NASA New Jersey Space Grant Consortium
2015 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
- Over 25% of NASA’s education budget
- 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
- Medgar Evers Coll. (NYC)
- 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
THE NEW JERSEY SPACE GRANT CONSORTIUM

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, Consultant
  - Recently took a full-time position at Rutgers Engineering Dean’s office. Helps voluntarily and also as a consultant.

- Leora Wenger, Webmaster (works from home)
New Jersey Space Grant Consortium Programs

• Programs in five main areas
  • Primary Programs
    • Research infrastructure
    • Higher education
    • Fellowships and NASA Internships
  • Secondary Programs
    • Pre-college
    • Informal education

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

• U.S. citizenship (required by NASA) for all monetary award recipients
New Jersey Space Grant Consortium Research Programs

- 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 - we are working with RVCC - looking for more)

- Discontinued programs include:
  - Travel support for students to attend conferences
  - University-Industry Research ($25K for junior faculty)
## 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 or Internships 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. Match situation unclear - uncertain future</td>
</tr>
<tr>
<td>RockOn-RockSat</td>
<td>1</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 and NASA Internship Programs

<table>
<thead>
<tr>
<th>Type</th>
<th>Stipend</th>
<th>No.</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Summer Research</td>
<td>$4,000</td>
<td>7-8</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>2-3</td>
<td>Student must be a graduate student (new or entering grad school). This fellowship requires match</td>
</tr>
<tr>
<td>NASA Internships</td>
<td>$6,000</td>
<td>3</td>
<td>NASA now requires us to support interns at NASA centers. We are only supporting undergraduate students, as graduate stipends are very high.</td>
</tr>
<tr>
<td>Other NASA Opportunities</td>
<td>from NASA</td>
<td></td>
<td>NASA-funded internships and fellowships managed by a single web site: One Stop Shopping Initiative (intern.nasa.gov)</td>
</tr>
</tbody>
</table>

The total amount allocated for fellowships is determined by NASA (25% of overall budget).
• Pre-College

K-12 math and science teacher training (in service, as well as pre-service teachers)

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

Collaborative effort this year with Orange Township schools

• Informal Education

For the general public

Primarily planetarium support

We have supported Liberty Science Center, 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 >160 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 (for students who receive stipends)

<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>
<tr>
<td>FY2013</td>
<td>31.6</td>
<td>29</td>
<td>44.3</td>
<td>45</td>
</tr>
</tbody>
</table>

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 has been held in 12 year. We have repeatedly requested that there should be competitions.

FY 2014 funding $40M for the Space Grant program ($430K for N.J. plus competition award of $500K)
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 2016, NASA Education budget may go down significantly.
# NJSGC Yearly Budget Summary (in thousands)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base award</strong></td>
<td>430</td>
<td>430</td>
<td>430</td>
<td>430</td>
<td>430</td>
<td>430</td>
<td>430</td>
<td>300</td>
</tr>
<tr>
<td><strong>Augment by congress</strong></td>
<td>160</td>
<td>230</td>
<td>185</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>?</td>
</tr>
<tr>
<td><strong>Competition</strong></td>
<td>None</td>
<td>185</td>
<td>None</td>
<td>Did not win</td>
<td>None</td>
<td>500</td>
<td>TBA</td>
<td>?</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>590</td>
<td>845</td>
<td>615</td>
<td>430</td>
<td>430</td>
<td>930</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>National Space Grant</strong></td>
<td>39M</td>
<td>45.6M</td>
<td>42M</td>
<td>40M</td>
<td>40M</td>
<td>40M</td>
<td>40M</td>
<td>24M</td>
</tr>
</tbody>
</table>
# FY 2014 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>
NJSGC Budget Status

• 5-year budget cycle (2010-2014) ends this summer
• 3-year bridge period, while the Space Grant Program gets evaluated
• Estimated NJ funding for those three years: $430K, $300K, $300K
• We wrote the proposal asked of us (for those three years) and it was accepted
• National Space Grant office at NASA HQ has begun charging an overhead on the budget given to them. Yearly awards will be smaller in the future
NJSGC Budget Status

- At end of summer 2015, we will have a substantial surplus
- We received a one-year no cost extension till August 2016. We hope to receive a second NCE until August 2017
- Please see attached sheet for 2014 budget allocations
- New competitive funding opportunity (with SG funds): University Student Instrumentation Project. Details should be announced shortly
- We will discuss the community college grant of $500K shortly
Match Requirements

- Every NJSGC program (except fellowships) requires match - at least one-to-one

- 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>Student stipends</td>
<td>Each program individually matched</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Administrative expenses</td>
<td>Affiliate representative participation letter</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Overhead (indirect cost)</td>
<td>Reduction of overhead rate: 53% to 26.5%</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

All NJSGGC 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 - by NASA Education Office
- Support of Community Colleges
  - We successfully submitted a proposal to the Community College initiative. $500K funding
  - We are working with six community colleges - Atlantic Cape, Bergen, Brookdale, Middlesex, Union, Essex
  - Also with Rowan and with Rutgers
  - Please see attached sheet for program and expenditure status
  - No match required for this grant
NJSGC Activities in the Past Year

• Submitted successful reports to NASA and received forward funding for 2014-2017
  • Sent a request to NASA to receive the funding that we were not given in 2006, 2007, and 2008 - NO RESPONSE
  • Sent a request to NASA to seek designated status (for increased funding and recognition) - NO RESPONSE

• Involved in national Space Grant network (executive council secretary, aeronautics subcommittee chair)

• Visited congressional offices in D.C.

• Still no progress with Sea Grant and with the FAA.
NJSGC Activities in the Past Year

- Attended a regional (Va.) and one national conference (DC)
- Begun a collaborative effort with Orange Township School system for teacher professional development
- Summer fellowship conference and poster session held in August 2014, where all summer fellows made presentations
  - Will do same this year
- Most fellowship awards made
  - Summer fellowship awards made (24 applicants, 7 awards)
  - Two NASA Internships (at NASA centers)
  - All academic year and one graduate fellowships given out
Future Activities and Challenges

• Expansion involving community colleges
  • NASA wants us to do so
  • Affiliate structure - what can we do with reduced funding
  • It has been difficult finding match from community colleges

• The five-year performance period ends August 2015
  • We will soon begin a lengthy review process
  • Each state will be reviewed, as well as the national program
  • Most likely, we ill need even more data from you - please cooperate
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
- Major evaluation of Space Grant Programs coming up soon
Thank You

• We are **ALWAYS** open to new ideas
• Space grant is moving and also changing, statewide as well as nationwide
• We should adapt to the times and be proactive
• Affiliates that participate in NJSGC receive more funding
• Thank you for your support