



Higher Orbits

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Tallahassee teens' project wins national competition and will be developed for launch to International Space Station

Team Lotus will measure algae oxygen production to further study of energy production

Tallahassee, Florida — Feb. 8, 2020 — Three Tallahassee teens, Iyshwary Vigneswaran Warren, Lynthury Vigneswaran Warren, and Shikha Patel, will send algae to the International Space Station in hopes their findings help those studying climate change and future energy production. The three are Team Lotus, which won the [Higher Orbits Go For Launch!](#) event at the [Challenger Learning Center](#) in January 2020. Recently Team Lotus's project competed with other *Go For Launch!* event winners nationally for the opportunity to launch to space.

Higher Orbits is an educational nonprofit that uses space to promote STEM, leadership, teamwork, and communication. During *Go For Launch!* events, students experience the scientific process firsthand with astronauts, scientists, and engineers. Participants design mission patches and conduct hands-on collaborative activities for awards that culminate with a project intended for space. Teens experience science, technology, engineering, art, and math together.

"We wanted to know how space influences algae and photosynthesis," said Lynthury Vigneswaran Warren. "Would algae have more surface area in space and produce more oxygen? That information could benefit people in a lot of ways like studying climate change, pollution, and energy production."

Iyshwary and Lynthury Vigneswaran Warren are sisters from Florida High School. Iyshwary is now attending Stanford University in California. Lynthury is a junior in Florida State University School. Patel is a junior at James S. Rickards High School.

Higher Orbits teams collaboratively define and design projects that contribute to humans living in space and those bound by gravity. Judges evaluate projects that compete

against other *Go For Launch!* teams nationwide to determine a winning project launched to space.

“I’m thankful for the wonderful people who encouraged me along the way,” said retired astronaut Greg “Box” Johnson. “Influencing kids early and getting them excited about space and science is important.”

“We were all equals in this project,” said lyshwary, who also enjoyed working with retired astronaut Greg Johnson. “I like working on that level. The best work is done when you respect each other.”

Team Lotus appreciated Johnson’s experience and insight. lyshwary narrowed the plant choice to an algae called *chlorella vulgaris*, while her sister lynthury determined how to keep the algae alive and invigorate algae once in space. Shikha determined the Cube-Lab’s hardware integration to maintain algae health and record growth, as well as camera and light locations and water-tight elements.

“I was really concerned about working with a 10-centimeter box, said Shikha. “It was challenging because we had to make sure there was space so the algae could grow. You need water, but you can’t get anything wet. I made diagrams to make it all work.”

A dozen Higher Orbits experiments have flown to space and others are in development. Ten projects used microgravity and conditions aboard the International Space Station to measure outcomes, such as production of an antioxidant produced by stressed algae and radiation-absorbing fungi that are now being studied for other applications. A few projects were sub-orbital. [Northrop Grumman](#), [BRPH](#) and [Holland & Hart](#) sponsored Tallahassee’s *Go For Launch!* event. With the help of CubeLab-building partner [Space Tango](#), more projects are being prepared for launches in the coming year.

“Although many of our 2020 *Go For Launch!* events are postponed until late 2021, recent online-learning needs nationwide result in an even greater need for in-person team-building opportunities when we can safely come together again,” said Michelle Lucas, founder and president of Higher Orbits.

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About Higher Orbits:

Higher Orbits is a 501(c)3 non-profit that uses spaceflight to promote science, technology, engineering, art and math while strengthening leadership, teamwork, and communication skills. Higher Orbits conducts *Go For Launch!* and *Go For Launch! Full STEAM Ahead* events across the country and partners with companies and organizations to achieve educational goals that launch the next generation of scientists, researchers and creators. To learn more about 2021’s events and inspire the next generation of STEMists, STEAMists and explorers, visit HigherOrbits.org.