

Dear STEM Education Colleague,

The Student Spaceflight Experiments Program was designed as a model U.S. national STEM education initiative to inspire and engage the next generation.

SSEP provides truly authentic STEM education experiences with seamless integration across STEM disciplines, and cross-disciplinary connections to reading, writing, communication, and art and design. And it is garnering very significant media attention at the local and national level.

We are truly inviting YOUR students to be real researchers, and your community to be part of America's Space Program – in fact we want you to have your OWN Space Program.

To give you a sense of the embraced pedagogical approach when we created this program, you might want to share the following 3-minute Symphony of Science music video with interested staff. It is from my Keynote Address on STEM education in the 21st century, delivered at the 2011 National Science Teachers Association (NSTA) National Conference, and the philosophy it contains reflects SSEP:

<http://www.youtube.com/watch?v=haUj3qUncOs>

**SSEP TOP-LEVEL STEM AND COMMUNITY-ENGAGEMENT OBJECTIVES:**

1. For school districts, even individual schools, SSEP provides an opportunity to implement a systemic, high caliber STEM education program tailored to local curricular need, which immerses a community of grade 5-12 students in every facet of authentic research. The program is designed to reflect the Next Generation Science Standards.
2. The program is designed to inspire and engage the next generation of scientists and engineers, and is accomplished by providing each participating community their own very real Space Program. This is not a simulation.
3. More broadly, SSEP is about a commitment to student ownership in exploration, to science as a journey, to the joys of learning, and to science as an interdisciplinary tapestry that extends to vital written and oral communication skills, and design.
4. The program uses a Community Engagement Model for STEM Education, which can extend to all K-12 students, their teachers, and families, and generate significant excitement across the community.

**PROGRAM OVERVIEW:**

SSEP Mission 5 to ISS will provide each participating community a real microgravity research mini-laboratory capable of supporting a single microgravity experiment, and all launch services to fly the mini-lab to ISS in Spring 2014. Mirroring how professional research is done, student teams across the community design their own microgravity research programs, and submit real but grade level appropriate research proposals. Proposals from across the community go through a formal review process, and the community's flight experiment is selected by a Review Board meeting at the Smithsonian National Air and Space Museum, a National Partner on SSEP. The design competition - from program start, to experiment design, to submission of proposals by student teams – spans 9 weeks from September 9 to November 11, 2013. Content resources for teachers and students support foundational instruction on science in microgravity and experiment design.

This is a true science immersion program where students are asked to be real scientists and go through the exact same process as professional researchers vying for research resources and research opportunities.

SSEP addresses a wide range of biological and physical science disciplines, including: seed germination, crystal growth, physiology and life cycles of microorganisms (e.g. bacteria), cell biology and growth, food studies, and studies of micro-aquatic life. Students design experiments to the technology and engineering constraints imposed by a real research mini-lab and flight operations to and from Earth orbit.

**MILESTONE DATES:**

9-Week Experiment Design Phase in Your Community: September 9 to November 11, 2013.

Selection of Your Community's Flight Experiment: December 12, 2013 Ferry Flight to ISS: Spring 2014  
Ferry Flight Return to Earth: expectation is Launch + 6 weeks National Conference at Smithsonian in Washington, DC: early July 2014

**TIME CRITICAL:**

ALL INTERESTED COMMUNITIES ARE ASKED TO READ THIS EMAIL CAREFULLY AND INQUIRE **BY JUNE 30, 2013**; schools and districts need to assess interest with their staff and, if appropriate, move forward with an Implementation Plan.

**DEADLINE FOR COMMUNITIES TO BE ABOARD (approved Plan and funded):**

**September 4, 2013.** To meet this deadline, the Center needs to begin working with interested communities as soon as possible.

**HERITAGE:**

Since program inception in June 2010, there have been six SSEP flight opportunities: SSEP on STS-134 and STS-135, which were the final flights of Space Shuttles Endeavour and Atlantis; and SSEP Missions 1 through 4 to ISS.

To date, 60 communities have participated in the program. Not yet counting Mission 4 to ISS, a total of 17,670 grade 5-14 students were fully immersed in microgravity experiment design and proposal writing, and 4,347 experiment proposals were submitted by student teams. To date, 14 communities have participated in 2, 3, or 4 flight opportunities, reflecting the sustainable nature of the program.

Latest news: the payloads containing the 28 Mission 3 and Mission 4 flight experiments, one experiment selected for each of 28 participating communities, are scheduled to launch this Fall on SpaceX-3 Dragon out of Cape Canaveral Air Force Station adjoining Kennedy Space Center in Florida, and aboard the historic flight of Orbital Sciences D-1 Cygnus out of the nation's new spaceport the Mid-Atlantic Regional Spaceport (MARS) in Virginia. Community delegations will be in attendance. (YES THIS IS VERY REAL.)

The initiative was also highlighted last year at the 2nd Annual White House Science Fair event.

**NEXT STEPS - WE ARE ON A FAST TRACK:**

1. CAREFULLY read the Student Spaceflight Experiments Program home page (link below), which includes links to all aspects of the program, including program operations, how to participate, profiles of

the 60 communities participating to date, and summaries of all selected flight experiments. Also below are the links to the extensive media coverage, and program testimonials from community leadership.

2. Contact us via the SSEP home page, or call me directly at: 301-395-0770

SSEP HOMEPAGE: <http://ssep.ncesse.org>

TESTIMONIALS: <http://ssep.ncesse.org/communities/in-our-own-words/>

MEDIA COVERAGE: <http://ssep.ncesse.org/communities/in-the-news/>

Be part of history by making history

**CONTACT:**

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**SSEP STRATEGIC PARTNERS:**

National Center for Earth and Space Science Education Arthur C. Clarke Institute for Space Education  
NanoRacks, LLC

**SSEP NATIONAL PARTNERS:**

Smithsonian National Air and Space Museum Center for the Advancement of Science in Space (CASIS)  
Subaru of America, Inc.

This on-orbit, real research opportunity for students is enabled through NanoRacks LLC, which is working in partnership with NASA under a Space Act Agreement as part of the utilization of the International Space Station as a National Laboratory.