

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Innovative Space Education And Outreach (5)

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A NATIONAL PARTNERSHIP-BASED SUMMER LEARNING INITIATIVE TO ENGAGE
UNDERREPRESENTED STUDENTS WITH SCIENCE, TECHNOLOGY, ENGINEERING, AND
MATHEMATICS

Abstract

NASA has historically provided traditional programs in elementary and secondary, informal, and higher education that involve students and educators with science, technology, engineering, and mathematics (STEM) and improve overall scientific literacy. In January 2010, the national Educate to Innovate campaign was announced with a call to action for U.S. government agencies, companies, and education institutions to advance STEM nationwide by increasing STEM literacy, improving student performance ratings, and expanding STEM education and career opportunities for underrepresented groups.

In response, NASA saw the need for a new education program for nontraditional audiences that also focused on public-private partnerships and nationwide participation. NASA recognized that summer break is an often overlooked but opportune time to engage youth in STEM experiences, and elevated its ongoing commitment to the cultivation of diversity. The Summer of Innovation (SoI) is the resulting initiative that uses NASA's unique missions and resources to boost summer learning, particularly for students who are underrepresented, underserved and underperforming in STEM.

NASA launched the SoI pilot in June 2010. SoI works to counter the "summer slide" (loss of academic skills over the summer); it is a multi-faceted effort designed to improve STEM teaching and learning through partnership, multi-week summer learning programs, special events, a national concluding event, and teacher development. SoI features strategic infusion of NASA content and educational resource materials, sustainability through STEM Learning Communities, and assessments of effectiveness of SoI interventions with other pilot efforts.

During the pilot, sites reported successful student and teacher activities notwithstanding the challenges posed by the pilot's ambitious timeline. Over 150 thousand people, including a large number of direct students, were engaged at various levels and over 250 activities were executed nationally during the summer. Teachers established relationships with university faculty, received training on use of NASA content, and made plans to integrate NASA content in their classrooms during the school year. In addition to these accomplishments, SoI helped to expand the availability of partnerships/resources in rural areas and underserved communities.

This paper examines the inception and development of the Summer of Innovation project, including achievements and effectiveness, as well as lessons learned for future efforts. We also discuss the communications and management methodologies developed to support the project. The paper summarizes SoI as a model for an innovative summer learning project, a national exploration campaign, and a national

space agency's flagship education and outreach vehicle that is supported across its management, missions, and infrastructure.