The rocket utilizes a duel deployment method with the main parachute in the upper section and a smaller drogue chute in the booster section. The smaller parachute deploys at apogee and slows the rocket down to Mach 0.2 before deploying the main parachute at 1,500 feet. This stops the rocket from being carried off from the launch zone by the wind as it descends.

Members
Tristan Hieronymus
Paulo Chan
Jacob Waitman
Stephen Hahn
Daniel Griffith
Christian Phillips
Jenn Transue
Taylor Knight
Christopher Yanik
Richard Garcia

Other Universities Competing
Brigham Young University
Brigham Young University-Idaho
Ecole Polytechnique de Montreal
Embry-Riddle Aeronautical University-Daytona Beach
ETS Montreal
George Washington University
New Mexico Institute of Mining and Technology
Rensselaer Polytechnic Institute
Ryerson University
University of Arizona
And others

IREC-Intercollegiate Rocket Engineering Competition
IREC is a high-powered rocketry competition held in Green River, Utah annually every June. The competition consists of lifting a minimum of a ten-pound payload to an altitude of 10,000 ft. The team which reaches closest to the target altitude while making a safe recovery is granted bragging rights for the year. IREC also holds an advanced level competition that challenges teams to construct a rocket to hit 20,000 ft with a similar payload.

Payload-Arduino
The main component of our payload is a ten-pound lead puck created by mixing epoxy with lead shot and casted in a mold. To supplement our payload we will be including an assortment of sensors all connected to an Arduino microcontroller. This will allow us to record flight data like GPS coordinates, acceleration in different axes, and velocity. We will also be recording atmospheric data like temperature and humidity and plot it against altitude.

1. Nose Cone
The nose cone is an Intellicone and manufactured by public missiles. The nose cone is made of PVC and constructed with a payload bay for use with electronics or flight computers. We will be using the payload bay to adjust the center of mass with lead weights to ensure a stable flight.

Live Streaming Data
A high power antenna attached to our Arduino board will allow us to live stream data from the rocket during flight.

2. Parachute
The rocket utilizes a duel deployment method with the main parachute in the upper section and a smaller drogue chute in the booster section. The smaller parachute deploys at apogee and slows the rocket down to Mach 0.2 before deploying the main parachute at 1,500 feet. This stops the rocket from being carried off from the launch zone by the wind as it descends.

Motor-Propellent
Our rocket will use a 75mm Aerotech reloadable case to house a L1170FS motor. The case measures slightly longer than two feet and when loaded will weigh around ten pounds. The L1170 propellant has a burn time of 3.67 seconds and provides 4183 Newton Seconds of total impulse. The reloadable case allows us to cut down on costs by building the motors at each launch and provides a larger variety. Should a more powerful motor be required.

3. Fins-Carbon Fiber
The fins were made by sandwiching sixteen layers of bi-directional weave carbon sheets under vacuum to create an eight-inch sheet. The sheets of carbon fiber were then cut to the proper shape using a band saw and made equal with a belt sander. The fins have a span of four inches and a height of between ten inches against the body tube and twelve inches from the base to the tip.