td>
<td>• Peer and Faculty Mentoring</td>
<td></td>
</tr>
<tr>
<td>• Tutoring</td>
<td>• Travel Grants, Workshops on Grant Writing, Patents</td>
<td></td>
</tr>
<tr>
<td>• Internships/Co-Ops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Research Experiences for Undergraduates (Ronald E. McNair Program)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Lenell Allen

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STEM Recruitment/Retention and Evaluation Best Practices Resources

American Association for the Advancement of Science (AAAS) AGEP Website:

http://www.nsfagep.org
STEM Recruitment/Retention and Evaluation Best Practices Resources

SREB-State Doctoral Scholars Program

Increasing Faculty Diversity

More than one-third of America’s college students are people of color. But the percentages of college and university faculty who are members of racial/ethnic minority groups are only small fractions of the total. Nationwide, about 5 percent of faculty are African-American, about 3 percent are Hispanic and about 1 percent are Native American. The SREB-State Doctoral Scholars Program is working to change that.

The program’s goal is to produce more minority Ph.D students who seek careers as faculty on college campuses.

The Doctoral Scholars Program provides multiple layers of support including financial assistance, academic/research funding, career counseling and job postings, scholar counseling and advocacy, a scholar directory for networking and recruiting, invitation to the annual Institute on Teaching and Mentoring, and continued early career support.

http://www.sreb.org/page/1074/doctoral_scholars.html
## Co-STEM Priority Areas/Strategic Goals

<table>
<thead>
<tr>
<th>Priority Area</th>
<th>Strategic Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve STEM Teacher Training</td>
<td>100,000 new K-12 STEM teachers by 2020 and support existing STEM teacher workforce</td>
</tr>
<tr>
<td>Increase and Sustain Youth and Public Engagement in STEM</td>
<td>Support a 50% increase in the number of youth who have authentic STEM experiences each year</td>
</tr>
<tr>
<td>Enhance STEM Experience of Undergraduate Students</td>
<td>Graduate 1 million additional students with degrees in STEM fields over a decade</td>
</tr>
<tr>
<td>Better Serve Groups Historically Underrepresented in STEM Fields</td>
<td>Increase the number of underrepresented minorities graduating with STEM degrees and improve women’s participation in areas of STEM where they are significantly underrepresented</td>
</tr>
<tr>
<td>Design Graduate Education for Tomorrow's STEM Workforce</td>
<td>Provide basic research expertise, professional development, and specialized skills development to graduate-trained STEM professionals</td>
</tr>
</tbody>
</table>
Alignment of Space Grant Objectives with NASA Lines of Business (LOBs)

**NASA Education Lines of Business (LOBs)**

- STEM Engagement
- Educator Professional Development
- Institutional Engagement
- NASA Internships, Fellowships and Scholarships (NIFS)

**NASA Space Grant Objectives**

- Establish and maintain a national network of universities with interests and capabilities in aeronautics, outer space and related fields.
- Encourage cooperative programs among universities, aerospace industry, and federal, state and local governments.
- Encourage interdisciplinary training, research and public service programs related to aerospace.
- Recruit and train U.S. citizens, especially underrepresented minorities, women and persons with disabilities, for careers in aerospace science and technology.
- Promote a strong science, mathematics, and technology education base from elementary-secondary levels.
Approximate Breakdown of Space Grant FY2013 Funding Towards Lines of Business

- NIFS: 43%
- Institutional Engagement: 17%
- STEM Engagement: 33%
- Educator Professional Development: 7%

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STEM Engagement

<table>
<thead>
<tr>
<th># of Project Partners</th>
<th># of Publications</th>
<th># of Papers Presented</th>
<th># of Proposals Funded</th>
<th># of Patents Granted</th>
<th># of Tech Transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td>142</td>
<td>761</td>
<td>636</td>
<td>172</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

- 136 Public Education Activities
- 260 Pre-College Project Activities
- 423 Higher Education Project Activities
- New/Revised Higher Education STEM Courses
  - 37 New Courses
  - 85 Revised Courses
## Educator Professional Development

<table>
<thead>
<tr>
<th>Participant Type</th>
<th>Direct Interaction</th>
<th>Indirect Interaction</th>
<th>Unique Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School Teachers</td>
<td>3,876</td>
<td>11,265</td>
<td>3,293</td>
</tr>
<tr>
<td>Middle School Teachers</td>
<td>7,006</td>
<td>7,853</td>
<td>6,061</td>
</tr>
<tr>
<td>High School Teachers</td>
<td>3,275</td>
<td>5,694</td>
<td>2,396</td>
</tr>
<tr>
<td>Pre-Service Teachers</td>
<td>1,699</td>
<td>775</td>
<td>1,351</td>
</tr>
<tr>
<td>Higher Education Faculty</td>
<td>4,305</td>
<td>2,613</td>
<td>3,112</td>
</tr>
</tbody>
</table>
Institutional Engagement

Affiliate Classification

- 109 Two-Year Institutions
- 497 Four-Year Institutions

N = 878 Affiliates

*Functionality to determine Minority Serving Institutions in OEPM is currently in the development phase
Space Grant Student Internships FY2013

- 445 Internships Awarded through Space Grant
  - 126 Internships at NASA Centers
- Approximately $3.7M Awarded as Internship Awards
Space Grant Fellowships/Scholarships: FY2013

Total Fellowship/Scholarship Awards = 2,799

- Female: 1,272
- Male: 1,489
- Undisclosed: 38
888 Fellowships awarded in FY2013
- 167 Underrepresented Minority Students

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>334</td>
<td>(38%)</td>
</tr>
<tr>
<td>Male</td>
<td>526</td>
<td>(59%)</td>
</tr>
<tr>
<td>Undisclosed</td>
<td>28</td>
<td>(3%)</td>
</tr>
</tbody>
</table>
FY2013 Space Grant STEM Graduates: By Gender

N=4,033 Students
*20 Students Unidentified Gender

**Significant** Awards = $5,000 or ≥ 160 Contact Hours

(Source: Student Data Table B)
Change The Equation’s Analysis of Census Bureau STEM Data

STEM SPRINGBOARD
Too many new college graduates have heaps of debt and no job — except those with a STEM degree. Not only are STEM graduates more likely to land jobs soon after they graduate, those jobs pay more and make better use of their skills.

NEW STEM GRADS GET AHEAD

<table>
<thead>
<tr>
<th>Unemployment</th>
<th>3.2%</th>
<th>7.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>among new grad with bachelor’s degrees and above, 2011-2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-STEM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unemployment among new grad with less than bachelor’s degrees, 2011-2014

Unemployed

STEM opens doors
For new grads, an associate’s degree in STEM was more likely to lead to a job than a bachelor’s degree outside of STEM.

Unemployment among new grad, 2011-2014

<table>
<thead>
<tr>
<th>4.6%</th>
<th>7.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a bachelor’s degree</td>
<td>Bachelor’s or higher</td>
</tr>
</tbody>
</table>

Health care, engineering grads did best
Unemployment among new grad with bachelor’s or higher, 2011-2014

2.1% STEM-Focused Health Care
2.2% Engineering
5.4% Life/Physical Sciences
4.5% Computer Occupations
7.0% non-STEM bachelor’s grads

For more information about methodology and sources, see changetheequation.org/stem-springboard

http://changetheequation.org/stem-springboard#overlay-context

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Change The Equation’s Analysis of Census Bureau STEM Data

Most new STEM graduates earn more

Average starting salaries for new bachelor’s degree graduates in STEM and non-STEM jobs, 2014

<table>
<thead>
<tr>
<th>Field</th>
<th>STEM Salary</th>
<th>Non-STEM Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>$62,891</td>
<td></td>
</tr>
<tr>
<td>Computer Science</td>
<td>$62,103</td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>$57,229</td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>$53,266</td>
<td></td>
</tr>
<tr>
<td>Math/Statistics</td>
<td>$50,500</td>
<td></td>
</tr>
<tr>
<td>All Majors</td>
<td>$48,707</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>$46,300</td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td>$41,300</td>
<td></td>
</tr>
</tbody>
</table>

Source: National Association of Colleges and Employers, 2014

For more information about methodology and sources, see changetheequation.org/stem-springboard

http://changetheequation.org/stem-springboard#overlay-context
2014 Community Colleges & Technical Schools Solicitation Update

- 35 Awards
- $17.3M

Winning proposals outlined ways to attract and retain more students from community and technical colleges in STEM curricula, develop stronger collaborations to increase student access to NASA’s STEM education content, and increase the number of students who advance from an associate to a bachelor’s degree.

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On The Horizon

- **CubeSAT Launch Solicitation - Human Exploration and Operations Mission Directorate (HEOMD)**
  - Proposals Due - Tuesday, November 25, 2014
  - Jason Crusan (POC)

- **Space Grant “Base Award” Solicitation**
  - Currently under NASA legal and procurement internal reviews
  - Anticipated Release Date – First Quarter of FY2015

- The **2015 Spring internship** application period is open until **October 12, 2014**.

- The **2015 Summer internship** application period is anticipated to open on **November 1, 2014**.

- On The Horizon
  - Space Grant “Base Award” Solicitation
  - Currently under NASA legal and procurement internal reviews
  - Anticipated Release Date – First Quarter of FY2015
The FY 2015 Budget

- FY2015 President’s Budget Request:
  - Office of Education: $88.9M
  - Space Grant: $24M
  - EPSCoR: $9M

- FY2014 Enacted Budget:
  - Office of Education: $116.6M
  - Space Grant: $40M
  - EPSCoR: $18M

- Continuing Resolution Until December 11, 2014
  - Waiting on NASA Appropriation for the final Space Grant budget
Distribution of SG 2010-2015 Base Awards End Dates (April 2015 - August 2015)

<table>
<thead>
<tr>
<th>Month</th>
<th>End Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>11</td>
</tr>
<tr>
<td>May</td>
<td>15</td>
</tr>
<tr>
<td>June</td>
<td>14</td>
</tr>
<tr>
<td>July</td>
<td>2</td>
</tr>
<tr>
<td>August</td>
<td>7</td>
</tr>
<tr>
<td>Off-Cycle</td>
<td>3</td>
</tr>
</tbody>
</table>

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The NASA HQ Space Grant Program Office will consider approving no-cost extensions for the current 5-year base award for reasons identified in the NASA Grant and Cooperative Agreement Handbook and OMB Circulars.

The new Space Grant base award will be a training grant. It is not a continuation of existing base awards. Since the work proposed under the new training grant will be a different statement of work, and two grants can not be in place for the same purpose, a no-cost extension is allowable.

**Note:** It is very important to “Draw-Down” Space Grant funding expeditiously!

For further guidance on NCEs, please contact Ms. LaTeicia Durham at lateicia.durham@nasa.gov
Space Grant National Evaluation Update

- Space Grant (SG) Evaluation Planning begins Fall 2014
  - Community consultation on:
    - Evaluation questions
    - Existing data sources
    - Past SG evaluation methods
  - Data quality assessment during the fall and winter

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Contact Information:

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Email: lenell.allen@nasa.gov

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