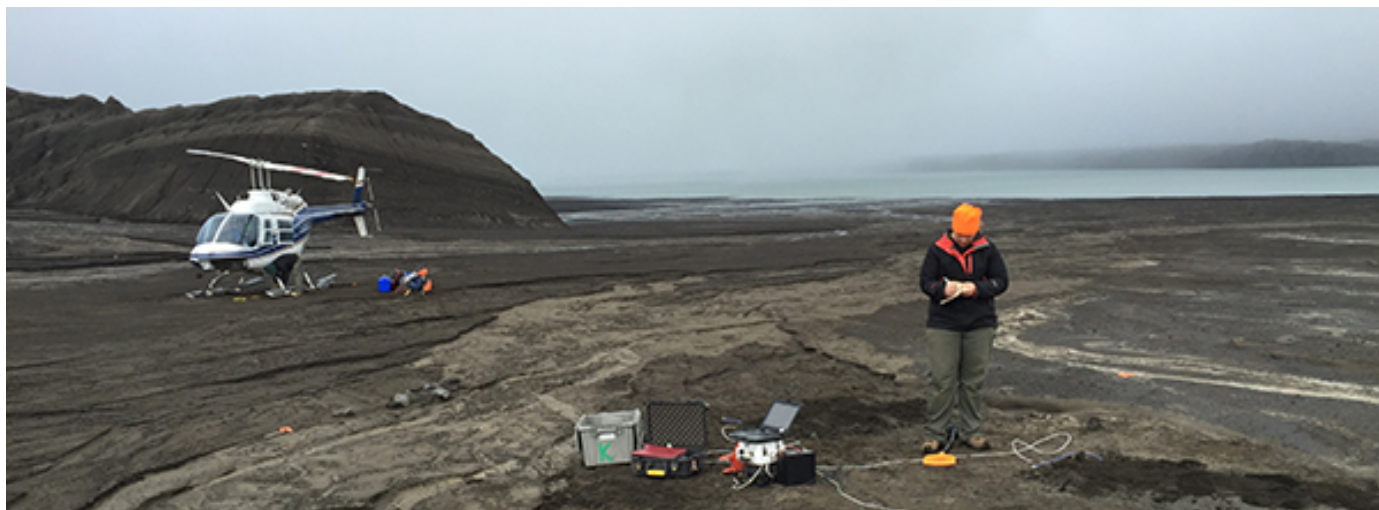


# GEORGIANNA ZELENAK



After Georgianna Zelenak '13 graduated high school, she participated in a trip with SEA Semester, a non-profit educational institution focused on environmental studies and the world's oceans. During the program Zelenak assisted with oceanographic research while learning to sail a tall ship. Little did she know that she would come full circle and get a dream job with the same organization years later; she recently took a job as SEA's science operations coordinator.

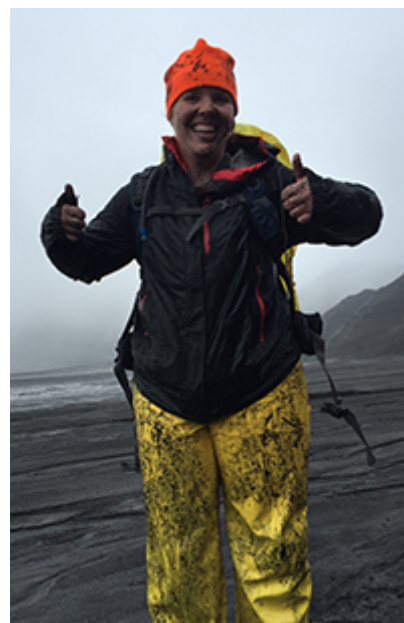
Zelenak is no stranger to working in places that many might not think of. After she graduated from Mines with a bachelor's degree in geophysical engineering, she did a stint studying plate tectonics in New Mexico and then worked in Hawaii installing sensors to study active volcanoes. "I was getting a lot of experience in magnetotellurics, which is a geophysical method that measures electromagnetic fields and how they change as they propagate into the earth. This method tells us about the conductivity underground, which can help us distinguish between different rock materials and temperatures. It's a very powerful tool. It was great getting experience with those instruments and having fun out in the field," she said.

She went to grad school at Scripps Institution of Oceanography, and because of her experience in Hawaii, Zelenak was able to work with her advisor to do a project on an active volcano in Alaska. So away they headed to Umnak Island, part of the Aleutian Islands Chain, where they studied Okmok Volcano, an active volcano that had suddenly erupted, without warning, in 2008. Zelenak and her team were going to map where the magma beneath the volcano was pooling in order to better understand the nature of future eruptions.

The region where they were working had just one resident living there year around; they bunked on a former World War II base that was turned into a cattle ranch. They accessed the volcano by helicopter and Zelenak tried to explain how stark the landscape was. "It was out of this world. You're out on this ranch, rolling green hills, really lush grass. When you get closer to the volcano suddenly it's barren, lava rock, snow on the side, and you come over the flank of the volcano and see this six mile wide hole in the ground."

They were dropped into the mouth of the volcano from the helicopter. The team was tasked with putting sensors into the caldera (a feature formed by the collapse of a volcano into itself, making a special form of a volcanic crater). For the next one and a half years of her studies for a master's degree, Zelenak studied the data that came directly from those sensors.

The skill set she built doing this field work, her involvement in science education (she helped create an exhibit at an aquarium to get diverse students interested in ocean research) and her background on research cruises at Scripps led her to a job with SEA Semester as their science operations coordinator, a position she has held since January 2017.



“My role is in support of the ship and the chief scientists,” Zelenak said. “There are huge amounts to deal with, like making sure everything’s up and running and making sure we have research permits. SEA as a whole has a huge variety of research projects. We do everything from climate science to marine geology, studying coral reefs, and we have a strong program looking at plastics in the ocean.”

As she starts her new job she knows that her time at Mines contributed greatly, especially the basic engineering background she got while she was a student. “I was a geophysics student, I wasn’t mechanical or electrical. But having that EPICS class where you learned some of the basic drafting, soldering, and fundamental engineering skills has served me really well. I know I can open up an instrument in the field and get a basic understanding of what is wrong.”

Georgianna Zelenak '13 has worked IN volcanoes & is now heading out to sea w/[@SEA\\_Semester!](#) (cc: [@MinesCERSE](#))  
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