

From Carbonates to Congress: Applying the Geosciences to the Policy-Making Process



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When I interviewed for the GSA-USGS Congressional Science Fellowship in February 2021, COVID-19 vaccines had only been available for a few weeks, I was at the very end of writing my doctoral dissertation, and I had spent the last year in quarantine. The pandemic highlighted, among many issues, that scientifically sound policies were vital to the health of the world, and it became apparent to me that I needed to apply my geologic training and knowledge to try and create tangible, impactful differences.

I started my fellowship at the end of September 2022 in the office of Congresswoman Alexandria Ocasio-Cortez (D-NY), where I was selected to help her build up her environmental, climate, and energy portfolios. At the beginning of my fellowship, the Build Back Better Act (BBB) and Infrastructure Investment and Jobs Act (IIJA) were still works in progress. A large part of BBB was addressing climate and environmental issues. I was tasked to work with other House and Senate offices on developing the Civilian Climate Corps (CCC) with the BBB, along with other initiatives within both pieces of legislation that addressed the impacts of climate change on our workforce, infrastructure, and environment. Although IIJA was passed and signed into law, BBB was passed through the House and now sits with the Senate with an uncertain future.

Because Ocasio-Cortez is one of the champions for the Green New Deal (GND), the Committee of Oversight and Reform, on which she sits, organized a hearing on the importance of the GND. The main objectives of this piece of legislation are to promote transition from fossil fuels to renewable energies, strengthen the economy by creating jobs and training people in skills that will become more important as our global climate shifts, and lift historically disadvantaged communities up by having them drive this transition.

As a geoscientist, climate change and protecting the natural world around us have been key reasons for much of the scientific research conducted. My own research focused on how microorganisms can help create large carbonate rock assemblages deep underground. The environment these microbes thrive in is considered very hard to exist in because there is no sunlight and very little water or oxygen. One microbe on its own may not seem important, but when there are a large group of them cycling different chemical compounds over time, these microscopic creatures can create large rock packages that are meters thick and many square meters wide. I see this as similar to how Congress operates. When various stakeholders and members of Congress come together, legislation is passed that can create impact and

meaningful change to the lives of many people. It is also the reason I believe the optimism and energy some members of Congress have is justified. Over time, working together has created pieces of legislation that have helped create and protect national parks, save endangered species, and ensure clean air and water. Legislation like the GND can help make the strides necessary to become more resilient to climate change by working together and having these efforts led by communities that have been historically left behind. Like the microbes in caves and deep underground that I studied, we can also thrive in uncertain times and conditions when we work together.

When people asked me what I envisioned for my future after earning my Ph.D., I did not imagine I would have the opportunity to help organize congressional hearings, which highlight major issues such as the housing problem our country is currently experiencing, on a national platform. During my graduate studies, I spent my days measuring isotopes of carbonates, conducting microbial incubation experiments, and generally being in either a lab or at my computer reading and/or writing. Working in the office of a congressperson is much more fast paced and generally revolves around learning as much as possible as quickly as possible so that votes can be made, questions can be asked to expert witnesses during hearings, or legislation can be created with various stakeholders to help improve the everyday lives of Americans.

Engaging in the policy-making process has allowed me to utilize the skills geoscientists learn to sharpen in different ways. The ability to make observations, analyze data, apply knowledge, and effectively communicate have been crucial to me learning how to present policies, work in a bipartisan manner, and remain calm and productive during tight turnarounds. I am in awe of Hill staffers and members of Congress who work tirelessly day in and day out to create a better future for the United States, and our world at large, and I only aim to continue playing a role, however small, in helping make it a reality during the rest of my fellowship.

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