NASA SBIR/STTR Small Business Innovation Research / Small Business Technology Transfer

NASA SBIR/STTR Blog: ASTER Labs, Inc. **[1]**

Q&A with ASTER Labs: Pivoting Technology for NASA and Commercial Use through a Phase II-Extended (II-E) Award

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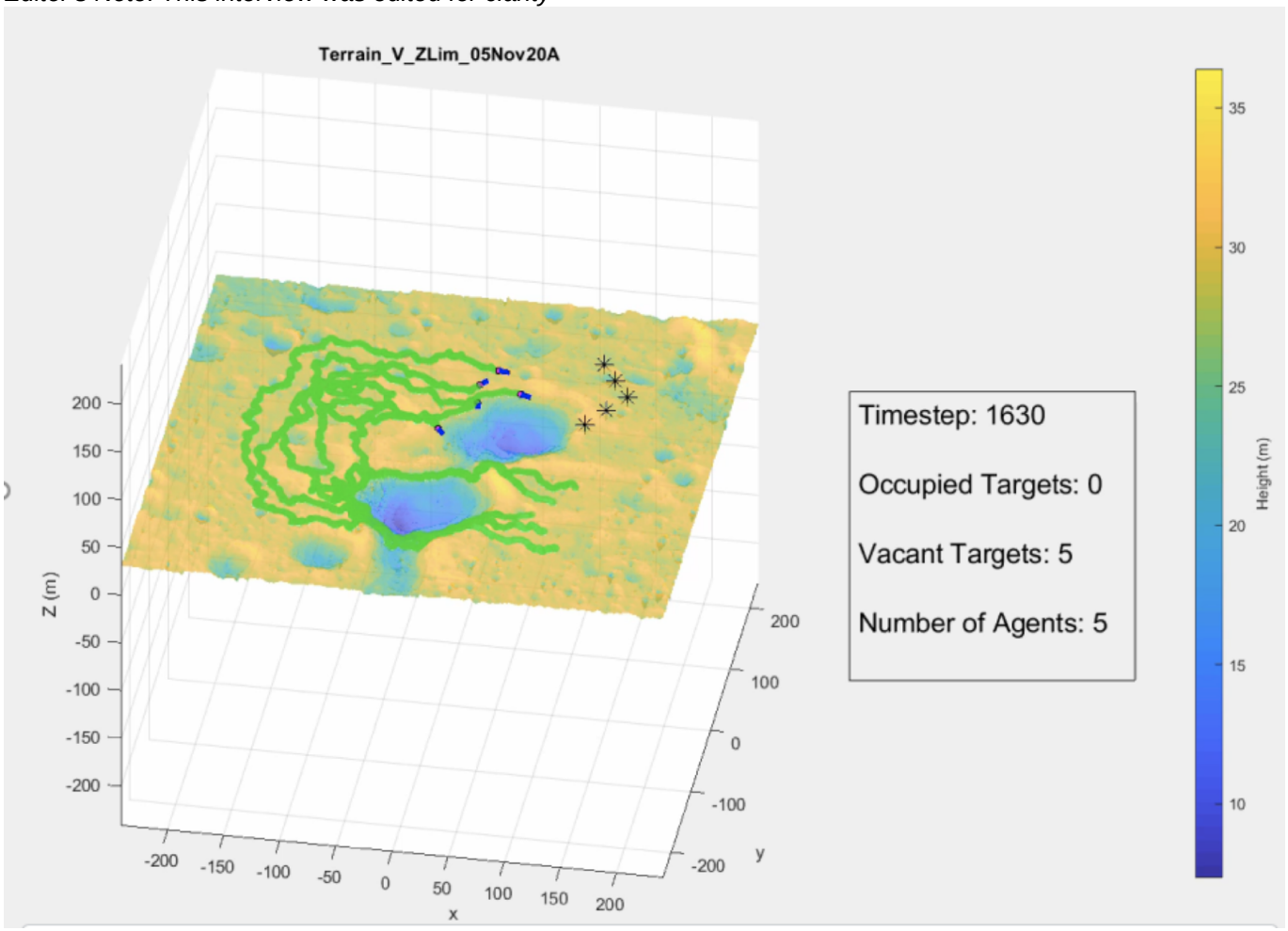
In 2004, Suneel Sheikh started ASTER Labs, Inc., a small business based in St. Paul, Minnesota, while completing his PhD in Aerospace Engineering at the University of Maryland (UMD). Since then, ASTER Labs has grown to do business with multiple government agencies, including NASA, through the SBIR/STTR program. In 2019, the company leveraged the NASA SBIR/STTR program's **Phase II-Extended (II-E)** [2] opportunity. With the Phase II-E funding, ASTER Labs advanced its technology to support NASA's needs and pivoted their technology for new customers. We asked Dr. Sheikh, ASTER Lab's CEO and Chief Research Scientist, about his experience starting his business and beginning a path towards commercialization with the NASA SBIR/STTR program.

Editor's Note: This interview was edited for clarity



Example output of the SWARM Toolset developed under the NASA SBIR/STTR program. Photo credit: ASTER Labs, Inc.

When did you found ASTER Labs?

Dr. Sheikh: I started the company in 2004 when I was finishing my PhD in Aerospace Engineering at UMD. I didn't have plans to start as a company, but I had the opportunity to be an independent contractor for DARPA, so it made sense to start one. Almost immediately I submitted several SBIRs to NASA. I kept trying and didn't win right away, but I did have the chance to subcontract with other companies that received SBIRs. I learned from them how they did it and gained success from that experience.

Your company received its first Phase I SBIR for the 2011 solicitation. You've since had 12 awards, including STTRs and an extended Phase II in 2019 for a 2016 STTR. Was NASA your first SBIR/STTR customer?

Dr. Sheikh: The NASA award in 2011 was the first award we received as a prime. Our company has since grown to about 20 people now and we've branched out from NASA to agencies including NIH, USDA, DARPA, and DAF. The SBIR and STTR awards have been very significant for keeping the company operational and fueling growth towards commercialization.

Can you tell me about the technology you developed with the STTR Phase II-E funding?

Dr Sheikh: My personal background in aerospace engineering is in navigation of vehicles and persons. This STTR technology was focused on satellite swarm localization and control. We wanted to address the question: where are the satellites in the swarm located and how do we get them collectively to their destinations? Our developments with NASA's Jet Propulsion Laboratory were related to vehicle swarms surveying and exploring the surfaces of the Moon together, which addressed a NASA need but presented a challenge in terms of finding a commercial product for that.

We had a working relationship with a company that builds automated cleaning systems – for example, robots that clean grocery aisles. We were already working with them on a separate project, so when we told them about our NASA STTR work, they began considering how our technology could apply to their robots and how multiple robots could move all at once together to clean. They provided the matching funds needed for NASA's Phase II-E funding, allowing us to continue developing the product for our mutual benefit.

"It's not a gift, it's an opportunity. So don't give up, don't back down, but learn from your mistakes."
– Dr. Suneel Sheikh, CEO and Chief Research Scientist of ASTER Labs, Inc.

How did you initially form a relationship with the external investor?

Dr. Sheikh: At my former company [before ASTER Labs], there were people who knew we were working on NASA SBIR/STTR projects. My connections from that company helped connect me with the global cleaning company that became our Phase II-E investor. It was powerful that we won those SBIR and STTR contracts. Having the relationships plus funding from NASA introduced us to new opportunities.

Any advice for prospective small business proposers?

Dr. Sheikh: I really encourage them to understand it's not a gift, it's an opportunity. So don't give up, don't back down, but learn from your mistakes. Once you receive your first award you understand the process. There's a lot to learn during the program, proposing as well as winning. But we would like to use SBIRs as a bridge to much larger programs. In this way, we've learned more from our SBIRs – if we just jumped into those big programs, I don't think we would have been as successful.

Our goal is to help small businesses and research institutions transition their technologies by getting infused into a NASA mission or commercializing. Learn more about how a Phase II-E and other Post Phase II opportunities can help you in your transition journey: sbir.nasa.gov/content/post-phase-ii-initiatives *[2]. The Phase II-E option is available to firms that have received Phase II awards. Currently, selections for the SBIR/STTR Phase II-E proposals occur approximately every 2 months (subject to change). Proposals received by November 5, 2021 will be considered for the next cycle of awards at the end of 2021.*