

# A Climate Scientist on Capitol Hill: Encountering Uncertainty in Science and Practice



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On 29 Feb. 2020, I took the train to Union Station in Washington, D.C., hopped on the Red Line to Metro Center, and walked about a block to the GSA office to interview for the remarkable opportunity to serve as a Congressional Science Fellow. There, I sat in a conference room with 10 strangers and talked, unmasked, for almost an hour. As I write this more than a year later, that was the last time I rode on public transit or had unrestricted interactions with such a large group

of people, and it is surreal to think we once took such experiences for granted.

As COVID-19 cases exploded during the spring and summer, and as we struggled to mount an effective defense against the virus, uncertainty grew as to when and how we would ever return to normal. At the same time, smaller-scale uncertainty grew for myself and the roughly 30 other Congressional Science Fellows, funded by a host of scientific societies, bracing for the transition to becoming Hill staffers. Already unsure as to what to expect in our new roles, we became quickly unsure how we would even perform them. The set of experiences that followed can be characterized most broadly by uncertainty, but I have come to learn in my time on Capitol Hill so far that even in “normal” years, dealing with uncertainty is at the core of the alchemy of federal policy making.

All scientists, but geoscientists in particular, are trained to understand the robustness of conclusions and predictions given differing levels of uncertainty. This skill first proved useful in my current role upon entering the office of Senator Edward J. Markey in October of an election year, with the fate of Senate control and the presidency hinging on the outcome of an election. The alternate permutations of the potential futures we were likely to face soon in the federal government meant that planning legislative priorities and oversight actions had to be probabilistic in nature: multiple contingencies for multiple scenarios, with a proportionate amount of effort and time. During that period, I produced dual memos on many issues with different recommendations on approach depending on the outcome of the election.

In the narrative of my time on the Hill so far, no date looms as large as 6 Jan., when a series of shocking tragedies and disgraces occurred in my new workplace, and my new colleagues and the senator whom I serve were placed in harm’s way. That was also the day that decided the working reality of the Senate for the next two years, with the elections in Georgia officially cementing an evenly split body. A whole new suite of uncertain events then

came to bear on my work: how would the two parties share power? What would be the legislative plan? What kind of legislation can pass through budget reconciliation, thereby bypassing the filibuster? These questions were now superimposed on the uncertainty of the COVID-19 pandemic regarding cases, vaccines, and the return to “normal.”

After the presidential inauguration, key Senate tasks took center stage. Confirmation hearings for presidential nominees, and the preparatory meetings between nominees and members of Congress, were the first major order of business. My office also turned its attention more fully to policy initiatives and priorities where I have seen yet another form of uncertainty play out—uncertainty about the final outcome of a project. With legislation, cosponsors are often brought on board and may suggest edits, and interest groups and outside experts are often consulted to ensure the legislation will accomplish its goals, bringing along further suggestions and changes. It is an iterative process, with difficult-to-predict outcomes.

My time on Capitol Hill so far has been spent entirely on Zoom, save one in-person press conference for a bill on which I worked extensively. In all this time, I have nonetheless drawn deeply on the lessons, skills, and ways of thinking I developed while training to become a scientist—understanding of uncertainty, project iteration, navigating complexity, and structured analysis—to contribute to the policy-making process. I have gained a deeper understanding of just how complex and at times unpredictable policy making can be, and I have built an appreciation for all there is to learn by working with seasoned and dedicated experts. The privilege I feel to be able to serve my country, my home state, and the geoscientific community in this way is immense, and I can only hope the second half of my experience is as fruitful and perhaps slightly less uncertain.

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