



# **NASA New Jersey Space Grant Consortium 2020 Annual Meeting**



# Four Major Changes This Year

- **Funding went up (from \$581,000)**
- **Grant cycle changed (starts March 14)**
  - **We are currently in FY2020, entire proposal is funded at \$760,000 plus a community college program for \$37,500**
- **NASA changed all classifications and announced alignment with its Mission Directorates**
- **The wretched virus - disruptions of programs**





# National Space Grant Program

- **Created by Congress in 1988**
- **Funding by congressional appropriation**
- **52 Consortia (50 states + DC, PR, **Guam, VI**)**
- **Each state uses its funding to promote programs in STEM and aerospace**
- **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**





# The Space Grant Network

- **Office of STEM Engagement at NASA HQ (AA: Mike Kincaid)**
- **Space Grant Office at NASA OSTEM (Future Manager: Joeletta Patrick, Interim Manager: Chad Rowe, Deputy Manager: Erica Alston)**
- **Consortia for Each State + DC, PR, VI, Guam**
- **National Space Grant Alliance**
  - **Advocacy organization formed by Space Grant consortia (all consortia pay annual dues)**
- **National Space Grant Foundation**
  - **Formed by Space Grant consortia to solicit donations, organize conferences, and support states (NJ does not use it much)**





# 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 Coll.
- Bloomfield College
- Brookdale Community College
- Essex County College
- Georgian Court University
- Liberty Science Center
- Medgar Evers Coll. (NYC) ??
- Middlesex County College
- New Jersey City Univ.
- Montclair State Univ
- New Jersey Institute of Technology
- Princeton University
- Ramapo College
- Rowan University
- Rutgers Camden
- Rutgers New Brunswick
- Rutgers Newark
- Seton Hall University
- Stockton University
- Stevens Institute of Technology
- The College of New Jersey
- Union County College
- William Paterson University
- All other organizations we deal with



# Non-Affiliate Organizations

- **We work (sometimes) with the following institutions**
  - **FAA**
  - **NASA GISS (Goddard Institute of Space Studies) at New York City**
  - **Princeton Plasma Physics Laboratory (not active for last four years)**
  - **Open to working with more such institutions/labs**





# 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
- **Sherry Lam, Program Assistant**
  - Quarter to half time. Gradually taking over Qiming's duties
- **Leora Wenger, Webmaster (works from home)**
- **Alexander Sanducu, Rocketry Coordinator (grad student at RU)**
- **Also, student help, currently Qiming Guan (TA at RU)**





# New Jersey Space Grant Consortium Programs

- **Major Changes in Classification of Programs**
  - New initiative by the Associate Administrator for STEM Engagement
  - No longer Research Infrastructure, Higher Education, Fellowships and NASA Internships, Pre-College, and Informal Education
  - Current classification:
    - NASA Internships and Fellowships
    - Alignment with the four NASA Mission Directorates: Aeronautics, Human Exploration, Science, Space Technology
    - Programs whose alignment cannot be determined in advance
- **NASA requires all Space Grant programs to have at least 100% match, except fellowship programs**
  - U.S. citizenship for all monetary award recipients



# Reporting Student Data

- **How the reporting will be under the new classification has not yet been determined**
- **How will the previous students, who were reported under the old categories and the new students, under the new categories, be combined?**
- **NJSGC in its database is using the new as well as old classification so we can sort student data both ways**





# How We Wrote the FY 2020 Proposal

- **Based on some guidance and discussions with NJ Space Grant Colleagues, we did not change any of our programs**
- **We just classified them differently**
- **For someone not familiar with the NASA Mission Directorates, the classification does not make too much sense**
- **We won't bore you with the details; rather we will describe programs under the old classification**





# New Jersey Space Grant Consortium **Research** Programs

- **Clustered research programs at universities (Rowan, TCNJ, NJIT-Ramapo, Rutgers, Seton Hall, Stevens)**
- **RiSE program: summer research for minority students (run by Graduate School at Rutgers)**
- **Community college research program (subcontracts with Middlesex CC, Brookdale CC, and Essex CC, open to more suggestions)**
- **Student travel to conferences**
- **Brought back minority graduate student bridge program**





# New Jersey Space Grant Consortium Higher Education Programs

Name	Awar ds	Description
Course Development	1-2	\$4,000 per new course for salaries and supplies
Student Projects	10-12	Support of design projects and student clubs, such as AIAA student groups
College Bridge Programs	5	Attracting K-12 students to STEM. Programs at Rutgers, Liberty Sci Ctr, GCU, Stockton
Summer and Development	1-2	Currently at Rutgers, primarily with EOF offices, new Ambassadors program at Rutgers
NASA GISS	1	New mentoring initiative, smaller program
Rocketry and Ballooning	3-5	RockSat at Stevens (sounding rocket), Space Club at Rutgers, Rocketry at Princeton, <a href="#">Rocketry at Rowan</a>
Co-op or Internships in Industry	1-2	\$6,000-8,000 per student doing the internship. 1 in summer 2019



## New Jersey Space Grant Consortium **NASA Internship and Fellowship Programs**

Type	Stipend	No.	Details
Undergraduate Summer	\$4,500	14	9 weeks of research at a NJ university or research center. Statewide competition
Academic Year	\$2,000	35	Year long research in student's academic institution. Students selected by NJSGC campus representative
Graduate	\$5,000	5	Student must be a graduate student (new or entering grad school). This fellowship requires match
NASA Internships	\$7,300	2-3	NASA requires us to support interns at NASA centers. We are only supporting undergraduate students, as graduate intern stipends are high
Other NASA Opportunities	from NASA		NASA-funded internships and fellowships managed by a single web site: ( <a href="http://intern.nasa.gov">intern.nasa.gov</a> )

All undergraduate programs are called internships. NASA definition of fellowships is for graduate students only





## **Other New Jersey Space Grant Consortium Programs (secondary)**

- **Pre-College**

- K-12 math and science teacher training (in service, as well as pre-service teachers)
- Supporting programs at Raritan Valley CC, Rutgers, aviation program with Up Up Away at Hunterdon County Airport

- **Informal Education**

- For the general public
- Primarily planetarium support
- We have supported Liberty Science Center, Raritan Valley CC, and Rowan





# Diversity and Reporting Mandates (did not change from before)

- NJSGC is mandated to spend its student support in a proportion that reflects the diversity of New Jersey higher education students
- **New statistics for New Jersey of 37% (was 29% before)**
- We need to 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 keep statistics on congressional districts of students to inform elected representatives





# NJSGC Diversity Statistics (for students who receive stipends)

Year	Minority	Target	Female	Target
FY2010	24.4%	29%	35.6%	45%
FY2011	23.8	29	42.5	45
FY2012	32.3	29	45.2	45
FY2013	31.6	29	44.3	45
FY2014	33.3	29	48.9	45
FY2015	27.6	29	44.7	45
FY2016	28.4	29	41.3	45
FY2017	28.6	29	47.6	45
FY2018	33.0	37	57.2	45



# Match Requirements

- **Every NJSGC program (except fellowships) requires match - at least one-to-one**
- **Match certification and reporting**
  - **Rutgers stricter than other universities**
  - **Rutgers no longer gives us match on indirect cost**
  - **Match requirement is treated like cost share**
  - **Cost share can be actual dollars or in-kind**
  - **Match must be realistic**





# NJSGC Match Procedures

Activity	Match Description	\$\$	In-kind
Programmatic elements	Each program individually matched	Yes	Yes
Invoices (<\$10,000)	Submit NJSGC match form or indicate match on invoice	Yes	Yes
Subawards (>\$10,000)	All invoices must show cost share, with final invoice giving total cost share	Yes	Depends
Student stipends	Each program individually matched	Yes	No
Administrative expenses	Affiliate representative participation letter	No	Yes
Overhead (indirect cost)	We pay an off-campus training grant rated of 27% by Rutgers	No	Yes



# Items that Count as Match (Cost Share)

- **Expenses incurred by (or shared by) your institution or other organization**
- **Waived indirect costs**
- **Faculty release time**
- **Faculty volunteer or travel time**
- **If NJSGC funding is a fraction of your program budget, your entire budget can count as match**





# Match Certification

- We sent you faculty match certification forms (for all five years of 2015-2019 grant) **please send the forms back**
- NJSGC is strict in requesting match and in getting match certification letters
  - We require a description of match BEFORE and AFTER the award is completed
- At least **120%** programmatic match, also match from supervisory activities of faculty involved
- Subawards can list indirect cost waiver as additional match
- Invoices from a subaward must include cost share amount
  - Final invoice must include **total** cost share





# NASA News

- **NASA administrator is well-liked and he likes Space Grant**
  - **Jim Bridenstine, was Congressman from Oklahoma**
- **Office of Education now called Office of STEM Engagement (OSTEM)**
  - **New AA, Mike Kincaid**
  - **Space Grant Budget is increasing, but we are told to have a narrower focus - NASA Mission Directorate Alignment**
- **Manager of Space Grant: Joeletta Patrick, currently on leave**
  - **Interim Manager: Chad Rowe, Deputy Manager: Dr. Erica Alston**
  - **Some run-ins but overall good relations**





# Changes and New Emphases in Space Grant Office

- **NASA OSTEM has four major programs:**
  - **Space Grant,**
  - **EPSCoR (NJ does not qualify)**
  - **MUREP (minority institution programs)**
  - **SEAP (STEM Engagement and Accountability Project)**
- **Mr. Kincaid and Ms. Patrick are interested in increasing collaboration among different programs in OSTEM**
  - **For example, to get Space Grant more involved with MUREP and MSIs (minority serving institutions)**





# Activities for Moon Landing 50th Anniversary (July 19, 2019)

- Professor Rob Stengel (Princeton), who worked at NASA during the Apollo years, did lectures
- Rowan had a special day with an astronaut speaker
- TCNJ did a special program
- Liberty Science Center did an evening program the Friday before the anniversary
- Rutgers did a program for K-12 students on campus at day of anniversary, with astronaut Bob Cenker as speaker
- Haim gave a talk at the Newark Museum
- We still have balloons with Moon pictures on them, as well as Apollo stickers, and NASA tattoos





# NJSGC Activities in the Past Year

- **Submitted successful reports to NASA and proposal for FY2020 funding**
  - **Proposal is accepted, half the funding has arrived**
  - **Augmentation proposal in process and about to be accepted**
  - **Received NCE for FY2019 award till 3/13/2021**
  - **Aerospace Scholars program at Essex County College (ongoing) and new program at Union Country College**
- **We renewed all sub-awards with the NCE moneys**
- **Need help from you in encouraging your student to respond to tracking surveys**





# NJSGC Activities in the Past Year

- Involved in national Space Grant network (executive council secretary, aeronautics working group co-chair, transition meeting)
- Visited congressional offices in D.C.
- Attended two national conferences (Cleveland - meeting for all NASA Education PIs, also national meeting in D.C.)
- Limited progress with FAA
  - Haim doing research with two students on separation standards for aircraft
  - We made a pitch to them to create FAA fellowships for NJ, managed by us - we did this pitch a month before Covid-19





# NJSGC Activities in the Past Year

- **Academic year poster session and affiliate meeting**
- **Summer fellowship conference and poster session was held in August 2019, where fellows made presentations**
- **William Paterson joined**
- **Increase in student rocketry group activities, two groups at Rutgers, one at Princeton**
  - **Looking to grow, we had a meeting at Rowan to get them more involved**
- **New Rocketry outreach coordinator - Alexander Sanducu (graduate student at Rutgers, lives and breathes rockets)**
- **New Ambassadors program at Rutgers**





# Budget Issues - First the Good News

- **Starting in FY2020, every state gets same funding - \$700K plus \$60K augmentation for a total of \$760,000**
- **We also are receiving additional \$37,500 for the community college aerospace scholars program**
- **Change in budget cycle - FY2020 is for 3/14/2020 to 3/13/2021**
- **Starting in FY2020, there will be competitions for additional funding**
- **Most of these competitions are for hands-on activities and for activities of interest to mission directorates - we are not strong in these areas**





# NJSGC Funding Summary (in thousands)

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Base award	430	430	430	430	430	300	300	570	536	700
Augmentation	185	None	None	None	None	270	270	0	45	97.5
Competition	None	Did not win	None	500	Did not win	None	None	None	Did not participate	?
Total NJ Funding	615	430	430	930	430	570	570	570	581	797.5
National	42MM	40MM	40MM	40MM	40MM	40MM	40MM	40MM	44MM	48MM



# FY2019 Expenditure Estimates

Program Name	Base	Carryover	Total	Percent
Fellowships	142,500	0	142,500	21.0%
Research	130,000	50,000	180,000	26.5%
Higher Education	138,000	10,000	148,000	21.8%
Pre-College	25,000	20,000	45,000	6.6%
Informal Education	8,500	2,500	11,000	1.6%
Operating Expenses	112,000	10,000	122,000	18.0%
Overhead (26.5%)	25,000	5,000	30,000	4.4%
Total	581,000	97,500	678,500	100%

Please look at spreadsheet for FY2020 budget





# Budget and Accounting Issues

- **We have a surplus in FY2015-2019 funds**
- **How much? Hard to tell because of issues with the accounting system at Rutgers**
- **Some progress with accounting system but many payments are not done on time due to computer glitches**
- **We have been spending the carryover funds**
  - **For example, summer research clusters are being funded at twice their usual level for last four years**
  - **Teacher training and informal education also being funded at a higher level**





# COVID-19

- **The virus has upended all our lives**
- **Space Grant is no exception**
- **FY2020 funds not cut (so far)**
  - **No word on cuts to FY2021 funds**
- **Likely cancellation of several NJSGC programs (summer 2020 and maybe more)**
  - **Especially at college campuses, experimental work, rocketry, some NASA internships**





# COVID-19 Response

- **NJSGC awarded almost all subcontracts for summer research (assuming that these programs can be run this summer)**
- **To deal with programs canceled due to Covid-19, we are vastly expanding graduate fellowships for Fall 2020**
  - **Also helps with increasing enrollments in graduate programs (as much fewer foreign students will arrive)**
  - **We will expand academic year fellowships, as well**
  - **Other ideas for spending funds most welcome**



# COVID-19 Response

- **By the end of summer 2020, we will have an idea of what FY2021 funding will look like**
- **By that time, we also will know exactly how many programs we had to cancel**
- **We should have another discussion around that time to assess our financial situation and talk about new programs (or cutting programs)**
- **Right now, too much uncertainty**
  - **It is possible that we will be very rich in FY2020 and poor in FY2021 and beyond**





# Near-Term Challenges

- **Community Colleges**
  - It has been difficult to find match from community colleges
- **Review of Space Grant**
  - One of the issues that has not been resolved
  - Each state will be reviewed, as well as the national program (OSTEM is working on this)
  - We will likely need even more data from you - please cooperate when the time comes





# Future Activities and Challenges

- **Student projects - we are not strong in this area**
  - NASA wants hands-on projects (interested in CubeSats and projects across state lines)
  - Projects related to Artemis (going back to the Moon) and to the Mars exploration
- **Reaching our new diversity statistics**
  - Targeted programs for minority students - any ideas
- **Maintaining enthusiasm level of affiliates**
- **Reporting requirements are stricter - please respond promptly when Joe Miles contacts you**





# Thank You

- We are **ALWAYS** open to new ideas
- Space Grant is continuously evolving
- We need to be flexible and aggressive, as well as maintain our enthusiasm
- Thank you for your support
- We are all doing good and valuable work by funding future scientists and engineers (quote from Dr. Bill Garrard, director of Minnesota SGC)