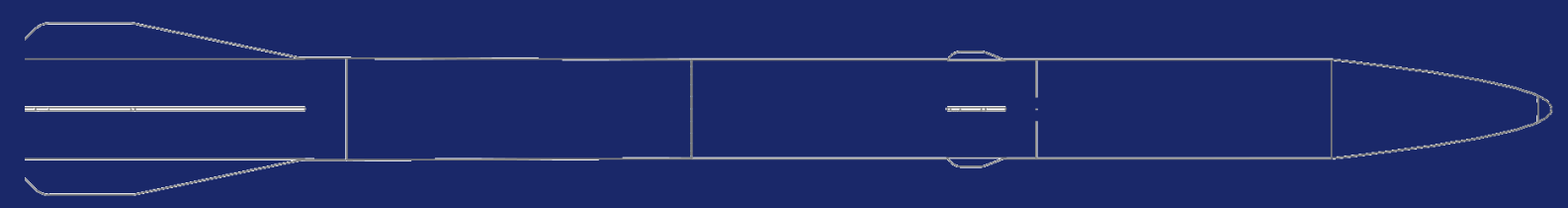




UCI ROCKET PROJECT

Advisor: Professor Mark Walter



BACKGROUND

- 50+ undergraduate engineering and science students pursuing liquid and solid rocketry
- Developing skills and experience needed to excel in the airplane, launch vehicle, and spacecraft industries
- Develop an alumni network throught the aerospace industry, in companies such as Maxar, Raytheon, NASA, Boeing, and many more to come

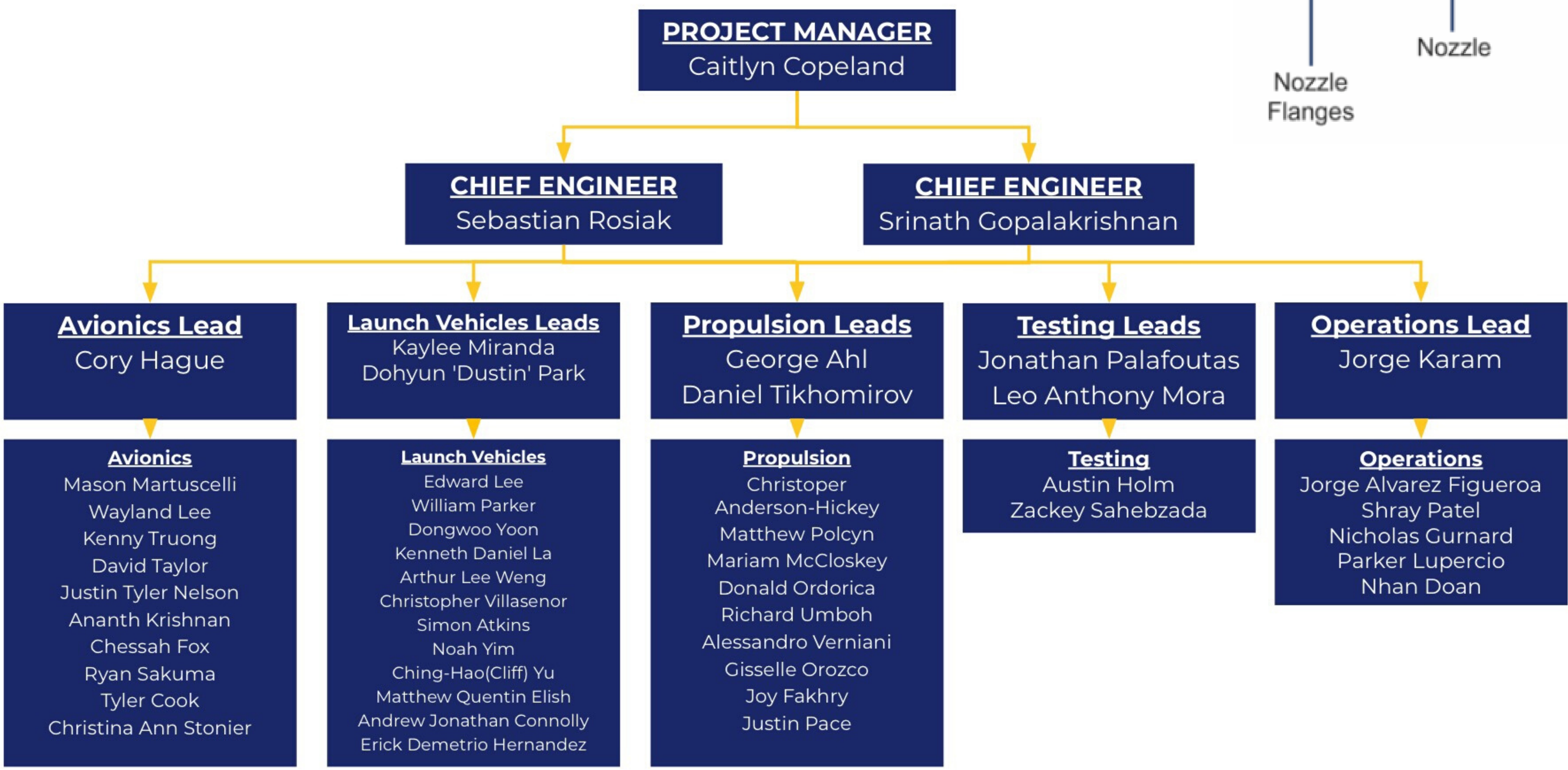
GOALS

- Launch a liquid bipropellant rocket to 45,000 feet
- Break the altitude record for collegiate liquid rocketry
- Successfully fire the most powerful methalox rocket engine developed by undergraduate students

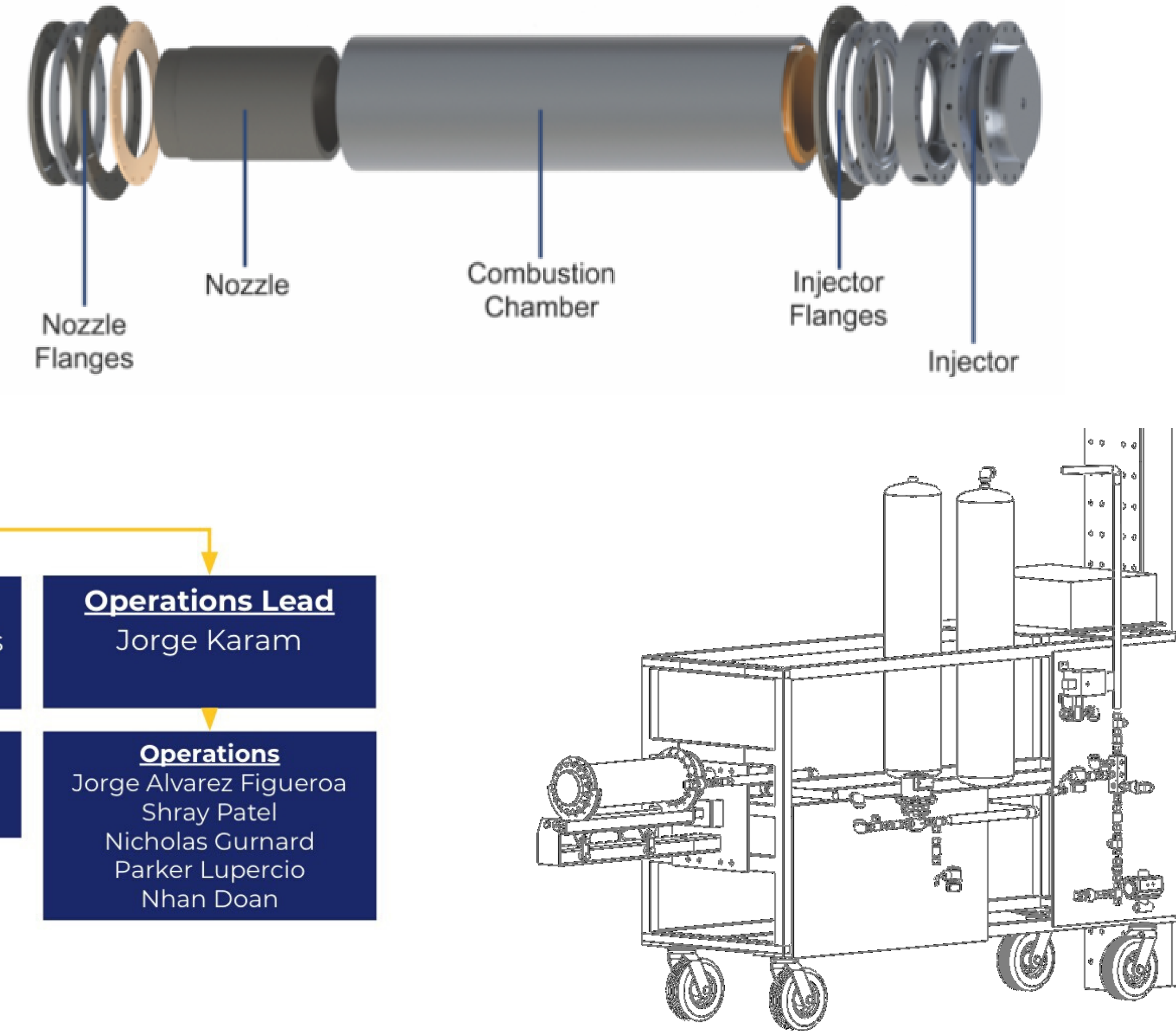
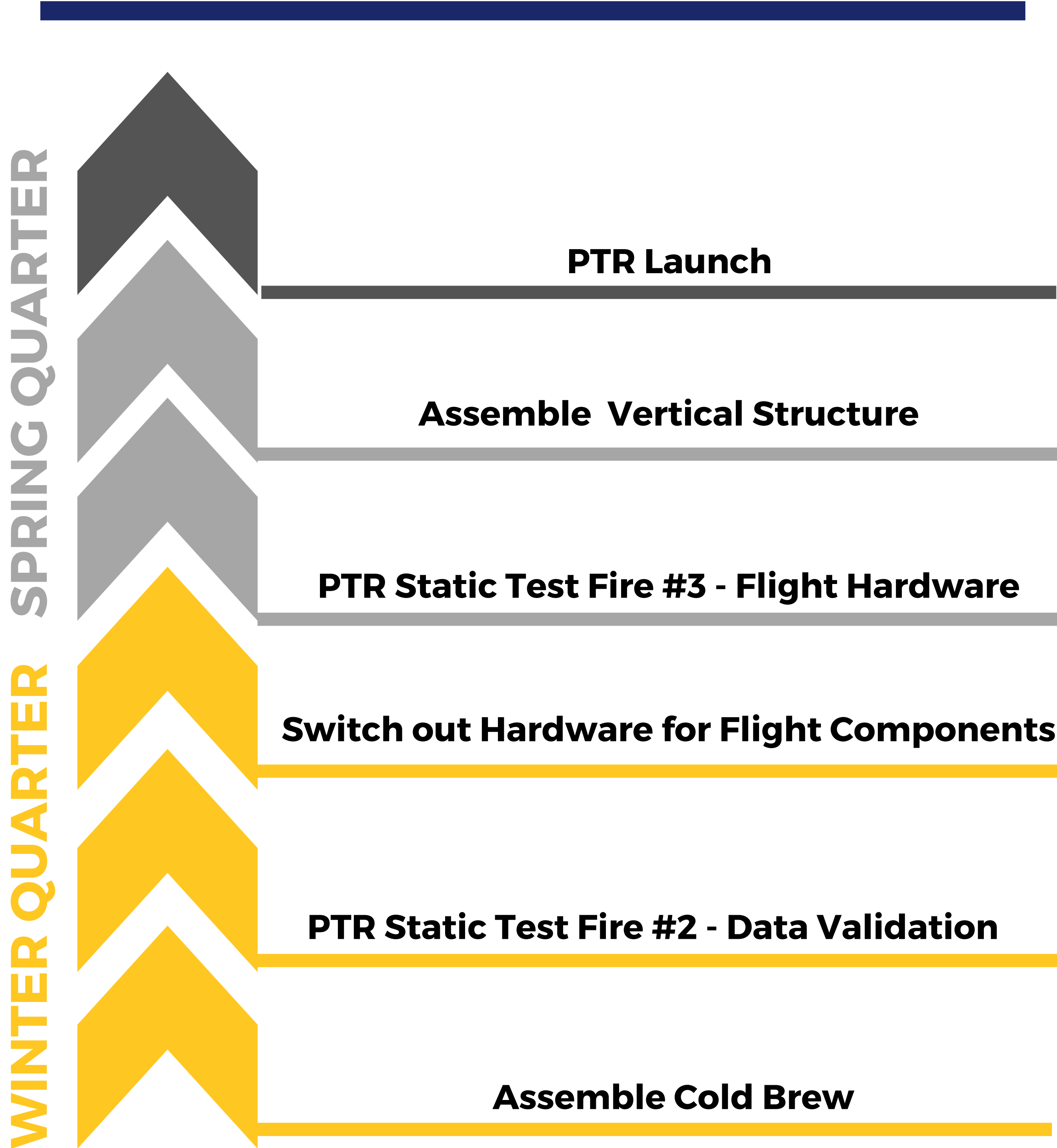
OBJECTIVES

- Design and manufacture a modular test stand for liquid bipropellant rocket engines up to 10,000 lbf
- Reliably manufacture and assemble multiple PTE engines for multiple test fires and launch
- Design lightweight launch vehicle structure to launch a 2.2 lb payload to 45,000 ft and recover safely
- Develop test stand data acqusition and control system
- Develop launch vehicle avionics system for valve acquisition, data collection, and telemetry

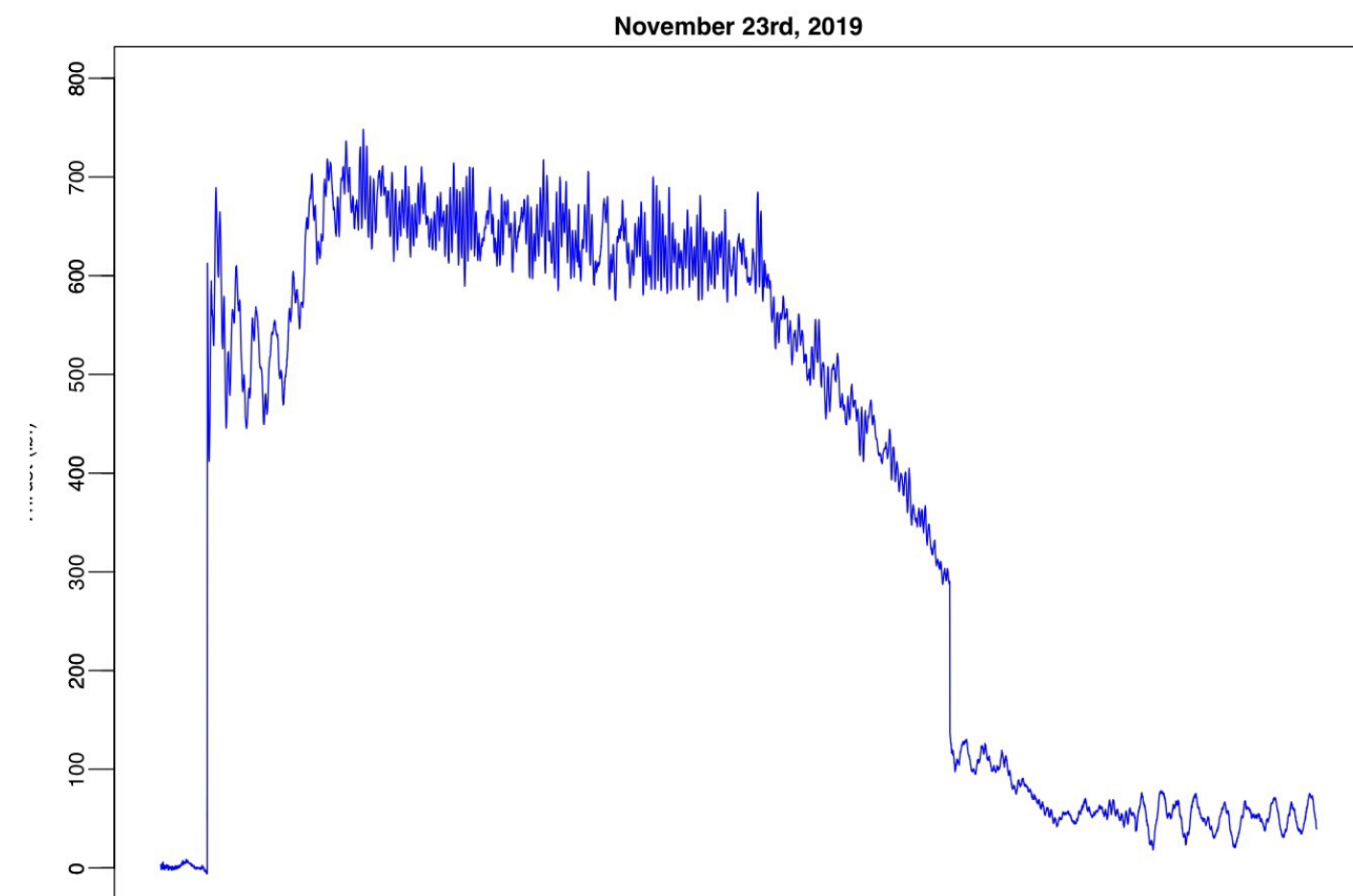
TEAM STRUCTURE



TIMELINE



PROGRESS



- Conducted UCIRP's first static test fire (STF1) producing an average of 750 lbf of thrust for 3 seconds
- Redesigned and assembled an improved test stand to improve fluid system design and test operations
- Redesigned test stand electronics to include new avionics bay, improved wiring, intuitive LabView VI, and manual control box
- Manufactured and purchased components to assemble multiple PTE engine for next two test fires
- Finalized critical design of launch vehicle structures, vehicle propulsion system, and recovery system
- Finalized design of ground support equipment and infrastructure associated with vertical test fire and launch

PRELIMINARY TEST ROCKET BUDGET

