NASA New Jersey Space Grant Consortium
2014 Annual Meeting
National Space Grant Program

- Created by Congress in 1988
- Funding by congressional appropriation
- 52 Consortia (50 states + D.C. + P.R.)
- Each state uses its funding to promote programs in STEM and aerospace
- Primary emphasis on higher education, research and fellowships
- Strong emphasis on diversity
- 25% of NASA’s education budget ($40M in FY 2013)
- The most successful education program in NASA in terms of students supported and STEM pipeline
Goals of New Jersey Space Grant

- To establish a network of universities with interests and capabilities in aeronautics, space science and related STEM fields
- To develop interdisciplinary programs to further space science, aerospace and STEM education
- To foster research and development in New Jersey
- To promote a strong STEM education base from elementary through university levels
- To recruit and train U.S. citizens, especially women and underrepresented minorities, and persons with disabilities
NJSGC Affiliates

- Astronomy Education Center at Raritan Valley Community College
- Bloomfield College
- Essex County College
- Georgian Court University
- Liberty Science Center
- NASA GISS at New York City
- New Jersey City Univ. (minority serving)
- New Jersey Institute of Technology
- Princeton University
- Ramapo College
- Rowan University
- Rutgers University
- Seton Hall University
- Stevens Institute of Technology
- The College of New Jersey
- Union County College
NJSGC Administration

- Haim Baruh, Director
  - Office at Rutgers, spends 20% of time [often more] on NJSGC

- Joseph S. Miles, Program Coordinator
  - Spends half his time with NJSGC, other half as faculty member at Stevens, office located at Stevens

- Aiesha F. Long, Project Coordinator
  - Spends half her time with NJSGC, other half at Rutgers Engineering Dean’s office

- Leora Wenger, Webmaster (works from home)
• **Outcome 1**: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA’s strategic goals

• **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

• **NASA requires** that Space Grant consortia fund primarily Outcome 1 programs
New Jersey Space Grant Consortium Programs

- Programs in five main areas
  - Research infrastructure (Outcome 1)
  - Higher education (Outcomes 1 and 2)
  - Fellowships (Outcome 1)
  - Pre-college (Outcome 2)
  - Informal education (Outcome 3)

- NASA requires all NJSGC programs to have a 100% match, except fellowship programs

- U.S. citizenship (required by NASA) for all monetary award recipients

- NJSGC budget for FY 2013 is $430,000, plus we are using $50K of unspent funds from previous years for a total budget of $480,000
New Jersey Space Grant Consortium Research Programs

- Industry-University Research program (discontinued since 2011, but one award remains)
- Clustered research programs at universities (programs at Rowan, TCNJ, NJIT-Ramapo, Seton Hall)
- RiSE program: summer research for minority students (run by Graduate School at Rutgers)
- Community college research program (new initiative to promote science education and research)
- Travel support for students to attend conferences ($400 per participant)
## New Jersey Space Grant Consortium

### Higher Education Programs

<table>
<thead>
<tr>
<th>Name</th>
<th>Awards</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op in Industry</td>
<td>1-2</td>
<td>$6,000-8,000 per student doing the co-op</td>
</tr>
<tr>
<td>Course Development</td>
<td>1</td>
<td>$4,000 per new course for salaries and supplies</td>
</tr>
<tr>
<td>Design Projects</td>
<td>8</td>
<td>Up to $600 per project.</td>
</tr>
<tr>
<td>College Bridge Programs</td>
<td>2</td>
<td>Attracting (female and minority) high school students to STEM. Programs at Rutgers, Georgian Court, and Liberty Science Center.</td>
</tr>
<tr>
<td>Summer Development</td>
<td>3</td>
<td>At NJ universities, primarily with EOF offices</td>
</tr>
<tr>
<td>New York City Research Initiative</td>
<td>3</td>
<td>Groups of college and high school students work together on research projects during summer. Director retired - uncertain future</td>
</tr>
<tr>
<td>RockOn-RockSat</td>
<td>1-2</td>
<td>Students build sounding rocket payloads which are launched into 75 mile altitudes.</td>
</tr>
</tbody>
</table>
### NASA and New Jersey Space Grant Consortium Fellowship Programs

<table>
<thead>
<tr>
<th>Type</th>
<th>Stipend</th>
<th>Awards</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Summer Research</td>
<td>$4,000</td>
<td>9 - 10</td>
<td>10 weeks of research at a NJ university or research center. Statewide competition</td>
</tr>
<tr>
<td>Academic Year</td>
<td>$2,000</td>
<td>24</td>
<td>Year long research in student's academic institution. Students selected by NJSGC campus representative</td>
</tr>
<tr>
<td>Graduate</td>
<td>$7,500</td>
<td>3</td>
<td>Student must be a graduate student (new or entering grad school). This fellowship requires match</td>
</tr>
<tr>
<td>NASA Academy</td>
<td>$5,000-6,000</td>
<td>0 - 1</td>
<td>Summer research at a NASA center or NASA Academy. (<a href="https://academyapp.nasa.gov">academyapp.nasa.gov</a>) None is being awarded this year. NASA wants us to support centers</td>
</tr>
<tr>
<td>NASA Internship and Fellowship Programs</td>
<td>from NASA</td>
<td></td>
<td>NASA internships and fellowships (except NASA Academy) managed by a single web site: One Stop Shopping Initiative (<a href="https://intern.nasa.gov">intern.nasa.gov</a>)</td>
</tr>
</tbody>
</table>

The total amount allocated for fellowships is determined by NASA (25% of overall budget).
Other New Jersey Space Grant Consortium Programs

• Pre-College

K-12 science teacher training (In service, as well as pre-service teachers)

We have supported programs at Raritan Valley CC, Rutgers, and Hanover High School

• Informal Education

For the general public

Primarily planetarium support

Currently supporting Raritan Valley CC and Rowan
Diversity and Reporting Mandates

• NJSGC is mandated to spend its student support in a proportion that reflects the diversity of New Jersey higher education students
  • 14% African American, 14% Hispanics, <1% Native American

• We need track of all students who receive major awards ($>2,000 or >180 hours)
  • NASA wants not only gender and racial diversity, they also want geographic diversity, as well as programs for the disabled (we currently have no programs for the disabled)

• We are keeping statistics on congressional districts of students to inform elected representatives
## NJSGC Diversity Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>Minority</th>
<th>Target</th>
<th>Female</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2009</td>
<td>36.6%</td>
<td>29%</td>
<td>33.3%</td>
<td>45%</td>
</tr>
<tr>
<td>FY2010</td>
<td>24.4</td>
<td>29</td>
<td>35.6</td>
<td>45</td>
</tr>
<tr>
<td>FY2011</td>
<td>23.8</td>
<td>29</td>
<td>42.5</td>
<td>45</td>
</tr>
<tr>
<td>FY2012</td>
<td>32.3</td>
<td>29</td>
<td>45.2</td>
<td>45</td>
</tr>
</tbody>
</table>

Statistics are for students who received stipends

NASA threatens to cut off funding if diversity targets are not met
• Two types of consortia in national program:
  • 35 Designated states (higher funding - 575K)
  • 17 Program states (lower funding - 430K)
    • N.J. is a program state - One of our top priorities is to become a designated state
    • No competitions for promoting program states to designated status. We requested that there should be competitions
  • FY 2013 funding $40M for the Space Grant program ($430K for N.J. plus competition awards)
Budget Issues

• For the last 10 years, Space Grant has been funded by Congress at a level higher than the president’s request.

• In FY 2012, Congress changed language of the Space Grant budget (at request of NASA and contrary to the wishes of the states).

• Now, they use part of the Space Grant budget to fund competitions.

• Starting in 2014, NASA Education budget may go down significantly.
# NJSGC Yearly Budget Summary

<table>
<thead>
<tr>
<th>FY</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base award</td>
<td>430K</td>
<td>430K</td>
<td>430K</td>
<td>430K</td>
<td>430K</td>
<td>430K</td>
</tr>
<tr>
<td>Augmentation (congressional)</td>
<td>160</td>
<td>230</td>
<td>185</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Competition</td>
<td>Was not held</td>
<td>185</td>
<td>None was run</td>
<td>Did not win</td>
<td>Just announced</td>
<td>?</td>
</tr>
<tr>
<td>NJSGC Surplus Funds</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>590K</td>
<td>845K</td>
<td>615K</td>
<td>480K</td>
<td>480K</td>
<td></td>
</tr>
<tr>
<td>National Space Grant Budget</td>
<td>39M</td>
<td>45.6M</td>
<td>42M</td>
<td>40M</td>
<td>40M</td>
<td>40M</td>
</tr>
</tbody>
</table>
## FY 2013 Budget Summary

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Base</th>
<th>Surplus</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellowships</td>
<td>110,000</td>
<td>0</td>
<td>110,000</td>
<td>22.9%</td>
</tr>
<tr>
<td>Research</td>
<td>66,000</td>
<td>9,000</td>
<td>75,000</td>
<td>15.6%</td>
</tr>
<tr>
<td>Higher Education</td>
<td>74,000</td>
<td>19,000</td>
<td>93,000</td>
<td>19.4%</td>
</tr>
<tr>
<td>Pre-College</td>
<td>17,000</td>
<td>13,000</td>
<td>30,000</td>
<td>6.3%</td>
</tr>
<tr>
<td>Informal Education</td>
<td>4,600</td>
<td>0</td>
<td>4,600</td>
<td>1.0%</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>110,900</td>
<td>0</td>
<td>110,900</td>
<td>23.1%</td>
</tr>
<tr>
<td>Overhead (27%)</td>
<td>47,500</td>
<td>9,000</td>
<td>56,500</td>
<td>11.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$430,000</strong></td>
<td><strong>$50,000</strong></td>
<td><strong>$480,000</strong></td>
<td></td>
</tr>
</tbody>
</table>
FY 2009 budget completed and closed

This is how we became aware of the match issues

In 2010 the new 5-year budget cycle began (2010-2014)

We have spent around 90% of the 2010 budget and 80% of 2011 and 75% of 2012

Please see attached sheet for 2013 budget allocations
Match Requirements

- Every NJSGC program (except fellowships) requires match - at least one-to-one
- After closing FY2009 account, we became aware of match certification requirements by Rutgers
  - Rutgers much stricter than other universities
  - Match requirement is treated like cost share
- Cost share can be actual dollars or in-kind
## NJSGC Match Procedures

<table>
<thead>
<tr>
<th>Activity</th>
<th>Match Description</th>
<th>$$</th>
<th>In-kind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmatic elements</td>
<td>Each program individually matched</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Administrative expenses</td>
<td>Affiliate representative participation letter</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Overhead</td>
<td>Reduction of overhead rate: 54% to 27%</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

All NJSGC programs except fellowships must have match
Match Certification

• NJSGC has become stricter in requesting match and in getting match certification letters - before and AFTER the award is completed

• To make up for match that was promised and not delivered (and for faculty who do not send us their affiliate effort certification), we need more than one-to-one match in our programmatic elements

• New procedures: At least 100% programmatic match, also match from supervisory activities of faculty involved

• If NJSGC funding is a fraction of your program budget, your entire budget can count as match
NJSGC Activities in the Past Year

- New Initiative - imposed by Education Office
  - New director of Space Grant (Dr. Lenell Allen) comes from a Community college background.
  - We are required to be more involved with community colleges
  - Where will the additional funding come?
  - We visited Union County College, Raritan Valley CC, and Brookdale CC and made presentations

- RFP issued by NASA for a grant for community college recruitment and retention of STEM activities
  - We are working with comment colleges to prepare the proposal. Requires concurrence of all affiliates
NJSGC Activities in the Past Year

• Submitted successful reports to NASA and received forward funding for 2014-2015
  • Proposal we submitted in 2013 for a competition was denied based on a technicality
  • We sent a request to NASA to receive the funding that we were not given in 2006, 2007, and 2008
  • We sent a request to NASA to seek designated status (for increased funding and better recognition from NASA)

• Involved in national Space Grant network (executive council secretary, aeronautics subcommittee chair)
• Visited congressional offices in D.C.
• Unfortunately, no progress with Sea Grant and with the FAA
NJSGC Activities in the Past Year

• Attended all national conferences (Charleston, S.C., D.C.). No regional conference last year

• Established contact with Princeton Plasma Physics Lab

• Summer fellowship conference and poster session held in August 2013, where all summer fellows made presentations
  • Will do same this year

• All fellowship awards made
  • Summer fellowship awards made (36 applicants, 10 awards)
  • No NASA Academy allocations (shifted to summer award) this year
  • All academic year and graduate fellowships given out
Future Activities and Challenges

- Expansion involving community colleges
  - Affiliate structure
  - Funding for community colleges - what type of programs, what level of funding
- The five-year performance period ends August 2015
  - We will have to write a new proposal with new budget breakdown
  - Carefully evaluating activities and expenses in view of the new realities of lower budgets and community college involvement
  - Developing new programs and discarding ineffective programs
  - NJSGC office needs your input
Future Activities and Challenges

- We need to develop an advisory board and also reach out to more universities
- Maintaining enthusiasm level of affiliates
- Reevaluation of our priorities
Thank You

- We are **ALWAYS** open to new ideas
- Space grant is moving fast and also changing, statewide as well as nationwide
- We should adapt to the times and be proactive
- Thank you for your support