VILLANOVA ENGINEERS BRING STEM EDUCATION TO CAMBODIA

T he week culminated in a tower-building competition that required the CFC students to come up with their own ideas and work under a deadline. The top two winning teams, plus three exceptional student leaders, won a trip to mid-March to the first Cambodia Science and Technology Festival held in Phnom Penh, Cambodia. Weeks after returning from Cambodia, Alex Poultney beamed when describing the experience.

"Having the stand-based, students’ faces reflect excitement, joy, surprise, awareness, and even a little fear." — Jordan Boucha "14 ME, Villanova/Engineering Service’s Learning

Engineering students build EOD robot

Working together with Golden West Design Lab at Phnom Penh, Cambodia, Associate Professor of Mechanical Engineering Garrett Clayton, PhD, and teams of Mechanical Engineering students have dedicated themselves to the development of an effective EOD/robotic robot with a price tag under $10,000 (USD). Students are challenged with the realities of product design, sustainability, infrastructure and economics in a developing country. Those who have traveled to Cambodia have had the opportunity to speak with local students who live with the problem, as well as EOD specialists who are working to solve it, including Director of the Cambodia program and Danish EOD expert, Dr. Faye, a former soldier. “It’s very important to have that firsthand knowledge,” says Villanova team member Michael Benson ’15 ME. “Otherwise you can’t understand the problem fully and what’s needed to fix it.”

Throughout the past three years, 15 students have worked on the robot at their senior capstone project, each improving upon the last team’s design. In January 2015, after conducting field trials of the latest prototypes at Golden West’s Applied Technology and Training Center, everyone agreed that the robotic platform is ready to undergo pilot production for use in Cambodia.

"It would be from low cost by a certain amount of repatriated locality. Also it fits into a situation so that it can be taken on a plane and deployed to different locations. The robot control interface is designed for interactive training and can be adapted to meet the needs of various missions. The overall goal is to provide a fully functional system to the Ministry of Defence in Cambodia by mid-2016."

WHERE ARE THEY NOW?

Taking his career to great heights

Andrew Blasier ’04 CE, ’06 MSCE

In an article about international service learning in the Summer 2009 issue of the College of Engineering’s magazine, Andrew Blasier ’04 CE, ’06 MSCE wrote of his three undergraduate trips to Antigua de Jerez, an orphanage in Honduras. Five years later when asked what the highlight of his time at Villanova, Blasier doesn’t hesitate, “The service-learning trips to Antigua de Jerez in Honduras with Doug Davidshen and Shuang Han.”

He credits them with introducing him to structural engineering.

Raство has worked for Thornton Tomasetti since graduation, and says high-tech structures have been his niche since his earlier days with the firm. He recalls: “We were working on a number of projects with the architect firm and even had one very unique geometry that had to be engineered unconventionally. I had some ideas and successfully presented them to my superiors.”

He is passionate in high-tech structures, and his ability to successfully communicate at an early age has been critical.

On the Right Track for Success: Jordan Mahoney (’15 ME)

The first three years of Sarruda’s career were spent in Lockheed Martin’s Engineering Leadership Development Program (ELDP), an elite training regimen for new employees. The ELDP enabled Sarruda to refine the fundamental and different functional skills, earn a Master’s in Systems Engineering, and develop a valuable professional network through leadership training and conferences. She credits her Villanova education with her success in the program, as well as her in-depth understanding of engineering concepts. She was fortunate to lead a very talented, multi-disciplinary group of engineers through a project for which we proposed, developed, tested and manufactured a design prototype for a hydraulic actuator. Our hard work earned us some recognition both individually and as a team. In the end, one of the most valuable lessons I learned was what it meant to be a leader in engineering.”

Senior Associate Dean for Graduate Studies and Engineering Research Gaudard Jarry, PhD, recalls Jordan as “One of the most delightful, genuine, positive-thinking, motivated, stimulating and talented students I have evermet.”

After completing the ELDP, Sarruda moved into a permanent position involving integration and testing for Lockheed Martin’s Aegis Ballistic Missile Defense. In 2015, she led a successful “Pro for Free” trial of a missile system, non-asset owner, a major accomplishment that resulted in the NOVA Award—Lockheed Martin’s highest honor—for Sarruda and her team.

When asked if her life and career are what she could have ever imagined my life and career? I cannot imagine leaving the field of structural engineering. But in the meantime, I do not want to put limits on where my career may take me.”

On his wedding day, June 26, 2016, with husband Lee Mahoney.

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