Questions for the G.R.I.T. Mission:

1. Q: How does studying human tissues on chips benefit *us?*
A: These chips benefit us as the public because they are finding the impact that acceleration and huge amounts of G-force are having on our bodies without actually harming a human. These data samples will help engineers and researchers design space suits that could allow humans to travel at even faster speeds. This would include commercial and tourism aspects of aerospace. Additionally, the data can help us learn more about the effects of microgravity and hypergravity. Finally, this data will benefit us as it will help medical researchers studying muscle atrophy.

2. Q: What is "gravitational response," and what does it mean?
A: The mission is measuring the gravitational response from the organ chips. This means when the sounding rocket enters hypergravity, it is experiencing extreme g-forces scaled up from what an astronaut would feel upon launch, or a fighter jet when performing certain maneuvers. Then, microgravity will be when the rocket is floating, weightless, before reentry. In conclusion, the organ chip will show responses due to different gravitational forces.

3. Q: Do you need to recover your payloads? How and where is the data being collected and/or studied?
A: The payload (singular) has to be recovered. Data on sounding rocket acceleration, atmospheric pressure, G-force, and velocity are all collected throughout the launch and are sent to ground stations using telemetry systems. Data taken from the chips (e.g. contraction data from muscle on a chip, bile production from liver) will be stored in onboard memory systems and will also be sent via telemetry. Post-studies will determine any significant changes in data; control data will also be taken of tissue chips beforehand for comparison.

4. Q: What kind of tissues are you sending and why?
A: We are sending three main types of tissues that include: eye tissue, liver tissue, and skeletal muscle. We chose these because they are known to be impacted most on astronauts because of changes in gravity, speed, and pressure. Additionally, these types of tissues are most responsive to decay, releasing certain ions in addition to providing observable signs of weakness.