

NASA MUREP Aerospace Academy (MAA)

Award Year: 2018

Title: MUREP Aerospace Academy for the Southwest: MAA Southwest

Organization: University of Texas, El Paso

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Summary: "The overarching goal of the MUREP Aerospace Academy for the Southwest (MAA Southwest) at the University of Texas at El Paso (UTEP) is to inspire and prepare underserved K-12 students in the region for advanced studies and careers in STEM, particularly, aerospace-related fields. MAA Southwest at UTEP engages an underserved and economically disadvantaged Hispanic population who are critically underrepresented in STEM disciplines. Prior to NASA MUREP investment, the southwest border region, home to more than \$1.4 million (80%+ Hispanic) residents had limited awareness and opportunity in aerospace careers. MAA Southwest is a 2014 MAA grantee that engaged and prepared more than 3000 direct participants, 3000 K-12 students and 135 in-service teachers during the last funding cycle (2015-2018). Additionally, it has engaged thousands more non-direct participants, including both adults and students, at educational and community outreach events.

The intertwined objectives of the proposed effort of MAA Southwest involve expansion of its past success to severely underserved areas within the outskirts of El Paso County (Fabens, Clint, San Elizario, and Fort Hancock) as well as the Ysleta del Sur Pueblo (Tigua Pueblo) Tribe. MAA Southwest will form a collaborative alliance with the United Way and Lockheed Martin Space Systems to scale and replicate the best practices at local, regional, and national levels.

Project Objectives:

Objective 1: Establish Out of School Time NASA Mission Focused STEM Programs for Underserved and Underrepresented Audiences

Objective 2: Conduct NASA-themed outreach events and activities to provide continuous engagement of families, parents, and caregivers:

Objective 3: Develop an intense collaboration with After School Network, Information Learning Providers, and NASA Prime Contractors for scalability and sustainability

MAA Southwest program will succeed in leveraging an established model that has proven its value in reaching many underrepresented youths within our community. Since inception in 2015, the MAA Southwest program has continued to expand through continuous quality improvements and by implementing feedback attained from students, parents, teachers, and community stakeholders. A specific goal of this work involves the implementation of three new dedicated tracks of study that will empower young thinkers to explore research, experimentation, and the engineering design process through a 36-hour curriculum that will culminate in a capstone project appropriate for the age group of the student population. The three tracks of study include:

- Earth Science: High-Altitude Weather Balloons and Scientific Payload Development [Grades K-4]
- Aeronautics and Earth Science: Unmanned Aerial Systems (UAS) aka Drones, Flight, Mission Planning, and Payload Development [Grades 5-8]
- Space Exploration and Space Science: Small Satellite aka CubeSat Systems, Mission Planning, and Payload Development [Grades 9-12]"