

**California Space Grant Consortium  
STEM Pipeline Program  
Announcement Date: October 31, 2016  
Proposal Due Date: December 2, 2016  
Performance Period: January 9, 2017<sup>1</sup> – July 5, 2017<sup>2</sup>**

The California Space Grant Consortium (CaSGC) will provide “seed” support for the 2016-2017 fiscal year to CaSGC affiliate institutions for a number of innovative Science, Technology, Engineering and Math (STEM) Pipeline projects relating to “Human Capital” pipeline issues within NASA and the Nation. These include educational (Higher Education, Precollege, and Public Outreach), research, and hands-on projects that will positively impact the STEM Pipeline.

**Program Goal:** To contribute positively to the STEM Pipeline through inspiring, engaging, educating and training students in the STEM fields, preparing pre-service teachers to become effective STEM educators using NASA content & resources, and sharing NASA content & resources with in-service teachers for inclusion in their classrooms.

**Program Objectives:** To creatively leverage limited Space Grant funds by “seeding” projects that:

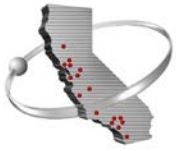
- Innovatively address a critical STEM pipeline need in California;
- Promote interdisciplinary (science and engineering) teaming;
- Seek partnerships across the pipeline (Informal Education & Public Outreach, Precollege, and Higher Education) with special attention to the inclusion of community colleges, particularly Minority Serving Institutions (MSIs);
- Incorporate novel approaches to encourage the participation of science and engineering students from underrepresented minority<sup>3</sup> or gender groups. Diversity efforts can include reaching out to student and STEM diversity organizations on your campuses to recruit underrepresented students. Those organizations include, but are not limited to:
  - Society of Women Engineers (SWE)
  - National Society of Black Engineers (NSBE)
  - Society of Hispanic Professional Engineers (SHPE)
  - Association for Women in Science (AWIS)
  - American Indian Science and Engineering Society (AISES)
  - Mathematics Engineering Science Achievement (MESA)
  - California Alliance for Minority Participation in Science, Engineering and Mathematics (CAMP);
- Obtain matching resources from industry, state agencies, educational institutions, and community organizations;
- Provide a means for efficient and effective dissemination of results (through websites, social media, newsletters, journal articles, and presentations, for example); and
- Take responsibility for documenting the quantitative outcomes & impacts of your project and providing timely responses to CaSGC performance data requests for our annual NASA report.

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<sup>1</sup> Award letters to be released in January 2017.

<sup>2</sup> Official end date of the three-year NASA Grant funding this program is July 5, 2018: Grant #NNX15AP87H.

<sup>3</sup> Underrepresented minorities in STEM include Blacks, Hispanics, Native Americans, and Pacific Islanders.



### **STEM Pipeline Project Examples:**

The CaSGC STEM Pipeline Program is different from the CaSGC Workforce Development Program in that the STEM Pipeline Program includes Informal Education & Public Outreach, Precollege, and Higher Education program elements whereas the Workforce Development Program is directed only at Higher Education. Examples of STEM Pipeline Projects include:

- Partnerships with informal education<sup>4</sup> organizations (e.g. science centers and museums) to:
  - Engage and educate students, educators and the general public on aerospace-specific STEM content areas. Includes providing your own aerospace-related content expertise as well as drawing from NASA lesson plans and classroom activities<sup>5</sup>.
  - Provide STEM experiential learning opportunities using an inquiry-based/project-based learning approach.
- Partnerships with organizations on your campuses that focus on encouraging underrepresented precollege students (minorities & women) to select STEM careers.
- Partnerships with Colleges of Education to support new and/or revised STEM courses targeted to College of Education students (i.e. STEM courses for non-STEM majors) and involvement of STEM subject-matter experts with College of Education workshops.
- Professional Development opportunities targeted at middle-school in-service educators.
- Precollege and Higher Education STEM Challenges<sup>6</sup>—creative applications of NASA-related STEM that encourage learners to demonstrate knowledge of STEM while enhancing innovation, critical thinking, and problem solving skills.
- Higher Education curriculum development and dissemination with increased participation of community colleges.

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<sup>4</sup> For Informal Education / Public Outreach, the metrics used to determine the success of your project include:

- a. Number of visits to any websites set up for your project,
- b. Numbers of General Public and student participants,
- c. Production of articles and features in the media (remember to state your project is sponsored by the California Space Grant and NASA),
- d. Attendance at any community projects, and
- e. Participant testimonials regarding your program.

<sup>5</sup> For an example of NASA lesson plans and classroom activities, please visit:

[http://www.nasa.gov/audience/foreducators/Alpha\\_index.html](http://www.nasa.gov/audience/foreducators/Alpha_index.html)

<http://www.nasa.gov/audience/foreducators/5-8/index.html>

<http://www.nasa.gov/audience/foreducators/9-12/index.html>

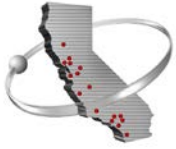
<http://www.nasa.gov/audience/foreducators/spacelife/home>

<sup>6</sup> For an example of STEM Challenges, please visit:

<http://www.nasa.gov/offices/education/programs/national/summer/NASASTEMchallenges/main>

<http://ipp.gsfc.nasa.gov/optimus>

<http://www.nasa.gov/roverchallenge/home/index.html>



**Project Reporting:**

Principal Investigators (PIs) for awarded proposals will be expected to:

- Have each student involved in the project fill out the CaSGC awardee form at:

<https://www.surveymonkey.com/r/2016-17WorkDevSTEMPipeAwardeeForm>

We recommend making this a condition before providing funding to the students. The CaSGC office will work with you to inform you which students from your campus have filled out the form.

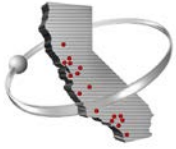
- Fill out the relevant project report form at: [http://casgc.ucsd.edu/?page\\_id=2446](http://casgc.ucsd.edu/?page_id=2446) in response to our request for performance data for the NASA Office of Education Performance Measurement (OEPM) System. Not all forms on this webpage will be required. We expect to request this data in late spring 2016.
- Send a financial report at the end of the project showing all expenses made against the award; total expenses should equal the award amount. Can be in the form of a spreadsheet or pdf.

**Proposal Submission:**

- This opportunity does not require official submission through a university contracts & grants office. The CaSGC STEM Pipeline Program will be handled entirely within the CaSGC organizational structure. However, if your university requires submission through a contracts & grants office or similar entity, please adhere to those requirements.
- This CaSGC STEM Pipeline Program is open to any faculty at current California Space Grant affiliate institutions, however proposal submission must be through the affiliate Campus Director. For a list of affiliate institutions and affiliate Campus Directors, please visit the following link: [http://casgc.ucsd.edu?page\\_id=27](http://casgc.ucsd.edu?page_id=27).

**Funding Requirements:**

- As with all Space Grant Funds, no indirect costs are allowed and funds may only support students/faculty/staff that are U.S. citizens.
- Student awards from this grant may be no more than \$2,000 per student.
- A detailed budget justification must be included in your proposal to receive funding under this program.
- No equipment, food, or clothing may be purchased with Space Grant funds under this solicitation; remaining funds may be sought from other industry, government, or community sources.
- Funds for this opportunity should be spent by the end date of our NASA grant: 7/5/2017. If the CaSGC no cost extension request is approved by NASA this date may be extended. It would be prudent, however, to aim to complete expenditures by the current grant end date.



**Proposal Elements:**

- 1) Summary Information submitted in our Survey Monkey data collection form. This form will collect your proposal abstract and fiscal contact information. Please do not neglect to fill it out; proposals submitted without completion of the form may not be evaluated:

[https://www.surveymonkey.com/r/2016-17\\_Affiliate\\_Proposals](https://www.surveymonkey.com/r/2016-17_Affiliate_Proposals)

- 2) Cover Page: Include proposal title, principal investigator name and contact information.
- 3) Proposal Main Body—Includes:
  - a) Abstract (as submitted online)
  - b) Background
  - c) Proposal goals
  - d) Implementation plan, including interdisciplinary teaming
  - e) Plans to encourage diversity & inclusion
  - f) Description of matching resources
  - g) Evaluation plan
  - h) Plans for dissemination of results & documenting quantitative outcomes.

This section must be brief, five pages or less. Projects seeded by these CaSGC funds must meet the rigorous standards of evaluation and reporting associated with the National Space Grant program.

- 4) Detailed Budget Breakdown & Justification: Space Grant funds may only account for a part of the total budget of the project. Total budget may include a portion of PI's salary to show matching funds applied to the project. Projects will only be funded up to \$8,000. Proposals that include a community college partner will be funded up to \$10,000. Budget must delineate funds requested from CaSGC and funds that will be applied as matching. There should be a clear correlation with the Proposal Main Body. Two pages or less for this section.
- 5) A brief summary of the outcomes of your past California Space Grant STEM Pipeline projects. Please include number of students involved, diversity statistics, partners, publications, outreach, and use of a multiplier approach (if applicable) where funded students reach out to a larger number of unfunded students. Two pages or less for this section.

**Proposal Evaluation Criteria:**

- Originality
- Project Outcomes, Documentation, and Dissemination of Results
- Interdisciplinary Teaming
- Diversity (Individuals or Organizations)
- Matching Resources
- Budget Justification
- Past Project Performance (as described in element number 5 above)

**After completing the Survey Monkey form<sup>7</sup>, please submit proposals via email to:**

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<sup>7</sup> [https://www.surveymonkey.com/r/2016-17\\_Affiliate\\_Proposals](https://www.surveymonkey.com/r/2016-17_Affiliate_Proposals)