Roseville resident part of student team sending solar vehicle to Australia

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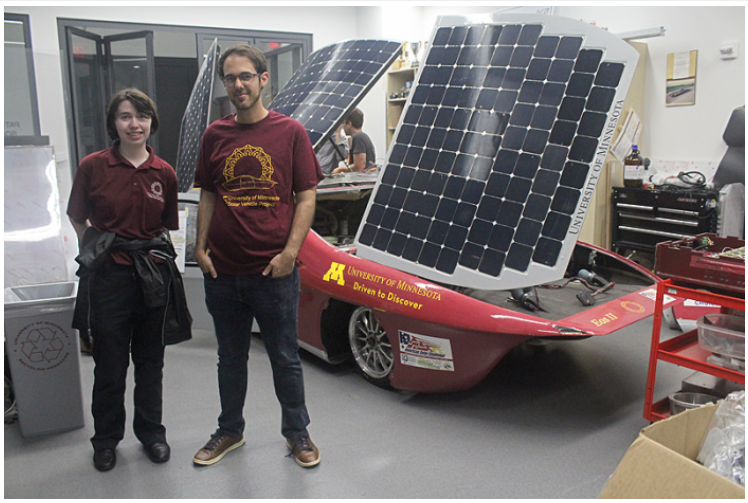
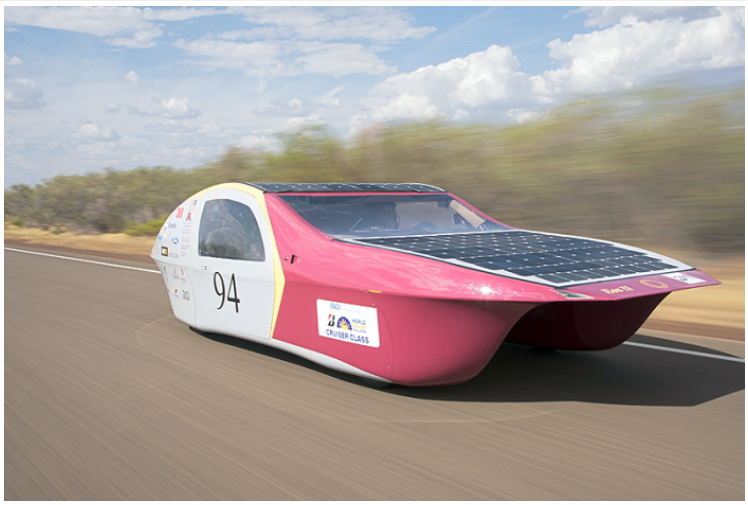
By: Mike Munzenrider



University of Minnesota Solar Vehicle Project team members Amethyst O'Connell and Farris Al-Humayani with the EOS II vehicle, which the team will be racing in Australia this fall. (Mike Munzenrider)



The solar car can top out at 75 mph but team members say that's not the point — their work is all about making an efficient vehicle. (courtesy of University of Minnesota Solar Vehicle Project)

The University of Minnesota Solar Vehicle Project started in 1990. Its 2019 team is seen here with its current vehicle, EOS II, on The Mall at the U's Twin Cities campus. The solar car can top out at 75 mph but team members say that's not the point — their work is all about making an efficient vehicle. (photo courtesy of University of Minnesota Solar Vehicle Project)

Roseville resident Amethyst O’Connell is part of a University of Minnesota team of students working to send a solar-powered vehicle to race in Australia this fall.

The 21-year-old has been dutifully heading to campus this summer following her electrical engineering internship to continue working on the vehicle — just don’t count on her going Down Under along with it.

“I’m staying back,” O’Connell says. “Too many bugs in Australia for me.”

Back in the lab

On a recent Thursday evening, University of Minnesota Solar Vehicle Project team members filtered into a work space in the Shepherd Labs building on the Twin Cities campus.

Since its founding in 1990 by a group of undergrads, the team — made up of a rolling group of students that often become alumni mentors — has made 13 vehicles. Those vehicles have raced in more than 30 solar challenges in four countries.

Currently, the team is less than four months away from the 2019 Bridgestone World Solar Challenge, in which solar vehicles will bisect Australia racing some 1,900 miles from its north to south coast, Darwin to Adelaide, in mid-October.

O’Connell, a member of the Roseville Area High School Class of 2016, transferred to the U after completing an associate of arts degree at St. Paul College.

She encountered the Solar Vehicle Project at a technology and electronics event called Geek-a-Palooza, where team members pitched her to join.

The team is constantly recruiting, according to 23-year-old Farris Al-Humayani, who oversees O’Connell and others as the project’s controls team manager. The controls team creates and integrates the systems in the interior of the vehicle.

An electrical engineering grad student, Al-Humayani grew up splitting time between Saudi Arabia and the U.S. before attending high school in White Bear Lake. He says the project is more of a business than a school club.

“It almost simulates a start-up company,” Al-Humayani says, pointing out that while plenty of engineering goes into the solar car, a healthy dose of entrepreneurism goes into finding team sponsors who provide components for it or help cover the cost of shipping it to races.

Though O’Connell isn’t headed to Australia, Al-Humayani is. “I’m excited,” he says.

Car people, solar people

Before getting set on her current course, O’Connell says she had inklings of going to film school. She couldn’t stomach the idea of writing an essay on “Invasion of the Body Snatchers,” though — it just seemed silly — and she scrapped the plan.

Studying electrical engineering was never that far off for her. In high school she was marketing director for the FireBears FIRST Robotics Team, and at St. Paul College she rode backing of STEM — science, technology, engineering and math — courses to becoming student senate president.

Under Al-Humayani at the Solar Vehicle Project, O'Connell has worked on the vehicle's windshield wipers and more. She jokes, "I'm doing whatever Farris needs me to do."

The name of the game is making the vehicle as efficient as possible. As Al-Humayani explains, that might mean ditching mirrors for cameras, which may use battery power but cut down on drag.

"Aerodynamics are king and always will be," says 28-year-old Ross Olson, a Wisconsinite set to graduate with a degree in electrical engineering this fall, who's among the team members who build the vehicle's motor.

An immense amount of time goes into creating and tweaking the vehicle toward maximum efficiency. Some 125,000 man hours will go into the EOS II, the vehicle headed to Australia in October, team members estimate — that's 40 people working on it over the span of two years.

Such experience is valuable and the team has a well-regarded reputation in the professional world. Former team members have gone onto work for Tesla, the electric car maker, and Ford.

O'Connell says she couldn't land an internship last year, though with the Solar Vehicle Project on her resume this summer she had no problem slotting in at the Plymouth-based firm with which she's interning now.

There are benefits beyond the workplace, too. "It's experience that will get me jobs," O'Connell says, "friendships that will last me a lifetime."

While team members have much in common, Al-Humayani explains they generally break into two categories: car people and solar people. O'Connell knows into which camp she falls.

"I'm a solar person," she says. "I hope I can end global warming before it kills us all."

The team is holding a send-off event for the car on Friday, July 19 from 6 to 8 p.m. in the Lind Courtyard on the University of Minnesota-Twin Cities campus. Lind Hall is located at 207 Church St. SE in Minneapolis. There will be grilled hot dogs and other snacks, along with the solar vehicle.

For more information about the Solar Vehicle Project go to **www.umnsvp.org**.

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