DISTINCTIVE STUDENTS

WEBSITE WHIZ, HONOR STUDENT, CHAMPION BOOMERANG THROWER

ADAM STANKIEWICZ ’15

Stankiewicz’s career in computer science actually began as a result of his passion for riding unicycles. As a freshman in high school, he started a website about unicycles, using professional software for building websites. He soon began teaching himself how to build web pages on his own so he would no longer have to pay for the software.

When it came time to apply to colleges, Stankiewicz found that there were not a lot of undergraduate programs that focused specifically on web design and development. The University of Hartford’s MWD program seemed to be a great fit.

Two UHart faculty members in particular have had a significant impact on him: Larissa Schroeder, assistant professor of mathematics, and former MWD faculty member Brian Dorn, who is now at the University of Nebraska-Omaha. It was Dorn who introduced Stankiewicz to the project involving collaborative discussion of video content among students. Stankiewicz and Dorn are still working on the project, together with Schroeder.

“He [Dorn] introduced me to the research world, and I have not turned back since,” Stankiewicz says. “If it weren’t for him, I would definitely not be going to grad school for a PhD in this field.”

Stankiewicz and Dorn have co-written papers on their project. In March, Stankiewicz joined Dorn at an international conference in Vancouver, British Columbia, Canada, where Dorn gave a presentation on their work.

During his undergraduate career, Stankiewicz completed technical internships at three different companies, and he did a summer research project at Carnegie Mellon. But even as his success in the computer science world, he plans to maintain his status as one of the world’s top boomerang throwers.

As a member of the U.S. Boomerang Team, Stankiewicz competed in the 2014 World Boomerang Cup in Porto, Australia, where he finished eighth out of 74 individual competitors. He also competed in the 2012 World Boomerang Cup in São Paulo, Brazil.

Stankiewicz plans to compete in three regional tournaments this year. He is hoping to make the team for the next World Boomerang Cup, which will take place in 2016 in Colgan, Germany.

When Casey Beasley ’13, M’15, approached her professor, Michael Wininger, about building a prosthetic finger as a University Honors project in 2013, she says she had no idea that her project would take off the way it has.

“I’m very surprised and proud with where it’s gone. It’s going to be hard to leave the project behind,” Beasley, who graduated in May, plans to do residencies in prosthetics and orthotics in the Washington, D.C., area before going to graduate school for a doctoral degree, possibly in biomedical engineering.

“In observing patients in clinic work as an undergraduate, Beasley had made an important discovery: patients had difficulty using their prosthetic hands, sometimes even rejecting them, and then she noticed why.”

The fingers of prosthetic hands do not bear much resemblance to actual human fingers. For one thing, all the fingers on a prosthetic hand tend to be the same size. And for that matter, all prosthetic hands tend to be the same size. Also, Beasley observed, they were missing the fat pads on the inner side of the fingers that are vital to human grasp.

Beasley began working with Wininger, assistant professor of professional studies in the Department of Rehabilitation Science in the College of Engineering, Technology, and Architecture (CETA), to design a finger that more closely mimics a human one. They began with the index finger in the summer of 2013, successfully completing the final prototype in early 2014. By that time, two other P&O students, Jos Casella M’15 and Steve Sousa ‘14, M16, were also working on the project.

The next step was to build an entire prosthetic hand, and work on the Hartford Hand Project began in the spring of 2014. The team grew to six, now including Frank Finelli ’15, an entrepreneurial studies major, who was recommended by Associate Professor Irina Naumovich of the Barney School of Business. Finelli’s assignment was to build a business plan for the project. Michelle Swanston M’16, who joined the project in fall 2014 and hopes one day to manage a P&O practice, assisted Finelli in the preparation of the 100-page business plan.

“Why a business plan?” says Wininger. “I’m very interested in getting students involved from across the campus. A lot of students here have interests that are similar to our own.”

“The second reason is a national student design competition run by the Rehabilitation Engineering and Assistive Technology Society of North America, or RESNA. Frank’s work on the business plan, which deals only with the finger, has been vital to our submission to the contest.” With the plan, they sent along photos and videos, as well as a 2,000-word paper explaining their research, in mid-April; a decision will be made in mid-June. The four other Hartford Hand team members were divided into two groups; for the electronics, Cassella was joined by Christopher Welch M’16 during the 2015 spring semester. Welch also spearheaded the RESNA submission. Beasley and Sousa were in charge of the design. A seventh student, Chelsea Dornfeld M’15, did not work on the development of the prosthetic hand but spent the past academic year coordinating a formal research study on the consistency of hand shape preferences.

Thanks to a grant Beasley received from the University’s Women’s Education and Leadership Fund and support from the Connecticut Space Grant Consortium, the team was able to pay for a 3-D credit research practicum for summer 2014. Sousa and Stephanie Hebert ‘15, a student in the College of Engineering, Technology, and Architecture (CETA), worked on the design of the phalanges, or sections, of each finger. To create a prosthetic hand that could be more customized for the user, Sousa and Hebert had to figure out how to make the phalanges adjustable, both in length and circumference. By the end of the summer, they had their answer.

“Having Stephanie’s skill set last summer for the project was so important to getting us where we are today,” says Beasley. Hebert, a biomedical engineering major, was recommended to the Hartford Hand Project by CETA Assistant Professor Mary Arico.

Perhaps the most surprising thing about the Hartford Hand Project is how much time and effort the students and Wininger have put into the project, not all of it well paid or paid course credit. Most say they were not primarily motivated to apply classroom theory to the real world. But that’s not all, according to Wininger.

“These students are very interested in helping patients as well as learning the technology. They have put their hearts and souls into this project.”

Next year, his plans to recruit undergraduates so they will have an opportunity to work for a longer period of time on the project.

What started out as a senior’s undergraduate honors project has turned into a full-fledged research team that will continue searching for a prosthetic device that is more like the real thing.
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The Hartford Hand Project

This fall, Adam Stankiewicz ‘15 is headed to the PhD program at Carnegie Mellon University’s Human-Computer Interaction Institute, one of the top programs of its kind in the world. Stankiewicz graduated in May with University Honors, following a brilliant, four-year career in the Multimedia Web Design and Development (MWD 2) program at the University of Hartford.

Those achievements alone make him stand out, but they only tell part of his story. Stankiewicz is also one of the top competitors in the world in the sport of boomerang throwing. Oh, and he rides a unicycle. It’s a combination of skills and interests that is unusual, to say the least.

As an undergraduate, Stankiewicz developed a web-based media player that is designed to promote collaborative discussion of video content, such as class lectures, among students. During his undergraduate career, Stankiewicz completed technical internships at three different universities, including UHart. In his honors thesis, Stankiewicz researched and analyzed student participation in the program.

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Two UHart faculty members in particular have had a significant impact on him: Larissa Schroeder, assistant professor of mathematics, and former MWD 2 faculty member Brian Dorn, who is now at the University of Nebraska-Omaha. It was Dorn who introduced Stankiewicz to the sport of boomerang throwing, which involves collaborative discussion of video content among students. Stankiewicz and Dorn are still working on the project, together with Schroeder.

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David Drakes ’15 was still weeks away from graduating when he learned he had landed the perfect job for him: engineer at Harley-Davidson’s corporate headquarters in Milwaukee, Wis. Drakes, who majored in mechanical engineering in the University’s College of Engineering, Technology, and Architecture (CETA), grew up around motorcycles and had always hoped to work with them one day. That goal shaped the way he lived his life in college, from choosing classes to joining extracurricular clubs and organizations.

“When I graduated [from] high school, I went into a technical program at a community college and learned how to take motorcycles apart and troubleshoot them,” says Drakes, who is from Enfield, Conn. “I actually didn’t even know I wanted to be an engineer until after I was done with that program. I realized I wanted to design motorcycles, not just figure out how they work.”

Drakes started taking engineering courses as soon as he transferred to UHart. In particular, he looked for classes and research that would give him the opportunity to put what he had learned to practical use. CETA Professor Ivana Milanovic was the perfect mentor.

“I’m more of a hands-on learner,” explains Drakes. “Obviously a lot of engineering is calculation and theory-based, but Professor Milanovic actually took the time to help me understand [how to apply these lessons]. She wanted me to succeed.”

Milanovic also encouraged him to help refurbish the on-campus wind tunnel lab, a project made possible by support from United Technologies and the Connecticut Space Grant Consortium. Drakes joined three undergraduates and one graduate student who were already working on the project. In fall 2015, when the facility is complete, students will be able to use it to study and measure the flow of air over airfoils and turbine blades, an important aspect of aerodynamics. Drakes and four other students have been involved in every aspect of the project, from disassembling the old tunnel to ordering all of the equipment necessary for the upgrade.

Milanovic says Drakes’s focus and enthusiasm are apparent. “When I announced the research opportunity [wind tunnel project] for our students last September, I was very surprised that about 15 students applied for just a few slots. The competition was indeed fierce. Dave was the first one hired. He had it all: intellectual curiosity, passion for doing and learning, and he presented himself very well. I had no doubts that Dave was the right choice.”

Drakes also served as the vice president of the Green 707 Car Club, a student organization that is working to convert a regular gas-powered pickup truck into an electric-powered vehicle. This project is still ongoing. In addition, he was the treasurer of the campus chapter of the National Society of Black Engineers. With these activities and an engineering internship at FlowTech in South Windsor, Conn., it’s no wonder Harley-Davidson came calling. And Drakes was ready.

Biking is in Drakes’s blood. His father was a road cyclist when younger and has always had motorcycles at home. Drakes says he has been in love with them all his life. As his career progresses, he plans to combine that passion with his larger goal of changing the world.

“I’ve always had a desire to help people around me. Engineering gave me the opportunity to do that, to make a difference in my community by coming up with better systems and a better way of doing things. That’s why I got into it, to help people and build motorcycles. Carbon-zero motorcycles, of course, but they will still be just as cool.”
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ON THE ROAD TO Success

David Drakes ’15, left, works with Mark Markiewicz ’18, center, and Mohammed Alabdulqader ’15 in reconstruct the wind tunnel in the Turbomachinery Lab in CETA.