Mechanical Engineering Student Speaks Language of Design

By: Desiré Bennett

Elizabeth DeBenedictis is the UC College of Engineering and Applied Science Engineer of the Month for January. Elizabeth maintains a 3.987 GPA in her senior year in the mechanical engineering program while working toward a Bachelor of Science degree.

Like many other students in the engineering program at UC, Elizabeth says that what drew her most to choose the University of Cincinnati is the co-op program and the opportunities that it opens for her. “I really liked the idea that when I graduated, I wouldn’t be completely clueless about engineering in the real world.”

Elizabeth says she has always known she wanted to be an engineer. “Most of my family members are Engineers,” she said. “I chose engineering a long time ago because I had a good understanding of what it was and I really enjoyed math and science. I didn’t really consider any other field.”

She chose to study mechanical engineering because she loves the innovation associated with the field. “I like that you can never run out of new things to learn because the field is always advancing,” she said. “I really like mechanical engineering because you can do nearly anything with it – mechanical engineers work on everything!”

Elizabeth has worked on several engineering tasks via her research and development co-op experiences. Her co-op rotation at Ethicon Endo-Surgery, located in Blue Ash, Ohio, involved improving an existing Harmonic device for cutting and sealing tissue.

“My tasks included experiment design and execution, data analysis and technical writing, as well as programming part of an algorithm used in the device’s energy generator,” she explains. “I began designing, testing, and programming a predictive model with the intention of reducing testing time and cost and eventually I wrote a program with an easy-to-use user interface for comparison testing, in addition to my original project task.”

Elizabeth also traveled to Stuttgart, Germany to complete a seven month co-op rotation at Robert Bosch Stiftung. She says that during her programming-based project set, she was challenged by learning multiple new programming languages in German. “These projects required a great deal of research – not only in learning a new language – but also with the electronics used, which extended past my mechanical engineering background.”
She says that, in addition to tremendously improving her German speaking and communication skills, working in an international department in Germany helped her in several different ways. “I developed an understanding of different cultures, a global perspective, a sense of personal responsibility, the necessity of research, as well as new engineering skills,” she said. “I also learned a lot about office culture, team dynamics, as well as independent work and I got to see the things I learned in school be applied in the real world.”

Elizabeth says that what she gained from her co-op experience was invaluable. “Being able to not only learn a new programming language, but a new programming language through my second language was an incredibly challenging but fulfilling experience.”

Elizabeth participates in several on-campus organizations. She serves as the corresponding secretary for Tau Beta Pi, she tutors in the Freshmen Engineering Program, is a member of Pi Tau Sigma, and is a volunteer in the Society of Women Engineers (SWE) Middle School Outreach Program.

“Having worked in the Society of Women Engineers Middle School Outreach events, I believe that the human resource is the greatest asset to the field of engineering,” she said. “I have greatly enjoyed working as a support for many of my students. I do my best to help during their freshmen year and I love seeing their continued success and achievement as they progress through each year.”

Elizabeth is also a part of the Research Experiences for Undergraduates, or REU, working in the University of Cincinnati Nanoworld laboratories. “I am working on building a micro-scale pressure sensor for biomedical use, and have also been testing the measurement of blood flow using a CNT sensor,” she said. “This has not only provided a new perspective from all of my industry-based background, but has also heightened my level of independence within the laboratory.”
Elizabeth says that her current work in the Nanoworld lab is a stepping-stone to graduate school. She plans to develop at least two laboratory experiments involving an introduction to Nanotechnology for use in Freshmen MATLAB courses. “I have worked as a teaching assistant since their implementation two years ago and I believe these activities can help increase awareness and interest in the growing fields of nanotechnology and biomedicine.”

Elizabeth believes that keeping a balance between engineering and non-engineering activities is important. “It’s good to have realistic expectations of how much time you can put forth,” she explains. “I think some people get swamped by trying to participate in everything, but I believe it is more meaningful to participate more strongly in just a few things you are passionate about.”

**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:

**Elizabeth DeBenedictis**

*Engineer of the Month for January*

Senior - 3.987 GPA

Mechanical Engineering