



Micro-g NExT : Test Week 1 Summary

Micro-g Neutral Buoyancy Experiment Design Teams (Micro-g NExT) challenges undergraduate students to design, build, and test a tool or device that addresses an authentic, current space exploration problem. The overall experience includes hands-on engineering design, test operations, and educational/public outreach. Test operations are conducted in the simulated microgravity environment of the NASA Johnson Space Center Neutral Buoyancy Laboratory (NBL). In this pilot year, Micro-g NExT leverages the NASA unique NBL as well as the expertise of the EVA tool engineering group to invite university students to design and build EVA tools based on current needs.

“This is a valuable experience allowing you to tackle a problem or challenge and be able to use technical writing and analysis and experience all the steps from design, manifestation through testing in a high end testing facility.” – Micro-g NExT student



Micro-g NExT Students Engineer EVA Tools

Micro-g NExT Test Week 1 took place at NASA’s NBL June 1-4. The event coincided with the 50th Anniversary of the first U.S. EVA. The experience included student teams and faculty members representing eight universities across the country. Participating schools include Boise State University, Embry-Riddle Aeronautical University, Houston Community College, Oklahoma State University, Purdue University, Trinity University, University of Texas at Austin, and University of Texas at El Paso. Students began their Test Week with a rigorous review of their EVA prototype tool by the NBL safety and engineering team followed by secondary reviews by the NBL divers. After some tool

modifications, all teams were approved to move forward with underwater tool tests in which the students briefed NBL divers on test procedures and directed the dive test from the NBL Test Conductor Room.

“My experience this week at the NBL was more beneficial to my career development than I could have ever possibly imagined.” – Micro-g NExT student



During this 4-day research experience, students visited NASA facilities related to EVA exploration and met with NASA subject matter experts in the areas of Virtual Reality simulation training, spacesuit technology, and Astromaterials sample processing. The students also participated in talks about the ISS and the one year crew, NASA’s journey to Mars, and how to apply for NASA internships. Micro-g NExT is a pilot program that leverages the NASA unique NBL as well as the expertise of the EVA tool engineering group to invite university students to design and build EVA tools based on current needs.



Micro-g NExT Students as NASA Ambassadors

In addition to designing an EVA tool, teams are also educating their communities about NASA. Through talks and demonstrations at local schools and large community events, Micro-g NExT teams are engaging a greater population of future explorers. Test Week 1 also included a publicly available live webcast from the NBL in which student teams shared information about their tool and their experience. The students maintain a presence on social media as a means of informing the community.

"This experience was valuable to me in ways that a class could probably never be. Between theory and practice, there is Micro-g NExT, meaning that this program helped me to put into practice everything I had learned, and build upon this for use in the future. Besides technical knowledge related to my career path, there was also an abundance of tangential information that was non-the-less useful moving forward. This is an experience that I absolutely want to repeat and to extend to those around me in order to grow the STEM field." – Micro-g NExT student

Media Stories

University of Texas at El Paso

<http://www.kvia.com/news/utep-students-create-tool-for-nasa-headed-to-johnson-space-center/33212460>

Boise State University

http://www.idahostatesman.com/2015/06/02/3832971_boise-state-students-clear-another.html?rh=1

<http://www.idahostatesman.com/2015/06/03/3834228/boise-state-students-go-behind.html>

Oklahoma State University

<http://news.okstate.edu/articles/oklahoma-state-s-space-cowboys-nasa-testing-deep-space-concepts>

"I will leave this process wanting to try harder, to reach farther, and to emulate the ideals and core values of the NASA mission in my own work. It is my hope that I can one day serve NASA, and this experience has strengthened that resolve." – Micro-g NExT student

For information about Micro-g NExT, visit <https://microgravityuniversity.jsc.nasa.gov/theProgram/micro-g-next/index.cfm>