Celebrating Mathematics Teaching with Jennifer Quinn

By: Amalia Kouloglou (T-18)

Dr. Jennifer Quinn, a Professor of Mathematics at the University of Washington-Tacoma, will be the keynote speaker at the fifteenth annual TIME 2000 event, Celebrating Mathematics Teaching, on November 4, 2016, at Queens College. She has served as the Executive Director for the Association for Women in Mathematics, Second Vice President of the Mathematical Association of America (MAA), and co-editor of the magazine Math Horizons. Her research in mathematics is in the fields of combinatorics and graph theory. She co-authored Proofs That Really Count: The Art of Combinatorial Proof. In 2007, she received the MAA Haimo Award for Distinguished College or University Teaching. Thus, it is most appropriate that she joins us in Celebrating Mathematics Teaching. I had the privilege to interview Dr. Quinn about her experiences with mathematics and teaching:

Q: At what point in your life did you become interested in mathematics? Were you interested in any subject prior to mathematics?
A: I have always liked mathematics. I clearly remember playing with cuisenaire rods in the second grade to visualize basic arithmetic. I was never particularly good at timed drills but enjoyed the puzzle-solving aspect of word problems. Growing up, I thought I would become a physicist (like my Dad) or an artist or an actress. In college, I declared a biology major. I took math classes in college because that was what I had always done. One special professor, Dr. William Lenhart, encouraged me. When he ran into me on campus he’d say, “You should take another math class. You’re really good at this.” That transformed into, “You’ve taken so many math classes, you should become a math major.” So I did. I completed a double major in biology and mathematics but it wasn’t until second semester, senior year, when I enrolled in my final math elective that I found my mathematical passion—Combinatorics. I am an accidental mathematician and a proud combinatorialist.

Q: What inspired you to begin teaching mathematics?
A: Teaching has always been a part of my life. I was the kid who helped others during class from an early age. I tutored during college. It was never a question of whether I would teach but what I would teach and to whom.

Q: What do you enjoy the most about your role as a mathematics professor at the University of Washington, Tacoma?
A: It’s hard to pick just one thing. Being a professor means that I teach, engage in scholarship, and serve my many communities. But honestly, my students are inspirational. Since UW-Tacoma is an urban-serving university, many students are non-traditional, often first-generation; they work full- or part-time jobs while attending school. Math skills are often rusty after years of disuse. And yet, I have never had students work harder. My role is to appreciate and leverage the skills they bring into the classroom, work together and without judgment to fill in missing gaps, and bring everyone to the same level of achievement and understanding.

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Jennifer Quinn (Continued from page 1)

Q: As pre-service math teachers, we are always interested in the future of math pedagogy. What, if anything, can you indicate in the field of mathematics education that you feel will play a big role in the next generation of math teachers?
A: I believe “Active Learning” is the next big thing. While many fine teachers already incorporate mathematical investigation, communication, and group problem-solving into their teaching practice, there is a developing movement for more systematic incorporation across all levels of mathematics education. It plays a central role in the National Council of Teachers of Mathematics’ Principles to Actions (2014), in the newest statement by the Council Board of the Mathematical Sciences member society presidents (2016) [www.cbmsweb.org/Statements/Active_Learning_Statement.docx], and in the August 17, 2016, Call to Action: Incorporating Active STEM Learning Strategies into K-12 and Higher Education from the White House Office of Science and Technology Policy. I participated in the White House sponsored “Day of Active Learning” on October 25.

Q: How was your experience serving as Executive Director for the Association for Women in Mathematics? What advice can you give to young women who are interested in pursuing a career in mathematics?
A: Serving as Executive Director was an incredible opportunity to promote and support mathematics. I learned a great deal from the pioneering women of the Association. The battles they fought and the pathways they forged, made my own experience a walk in the park. Women have come a long way in mathematics—but that does not mean there isn’t more work to do. As for advice, I think it applies to anyone, not just women: Don’t listen to the people telling you what is not possible. If you know what you want and you’re willing to work for it, you can make it happen.

Q: What advice can you give to prospective math educators and the students of TIME 2000?
A: To the students: “Please don’t buy into the myth that to excel at mathematics you must be an idiosyncratic genius. Work hard and take just one more math class.”

To the math educators: “Appreciate and encourage your students. We live in a world of deficit thinking—too quick to attack, too quick to blame, too quick to dismiss. See your students as emerging scholars and help them to see themselves the same way.”

Q: What else would you like to share?
A: Just a reminder that there is value in struggle and persistence. That’s where the real learning happens. If you don’t understand a mathematical question immediately, it is not an indicator of intelligence or ability; it is an opportunity to grow and achieve.

Where’s the Math? In a Prison Break, Of Course!  By: Zean Khan (T-16)

Okay, the title may be a little misleading. None of us actually went to prison. But we did play a game by a room escape company, OMEscape, which was designed as a prison break. The concept behind a “room escape” game is that a party of people must combine heads and deal with puzzles and riddles which, when solved, will help them “escape the room.” These games are actually inspired by a genre of videogames of the same design, the goal being to escape a room by using elements around you.

On Monday, October 10, 2016, several members of the senior cohort (T-16) visited an escape room, “T16/2 + 2” group, as we named ourselves (half of T-16 plus two friends), met at OMEscape in Manhattan. We met Jose, our Game Master for the day. His job was to direct the game and give hints or answer questions at his discretion. He told us to form three groups before heading into the game. Being the math people we are, someone used a random number generator on his/her phone, assigned everyone a number, and placed everyone into groups.

After handing over our phones, we were led into the game room, and each group was placed into a cell. The object was to solve all the puzzles in each cell in order to escape, after which we would need to escape the rest of the rooms together. We worked together and escaped three other rooms. Team “T16/2 + 2” did not finish the game on time, which was sad because we used almost every single problem-solving strategy we had learned in our mathematics classes to get through the game. Our Game Master offered us an extra five minutes, much to our delight and surprise, and we promptly solved the last puzzle!

We left the room after 70 minutes of hard teamwork, bonding, and shouting over each other. Our team was photographed, and we will forever be remembered as one of the groups that escaped from prison. In the picture, you can see me holding the sign “I am just passing by” because my teammate and I decided to sit down (while a few others solved the last puzzle) to discuss our prison life and what we planned to do when we escaped.

Details of the puzzles have been omitted from this article in case you want to visit this escape room yourself. Thank you to the organizer of this event, Amanda Lee (T-16), who patiently dealt with our cohort. Thanks, Amanda!
Fourteen hours of intense travel, but finally a “Welcome to Japan!” by the airhostess. I couldn’t ascertain much of Japan just yet since it was night; almost pitch black in a city that was not quite like the one that never sleeps. But, already, it seemed like a new world that would take a lot of effort and will to adjust to. The very first morning, I decided to explore the neighborhood around the hotel. I encountered shrine upon shrine in the most hidden places – places I would never think would shelter a spiritual habitat. Little did I know, they would be the first of many spiritually enriching experiences in this foreign land, and ultimately the muse for the presentation I gave at the end of my course. Fast-forward a bit and a market appeared almost out of nowhere. This market was like none I had ever seen before. Filled with the freshest, largest and most vividly colored fruits my eyes had set themselves on, the market welcomed a class of young students strolling through just as I was, their heads turned just as mine was. That first morning in Japan was definitely well spent.

In the summer of 2016, I studied abroad in Japan. Based in Toyohashi and Tokyo, I took a course entitled, “Technology, Industry and Culture in 21st Century Japan.” Two reasons led me to study abroad in Japan over the summer: (1) having a transformative experience studying abroad in China in the winter of 2016 and (2) believing that expanding my knowledge of cultures outside of New York City would help me understand the cultures of my future students inside a New York City classroom.

I stepped foot on the campus of Toyohashi University of Technology (TUT). It was beautiful, fresh with faces determined to change the world for the better. It was an honor to be amongst those faces. Classes were filled with fiery lessons on combustion, the world’s first battery-free car running only on kinetic energy, the natural disasters that devastated the Japanese people, and of course, anime culture.

Classes at TUT were not quite like those at Queens College. I took a variety of classes: Japanese language classes, laboratory classes, and classes on Japanese culture. The language classes and the laboratory classes consisted solely of American students (comprised of students from several CUNY campuses) and a Japanese professor (we referred to each of our professors as “Sensei”). The classes on Japanese culture included material on popular culture, daily life, stereotypes, politics, and natural disasters, amongst other topics. In the class on popular culture, we watched Kiki’s Delivery Service, the Japanese and American versions. Based on both screenings, we were able to make comparisons. The differences we found between the Japanese and American versions reflect common stereotypes of the respective target audiences. For example, the tone and diction of Kiki in the Japanese version was reflective of a more reserved, obedient (to parents) female, whereas the tone of Kiki in the American version was more ruder and the vocal volume was louder. This then segued to the next class session’s topic of Japanese and American stereotypes. In the class session on stereotypes, the entire class was split into two groups, one comprised of American students and one comprised of TUT professors. Each group talked in groups about stereotypes they knew of regarding the country they were not from (either the United States or Japan). After group discussions, the groups listed on the board what they discussed. The professor for that day then created groups that consisted of some American students and some TUT professors. Each group discussed the stereotypes that were written on the board. Learning from my professors what life was like for them in Japan was just as enjoyable as telling them about my life in the United States!

Just in case you were confused about why the group work included TUT professors, I’ll clarify: All classes on Japanese culture were comprised of the American CUNY students as well as TUT professors. Each class session was centered around CUNY student and TUT professor interactions. At the end of each session, one of the professors would present her or his latest research; there was even one presentation that included a lot of information on differential equations, which made me ecstatic that I understood. Outside of class was different because we had time to interact with TUT students, whether at lunch or on the tennis court.

While studying abroad, you never know when an adventure through mysterious lands will commence. In what seemed like minutes, I soared from castles and pagodas to fashion hubs and skyscrapers. On the weekends, I rode the Shinkansen bullet train, something I had only experienced years before through a YouTube video. I visited Osaka and Kyoto one weekend; Hiroshima and Miyajima on the same day, the next weekend. I took a quick cable car ride up to the peak of the mountains in Miyajima before hiking to the top of a waterfall in pouring rain in Kobe. Nature had never been so real to me. The farewell ceremony on campus with my senseis, classmates, and new friends made me feel like I was part of a family so far away from my New York home. Studying abroad made me a stronger person because I not only survived, I thrived! Not only did I learn information that I could bring back for my studies and future students, but I also learned about my capabilities. The impression Japan left on me has definitely left me craving more adventure, more learning, more nature, and more culture.
Work, Work, Work: The Need for Effective and Inspiring Teachers

By: Amalia Kouloglou (T-18)

Good news for TIME 2000 students: Jobs will be available for us when we graduate! According to an Education Week (September 14, 2016) article, “Analysis Projects Growing National Shortfall of Teachers,” by Madeline Will, there has been a growing teacher shortage across the United States. In the last 5 years, there has been a 35% decline in the number of students who enroll in teacher preparation programs. Since there is a shortage of teachers, more openings will be available in schools, especially in high-poverty schools. In the 2015-16 school year, the United States had 60,000 teacher openings that were not filled, and this number is expected to rise to 112,000 by 2018. Specifically in the teaching of mathematics, there have been teacher shortages reported in 42 states. In an effort to bring more teachers into the classroom, changes are bound to occur to attract more effective teachers. These changes may include enhancing the mentoring for new teachers and providing a more competitive salary and benefits package nationally. TIME 2000 is ahead of the game by providing seminars and professional development opportunities to ensure that its students are well prepared and fully qualified to start teaching mathematics upon graduation!

Interested in TIME 2000? For more information, visit TIME2000.qc.cuny.edu

TIME for Fun!

Field Day 2016

TIME 2000 students, faculty, and staff celebrate the end of a great year with Field Day! June 7, 2016

T-5, Class of 2006, at Dr. Artzt’s Annual Reunion Party on June 9th, 2016, above

Members of T-15, Class of 2016, Prepare to Graduate Above and left