

The National Space Grant Office requires two annual reports, the Annual Performance Data Report (APD – this document) and the Office of Education Performance Measurement System (OEPM) report. The former is primarily narrative and the latter data intensive. Because the reporting timeline cycles are different, data in the two reports may not necessarily agree at the time of report submission. OEPM data are used for official reporting.

New Jersey Space Grant Consortium
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Consortium URL: <http://njsgc.rutgers.edu>
Grant Number: NNX10AR62H

PROGRAM DESCRIPTION

The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the state's interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The New Jersey Space Grant Consortium is a Program Grant Consortium funded at a level of \$430,000 for fiscal year 2014.

PROGRAM GOALS

Goal 1: To develop a scholarship and fellowship program that provides graduate as well as undergraduate research and educational opportunities to a diverse spectrum of New Jersey students in the disciplines of science, math, technology, and engineering, with emphasis on aerospace, and with research opportunities at NASA centers.

- Objective 1.1: \$110,000 will be awarded in fellowships to N.J. students in STEM fields and in a way that reflects the diversity characteristics of N.J. college students.
- Objective 1.2: \$18,000 will be awarded through research fellowships to graduate students, through the NASA/NJSGC Graduate Student Fellowship program.
- Objective 1.3: \$46,000 will be awarded as Summer Fellowships to undergraduates in N.J. to conduct research at a NJSGC member university, at an approved industrial corporation, or at a NASA Center.
- Objective 1.4: \$46,000 will be awarded as Academic Year Fellowships to New Jersey undergraduate students in STEM.

- Objective 1.5: At least 90% of the summer fellowship students and graduate research fellows will present their research at the NJS GC fellowship conference, usually held in late summer.
- Objective 1.6: All of the fellowship recipients will be subject to longitudinal tracking. At least 80% of award recipients will respond to the longitudinal tracking survey.
- Objective 1.7: Based on national statistics on minority enrollment in N.J. colleges, at least 28% of all student awards and other direct support will be awarded to students from underrepresented minorities. At least 45% of all award recipients will be female students and faculty.

Goal 2: To promote research activities relevant to NASA and New Jersey industry, to build research networks and to create pipelines from research to industrial development, and support STEM workforce development. To support junior faculty and graduate students in research, to increase diversity among researchers and graduate students.

- Objective 2.1: \$0 will be awarded for Support of New Jersey Research Centers to collaborate with their activities in aerospace research and publication during FY2014. (A NJS GC program to be revived when budgets rise).
- Objective 2.2: \$0 will be provided for Travel Support to students (undergraduate and graduate) and faculty in New Jersey universities to attend scientific conferences and technical meetings. (A NJS GC program to be revived when budgets rise).
- Objective 2.3: The Research Clusters and Mini Grants program will provide \$35,000 to research clusters in N.J. universities or to junior faculty in STEM.
- Objective 2.4: \$5,000 will be allocated for Community College Research with the goal of supporting the students in some capacity through acceptance in a 4-year institution of higher learning.
- Objective 2.5: \$36,000 will be allocated for programs for Minority Student Development for Graduate Study (RiSE).

Goal 3: To produce diverse and well-educated college graduates in STEM who will be inspired by their NJS GC experience and will be motivated to pursue careers in STEM and aerospace, as well as graduate study, thus creating a pipeline to the STEM workforce. To nurture interdisciplinary approaches and to develop higher education networks.

- Objective 3.1: Allocate \$6,000 for support of Design Projects that will foster a higher education network in New Jersey and give design and hands-on experience to students.
- Objective 3.2: Allocate \$15,000 for an Industry Co-Op/Internship program for students to receive co-op or internship experience.
- Objective 3.3: \$4,000 will be allocated for the Aerospace Course Development program, for N.J. faculty to develop new college courses in aerospace and teach them.
- Objective 3.4: \$15,000 will be provided to New Jersey Universities for Summer Development programs for entering freshmen and for K-12 college bridge programs.
- Objective 3.5: \$0 can be allocated to support academic teams participating in the NYCRI Summer Institute. NYCRI could not secure matching funding during

FY2014. Hopefully, they will be able to find match funding in 2015. Traditionally, each team is comprised of a high school student, and an undergraduate or graduate college student, to conduct research at a New Jersey University. While some projects are research projects, others are hands-on activities.

- Objective 3.6: \$11,000 will be allocated to New Jersey college faculty members and students to participate in the Rock-SAT workshops. For various reasons, it was decided to merge the 2013 program into the 2014 program.
- Objective 3.7: \$13,000 will be allocated for the running of K-12 bridge programs, which connects K-12 students with college faculty and industrial experts for a summer of enrichment.

Goal 4: To inspire, motivate, and develop New Jersey's math and science teachers by means of teacher training, educational outreach, and professional development programs.

- Objective 4.1: Allocate \$17,000 to support science Teacher Training programs at Raritan Valley Community College, Rutgers University, as well as at other institutions.
- Objective 4.2: At least 80% of teachers will respond to our survey. At least 75% of teachers will have used their training within a year and 90% within two years of receiving their training. At least 75% of participating teachers will have used their training within a year of receiving their training and 90% will have used their training within two years of receiving their training.

Goal 5: To stimulate a broad interest in, and an understanding of, various scientific and technical disciplines of interest to NASA by supporting informal education STEM programs. Promote awareness of NASA's mission and its contribution to society.

- Objective 5.1: \$4,600 will be allocated for support of planetariums, science centers and new programs.

Goal 6: NJSGC will be a proactive and diverse organization that is run efficiently and effectively. All activities will continuously be monitored and new initiatives pursued.

- Objective 6.1: NJSGC will have an effective, efficient and frugal office which continuously monitors itself, and whose documents are up to date. NJSGC will have well-defined operational policies and procedures for all of its activities.
- Objective 6.2: NJSGC will have a set of active affiliates who contribute to the programs of the consortium by serving on committees, publicizing NJSGC activities at their organizations, and by recruiting students and faculty to apply for NJSGC awards.
- Objective 6.3: NJSGC will actively seek alliances with aerospace and educational organizations in New Jersey, with NASA centers and with New Jersey elected officials.
- Objective 6.4: NJSGC will advertise its programs statewide and administer its programs competitively and fairly. Applicants will be evaluated without bias or any artificial criteria.

- Objective 6.5: NJS GC will track all its major award recipients to monitor their progress and to evaluate the effectiveness and success of its programs. We will administer satisfaction surveys.
- Objective 6.6: NJS GC will continuously monitor its offerings and modify or discontinue programs that are not effective, have run their course or have not met expectations.

Goal 7: NJS GC will strive for diversity in all of its programs and will make its awards in a way that reflects the diversity of the state of New Jersey. NJS GC will inspire members of the minority community to choose careers in STEM and will work with minority serving institutions in New Jersey and as well as other states, supporting them with funding, fellowships and internships.

- Objective 7.1: Based on national statistics on minority enrollment in New Jersey colleges, at least 28% of all students receiving stipends will be underrepresented minorities. At least 45% of all student award recipients will be female students.
- Objective 7.2: NJS GC will actively engage and support minority serving institutions in New Jersey and in nearby states, including universities and community colleges with sizable minority populations.

PROGRAM/PROJECT BENEFIT TO OUTCOME (1, 2, and 3)

Provide concise, meaningful highlights or anecdotes (no more than three) that are directly related to work completed in 2014, highlighting student and/or project accomplishments. Specify alignment to each of the three Outcomes.

Outcome 1 - Educate and Employ. We continue to respond to affiliate requests to tailor our programs to affiliate needs and opportunities as they arise. For example, the research cluster program has now become a dominant part of the research clusters and mini grants program. We have shifted our focus to primarily support students.

Outcome 1 - Educate and Employ. We continue to allocate more funding to the academic year fellowship program. The NJS GC network of affiliates includes small colleges without major research or graduate STEM programs. Academic year fellowships usually are the only support we can provide them. We also give academic year fellowships to community colleges.

Outcome 1 - Educate and Employ. We have started to support the AIAA student section at Rutgers in their efforts to build an autonomous aircraft and compete in an autonomous vehicle competition sponsored by AUVSI. We also are actively discussing with our affiliates to expand this program statewide.

Outcome 2 - Engage and Educate. Three of the six Rock-On students who participated in the 2010 program graduated into the Rock-SAT-C program in 2011 and 2012. They have increased their expertise and gained hands-on experience building and integrating rocket payloads. They are presently mentoring nine new Rock-SAT-C students during the 2014-2015 academic years. The program has also helped one graduate (Ethan Hayon) obtain a

permanent job and the other two participants have gone on to graduate school (Mike Giglia and Mark Siembab). Mike and Mark graduated with their Masters of Mechanical Engineering in May. Mark will participate in Rock-SAT 2015 and has accepted a permanent job with Bechtel Corp. NJS GC is continuing with the Rock-SAT-C program and will launch a payload in June 2015.

Outcome 2 - Engage and Educate. NJS GC received a request from the Orange Township School Board to help them with teacher professional development and to increase STEM opportunities for their students. NJS GC immediately went into action, mobilized its affiliates and presented the Orange Township educators with a list of activities that we can support (and have supported before). Our initial meeting with the Orange Township superintendent of schools went very well. We are in the process of finalizing the activities that we will be conducting.

PROGRAM ACCOMPLISHMENTS

Outcome 1 Activities:

Over 80% of NJS GC's programmatic expenditures are for Outcome 1 activities.

NJS GC runs three fellowship programs: undergraduate Academic Year Fellowships, Summer Fellowships and NASA Internships, and Graduate Fellowships. This year, we supported three graduate students, twenty-three academic year fellows, seven summer fellows, and three students at NASA centers.

While fellowship programs do not require match, NJS GC asks the institutions receiving graduate fellowships to provide a more than one-to-one match. The maximum fellowship amount we allocate per student, \$7,500, is much lower than the cost of graduate education. The match by the academic institutions makes the stipends more attractive.

In FY2014 we supported one Community College academic year fellowship, though three were offered.

NJS GC holds two fellowship conferences each year to showcase the activities of its award recipients. One meeting is held in early May, with all the academic year fellows highlighting their work in a poster session. The poster session is preceded by the NJS GC annual affiliate meeting, attended by our affiliate representatives and to which legislators at the state and national levels are invited. The second meeting is held in August, where the summer fellows and research cluster participants make presentations. Also, NJS GC-supported students in other programs, such as RiSE, make presentations at those organizations conferences. Thus, there are ample poster and presentation venues for NJS GC students to make research presentations.

NJS GC considers fellowship recipients as major awards and tracks them.

In research, NJSGC has shifted the focus of its research clusters and mini grants program to primarily support students. In FY2014, NJSGC is supporting research clusters at Rowan, Seton Hall, and Ramapo College students at NJIT. The total number of students supported is 12 (4 at Rowan, 5 at Seton Hall, and 3 at Ramapo/NJIT).

Among Outcome 1 programs in higher education, NJSGC supported the following:

- The Senior or Multiyear Design Project program provides support to design projects in New Jersey universities for project supplies. We also support student design groups who participate in national competitions. In FY2014, we supported an autonomous airplane project by the AIAA student section at Rutgers.
- The NJSGC Co-Op/Internship program integrates learning with hands-on development work at a NASA contractor or other aerospace company. Hamilton Sundstrand has been our primary partner. During FY2014, NJSGC supported two students.
- The Course Development program supports higher education institutions to develop new STEM courses and programs related to astronomy, aeronautics and space sciences. For FY2014, NJSGC is supporting Rutgers University at its Camden location to develop a course in 3-D printing. The course is being developed by our affiliate representative there, Dr. Sean O'Malley.
- In FY2013, NJSGC began targeted support for Community College Students deciding to go onto a 4-year program in Science and Engineering. During FY2014, NJSGC also supported one student at Union County College with an academic year fellowship. Since NJSGC was the recipient of a Community College Award for \$500,000, we have not increased the funds awarded to this program in our main grant.
- The Minority Student Support for Graduate Study program currently supports the Research in Science and Engineering (RiSE) program, run by the Rutgers University Graduate School. Through a focused summer program, RiSE recruits, trains and encourages promising underrepresented, disadvantaged and underserved undergraduate students in STEM disciplines, and prepares them for graduate school and research. This program fully aligns with NASA objectives. This year, NJSGC is supporting six students.

Outcome 2 Activities:

The NJSGC Outcome 2 activities consist of Higher Education and Pre-College programs. NJSGC has increased its outcome 2 activities, especially involving teacher training to improve the teaching of science in K-12.

- NJSGC has been supporting EOF (Equal Opportunity Fund) programs at New Jersey colleges as part of its bridge programs. The EOF program provides enrichment to minority or disadvantaged students entering STEM fields by bringing them to campus before their first semester and provides them with enrichment, as well as a small stipend.

- NJSGC initiated participation in the Rock-ON program in 2010 by sending Joseph S. Miles, NJSGC's Program Coordinator, to the program. The following year, six students attended Rock-ON, a hands-on program. Three of the original six students attended the 2012 Rock SAT-C program and are mentoring seven new students. During FY2014, New Jersey Space Grant is supporting seven students for the ROCK-SAT-C program with five of them going to the launch at Wallops Island in June 2015. ROCK-SAT-C has become such an exciting program that two prior year participants will also go to the launch, at their own expense.
- The TARGET (The Academy at Rutgers for Girls in Engineering and Technology) program at Rutgers sponsors female middle school or high school students during the summer and introduces them to a hands-on engineering experience. Engineering faculty and student volunteers provide mentoring. During the academic year, female engineering students provide mentoring. NJSGC is funding about 15% of the program in FY2014.
- The Partners in Science program of the Liberty Science Center brings together high school students, primarily from disadvantaged areas, for a summer of enrichment under the tutelage of an industry professional. We support six high school students in that program.

The Pre-College programs consist of teacher training. NJSGC has diversified its support of our teacher training activities. In FY 2014, besides the New Jersey Astronomy Center for Education at Raritan Valley Community College, NJSGC is also funding pre-service science teacher training program, jointly run by Rutgers School of Education and Rutgers School of Engineering. This program is geared towards STEM students who begin taking education courses in their fourth year and who receive a B.S. degree in a STEM field and a master's degree in education at the end of their fifth year.

- As briefly described earlier, in FY2014 NJSGC has begun to work with the Orange Township School System to improve STEM teacher professional development. We are currently assessing their needs and developing an action plan. We plan to begin implementation in FY2015.

Outcome 3 Activities:

NJSGC supports informal education programs only minimally, about 1% of its budget. Our informal education programs are primarily planetarium support at Raritan Valley Community College, the Edelman Planetarium at Rowan University and the planetarium at Liberty Science Center. This planetarium provides formal education in astronomy to students, and also to the public on a weekly basis as public planetarium shows. We support their public education activities.

Activities that can be classified under All Outcomes:

- NJSGC uses databases in the management of the consortium and for longitudinal tracking. All major award recipients are required to complete pledge forms for

tracking purposes. These students sign a pledge form to provide information regarding their whereabouts and career progressions for five years after the completion of their projects.

- NJSGC continues to enhance and upgrade its Website (<http://njsgc.rutgers.edu/>) to attract more viewers and to advertise its programs.

PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE MEASURES

Student Data and Longitudinal Tracking:

Our FY2014, based on 72 direct funded students, shows a 33.3% minority (24/72, target 28%) and 48.6% female (35/72, target 45%) participation. For the third year in a row, we have met or exceeded our diversity targets.

NJSGC has an aggressive longitudinal tracking program. Of the 338 students who were tracked this year, we could not locate 23. Of the remaining 315 students, only 13, or 4% were not pursuing activities in STEM. Hence, 96% of the tracked students that we located are still doing STEM. Even if we assume that all of the people we could not reach are not doing STEM, we still get that at least 89% of our major award recipients are involved with STEM.

Diversity:

New Jersey is a very diverse state, with a college population that is 28% minority. Most universities in the state have enrollments that reflect this. All the major universities with sizable STEM programs are affiliates of NJSGC, so that NJSGC is able to reach almost all minority college students in STEM subjects.

Minority-Serving Institutions:

There are no historically black or other minority institutions in New Jersey. However, because of their location, there are two four-year institutions classified as minority serving. The largest is the New Jersey City University, which is an active affiliate of NJSGC. The second, St. Peter's University, has been contacted by NJSGC, but they have shown no interest. In addition, their STEM offerings are very small. NJSGC has developed excellent relationships with the following minority-serving institutions:

- Essex County College, which has a high African American and Hispanic enrollment. We have awarded them with academic year fellowships. In FY2015, we supported them with one academic year fellowship. They also are collaborating with us on the community college grant.

- The New Jersey City University is listed as an institution with “High Hispanic Enrollment.” We support them with academic year fellowships. We have also collaborated with them in proposal writing.
 - Union County College is a Hispanic serving institution. We have supported them with academic year fellowships. They also are collaborating with us in the community college grant.
 - In our community college grant, we have been working with four other community colleges, with two, Middlesex County College, and Atlantic Cape Community College classified as minority serving.
 - While they are not in New Jersey, we have excellent relations with CUNY Medgar Evers College in New York City, and we count them as our affiliate. We have collaborated with them in the NYCRI program (which we hope to restart next year) and in discussions involving teacher professional development.
- **NASA Education Priorities:** *Accomplishments related to the “Current Areas of Emphasis” stated in the 2010 Space Grant solicitation. Report on areas that apply to work proposed in your proposal and budget.*
 - Authentic, hands-on student experiences in science and engineering disciplines – the incorporation of active participation by students in hands-on learning or practice with experiences rooted in NASA-related, STEM-focused questions and issues; the incorporation of real-life problem-solving and needs as the context for activities.

We have supported research clusters, fellowships, and we have sent six students to Rock-SAT since 2011. Most of our direct students receive this type of experience as they work in the labs of New Jersey universities. We support senior design projects, which involve hands-on work which many times have an aerospace focus. In FY2014, we also supported the AIAA student section at Rutgers, in their activities of developing an autonomous aircraft. We also have begun discussions with our affiliates regarding the feasibility of a statewide autonomous air vehicle competition.

Diversity of institutions, faculty, and student participants (gender, underrepresented, underserved)

- FY2014 statistics for student stipends indicate 33.3% minority (24/72, target 28%) and 48.6% female (35/72, target 45%) participation. For the third year in a row, we have met or exceeded our diversity targets.
- NJSGC has continued supporting the RiSE program at Rutgers, where minority college students from across the country come to the Rutgers campus and conduct research. They also receive mentoring and tutoring about graduate school. This year six students are being supported, one more than previous years.
- We have expanded our relationship with colleges that enroll minority students. Our contacts at community colleges have helped. For example, the academic-year fellow from Union County College is an African-American student.

- We have an expanded relationship with New Jersey City University. NJCU qualifies as minority serving and they have a relatively large science program. We have partnered with them for fellowships, proposal writing, and graduate education. They have also helped us with contacts at community colleges.
- We have expanded our relationship with Bloomfield College, which has a sizable minority enrollment (nearing 50%, primarily because of its proximity to Newark, NJ). We support two academic-year fellows annually at Bloomfield.
- NJSGC has geographic diversity, as well. From Ramapo College, at the northern boundary of the state, to Rowan University in the South, we have programs at most New Jersey colleges. We continuously make contacts to gain more affiliates. This year, we made contact with people from Montclair State University. We make efforts to ensure that each congressional district is represented among our award recipients.

Engage middle school teachers in hands-on curriculum enhancement capabilities through exposure to NASA scientific and technical expertise. Capabilities for teachers to provide authentic, hands-on middle school student experiences in science and engineering disciplines (see above).

We are building a network of K-12 science and math teachers. We keep lines of communication open with the New Jersey Department of Education Science Coordinator. We support middle school teacher training efforts in several venues. The RVCC education program that we support gets teachers from throughout the state. NJSGC award recipients who go into K-12 STEM education automatically become part of our K-12 network.

Summer opportunities for secondary students on college campuses with the objective of increased enrollment in STEM disciplines or interest in STEM careers.

For FY2014, summer opportunities consisted mainly of two programs: TARGET (The Academy at Rutgers for Girls in Engineering and Technology), and the Liberty Science Center (LSC) Partners in Science program. The LSC program sends high school students to universities and industrial corporations to do a 10-week research project. TARGET sponsors female K-12 students during the summer and introduces them to a hands-on engineering experience.

Community Colleges – develop new relationships as well as sustain and strengthen existing institutional relationships with community colleges.

NJSGC's relations with community colleges have seen explosive growth in the last two years. We have close ties with seven community colleges, with more relations developed every year. We received a grant for \$500,000 from the competitive opportunity for community college support. We are in close contact with our community college partners, as we will describe in our report for community college efforts. We are working on research programs at N.J. community colleges with funding from our base award.

Aeronautics Research – research in traditional aeronautics disciplines; research in areas that are appropriate to NASA's unique capabilities; directly address the fundamental research needs of the Next Generation Air Transportation System (NextGen).

We are working with the FAA outreach offices to develop educational programs in aeronautics and air traffic control systems. Also, the director of NJSGC is co-chair of the Aeronautics Working Group and has made contacts at the Aeronautics Mission Directorate at NASA HQ. Last year we placed an intern at the FAA Technical Center in Pomona, N.J.. We have developed excellent relations with Atlantic Cape Community College, which is very close to the FAA Technical Center. They are one of our partners in the community college grant. We also are discussing with them course development in aviation and air traffic control.

Environmental Science and Global Climate Change – research and activities to better understand Earth's environments.

No funds allocated in FY 2014, but we are in talks with the New Jersey Sea Grant Consortium to develop collaborative research programs. Unfortunately, their funding has also gone down and it is a struggle to develop new programs with them.

Enhance the capacity of institutions to support innovative research infrastructure activities to enable early career faculty to focus their research toward NASA priorities.

Since FY 2013, we have supported the development of a new B.S. degree in aerospace engineering at Rutgers. This program has led to the hiring of junior faculty in aeronautics and space science, whose specialty is space transportation.

IMPROVEMENTS MADE IN THE PAST YEAR

- During FY2014, NJSGC continued to increase alliances with community colleges. Six community colleges participated in the NASA CAN for Community College Support and funding in the amount of \$500,000 was received.
- We have started discussions with the Space Technology Mission Directorate regarding the development of a cube-sat program in New Jersey.
- The Rock-On program has become more successful. Since FY2011, there has been a steady-stream of students participating in the program. Those students, who have graduated from college, have become volunteer mentors for the new students. They will launch a payload during June 2015. This is a hands-on program to which the students are attracted.
- NJSGC has expanded its outreach efforts to attract and retain minority students in STEM, as can be observed from our diversity statistics, which for three years in a row have met or exceeded our targets.
- The NJSGC office has seen a lot of change with the departure of Aiesha F. Long from full-time duty to volunteer/consultant duty. This has led us to re-evaluate how we do business, to streamline our office operations, to do more efficient data storage and collection, and also to reduce our office expenses.
- Our affiliation with the Orange Township School System has given us a better picture of challenges experienced by K-12 educators, especially in minority districts. With the additional experience we are acquiring, we will be in a better position to improve and expand our pre-college efforts as well as our bridge programs.

PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

Affiliate Partners:

Three-fourths of NJS GC members are active or very active partners of the consortium, and the remaining quarter are mildly active or engaged. Affiliate activity peaks and wanes over the years; many times having nothing to do with NJS GC itself. The activity level of an affiliate usually depends on the campus representative. Whenever an affiliate representative loses interest, we request that a new one be appointed. The list below (in alphabetical order) gives our evaluation of NJS GC affiliate institutions as very active, active, not very active and inactive, as well as key characteristics.

- Astronomy Center at Raritan Valley Community College. Very active, key player in our pre-college efforts. This organization is the primary teacher-training arm of Raritan Valley Community College.
- Bloomfield College. Active. Bloomfield participates in our Academic Year Fellowship program.
- Georgian Court University. Very active. We have funded them with academic year fellowships, K-12 bridge programs for higher education, and support of teacher workshops. A Jesuit institution with a small graduate program in teacher education, whose undergraduate college was all female and is in the process of transitioning to co-ed.
- Goddard Institute of Space Sciences. Active. While not an official affiliate, as it is part of a NASA center, we consider it an affiliate. A new director, Matt Pearce, was appointed in September 2014 and we have met with him in person. While we were not able to run the NYCRI program with them this year, we have started to work with GISS in our Orange Township School System project.
- Liberty Science Center. Very Active. Our only non-academic partner. Participates in our Outcome 2 activities with their Partners in Science program, which NJS GC supports. This program inspires high school students to pursue careers in STEM by providing hands-on, interactive research experiences with professionals in scientific fields. This program pairs students with scientists and engineers who serve as one-on-one mentors. We also support the LSC planetarium.
- New Jersey City University. Very active. Designated minority-serving institution. We have partnered with them for responding to NASA solicitations. They were very helpful with our proposal for community college support. Public institution with a primarily undergraduate enrollment, with small graduate programs.
- New Jersey Institute of Technology. Active, we have funded research programs and bridge programs for graduate study. This public university provides undergraduate and graduate education mostly on STEM topics. We are working with their pre-college education programs on the Orange Township project.
- Princeton University. Active, we have funded research programs with them and sent their students to NASA centers. Very highly ranked private university.
- Ramapo College. Active. Ramapo participates in our research clusters and we have made contacts with their science faculty.

- Rowan University. Very active. They are involved in research, fellowships, research clusters, and informal education. Originally a teachers college, they have become a comprehensive university with bachelors and masters programs.
- Rutgers Health and Biomedical Sciences. Beginning to become active again. Formerly, University of Medicine and Dentistry of NJ. We now have a new affiliate representative.
- Rutgers, New Brunswick. Lead institution and very active affiliate.
- Rutgers Camden. Active. We have supported Academic Year and Summer fellowships, as well as course development programs.
- Seton Hall University. Very active. They receive funding from our Academic Year Fellowships and also from our Research Clusters program.
- Stevens Institute of Technology. Very active. As former lead institution, they are active in all aspects of the consortium. Private university that provides undergraduate and graduate education in STEM topics.
- Union County College. Very active. Though a relatively new affiliate, they have become very active, participating in the Academic Year Fellowship program as well as partnering with us in the community college grant.
- The College of New Jersey. Active. We have supported them with fellowships and research clusters. Small public college, with primarily undergraduate programs.

Non-Affiliate Partners:

- RiSE - Research in Science and Engineering. This program, which is run by the Graduate School at Rutgers University, is a strong magnet to attract minority students to STEM and encourage these students to continue on to graduate school. One of the objectives is to create a STEM pipeline into graduate study.
- FAA and New Jersey Sea Grant Consortium. Our best efforts to establish programs with these organizations have not been very successful so far. Our initial contacts were fruitful, but upon follow up we did not receive any interest. Both organizations suffer from budget cuts, which makes them hesitant to develop new programs, with us or with others. We have not given up and will continue trying next year.