UC SANTA BARBARA

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Prized Protection

Pitching a lightweight body armor made from a unique ceramic design earned EEL Armor the top prize in UC Santa Barbara's 2021 Technology Management New Venture Competition (NVC). The group bested five other finalists to close out the eight-month tech business plan contest and take home the $10,000 First Place Award.

Comprised of undergraduate students Bernie Nguyen — who studies geographic information systems — economics major Nikola Pavlov, and computer engineering major Nazar Rybii, the EEL Armor team also received the People's Choice Award, based on votes from the audience, resulting in an additional $5,000 in prize money.

The 22nd annual competition was viewed remotely by people around the nation.

"Winning NVC is a surreal thing. It's very humbling given the strong teams and talented entrepreneurs in the competition," said Nguyen, who will graduate in June with a bachelor's degree in spatial sciences. "Having worked on this project with great passion over the past eight months, our team is very proud to see that the judges and audience understood the need for our product."

EEL Armor's product is designed to provide better protection and greater comfort than current options, such as vests with metal plate inserts, and to be less expensive.

"Over a year ago, I started taking defensive training classes with law enforcement and military officers. They usually came in full equipment, including armor, and I was

able to learn firsthand how heavy it was even after one hour of training," Nguyen explained. "The few people who had lightweight rifle armor plates spent thousands of dollars on armor, and the idea that our nation's men and women were vulnerable because they lacked the funds for better protection bothered me."

Nguyen said he started to build his own plates with a major emphasis on reducing weight and cost. The EEL Armor team developed a special ceramic strike plate that shatters a bullet, and a composite backer plate made of polyethylene that lies behind it for an added layer of protection.

"Our armor is lighter and cheaper than the competition, but does not sacrifice in the level of protection it provides," said Nguyen, noting that their design tested flawlessly and passed federal armor tests when it was shot-tested at a federal facility in Oregon.

According to Nguyen, the next steps for EEL Armor include incorporation, applying for patents and seeking official certification from the National Institute of Justice, which ensures that the armor meets rigorous safety and quality standards. "We are very grateful to the program, our mentors, and all the sponsors for the funding we are being awarded," said Nguyen. "We plan to have our plates manufactured and available for purchase by this fall, and hope their life-saving effects can have an immediate impact in the field."

In other results, Tesserol finished in second place and received the Best of Fair award to earn a total of $8,500. The team designed ethanol fuel-cell modules to power commercial drones, offering increased operation times and higher payload capacity, while being cheaper and minimizing the environmental impact. Third place and a check for $5,000 went to Ultim, designers of a cloud-based platform to help solve the $18 billion problem of lost luggage in the commercial aviation industry. Scopen, Solaris, and Aquipur each received honorable mention and a check for $2,500.

Teams were judged by a panel of tech entrepreneurship experts and investors that included Elizabeth Cholawsky, the chief executive officer of HG Insights; Michael Gross, the managing director of Beringea Venture Capital; and Alex Fang, a managing partner at Entrada Ventures, who earned his Ph.D. in electrical and computer engineering from UCSB.

For the second straight year, organizers implemented a virtual format for the annual competition to ensure that, during the pandemic, students would still have a live platform to showcase their innovation, dedication and hard work. All activities, the finals and last month's New Venture Fair took place over Zoom. The online nature of the events allowed students to think on their feet while interacting live with judges and audience members and answering their questions.

"This year was about making the best of a challenging situation, and the students really embraced that," said David Adornetto, Technology Management's entrepreneurship director. "Much of the early work of developing a new venture centers around customer discovery, which requires significant market interaction. The pandemic made that a much more difficult process, since there were no in-person meetings. The students were very resourceful in this regard and figured out other avenues to gain these important insights. Being entirely virtual also meant we could pull mentors into the program from anywhere."

The NVC Finals represent the culmination of a rigorous eight-month process open to students from all disciplines at UCSB. Mentored by a team of more than 40 individuals, who have lived and thrived in the fast-paced world of tech entrepreneurship, students in the program have the opportunity to hone their entrepreneurship skills, refine their business plans and practice pitching their stories and ideas. Of the 37 teams that began the program in October 2020, 12 were selected to participate in the NVC Fair, and six were selected to compete in the finals.

"In addition to having a viable business idea, the teams that make the finals usually have a few key traits in common — they are committed, coachable and competitive. EEL Armor had all of these in addition to being meticulously prepared," said Adornetto.

Nguyen said that while his team couldn't validate market research with in-person interviews of law enforcement or meet face-to-face with mentors, they focused on making the most of their available resources.

"We feel a sense of tongue-in-cheek pride to leave a legacy of being NVC's first and hopefully only 'fully remote' winning team, and hope that future competitors see us as an example of not letting adversity and uncertainty keep them from pursuing their ambitions," said Nguyen.

To watch a replay of the NVC Finals, visit www.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.