Top-flight Student Soars.

By: Desiré Bennett

Tyler Vick is the UC College of Engineering and Applied Science Engineer of the Month for March. Tyler maintains a 3.935 GPA in his senior year in the aerospace engineering program while working toward dual Bachelor of Science and Master of Science degrees in the college’s ACCEND program.

For Tyler, attending UC meant continuing a family tradition. “I have a brother who came here and my father also went to UC,” he said. Following in their footsteps and becoming a part of the UC family was an easy decision for Tyler for many reasons. “My dad was a chemical engineer and my older brother was also an aerospace engineer. Additionally, I was attracted to the co-op program.”

It was the co-op program that garnered his attention and, later, the ACCEND program that helped propel him to new heights. “It’s funny – I wasn’t originally an ACCEND student. When I first came to school I thought it sounded rather challenging to get a bachelor’s degree and master’s degree in five and half years,” he explains. During his sophomore year, Tyler decided that it would be beneficial to get started on the master’s track early. “It has been beneficial in that I have had lots of opportunities to do research—I’ve done several research rotations here at school,” he said. “It has also led to opportunities in the job field and has been helpful in getting me experience in the air force, where I currently work.”

Tyler has completed six co-op rotations. His first rotation was with the UC Gas Dynamics and Propulsion Lab where he conducted research in the area of jet noise reduction. “That was my first co-op so I spent a lot of time assisting people and writing a lot of code,” he said.

Tyler’s next five rotations have been with the United States Air Force research lab. “My first rotation I was in the flight test and evaluation office. During that rotation I reviewed flight test plans and participated in safety review boards to make sure that the flight tests, that were being posed by different groups within the Air Force, were safe enough to actually execute.”
His following rotations have been with the Control Sciences branch of the Air Force. “My first project was to develop a computer model of a hypersonic vehicle that can be used for simulation,” he explains. “Essentially, you provide some inputs with regards to control surface movements of the vehicle and the model tells you what happens to the vehicle and how it responds to those inputs.”

Tyler’s second project was a geometry modeling program that he developed. “The user can vary several parameters related to the geometry of a hypersonic vehicle and the program generates a 3-D surface of the vehicle,” he said. Each of these different modeling tools will be used in the design of guidance and control laws and Tyler intends to use both of these tools as part of his master’s thesis work.

From his co-op experience, Tyler says he has gained a lot of technical as well as communication skills. “I’ve had to present my work several times and I’ve written a conference paper on my work as well,” he said.

In addition to the work Tyler has done during his co-op experiences, Tyler has done research in the areas of pulsed detonation engines and micro air vehicles.

“Last year I received a grant from the Ohio Space Grant Consortium and as fulfillment of the scholarship requirements I had to research flapping flight micro air vehicles, like birds and insects and such,” he explains. “There are companies that make these flapping flight micro air vehicles, these mechanical flyers essentially, and as part of my research I investigated the feasibility of these micro air vehicles performing missions of 30 minutes to an hour of surveillance.”

As a result of his research Tyler found that, while advancements are currently being made in this area, there’s still a lot of work that needs to be done in order for these vehicles to be feasible. “I’ve also looked into empirical based research on actual birds, like flying flapping insects and birds, and I’ve compared theoretical research in the area to observations that people have made of birds. I essentially concluded that the theories that people have do not exactly match the biological observations made in the field by empirical biological researchers.”
When Tyler isn’t working in the lab or the classroom, he participates in Tau Beta Pi, the national engineering honor society, helping with recruitment of new members. He also assists the CEAS Tribunal with events such as the career fair. “Going to college is not all about your studies – that is important, but it’s also important to spend time with your friends and have a lot of fun,” he said.

Tyler was recently able to blend these two concepts by taking an honors seminar called the Roman Experience. “In class we learned about various arts and music in Italy and at the end of the class we went to Rome for a week,” he said. “I was able to visit the Sistine Chapel and the Colosseum – It was really great.”

Tyler is considering pursuing a PhD after graduation, but his future is not set in stone. “I would also like to look for jobs, and although I’m not entirely sure which companies yet, I would like to work in the controls field.”
ENGINEER OF THE MONTH

As one of the most innovative colleges, the College of Engineering and Applied Science at the University of Cincinnati takes pride in its exceptional students and their successes. “Our vision is to produce outstanding engineers and technologists,” states Interim Dean Teik C. Lim, PhD. “WE ENGINEER BETTER™ starts with our training the next generation and we are proud to introduce a few of our leaders.”

Starting in August and each month this academic year, the college is recognizing one of our upper classmen (junior or senior) as our Engineer of the Month.

Each Engineer of the Month has demonstrated excellence in the classroom, success in their co-op assignments, and leadership through extracurricular activities on campus and/or in the community. These students have found the balance needed to be leaders and exemplary scholars.

The College of Engineering and Applied Science salutes their efforts and recognizes:

Tyler Vick

Engineer of the Month for March

Senior - 3.935 GPA

Aerospace Engineering - ACCEND™ Program