UC SANTA BARBARA

THE Current

May 31, 2022
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Metabowlite for the Win

Pitching its optical technology for early detection of urinary tract infections (UTIs) to help save lives, improve health and reduce costs, Metabowlite won UC Santa Barbara's 23rd Annual New Venture Competition (NVC) Finals, taking home the $10,000 First Place Award. The event represents the culmination of the Technology Management (TM) Department's rigorous eight-month technology business plan competition that is open to UCSB students from all disciplines.

"It's a great honor to receive such a generous cash prize and land first place at the competition," said Metabowlite team member Orlando Chirikian, a Ph.D. candidate in biomolecular science and engineering (BMSE). "We are grateful to all of our friends, colleagues and family who supported us throughout the competition. It would not have been possible for us to convey such a polished presentation without the constant help and support of our mentors."

Comprising Chirikian, Markus Merk and Mohamed Faynus, all of whom are Ph.D. candidates in BMSE, Metabowlite designed a technology to detect UTIs quickly and accurately. UTIs are one of the top health complications impacting people 65 years and older, second only to respiratory infections. Seventy percent of UTI cases in the elderly progress to urosepsis, where the body's aged immune system starts attacking its own tissue, requiring hospitalization and, often, causing cognitive impairment and kidney problems. Most people seek treatment for UTIs only after experiencing symptoms; the team created a product to detect them before significant issues arise.

“The whole idea was really a group effort,” said Faynus, who initially signed up the team for NVC with the goal of developing a business that could provide something useful to the world. “Markus recalled an old idea of his to analyze urine using optics, a technique that he used frequently during his previous job as a chemical lab technician. And coupled with Orlando’s experience in retirement homes and working with UTIs, our concept was formulated.”

The team created a device, MBlite, that fits onto any standard toilet bowl to automatically collect and analyze a urine sample, sending the digital data through its software to the user quickly to provide real-time information.

“The MBlite is unique because it allows the user to autonomously measure and assess their health status on a daily basis by detecting the onset of an infection,” said Merk. “We believe that MBlite will be successful because of its simplicity, ease of use and capability to detect UTIs using technology that has been well curated.”

The next steps for Metabowlite are to secure additional seed funding, establish pilot contracts with assisted-living facilities and develop a prototype. The team hopes to produce units by the first quarter of 2024 and commercialize by 2025. They say that the urinalysis product could eventually be expanded to screen for cancer, Type II diabetes, preeclampsia and sexually transmitted diseases.

Finishing in second place, RapSyn also shared the Impact Award to earn a total of $10,000. The team created a rapid biomanufacturing platform that enables protein-production facilities to significantly improve their manufacturing yields, reduce production costs and delay costly infrastructure expansion. Third place and a check for $5,000 went to VizNet, which created an online dive report and forecasting service that allows customers to check ocean visibility conditions in their area before they dive, snorkel or swim. The Refillr team earned $10,000 after receiving honorable mention, the People’s Choice Award and sharing the Impact Award for its fully serviced, multi-product fluid dispensing system with UV sanitization to promote the sustainable practice of beauty product refilling.. The Raveival team, which designed a platform to sell and purchase second-hand and music festival apparel, received honorable mention and $2,500.

Mentored by individuals who have lived and thrived in the fast-paced world of tech entrepreneurship, students in the NVC program have the opportunity to hone their entrepreneurial skills, refine their business plans and practice pitching their stories

and ideas. Of the dozens of teams that started the program in October 2021, twelve were selected to participate in the competitive NVC Fair, where Refillr and Metabowlite shared the Best of Fair Award and received $1,000 apiece. Those two teams and three others were then selected to compete in the final.

“I’m always impressed with how the teams pull their final pitches together in the last couple weeks of the program. We provide them with coaching resources, but at the end of the day it comes down to their ability to tell the story of their business, and I thought all of the teams did that very well,” said TM entrepreneurship director Dave Adornetto. “What impressed me most about Metabowlite was how they evolved through their customer discovery process to determine the best application for their technology. They made a major pivot midway through the program, which enabled them to identify and meet a real need in the healthcare system.”

The program was an exciting and excellent learning experience,” added Faynus, who said he and his teammates gained valuable knowledge of how to form a business, the importance of unit economics and the power of market validation. “We have made several connections and friendships that will have a lasting impact on our company.”

After the pandemic forced the event to go virtual the previous two years, the university’s premier start-up competition returned to an in-person format. Each team pitched their products and business plans and answered questions from a judging panel of tech entrepreneurship experts and investors. This year’s judges included Sherman Chu, the founder and managing partner at Grayhawk Capital; Karen Roter Davis, the former director of early-stage projects at Google X and a partner at Entrada Ventures; angel investor Bei-Jing Guo, a graduate of UCSB’s Electrical and Computer Engineering Department, who spent twenty years at Microsoft and Amazon Web Service; and Jason Spievak, the co-founder and general partner of Entrada Ventures.

“There’s nothing that replaces a live audience in terms of energy and enthusiasm, which added to the experience of all involved,” said Adornetto. “There’s just a different level of preparation required by everybody for an in-person event, so everything was sharper. I’m very proud of how we kept the program going during the pandemic, but Zoom fatigue was a real factor early on in this year’s program, and things really started picking up as we got back to working together.”

To watch a replay of the NVC Finals, visit newventure.live, and to learn more about the program, visit http://tmp.ucsb.edu/new-venture.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.