# Get to Know Math Chair Dylan Helliwell.

The first in a series of Math faculty profiles
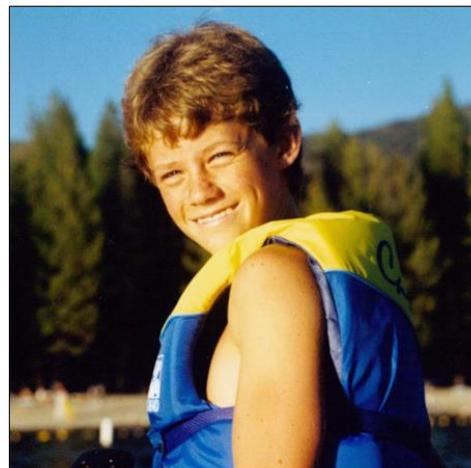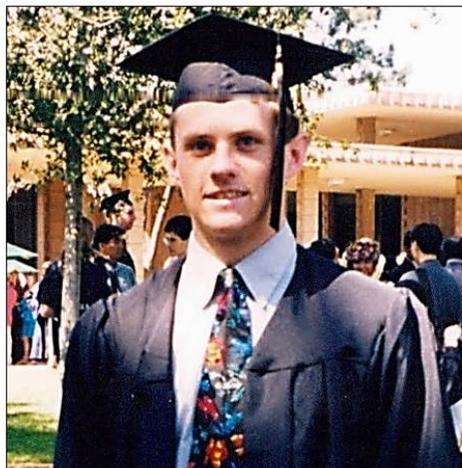
Where did you grow up?
I grew up in Incline Village, Nevada. This is at the north end of Lake Tahoe, close to the border between Nevada and California. My parents got divorced when I was young, and my dad moved to LA and then San Diego), so I spent a lot of summers in Southern California as well.

If you are not from Seattle, when and why did you come here?
I came to Seattle for grad school. I got my PhD at the University of Washington. UW was on my list for two reasons. First, they had a number of faculty who specialized in geometry, which is what I wanted to study. Second, after I graduated from high school, my mom moved up to Anacortes, and I thought it would be nice to be close to her.

When and how did you first become interested in math?
I have always liked math. My dad is an applied mathematician, and I have fond memories of long chats about math and science (usually on long drives to the Colorado River for weekends of swimming and water skiing). I didn't really start thinking of myself as "good at math" until the end of middle school/beginning of high school. I remember having a discussion at the end of the year about parabolas after school one day with my middle school math teacher and one other student. The other student and I got different answers on some problem and we were trying to figure out who was right. The teacher did a great job of letting us figure things out for ourselves. Ultimately the other student was correct, but she and I both agreed that playing around with the problem together was more fun than just getting the answer right.

Where did you go to college and what was your major?
I went to Harvey Mudd College in Claremont California. At first, I wasn't sure if I wanted to major in math, physics, or engineering. It happened that I was invited to a summer "Bridge Program" that covered calculus and an intro to programming before the freshman year officially started. At the end of the summer, the calculus instructor invited me to meet with him in his office. When I got there, he commented that I had done well on the end-of-summer assessment and that I should consider being a math major. I was sold on the spot. I loved my physics classes (and I enjoyed my only engineering class too – but that is another story), but the attention and encouragement from the math department made all the difference.

When did you start teaching at Seattle U. and how did that come about?
I started my grad work at UW in the Fall of 1998, and it took me seven years to complete my PhD. When it came time to look for work, the other grad students and I noted that SU was hiring. The conventional wisdom

was that SU would not hire UW grads though. (Apparently there was a moratorium on UW grads because some departments had too many faculty from UW.) It just so happened that the provost at the time was on sabbatical and the associate provost was more open to UW grads. So for one year there was a window where UW grads were viable. The other lucky thing for me was that I had done a fair amount of work as a grad student with folks in the UW math department who were interested in math education and the SU math department was looking to fill a math-ed niche. Without realizing it, I was distinguishing myself from the pack. You never know what aspects of your life experience will contribute to new opportunities!

What is your favorite class to teach and why?
I have always liked MATH 3460 – Euclidean and Modern Geometry. I love geometry, in all its forms (well, almost – I am not a huge fan of algebraic geometry…), and this class explores a bunch of fun problems, from classical to more recent.

What is the most exciting math project you've ever been involved with?
Eric Bahuaud and I led a summer REU where, with seven undergrads from around the country, we explored questions in Taxicab Geometry, which is similar to Euclidean geometry, but the way distance is measured is altered. I had some plans for problems to explore, but I did not expect some of the surprising results we discovered, nor some of the interesting directions that students wanted to pursue. I am still working on these problems, and love continuing to explore them, especially with students!

What is your favorite pastime, other than math?
I practice aikido, which is a Japanese martial art that emphasizes redirecting energy, rather than stopping or subduing an opponent. I love the physical part of practice. Lots of dynamic motion and learning about how our bodies work. But I also like the psychological part. Many of the mental skills can also be applied to stressful and difficult situations that do not involve physical confrontation.

What is your most prized possession?
At first, I didn't know how to answer this question. But there is one thing that I have that I would be very sad about if I lost. After my partner and I had been together for only a year or so, she bought me a "space pen" (the ink is under pressure so that it works even without the help of gravity). It is green (my favorite color) and engraved "FOR DYLAN LOVE TARAH." I have it with me almost all the time. I love it because it means, no matter where I am, I can do my favorite activity (math), and every time I pull it out to use it, I am reminded of my partner and my family.

If you could give college students one piece of advice for success in school, what would it be?
Just one? In that case, don't be afraid to be wrong. To elaborate: be curious; ask questions, even if you think they are simple/dumb/silly (they aren't); seek out peers who make you feel good about struggling with tough material; visit faculty in office hours, and outside of office hours. All of these activities put you at risk of exposing that you don't have all the answers, but it is not your job to know all the answers. Right now, it is your job to learn, and you can't learn if you close yourself off and hide what you don't already know.

If you could give college students one piece of advice for success in life, what would it be?
Mark Twain said "Find a job you enjoy doing, and you will never have to work a day in your life." While this may be true, it is also a conditional statement, and, as we learn in MATH 3000, the converse of this statement need not be true. I would argue that in this case, the converse is indeed false. In other words, there are other ways to love what you do. Wouldn't it be awful if it was an if and only if statement? So much pressure to find the "perfect" job! Certainly, seek out opportunities that excite you, but also, find joy in the things that come across your path unexpectedly, and be open to the possibility that there may be joyful bits hidden inside things that do not look so fun on the outside.