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Wichita State seniors partner with McConnell's Innovation Lab

By Abigail Klein, Strategic Communications

Two Wichita State University seniors have partnered with the McConnell Air Force Base Innovation Lab to help fight COVID-19 – by using robotics. Computer science majors Lucy Hoang and Lydia Melles are creating an autonomous robot that uses ultraviolet C-lights (UVC) to clean grocery stores.

The project is part of a senior design class taught by Andy Stallard, WSU College of Engineering Senior Design Experience lecturer and director. Sponsors of the included Tech. Sgt. Clayton Allen, Wing Innovation Cell superintendent at McConnell's Innovation Lab. Allen helped Hoang and Melles choose a project at the lab that fit their majors and their interests.

McConnell's Innovation Lab is responsible for rapid prototyping and creating solutions to help both the base and Wichita community. One of its projects last year included creating face shields for health care workers during the pandemic.



For Melles and Hoang, Allen suggested the development of a UVC robot, one that could kill germs in large public spaces. UVC radiation is a known disinfectant for air, water, and nonporous surfaces. UVC

radiation has effectively been used for decades to reduce the spread of bacteria, such as tuberculosis. To accomplish this, the students used 3D printers, laser cutters and bandsaws while coming up with innovative designs at the McConnell Innovation Lab. This took a little getting used to, as this was their first hands-on experience with these tools.

“At first it was kind of scary not knowing any of these tools,” Hoang said. “At the same time, it was very much a learning experience, and once we got the hang of it, it was easy.”

For Melles, working on a project that had practical implications for modern times was an exciting prospect.

“It’s really nice, as a computer science major, to code and see it in implementation and to see a project physically working,” she said.

These simulations include checking to see if the robot’s wheels can support its weight while maneuvering around the simulated grocery store, verifying that the robot can fit down the store aisles, and whether it can maneuver easily around store displays.

Hoang hopes the use of the robot will expand to more locations that are vulnerable to outbreaks.

“I really want to try to expand upon childcare centers, the places that are prone to germs,” she said. “That’s where this robot would be most effective.”

Once the robot is fully operational, they will use it at McConnell’s Commissary before expanding to other areas on base. According to Melles, the robot is one of five projects Wichita State senior students are working on for the semester. Next semester, new students will take over and complete the projects.