A Columbia Professor's Friday by Bill Menke, April 6, 2025

I am a Professor of Earth and Environmental Sciences at Columbia University. My specialty is earthquakes and volcanoes and the Earth processes that cause them.

Columbia has received lots of attention in the press lately, almost all of it bad. We have been accused of an insufficient response to anti-Semitic incidents on campus, of reverse discrimination though our attention to inclusiveness and diversity, and of wasting government grant money on frivolous and esoteric studies and outright fraud. Many of our grants have been cancelled and further cuts have been threatened. I think that readers of this news coverage might develop a rather stilted view of what Columbia professors do and what teaching and performing research at Columbia is all about. So here is a little reality: what I did yesterday, April 5, 2025.

Being Friday, no formal classes are held, only seminars.

These days, everyone gets – and has to answer – reams of email. I spent the first hour of the morning working though mine. Most was routine, but one item took twenty minutes or so: The University Parking Office said it needed a copy of my car registration. So I walked back to my car in the parking lot, took a photo of it, and emailed it off.

My colleague Jim had emailed me yesterday, asking for my help in solving a thorny statistical problem that was confounding him. Jim is a geophysicist who uses GPS technology to track Earth movements and had a finding related to the uplift of the ground near melting glaciers. As in all of science, proving that a new result is not just a fluke due to measurement error is really important. I'm one of the authorities on this subject here at Columbia, having written a textbook on it. Jim's problem was challenging – almost, but not quite the same as one I had analyzed in my book. He and I discussed it in his office for more than an hour, and then I worked on it solo for a couple hours more in mine before I had a handle on it. I started to write up my analysis, but will need to finish it next week after running a few computer simulations.

Being the first Friday of the month, I spent some time backing up my notebook computer and changing my passwords on the University computer network. The backup went fine, but I blew the password update and locked myself out of the network. The Columbia IT folk had to reset the password for me.

I spent a half hour comparing notes with Andrew, a professor who, like me, studies earthquakes. He is in the midst of setting up a new type of earthquake monitoring system based on optical fibers. I had just seen a similar system in action on a recent visit to Iceland, where it is being used to monitor volcanic eruptions. I conveyed my excitement about the technology's potential.

Our first seminar of the afternoon was organized by our graduate students and reviewed the recent Myanmar earthquake – a terrible disaster that killed more than 3000 people. The seminar began with a presentation by Mike, one of our professors who studies the region. He explained why motion of the region's tectonic plates led to earthquakes of this type and size. A sequence of students then summarized results that scientists around the world had previously published, as well as preliminary new analyses just posted to the web. The accuracy of the estimate of the amount of fault motion - more than thirty feet, in this case – was scrutinized, especially by Meredith, one of our professors who specializes in such measurements. Fault motions are vitally important in understanding the damage that earthquakes cause. I was saddened by the thought that we scientists have understood the earthquake hazard of Myanmar since the 1990's. Unfortunately, that knowledge has not translated into the safety of the people living there.

There was no break before the next seminar, so I rushed off to the big auditorium on the other side of campus where it is held, mindful that I had once again forgotten to eat lunch. It was a lecture on the prediction of extreme weather events and was given by Ruby, a scientist from one of the National Laboratories. Hurricanes, floods and droughts are really not my field, but I listened carefully and managed to follow most of her talk. I was impressed by recent improvements to our ability to predict these events. An advance that especially interested me was a new way to measure the amount of energy in the atmosphere that potentially could be tapped by storms. It seemed to me that the idea might be applicable to some of my own work. I think my undergraduate students will find it helpful, too.

The lecture was followed by a Beer Hour. I sipped my IPA and chatted with graduate students, taking the opportunity to informally debrief one who served as the Teaching Assistant on our recent week-long Fieldtrip to Death Valley. This fieldtrip introduces a group of about twenty undergraduates to geological formations in this visually spectacular part of our country. I serve on the relevant oversight committee, and wanted to get her first-hand opinion on how well the trip went and whether the undergrads seemed to get something out of the experience. The news was good.

Just before heading home, I buttonholed a member of our Admissions Committee. At the University's direction, we have drastically cut back this year, and plan to admit only half of the graduate students that we normally do. I have been concerned that the University might cut our allotment even further, in anticipation of the government cutting our research grants further. I breathed a sigh of relief when he assured me that we were still on track for fifty percent. Life at Columbia is a balancing act these days. We need to be prudent and not make financial commitments that we might not be able to honor, but we need to hope for the future and maintain our ability to perform our core mission, too.