

### Geo-CVD 2016

Each year, SSA invites U.S. graduate student members to apply for grants to attend Geosciences Congressional Visits Day (Geo-CVD). This SSA student member opportunity is made possible by the generous support of SSA members—you can donate to the SSA Geo-CVD Travel Grant Fund when you renew your SSA membership.

You don't have to be a student to take part in Geo-CVD. If you'd like to participate, send an e-mail to [govtrelations@seismosoc.org](mailto:govtrelations@seismosoc.org) with "2017 Geo-CVD" in the subject line.

Student Geo-CVD grant-winners write brief essays about their experiences; the 2016 Geo-CVD winners' essays are published below.

### LEARNING TO ADVOCATE FOR EARTH SCIENCE AT THE 2016 GEOSCIENCES CONGRESSIONAL VISIT DAY

#### Rob Anthony

As I have progressed through my Ph.D. in geosciences, I have learned much about seismology and begun to realize the importance of communicating effectively with policy makers. This communication plays a key role in ensuring that adequate resources are available to advance scientific discoveries. During my first few years of graduate school, I gave little thought to how entities enabling my research—such as Incorporated Research Institutions for Seismology (IRIS), the U.S. Geological Survey (USGS), and the National Science Foundation (NSF)—acquired their funding. Slowly, the enlightening messages presented during SSA presidential addresses, public policy luncheons, and Elizabeth Duffy's government relations workshops sank in. I realized I needed to take steps to learn how to effectively advocate for our science if I wanted to help sustain for others the incredible support and opportunities I have received through graduate school.

Geo-CVD was a fantastic opportunity to gain exposure to how Congress works and the current

status of geoscience funding. It also provided insight into what we can do as scientists to keep policy makers apprised of how geoscience funding benefits their constituents. Before meeting with congressional offices on the Hill, the geoscientists and students participating in Geo-CVD met for an afternoon at the American Geophysical Union (AGU) headquarters. We were presented with an overview of the current bills that impact geoscience funding, crafted a unified message to take to the Hill, and heard firsthand from congressional staffers of the importance that we, as scientists, take time to engage with members of Congress.

For the big day on the Hill, I was part of the Colorado team and met with the offices of both Colorado's senators and four of its seven representatives. Discussions mainly focused on geoscience issues that impact Colorado residents, such as hydraulic fracturing, induced seismicity through wastewater injection, the potential for damaging earthquakes on unknown faults, and how geoscience is at the heart of Colorado's mining and oil and gas economy. Our "ask" for continued support of geoscience funding and for representatives to join the newly founded House Earth and Space Science Cau-



▲ SSA 2016 Geo-CVD travel-grant winner Rob Anthony poses by the White House during his visit to Washington D. C. The color version of this figure is available only in the electronic edition.

cus was generally well-received. Colorado legislators have been engaged and supportive of the geosciences, with Rep. Jared Polis (D) co-chairing the caucus, and Sen. Cory Gardner (R) spearheading the favorable Senate version of the American Innovation and Competitiveness Act (S. 3084).

However, there is still much work to be done. The house version of the America COMPETES Reauthorization Act (H.R. 1806) mandates a 12% decrease in geoscience funding and restricts NSF's ability to allocate funding to meet the needs of researchers. As scientists, we need to bridge the communications gap with policy makers by reaching out to our members of Congress as well as actively engaging with our local communities. Especially in this new political climate, we must stand together to express the importance of geoscience research and education in preparing for natural disasters, managing resources, and taking advantage of economic opportunities.

*Rob Anthony recently completed his Ph.D. at Colorado State University and has started a USGS Mendenhall Postdoc at Albuquerque Seismological Laboratory. Contact him at reanthonny@usgs.gov.*

### GEO-CVD: A TASTE OF SCIENCE POLITICS

#### Kendra Johnson

I applied for a Geo-CVD grant because I believe in collaboration among science, politics, and the public. I hoped my participation would show me how science and politics interact—particularly around funding—and allow me to contribute to the dialogue. I was also curious about how and why the geosciences were dismissed as less-important in earlier budget discussions, which motivated me to speak on behalf of my field to our representatives in Washington, helping to make them aware of the immediate and long-term benefits of Earth science funding. Upon returning from Washington, I am happy to report that Geo-CVD taught me a lot about scientific (and otherwise) spending-bill development, and facilitated productive conversations that I hope left our representatives with a supportive view of the Earth sciences.



▲ Kendra Johnson, a Ph.D. student at Colorado School of Mines, was one of the 2016 Geo-CVD student travel-grant winners who traveled to Washington DC. The color version of this figure is available only in the electronic edition.

As a Colorado School of Mines student and long-time Colorado resident, I was part of a four-person Colorado Geo-CVD team. We had two unique advantages. First, our diverse specialties and variable employment sectors (academia, government, and private) represented a breadth of people benefiting from geoscience funding at the state and federal levels. Among the four of us, we study forestry, flooding, tectonics, hydraulic fracturing, and wastewater treatment, so we had a wide range of talking points. Second, we have a lot to speak for in Colorado: national labs and surveys, schools with reputable Earth-science programs, risk due to geohazards, and an economy much dependent on oil and gas.

This second advantage did a lot of work for us, garnering interest before we even arrived. Two of our representatives have recently fought especially hard for geoscience. Colorado Sen. Cory Gardner (R) sponsored the American Innovation and Competitiveness Act (AICA), a bill supporting research and development. He worked closely with the American Geophysical Union and American Geosciences Institute to ensure that this bill used wording inclusive of the geosciences. Colorado Rep. Jared Polis (D) co-chaired the recently launched House Earth and Space Science Caucus, which aims to improve congressional understanding of the economic, societal, and scientific advances facilitated by Earth science. We attended the launch reception, where the bipartisan message was that we live in a time when Congress should trust science and use important scientific consensus (e.g., on climate change) to inform policy.

Our team met with staffers for several Colorado representatives and both senators, asked for their continued support of Earth science, and requested that House members join the recently formed House Caucus. I was impressed by the staffers' curiosity when we each described our research and its relevance in Colorado and beyond. They asked good questions about the beneficiaries of our research and who employs Colorado geoscientists, and some showed specific interest in one or more topics and requested more information. Several also asked us to keep in contact and share new and relevant results as they become available. I plan to maintain contact with our Colorado representation, and to keep geoscience funding on their minds.

*Kendra Johnson is a Ph.D. student in geophysics at the Colorado School of Mines. Contact her at kejohnso@mines.edu.*

### GEO-CVD STIRS HOPE IN CHALLENGING TIMES

#### Marshall Rogers-Martinez

Scientific literacy is one of the most pressing challenges affecting public policy in the United States. When nearly half the elected representatives in Congress have openly denied anthropogenic climate change, communicating our knowledge as geoscient-



▲ Marshall Rogers-Martinez, an SSA Geo-CVD travel-grant winner, poses outside the office of U.S. Rep. Xavier Becerra during Geosciences Congressional Visits Day. The color version of this figure is available only in the electronic edition.

ists to those who craft legislation is paramount. For this reason alone, the Geosciences Congressional Visits Day (Geo-CVD) was an exciting opportunity to unabashedly influence the individuals who write federal law. In light of the results of the recent election, including the ascension of a president who has explicitly denied climate change, I cannot think of a more consequential time to have urged Congress to continue funding Earth science research.

Overall, the Geo-CVD experience was more exciting and involved than I thought it was going to be. During the first day, I attended a workshop with other Geo-CVDers where we were briefed on federal science funding issues and reminded of how the legislative process works. We broke into groups with other participants to prepare a coherent message to deliver to our legislators. Talking with other scientists in my group helped me understand the breadth of disciplines that make up the geosciences and how devastating it would be for our country to lose scientific insights in any individual discipline. With that in mind, we crafted our message: that federal funding for the Earth sciences funds everything from seismic discrimination between earthquakes and nuclear explosions to monitoring water-table quality in rural Hawaii.

The second day we met with seven legislators and staff. The formality of exchanging business cards with congressional staffers was foreign to me as a budding academic, but the casual nature of the conversations felt familiar. We were treated respectfully in each office and given ample time to explain the importance of Earth science funding for the future of America. In many ways, as the recipient of funds from various federal agencies, I felt like the poster child for what federal funding in the sciences can cultivate. During my senior year of high school, I participated in a Department of Energy internship program; in college, I interned in various National Science Foundation Research Experiences for Undergraduates and NASA programs; and I receive support for my Ph.D. work on seismic discrimination of nuclear tests through the Air Force Research Laboratory. I was able to explain to the staff and legislators in each office that without federal funding

throughout my career, I would not be in the position to give back to my country in the way I am now. My story was relatable, tangible, and well received.

If I were afforded the opportunity to participate in Geo-CVD again, I would jump at the chance. The conversations we had were powerful and informative. Geo-CVD gave me hope for my country and

boosted my faith in the legislative process, however messy it may be.

*Marshall Rogers-Martinez is a Ph.D. candidate studying geophysics and seismology at the University of Southern California. Contact him at [rogersma@usc.edu](mailto:rogersma@usc.edu). ✉*

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