

## Off Planet Research Awarded Phase II SBIR Grant from the National Science Foundation

*Small Business Innovation Research Program Provides Seed Funding for R&D*

Everett, Washington, September 5, 2023 – Off Planet Research, LLC has been awarded a Phase II National Science Foundation (NSF) Small Business Innovation Research (SBIR) grant for \$996,708. The two-year grant will provide funds to continue developing a “Portable Production Process for Icy Regoliths by Vapor Deposition.” These artificial mixtures of the ice and soil found on the Moon and other worlds aim to accelerate the development of space resource extraction and utilization.

Humanity’s near-future plans in space depend heavily on the ability to mine the ice that has been discovered at the lunar poles and convert it into rocket fuel, breathable air, and drinkable water for inhabitants of a future lunar base or the food they need to grow. This project will make producing realistic lunar ice/soil mixtures portable and accessible, converting a barrier into a path to success and providing access to students, researchers, and companies.

According to the owners and lead researchers Melissa Roth and Vince Roux, this simulated lunar ice is needed to help find ways for people to live and work on the Moon, and to provide fuel for spacecraft and satellites that will ultimately be much less expensive than lifting the fuel from the Earth. Their cryogenic process produces these realistic mixtures of ice and soil with the corrosive and reactive components found within the deep craters in the permanently shadowed regions of the Moon. There is great potential to be had from the water, hydrogen sulfide, sulfur dioxide, ammonia, carbon dioxide, and other components that might be found there!

During Phase I of this NSF SBIR grant Off Planet Research developed a way to expand their production and make it portable so this unique material can be available for researchers anywhere. According to Vince and Melissa, this is an industry-enabling innovation that will accelerate the technology development and research needed to establish an enduring human presence on the Moon and beyond in this emerging space economy.

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**About Off Planet Research:** Off Planet Research simulates extraterrestrial environments for testing space-based technologies with a focus on providing a range of general and specialized regolith simulants, including the icy regolith simulants mentioned above. Utilizing their knowledge working with these fine and abrasive materials, Off Planet Research also develops dust tolerant mechanisms, conducts component testing, and provides consulting expertise. Visit [www.offplanetresearch.com](http://www.offplanetresearch.com) to learn more.

**About the National Science Foundation's Small Business Programs:** America’s Seed Fund powered by NSF awards \$200 million annually to startups and small businesses, transforming scientific discovery into products and services with commercial and societal impact. Startups working across almost all areas of science and technology can receive up to \$2 million to support research and development (R&D), helping de-risk technology for commercial success. America’s Seed Fund is congressionally mandated through the Small Business Innovation Research (SBIR) program. The NSF is an independent federal agency with a budget of about \$9.5 billion that supports fundamental research and education across all fields of science and engineering. For more information, visit [www.seedfund.nsf.gov](http://www.seedfund.nsf.gov).