

My Earth science educator story – **Natalie Bursztyn** What I did, why I did it and what happened

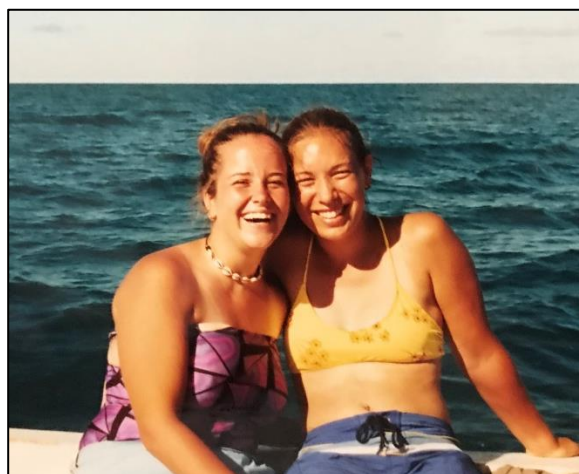


Wearing my custom-made geology-meets-roller-derby-helmet, complete with actual drill core from my research, after my dissertation defence. (Photo Credit: Eric Hiatt).

You can major in geology?

I went to Queen's University, Canada, planning on using a double major in biology and physics to somehow have a career making prosthetics. I thought engineers worked on trains. Obviously I had not done much in the way of research for my career path, but how many of us really know what we want to do and how to achieve that goal straight out of high school? I was lucky to have landed in a dorm only two doors away from Hilary Corlett, a geology major, and the girl who would become my closest friend and lab partner throughout my undergraduate degree. During my first semester in university I was so bored in my biology class, I couldn't bear the thought of taking part 2 the following semester and I steadfastly refused to register for it. I needed another class to fill my schedule and Hilary suggested geology. Despite having been friends for a couple of months, we somehow had not shared our majors with each other yet. I was surprised: "Geology? As in rocks? There are classes in that?" Hilary replied, laughing, "There's whole majors in that."

Since I liked rocks and needed a class, I decided to register for the Winter 1999 Geology 105 class with Dr. Leigh Smith, a man oddly shaped like Mr Potato Head. I instantly loved every second of it, and changed my major to geology without a second thought. One semester later I had a second thought about physics, and changed my major again to geological engineering so that I would have more physics in my curriculum. Hilary and I were lab partners in every geology class we took, we giggled constantly, made up songs about everything, pushed each other and excelled because of each other. We both landed junior geologist summer positions with AEC in Calgary, Alberta, and there I learned that the oil industry was not for me. After finishing my bachelor's degree, I stayed on at Queen's to do my masters with Gema Olivo for two reasons: 1) I had no idea what else to do with myself and, 2) the masters project I was being offered involved really cool rocks.



Hilary (left) and I (right) on a boat in Bermuda (2001) for a field excursion in our carbonate sedimentology course. Hilary later returned there for her MS and PhD! (Photo Credit: Joanne MacDonald).

Wait – what do I do now?

It was the 2004-2005 winter when it suddenly dawned on me that once I defended my master's thesis I would need to have some sort of job. I had done my

masters research on an unusual occurrence of precious metals, which set me up for employment in the mining industry. This industry was, unfortunately, the same type of work that I determined was not right for me some years earlier when I had worked for the oil company. Lack of forethought strikes again!

One of other the graduate students in our shared office space was from the US, and he told me that I could teach at the community college level in the US with my masters. I applied to three community colleges in California, interviewed, and got a job offer in Bakersfield, California before I definded. I had plenty of TA experience, but I had never taught a whole class before. I had never designed curriculum. All I knew going in was what I loved and what I hated about my university experience. Above all else I wanted to do whatever I could to make sure my students enjoyed themselves, actually wanted to come to class, and hopefully learned something too. I organized two field trips each semester for my big classes, and quickly got a contingent of geophytes who couldn't get enough geology field tripping – so they started a geology club.



Approximately 70 students on a field trip to the McKittrick tar seeps, California (2006? 2007?). The front row of students has just learned that they can identify diatomite by sticking it to their tongues. Kylie (left) is an elementary school teacher now and is finishing her masters in education this year. Travis (right) has been working in the oil industry and has just returned to school to do his masters in geology. (Photo Credit: Natalie Bursztyn).



Geology Club students and me (orange jacket) at the White Mountain Bristlecone Pines, California, on a self-organized nine-day summer field course (2010). I maintain an attitude of “I don’t see why you couldn’t do that” when it comes to accessibility. (Photo Credit: Rick Brantley).

The students fought for me.

I taught at Bakersfield College for six years and got tenure there before human resources incompetence and immigration issues tore into my blissfully carefree world. While I holed up in Canada waiting for a new work visa, unable to teach, and caught up in a situation where I couldn’t fulfil my contractual obligation for the school because the school hadn’t fulfilled their contractual obligation to immigration services- my students fought for me. They rallied, wrote letters, talked to the media, and showed me that my teaching had mattered. When I felt like I was in the depths of despair, six years of geology and Earth science students publicly shared their experiences in my classes and their successes that they credited to my teaching. They sent me photos from field trips they held in my honour and told me they missed me and they hoped I would be able to teach again soon. For the first time I knew that this was the career path for me, and I decided that I needed to earn my PhD in order to open the door to teaching opportunities in my country of citizenship.



Geology Club students making a “human mudcrack” near Fossil Falls, California. One of the photos sent to me while I was in “exile”.
(Photo Credit: Sirahuen Martinez).

In the summer of 2011, I started at Utah State University to earn a PhD in Geomorphology. Before my first month was up, my advisor (Joel Pederson) and I had agreed that I would do some component of my project on “something educationy”.

The result was a set of three augmented reality field trip apps, and a whole new direction in geoscience education research. Upon completing my PhD, I went to work at California State University – Fullerton as the geoscience education faculty member in an incredible supportive, fun, and collaborative geology department.

I have just finished my third, and final, year at California State University – Fullerton and am now embarking on another new adventure at Quest University in Canada, where I am a citizen.

Natalie Bursztyn, 38, Squamish, British Columbia, Canada, August 2018, nbursztyn@mac.com