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Center for Critical Minerals Strategy Manager
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What is your current occupation?

I manage the Center for Critical Minerals Strategy, housed under the broader energy-policy non-profit organization called SAFE or Securing America's Future Energy. We are based in Washington D.C. The Center's mission is to secure ethical and environmentally sustainable critical minerals supply chains for the global transition to a clean energy economy. Critical minerals are vital to our nation's economy, national defense sector and for the manufacturing of a variety of renewable energy technologies including electric vehicle batteries, solar panels, and wind turbines.

I am in charge of developing the Center's legislative and policy priorities related to the critical minerals space. I am the primary point person that coordinates with Congressional offices to gather policy-intel and disseminate the Center's priorities. Additionally, because I have a background in geology, I conduct research and write memos/policies related to hardrock mining, mineral processing, renewable energy development, and recycling. I also direct and manage the Center's associates and interns.

What is your educational background?

I am primarily trained as a research geologist. I have an Associate degree in Biology from Johnson County Community College and a Bachelor of Science in Geology from the University of Kansas. I also have a Master of Science in Structural Geology and Active Tectonics from

Oregon State University. While at graduate school, my research was focused on geological mapping and seismic hazard analysis of active faults in the Pacific Northwest.

A key message for students is that the geoscience workforce is dynamic, and boundaries between sectors and occupations are fluid. How has this been true in your career?

A geoscience education is varied, dynamic, and exciting. The boundaries between the physical science, the applied science, and the policies that govern the geosciences are fluid and very much related to one another. While at the University of Kansas I completed a senior's thesis project in structural geology which was a spectacular experience. After completing my undergraduate degree, I wanted to try something a bit more "off the beaten path" and decided to apply for a geoscience policy internship with the American Geosciences Institute based in Washington D.C. This experience allowed me to learn more about how federal science institutions, such as the U.S. Geological Survey and others, support the needs of the nation. After AGI, I worked in the public affairs department at the American Geophysical Union, gaining further experience in the art of reading and disseminating policies related to earth science federal agencies. After two years in the geoscience policy sphere, I decided to go back to school for my masters because I missed the "hard science" of geology and the field work.

I moved to Oregon to complete a master's degree, funded in part, by the USGS. My project involved creating a geological map of region in southern Washington state where the structural geology and tectonics were still unknown. This experience taught me how to be a critical thinker and how to best apply the scientific method to large-scale tectonics questions. After graduating from OSU, I worked at the Washington Geological Survey as a field assistant helping to create geological maps. This state government experience then helped me get a job at the USGS, where I compiled geological maps to help create a national scale geological map database of the entire United States. This experience was amazing, and vital to my progression as a field geologist and an earth scientist. How did I then end up back in DC, you may say? Great question. Even though I loved what I was doing at the USGS, I missed the varied day-to-day human-interactions that I had while working in DC at AGI and AGU.

My experiences working at the federal and state government level were integral to my job offer at the Center for Critical Minerals Strategy, because I now understood the ins and outs of how federal and state government programs operated and could use this knowledge in my new position. At the Center, we advocate for existing and new federal programs that fund and conduct earth science research in the critical minerals space, therefore allowing me to apply my real-world experience to my new position. Additionally, I'm now learning more and more everyday about the downstream applications of geology as they apply to battery manufacturing component companies and companies that make solar panels and other renewable energy technologies. Also, I get to learn more about mining practices and the environmental regulations governing these practices to think of ways in which these regulations and policies can be best implemented and updated at the regulatory and legislative scale. This is super interesting and

enables you to stretch other "parts" of your brain that you normally wouldn't if you stick to a more "classic" science career path.

Where do you see your sector moving in future years? How would you advise students to prepare to be competitive job applicants and successful employees?

Critical minerals and materials are essential for the future transition to a clean energy economy, and for helping the U.S. become less dependent on oil. The public and decision-makers need to be educated on the upstream portion of the critical minerals supply chain in order to secure it for our future energy needs. For example, where are we getting our minerals from? What countries import them to the US and do they have good environmental and human labor standards? I see the geoscience policy sector really growing in the future with an increase in the need for employees that not only understand policy, but that really understand the science and research supporting the policy. Geoscience, environmental science, and environmental policy students are already needed in the earth science policy space and the need for more of them is only going to increase with time.

My number one piece of advice would be to explore different parts of the geosciences and to not get too bogged down in the classic idea of applying directly to graduate school after your undergraduate degree. Take some time between degrees to explore alternative career options in the science space or even in the applied science space before you jump into a multi-year long commitment to graduate school. Intern in your local government, at a non-profit related to environment and earth science issues, at an energy-related non-profit, or even at an oil company or alternative energy company. These experiences will help you discover what you do and do not want to do with your life, so that you are sure of what you want to study if you decide to go back to school. Alternatively, you don't even have to go back to school after your undergraduate experience if you like, and maybe even work your way up the ladder at a non-profit or at an environmental engineering firm. After doing this for a couple years, revisit the idea of graduate school or of applying to a more permanent job, and I guarantee you will be viewed as a more successful applicant thanks to your diverse work history.

What is the role of networking in your sector? Do you have advice for a student who is just beginning to build their network? What is the best way for students to get their foot in the door?

Networking is a part of my everyday work experience. I cannot stress how important it is to expose yourself to people in all aspects of the earth sciences. Be sure to reach out to people for informational interviews to learn all about all of the different career path options for geoscience students. I think the best way to get your foot in the door in the geoscience policy space is to apply for an internship or to introduce yourself to someone working in that sector. Most times, they will then point you in the direction of an internship or a fellowship.

What does a "typical" day of work look like for you?

A typical day for me consists of a handful of meetings, either with think tanks, non-profits, federal agency staff or Congressional Hill staff. Then I have some time to digest what I've learned from the meetings and to do research surrounding whatever project or policy focus area we are concentrating on at the moment. As of right now, it's what critical minerals make up solar panel photovoltaic arrays and the details surrounding the supply chain of these materials in the US. Overall, my days vary in their content and I do not have a "set" schedule of daily tasks.

What is the best part of your job?

The best part of my job is that I get to learn new things daily and that I get to work with people from all over the nation and the world. I enjoy learning from others and by myself, and this job allows me to do that. I also enjoy writing and researching.

Do you have any other comments or advice for students looking to enter your sector of the geoscience workforce?

Do not be afraid to take risks and to talk to people you do not know! You'll never know you don't like something till you try it.

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