

Rocket Project

UCI Samueli School of Engineering

Advisors: Professor Mark Walter & Professor Ken Mease

BACKGROUND

- First liquid propellant rocket at UC Irvine
- Preparing engineers for aerospace industry

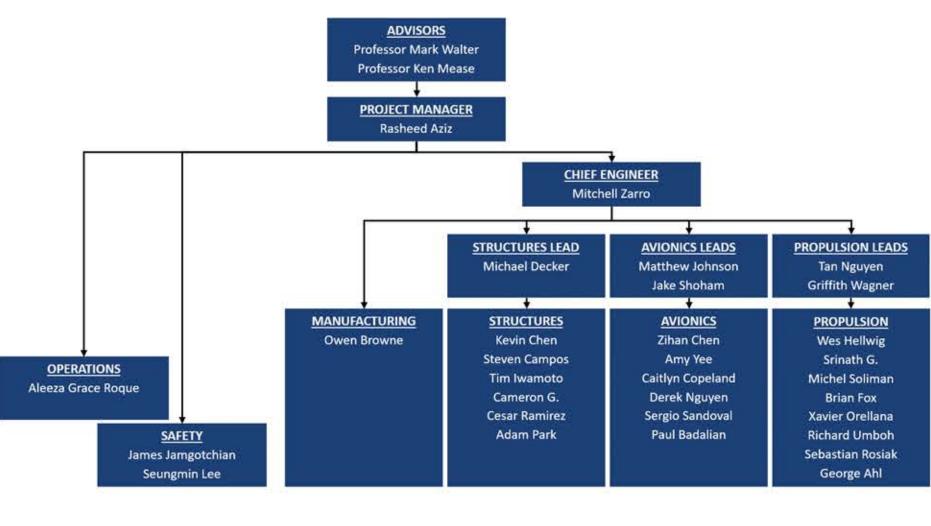
GOALS

- Conduct successful static test fire
- Win the Base 11 Space Challenge
- Be the first university to launch a liquid fueled rocket into space (Karman Line)

OBJECTIVES

- Static Test Fire Thrust: 1300 lbs
- Test Stand with Data Collection System
- Base 11 Rocket Altitude: 100 km
- Dynamic Flight Control System
- Single Stage Liquid Engine Design
- Full Rocket Structure Design

TEAM STRUCTURE

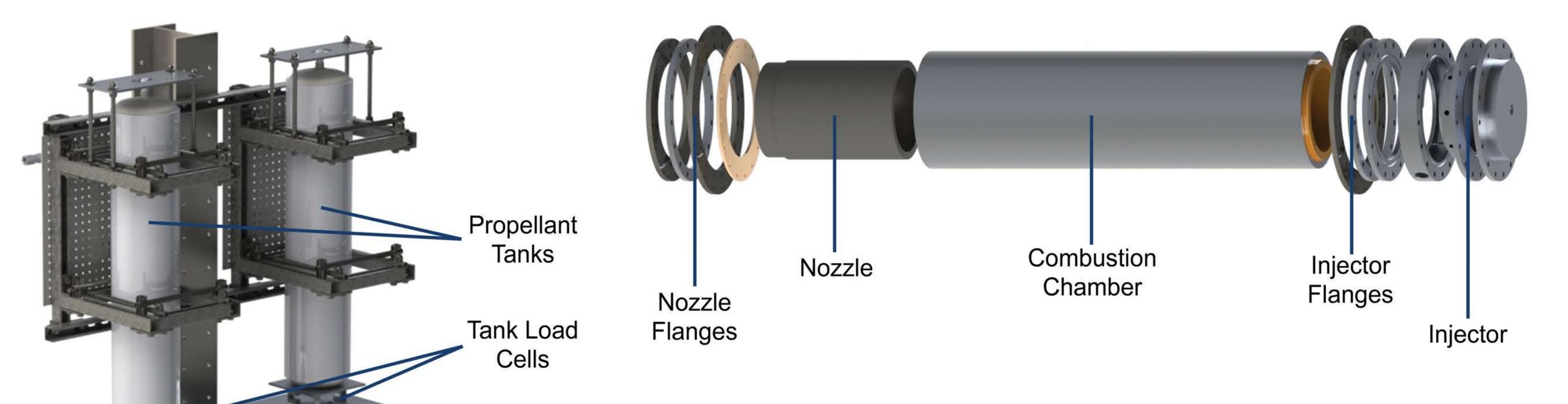


TIMELINE

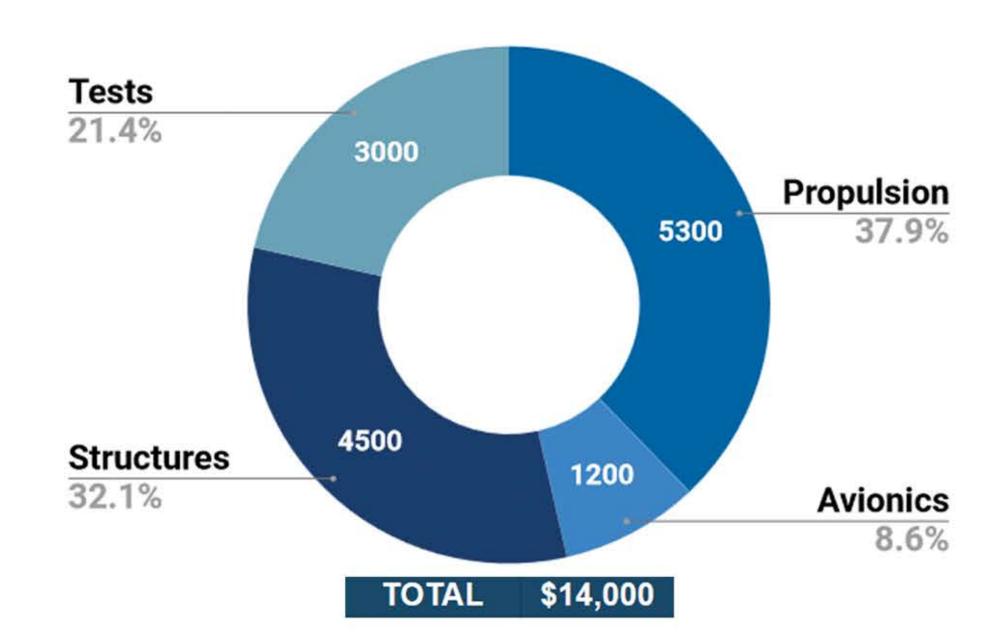
Oct. 2018 Mar. 22, 2019 Nov. 2018 Dec. 2018 Jan. 2019 Feb. 2019 Geometry, Models Manufacturing & **Conduct Static** Data Analysis & Theoretical Design Base 11 Phase 1 & Simulations **Theoretical Design** Test Fire

PROGRESS

- Finalized sensor & actuator statements of work
- Completed engine mount retrofit
- Verified injector, combustion chamber, and nozzle parameters
- Currently manufacturing test stand and engine



STATIC TEST FIRE BUDGET



Lower

Plumbing

Thrust Load

Cell

Engine Mount

Injector Plate

Liquid Methane Dome

Liquid Oxygen Ring Manifold