STUDENTS

Nicole Palazzo ‘18 ME
Activity: Choreographer for Nova Noise, Villanova’s tap dance group
Years dancing: I have been dancing ever since I could walk, and I have studied many different styles of dance from ballet and modern to jazz and hip hop. I’ve been a Nova Noise choreographer since spring of my sophomore year.
Time commitment: Rehearse twice a week for one to two hours, sometimes adding extra hours before and after performances. We perform two to three times per semester.
“Dance has always been a great stress reliever and source of joy for me, and I am very glad to continue doing what I love with other Villanovans, some of whom are also engineers.”

Kevin So ‘17 CE
Activity: Villanova Singers all male vocal choir
Years singing: Began singing my freshman year. Before college, I was an instrumentalist (piano and trumpet).
Time commitment: Rehearses twice a week for choir rehearsal, but a lot more for additional practice and personal learning time.
“Music is an incredibly time-consuming hobby, not only in terms of rehearsals and practice, but also learning how to write, structure lyrics, work with theory courses and come up with ideas. That’s the flip side of learning the technical aspects like singing, choreography, recording and basic production.”

Numerous Villanova Engineers
Activity: The Villanova Bond Time commitment: Four hours of practice each week, plus performances or all home football and basketball games, and travel to tournament games. Additional performances at a variety of events.

College’s Graduate Club Provides Opportunity to Connect and Unwind

In fall 2014, Villanova’s College of Engineering formed the CEER Graduate Club with a goal of creating a sense of community among the College’s graduate students. Open to all full-time and part-time graduate students, the club has grown to approximately 50 active members in less than two years.

Given the researched-oriented nature of their work, full-time and part-time graduate students, the club has grown to approximately 50 active members in less than two years.

Outside of the networking aspect, club leadership takes pride in its responsibility to represent all graduate students within the College of Engineering in front of the faculty and the administration. Last academic year, the board members helped to coordinate the graduate student orientation, and welcomed new students to campus. Club president Tamara Dinello, PhD candidate, says, “As an international student, it can be hard to be in a country you’ve never been to.”

The club hosts monthly on-campus events including morning coffee socials, afternoon pizza parties and movie nights. Club leadership also organizes social events throughout the year such as a night out at a Philadelphia Union game or participating in the St. Thomas of Villanova Day of Service.

Club Treasurer Sean Colby, PhD candidate, enjoys being a part of the club because, “It’s nice to connect with other students. It allows us to meet people from different departments that we may not have met otherwise.”

Colley believes the club offers a chance to decompress and says, “Many of us get caught up in our research, and the club gives us a break from other graduate students so we don’t burn out.”

As a result of their meeting, Golato was appointed a leader for the College’s 2015 fall break trip to Nicaragua. The goal of the trip was to support a long-term community initiative to provide greater access to clean water.

Villanova Engineering PhD candidate Andrew Golato was initially drawn to service work when his co-worker Tim Montessori told him about the James A. Masterson Foundation, which he had established to honor his late brother Jim, a Villanova alumnus. The organization’s mission is to help “people in crisis” and at the time was raising money to buy water filters for families and communities in developing countries. When asked if he wanted to get involved, Golato welcomed the opportunity and was brought onto the foundation’s advisory board. Shortly thereafter, he embarked on his first service trip to GoMab, where he and Tim traveled to remote locations and distributed 150 filters, which provided more than 12,000 people with clean drinking water.

This life-changing experience made a strong impression on Golato, leading him to initiate a meeting with the College’s Director of Engineering Service Learning Jordan Emadi, who sought student volunteers to travel and support the initiatives of Villanova’s service partners around the globe.

As a result of his meeting, Golato was appointed a leader for the College’s 2015 fall break trip to Nicaragua. The goal of the trip was to support a long-term community initiative to provide greater access to clean water.

Andrew Golato ‘15 ME who has been living in Nicaragua, fully immersed in the project since fall 2015.

On the last day of the trip, the Villanova team joined together with the community for a big dinner with dancing. While the community was grateful for the work the students had done, Golato recalls, “The students and the local beneficiaries felt this was a humbling experience.”

Back on campus, Golato and his teammates are busy wrapping up the final deliverables, which include a recommendation for a computer model of a water distribution system, a cost-benefit analysis, two site maps and a how-to guide. A follow-up trip is scheduled for spring 2017.

Golato appreciates this opportunity because he says he could have found this in Villanova. He knows it will be an advantage as he applies for teaching positions at universities after completing his doctorate this May. He notes, “VSLs give me a greater perspective on what I thought was a narrow cause.”

He believes that this project can be more about teaching and not just technology, “which can make you feel really global.”

TO STRUCTURAL HEALTH MONITORING AT VILLANOVA

G
iven the service projects he worked on, one might assume that PhD candidate Andrew Golato is a civil or environmental engineer pursuing his doctorate in the area of water resources. In fact, Golato’s service experiences are unrelated to his academic pursuits, which lie in the area of structural health monitoring, a subfield of non-destructive testing that allows for real-time, in situ monitoring of structural components.

For those unfamiliar with the field, Golato offers an analogy, “Your car has a check-engine light, which monitors your engine to ensure all components function properly. When one is failing, the light turns on, and a mechanic connects a computer to the car, and the computer identifies the faulty component.”

In Golato’s work there is a prism of piezoelectric sensors, which continually transmits a preprogrammed ultrasonic wave into the pipe or plate being inspected. If a flaw (crack, hole, corrosion, solid build-up, delamination) is detected, the propagating acoustic wave will be scattered by that flaw. A series of piezoelectric sensors functioning as “receivers” detect that scattering and record it. The recorded scattered waveform is then applied to a computer algorithm that Golato seeks, which uses prior knowledge of modeled scanning physics and wave propagation to provide the coordinates of the damage. The output is an image of the inspected plate or pipe on a computer screen with any and all damage properly located within 10 mm.

Golato is advised by Villanova University Mechanical Engineering Professor Todd Sliwinski, PhD, and Temple University’s Faisal Ahmed, PhD, an associate professor of Electrical and Computer Engineering. He also works with Center for Advanced Computing and Communication Director Moussa Amini, PhD.

Andrew Golato inspects a steel test panel in an ultrasonic-based defect localization scheme for thin plates.

FROM WATER RESOURCES MANAGEMENT IN NICARAGUA...