

MUREP Aerospace Academy (MAA)

Institution: Hartnell Community College District

Title: Hartnell College MUREP Aerospace Academy Project

PI: Jennifer Moorhouse

Hartnell College's MUREP Aerospace Academy (MAA) will align with NASA's goals and objectives by providing opportunities for high school students from groups traditionally underserved and/or underrepresented in STEM fields to engage in STEM experiential learning opportunities and other programming. These activities will build students' NASA-specific STEM content knowledge and skills, STEM identity, and college and career readiness.

This MAA will support NASA's Strategic Objective 4.3, "building the next generation of explorers (engaging students to build a diverse future STEM workforce)," by: 1) Creating unique opportunities for a diverse set of students to contribute to NASA's work in exploration and discovery; 2) Building a diverse future STEM workforce by engaging students in authentic learning experiences with NASA's people, content, and facilities; and 3) Attracting diverse groups of students to STEM through learning opportunities that spark interest and provide connections to NASA's mission and work. Hartnell College serves a district that is majority Latinx, with large populations of low income and educationally disadvantaged families.

A total of 330 eligible students will be recruited and enrolled over three years for this MAA program from Hartnell's feeder high schools, grades 9-12. Overall, students at these schools are predominantly Latinx from low-income families with limited educational attainment. Students have low proficiency rates in mathematics, science, and English language arts. Hartnell College has been very effective in recruiting, enrolling, and matriculating a diverse student body that reflects the district the College serves.

The NASA MAA project will be organizationally placed in the Division of Science, Technology, Engineering, and Mathematics (STEM) at Hartnell College under the supervision of Sharon Albert, Interim Dean. The principal investigator (PI) will be Dr. Jennifer Moorhouse, mathematics faculty at Hartnell. Hartnell's MAA will deliver 108-112 hours of engagement for participating students each year, including: experiential learning opportunities; field trips; tours; engagement with STEM professionals; near-peer mentoring; family engagement; and college and career readiness activities.

Hartnell has established a broad coalition of MAA partners in the local/regional STEM ecosystem. By category, the partners include and will provide: a) High School partners: student access for outreach and recruiting, program instructors, and facilities, b) Postsecondary partners: college readiness, college tours, engagement, college exploration opportunities, and near peer mentors; c) STEM Business/ Industry partners: career readiness, engagement with STEM professionals, experiential learning, guest speakers, and mentors; d) Non-Profit Community partners: experiential learning, college readiness, career exploration, and facilities access; e) Government (including NASA Ames): career readiness, engagement with STEM professionals,

tours, experiential learning; and f) Private Foundation partners: MAA program sustainability and community networking contacts.

Hartnell's MAA program evaluation will utilize appropriate quantitative and qualitative measures in formative and summative processes to gauge the results of the program in terms of student success, each project objective, and for making program adjustments and improvements. Hartnell College previously operated a K-12 MAA from 2019-2022, which served students who were 80% underrepresented. The program more than doubled its enrollment to over 4,700 by year three and has resulted in increased underrepresented STEM enrollments at Hartnell.