Inspiring Women: Elizabeth Miller

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Earthquake detective and triathlete: making tracks in New Mexico

Elizabeth Miller, with Earth and Environmental Sciences, helps the Lab better understand the history of the area's earthquakes and its potential seismic future.

"We're confident that there has been one major earthquake here in the past 10,000 years," she said, "but past studies suggest there may have been more than that. Knowing whether we average an earthquake every 10,000 years versus every 3,000 years has important implications for the Laboratory."

Miller, who began here in 2008 as a post-master's student, will help collect seismic and other data through new trenches dug around the Lab's property when this work begins later this year. Like cutting through a layer cake, Miller and other geologists analyze the uncovered bands that tell the region's history. For instance, a flood leaves a flat layer of sediment, and shifts in that layer could indicate there were earthquakes in that spot: the bigger the shift, the bigger the earthquake. Typically multiple geologists work in a trench so they can help corroborate each others' findings. The data gathered from this research can then be used to help model the area's shaky history for hazard assessments.

"We know that there has been more activity on the far West side of the Lab's property," said Miller, "and we know that TA-54 is in a fairly stable location. Not only does this help us understand what areas here might be at risk, it also helps us keep an eye on where we might site any new facilities.

Miller has been interested in geology ever since she can remember and would ask her parents to stop at gold panning locations on vacation so she could see what kinds of minerals she could discover.

“When my father told me I could actually get a job doing what I enjoyed most, I was thrilled,” Miller said. “Of course, taking that first geology class in college was make-or-break time for me, but thank goodness I didn’t need to reassess what I was going to do for a living.”

Digging a little deeper

When not at work, Miller pursues her volunteering efforts with the animal shelter, trains for Ironman Triathlon events and even finds time to bake. A current favorite recipe is vegan chocolate cupcakes with raspberry frosting.

As her application submitter pointed out: “Whether by day, night or all the rest of the time, Liz Miller brings remarkably high energy and multidimensional talent to all she does. Accomplishing any of these things might inspire respect. Accomplishing all simply *inspires*.”

Miller works for the EES-14's Earth System Observation group.

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