



## 2023 Space Ag Conference Student Workshops

Prior to the Space Ag Conference, Grand Farm, the University of North Dakota, North Dakota State University, and the National Center for Autonomous Technology and TrainND Northwest will host a series of educational activities for high school students. These free workshops will take place on UND's campus and are open to high school students from around the region.

### Goal

- Excite the next generation of agriculturalists by exploring space agriculture applications.

### Details

- **Date** - Tuesday, April 4, 2023
- **Time** - 9:00 am - 12:00 pm
- **Location** - University of North Dakota Campus - Grand Forks, ND

### What Students Can Expect

- Engage in hands-on workshops and activities
- Tickets to attend the entire conference
- Opportunity to meet with experts from universities, industry, and NASA
- Free lunch

### Sign Up!

- <https://www.eventbrite.com/e/508226357717>

### DEMO

#### University of North Dakota: Near-Space Mission

Join UND as they highlight a Near-Space Mission. This event will allow students to view the launch of a high-altitude balloon that ascends into the stratosphere. Participating students will receive seeds that have gone to the Earth's upper atmosphere, approaching the edge of space. Students will learn about what it takes to launch something to the stratosphere, the effects of space exploration on materials and more in this fascinating discussion.





### **North Dakota State University: Plant the Moon**

This demonstration will involve a brief explanation about the role microbes play in helping crops grow in space. We can get nutrients from microbes that reduce the payload of bringing fertilizers to space! Students will also learn about experimental design and good data collection. Students will work in groups and collect data for the experiment wherein crops do or do not receive a microbial treatment, and the students will collect data regarding the plant growth, assess formation of root nodules, and chlorophyll content of the plants to determine if the microbes did their job and improved crop growth in the lunar regolith.



### **National Center for Autonomous Technology: Flying Drones**

A small experimental station on Mars needs re-supply! A team of students will train to fly across the harsh Mars surface to give critical items to another team doing valuable research. In this training mission, student teams will create valuable operating protocols to navigate low-visibility situations and hone their skills to fly the drone completely autonomously if the weather deteriorates further. Students will work together to fly a DJI Tello drone through an obstacle course to reach a destination. They will fly both by line of site and autonomously with Scratch.

### **TrainND Northwest: Drones & Simulators**

Students will learn about the possibilities that exist with drones. Experts from TrainND will discuss the pathway to be able to use drones commercially. Students will then get to experience flying a drone using the simulator. Multiple drones of different sizes will be displayed for students to get a diverse perspective about drone applications in different industries.



### **Questions**

Email Ruchi Bhardwaj, Grower & Education Program Manager at Grand Farm:  
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### **About Space Ag Conference**

Space Ag Conference seeks to explore the potential of advanced agriculture technologies to transform the AgTech industry in space, with the understanding that solutions to space-based challenges can often be applied to those on Earth. Our world's production system is undergoing a dramatic shift towards sustainable practices and greater food security. Space agriculture and the technology it provides could help farmers produce higher crop yields with less land and energy. This is our opportunity to dream big and envision a bold future for agriculture.