MUREP Aerospace Academy (MAA)

Institution: Florida Atlantic University
Title: MAA Experiential Learning Opportunities for South Florida Underserved High School Students
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This NASA Minority University Research and Education Project (MUREP) Aerospace Academy (MAA), led by Florida Atlantic University (FAU) in partnership with Florida Memorial University (FMU) (a designated Historically Black University in southern Florida) will provide STEM Experiential Learning Opportunities Curriculum, Engagement opportunities with STEM Professionals and Settings, College and Career Readiness Opportunities, and Family Involvement to underrepresented high school students. FAU has been officially designated as a Hispanic Serving Institution (HIS) by the U.S. Department of Education Office of Postsecondary Education. This MAA site will have active participation of two high schools - Boyd Anderson High School and Lake Worth Community High School serving predominantly Black and Hispanic student population respectively. FAU has already established a partnership plan and engagement opportunities with the STEM ecosystem- South Florida Water Management District (SFWMD), Lockheed Martin (LM), Aerojet Rocketdyne (AR); NASA Centers- Kennedy Space Center (KSC), Glenn Research Center (GRC), Ames Research Center (ARC), Florida Space Grant Consortium (FSGC); and Gangals nonprofit Foundation.

FAU MAA project will recruit and engage a total of a minimum of 100 high school student participants per year from the two schools-Boyd Anderson High School (Broward School District) and Lake Worth Community High School (Palm Beach School District). The project will offer a minimum of 60 hours of engagement for students in the MAA program content each year including experiential learning opportunities, field trips, study tours, engagement with STEM professionals, and near-peer mentoring. The FAU MAA research team and the partnering institution Florida Memorial University (HBCU) have identified NASA Theme Option 1: Earth Observations and Theme Option 3: Aeronautics- Acoustic Damping and the Corresponding NASA Capstone Activities to develop the STEM Experiential Learning Opportunities Curriculum. Theme Option 1 has the NASA Mission Connections: Science Mission Directorate, NASA Earth Science and Earth System Observatory. Theme Option 3 has the NASA Mission Connections: Aeronautics Research Mission Directorate, X-59 Quiet Supersonic Technology (QueSST), and X-57 Maxwell all-electric experimental aircraft. The FAU Research Team had already detailed discussions with the Science Teachers as well as the senior administrators from the two high schools – Boyd Anderson High School in Broward School District and Lake Worth Community High School in Palm Beach School District in the design of the culturally relevant curriculum which would be embedded into the existing lesson plans delivered in the two high schools. The newly created curriculum will have the ability to validate the underrepresented high school students' language, foster a positive self and group identity, and help them work through a STEM vision for their lives which would aid students' empowerment and increase the potential for them to do well. The FAU MAA will provide opportunities for students to choose STEM topics for investigation that are important to their community and culture with connections between traditional cultural practices and STEM practices. FAU MAA project will engage

students in technology rich settings, provide opportunities to prepare students for college and career readiness, engagement with near-peer mentors, student research presentations, and family engagement. FAU MAA has an established partnership with a local non-profit organization Gangals Organization to sustain key aspects of the MAA activities beyond the period of NASA award funding. The evaluation methods in the FAU MAA project will include both formative and summative assessments and are designed following guidelines for best practices in project evaluation.