



## FY23 Strategic University Research Partnership (SURP)

### JPL Systems Engineering Class Collaboration with the ASU Space Works Program

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#### Objectives

The objective of the JPL and ASU collaboration is to bring industry relevant experience to the students participating in the ASU Space Works program. The ASU Space Works program itself intends to teach students the ability to work through the processes of mission design, fabrication, and testing of space systems. This work is done in the ASU Space Works Instrument Incubator, a 3,000 sq. ft. facility of engineering maker space that has all of the software and hardware to prepare students for the present workforce needs.



#### Background

The JPL-ASU Space Works collaboration serves to enhance the ASU Space Works courses goals of student workforce development. The ASU Space Works courses' leverages academic and industry partners to develop course curriculum in a way that the content of the program is directly rooted to evolving industry needs. JPL provided a series of Systems Engineering lectures to both the ASU Space Works 1 and 2 courses. These Systems Engineering related lectures will provide students the knowledge to implement industry standard Systems Engineering practices in the managing of their course project's subsystems, higher level systems, and system interfaces.

#### Approach

Course will focus on:

- Systems Engineering Traits
- Project Life Cycle: Understanding of different project phases
- Requirement Verification & Validation

Plan JPL-ASU Trip to enable:

- Onsite student to professional engineer/scientist interaction
- Speakers covering the bridge between coursework/ teachings and JPL applicability
- Student professional development and networking opportunity

#### Results

- No lectures nor trips to JPL planned because JPL hired ASU's Space Works Coordinator
- JPL discussed collaborating with ASU Space Works as an early adopter of Frontgrade's Coyote flight computer and F Prime flight software
- ASU expressed interest in the Coyote flight computer

#### Significance/Benefits to JPL and NASA

JPL has already identified ASU as a strategic university for recruiting and also for collaboration. A synergy between JPL, ASU and JPL's industrial partners will accelerate incorporating new technologies in JPL flight missions. Additionally, ASU can train its students to be new hire candidates with experience using JPL-developed technologies.

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#### Publications:

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