

Science Policy in Congress A Physics Problem Where the Laws of Physics Don't Apply

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Heisenberg's Uncertainty Principle states that position and momentum cannot both be known in quantum mechanics. And yet, there are times when US Congresspeople have no problem telling you both their position AND momentum on an issue. Needless to say, as a physics student, I am more comfortable studying the laws of physics than the laws of the United States government. If I wanted the path of least resistance though, I wouldn't have gone into physics. When the opportunity came up through the Society of Physics Students Congressional Visitation Day to go to Washington DC, meet the US Congresspeople and their staff, and talk about science policy, as both a researcher and science advocate, I had to go.



Science is being studied on a cosmic level, not to mention an international level. As a student and undergraduate researcher in different physics laboratories, I have had labmates and professors from all over the world. We collaborate with people in many different countries and our science and innovation gets better with the mix of collaboration and competition. My goal for this Congressional Visitation Day was to discuss US immigration policy, particularly as it has related to those I know in the sciences.

My interest in immigration as well as science policy is partly due to my international family being very involved in science. I am also a double major in physics and applied mathematics who is minoring in international studies at North Carolina State University. As the secretary of the active Society of Physics students at my school, I've gotten to help my chapter grow and see our participation in events like the March for Science and outreach events. The experiences of my family, stories of my friends, information from my classes, and events I've been a part of encouraged me to take on this Congressional Visitation Day.

Like before any problem set is assigned, we had to first learn the material. SPS also made sure we weren't just wandering into Congressional offices without any preparation. They gathered five of us physics students from around the US for this day of science policy and connected us with professional advocates who had gotten their PhDs in physics and had been working in DC trying to use their physics background for good. The five of us were interested in discussing policy ranging from physics education, energy research, science funding, and in my case, immigration. Our research areas were as varied as the places we came from (while I came from North Carolina, my new friend Riley had to fly in from Alaska). So we had a lot to talk about. During the training, we learned about crafting our message and more about how laws are drafted and all the factors senators need to keep in mind while making decisions.

Then came the day we all got to visit Congress! And it snowed...

DC was shut down and different offices were calling in to cancel appointments. North Carolinians in general don't know how to handle snow. I've attached a picture of the cars on fire

on the highway right outside my university when there was 2.5 inches of snow to highlight this point. Needless to say, it wasn't a surprise to get a text at 7:11 am that NC Senator Richard Burr and NC House of Representative Walter B. Jones had to cancel due to snow.

NC struggles with snow. Photo of NC drivers after getting 2.5



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nches of snow in 2014 - photo from WRAL news

The Alaskan Congresspeople on the other hand are very proud of the fact they do not cancel for snow! We were lucky since there were still a handful of offices that stayed open to meet with us. We started the morning with constituent meet and greet where senators would meet with the people who vote in their state and would announce what they are currently working on and what the big concerns are and listen to the concerns of everyone who made it there that morning. Then came our personal meeting with representatives.

Most of the time, we weren't actually meeting with the senators or representatives themselves, but their staffers. Their staffers were all pretty young, recently out of college and in charge of collecting all the information related to how bills should be written and what a senator should know before they vote. Basically, Congress is being run by a bunch of people in their twenties! These are also the people who have to keep up with dozen different national issues a day. With our group of students, we already had a handful of different issues we wanted to discuss. To handle this, in each meeting we would let the student whose state was represented run the meeting. As a physics student from eastern North Carolina, I've had my share of experiences related to lack of physics education at the k-12 level, with needs for better energy research, and with need for science funding so it was easy to give supporting evidence for the different meetings we had.

My big meeting was with NC Senator Thom Tillis's staffer Andrew Nam. As it turns out, Andrew had attended both universities that I spend my time at: North Carolina State University and University of North Carolina at Chapel Hill. Between this connection and the fact he wasn't much older than I am, it made for a very comfortable conversation. It was Andrew's job highlight what Senator Tillis is currently working toward accomplishing and both listen to me as well as represent Senator Tillis's stances.

It was an interesting dynamic since I came to talk about how the complexities of immigration and visas were costing academic institutions and businesses millions and slowing down US advancement. Additionally, it has been putting a toll of science by hindering the best minds from creating innovation. It's impossible to change visa status without the aid and money for a immigration lawyer, regardless of whether its because of a switching from student type to worker type to marriage type or any other. On the other hand, Senator Tillis is currently working on an immigration bill related to DACA called the Solution for Undocumented Children through Careers, Employment, Education and Defending our Nation (SUCCEED) Act (S. 1852).

While this potential law provides a path for the currently uncertain future of DACA participants to permanent legal status, it's a 10 to 15 year path that in its current form is pretty strict. My friend

David Ramirez, who has been a part of DACA for the last five or so years, worries that it is a long time and that he will be well into his thirties by the time he could change his immigration status and such an uncertain future is pretty scary.



Overall, the experience of talking with Senator Thom Tillis's staffer Andrew Nam helped me realize that regardless of what my overarching goals may be, different offices will have different priorities at any given time. Thus, my message is one that will have to be repeated often. Included is a picture of meeting with the staffer Andrew Nam, and it is a good general idea of what meeting with staffers around congress was

like.

Phoebe Sharp and myself meeting with Staffer Andrew Nam in NC Senator Thom Tillis's office. Typical meeting with office staff.

Overall, I've learned that Congress is much more complicated than it's been taught, just as physics is much more complicated than a freshman physics class makes it seem. Advocating for the things we care about may not seem easy, but it is something we all can do. The best thing about it is that science policy is also something that needs to be talked about again and again for us to make a sustained difference and all that talking sounds like some great practice to get better.

Physics students are not afraid of a challenge, so I dare you to take a step toward improving science policy online or by talking about it. Good luck!



Phoebe Sharp, Laura Goodman, and Guillermo Gutierrez in front of the United States Congress Building