

Finding Meaning Outside Academia

A. J. Stewart

“Why did you decide to work in Congress?”

I get asked this question a lot. It seems a mathematician working in Congress is a novel enough event that it requires an explanation. It is only now, over a year after I accepted the AMS Congressional Fellowship, that I feel I can begin to accurately answer this question. My time on Capitol Hill showed me how to use mathematics outside academia. Whether it be as an integral part of a team working on large issues or committing to small actions that make a big difference to a single person, I saw that mathematics has a place in creating a brighter future.

For my fellowship, I was placed in Senator Raphael Warnock’s office. I grew up in Florida, sometimes referred to as south of the South, and understood the challenges of being from a low-income family in the South. I wanted to utilize my mathematical skills on policy that would support a more equitable economy for all Americans. Senator Warnock’s office was a perfect fit.

Within Senator Warnock’s office I worked on the economic portfolio, which included housing, tax, trade, and financial services, with two other staffers. We were the hub for any content coming in or out of the office related to our portfolio. We met with constituents and stakeholders, created background documents, and lent our expertise on policy decisions. My background as a mathematician was immediately treated as an asset. It was assumed I would utilize my skills and training in any way to support the office. I felt trusted, valued, and part of a team. I was excited to be able to use mathematics to help working families and it was fulfilling to be part of an office committed to doing the same.

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However, no matter how committed a member of Congress may be, what gets done in Congress is completely reliant on the congressional body as a whole. If Congress is unable to reach sufficient consensus on any matter, then that matter won’t be resolved. This legislative gridlock was not the overarching theme during my time on Capitol Hill. The 117th Congress was exceptionally productive by providing COVID-19 relief, necessary infrastructure funding, future investments in green technology to combat climate change, as well as much more.

Much of this work was a result of bipartisan cooperation, which was a common thread through all my work during the fellowship. I felt the importance of creating and supporting bipartisan coalitions. My mathematical skills lent themselves to this cooperative process. Since mathematics has a large foundation in problem solving and so much of problem solving is being able to view a problem in several different ways, this meant that I could use the same skills to approach a specific policy that I would use to approach a problem. This enabled me to view policy areas from multiple viewpoints, which is an important skill on Capitol Hill.

I always felt that I was able to lend my skills in any way possible even though I was only a small part of larger legislative actions. The passage of The Inflation Reduction Act required a process called “vote-a-rama” where numerous amendments are voted on during an extended period of time. This process can take over 24 hours to complete. As multiple amendments regarding complex tax law were filed (sometimes at 3 or 4 in the morning), I relied on deduction and inference to predict the exact changes the suggested amendment would have on the tax structure as well as who would feel its effects. I needed to make quick policy recommendations and it was my training as a mathematician that guided me.

Not every action on Capitol Hill involves staying up all night researching amendments. Some actions are much

smaller in scope. The Economic Injury Disaster Loans (EIDL) are administered by the Small Business Administration (SBA) and provide emergency financial support for small businesses in disaster areas. As a result of the pandemic, specific COVID-19 EIDL loans were created. When the funding for a construction business in Georgia was delayed, I argued the business's case to the SBA. This meant that the business could stay afloat, and its employees could remain on payroll. It was a small action that helped a dozen or so working families. Being able to argue the merits of the case involved analyzing the required application documentation and using logic to persuade the SBA. Again, the skills I utilized were supported by the skills I use as a mathematician. It was mathematics that guided me as I supported and advocated for people in these small ways.

Now I return to the question of why I wanted to work in Congress or more specifically how I found a place outside academia. In the years leading up to 2020, I wanted to do more with mathematics. I felt that mathematics had so much to offer the world and should be used to address some of the hardest questions of our generation; wealth inequality, climate change, increased political polarization, etc. I wanted to work in Quantitative Justice. To apply my training and skills to support a more equitable and just world. I just didn't know how to do it or how I could be useful.

During my fellowship I realized mathematicians are desired for our quantitative training, logical skills, and problem-solving ability but we are also valued because of the unique perspective we bring. We naturally seek out truth and can see the center of systems and processes. Our education lends itself to finding more stable, equitable processes and so we possess necessary skills to address the inherent inequalities within our historical systems. We can be useful and the world outside academia is waiting for us to participate.

I know I won't solve the Riemann Hypothesis or the Hodge Conjecture, but I also know there is not a monopoly on worthy mathematical pursuits. Whether it be playing a small part of substantial climate change legislation or ensuring a construction business can pay its employees, mathematicians can make a difference in a multitude of ways. We need only step out into the world and commit to change.

The AMS Congressional Fellowship is a unique way to get involved in our government. For those interested in personally getting involved, the AMS funds one Congressional Fellow per year, with this year's application deadline of February 1, 2023, and there are multiple other types of science and technology policy fellowships available to mathematicians.

Learn about the AMS Congressional Fellowship at <https://www.ams.org/government/government/ams-congressional-fellowship>.



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