



## How Can You Get Involved in Mathematics and Science Advocacy?

*Karen Saxe*

President Biden came into office with an ambitious agenda for advancing scientific research and technology innovation. This included increasing access for all Americans to quality education, improving the STEM workforce pipeline, and reaching out and fully engaging the millions missing from the scientific enterprise. Despite these important goals, his administration has faced big challenges that have required legislators' attention—Afghanistan, Ukraine, and the pandemic—and taken their focus away from this agenda.

Mathematicians have a lot of skin in the game on many of Biden's agenda items, and Congress is working on legislation that will affect us. Legislators will vote on bills whether or not we tell them what we think and explain how the bills would benefit or harm us; we might as well try to engage with them so that our input has a chance to influence their decisions. Establishing trusting relationships between congressional members (and their staff) and the mathematicians who live and work in their districts will lead to long-term payoff for us.

If engaging with congressional members on topics related to mathematics interests you, there are many ways to get

involved with the AMS Office of Government Relations' activities to help us amplify our advocacy efforts. What can you do? What specific actions can you take? Here are some ideas, listed in—more or less—order of magnitude of the effort each takes:

- Receive (and read!) the bi-weekly AMS members' *Headlines & Deadlines* e-newsletter; most issues contain information from us about timely ways to take action, or point to deadlines for fellowships, etc.
- Follow the AMS on twitter, @amermathsoc, as we often tweet about relevant federal policy changes and legislation.
- Use our "Take Action" tool (<http://www.ams.org/government/getinvolved-dc#/>), to quickly add your voice on legislation, and sign up to receive our emails alerting you to new letter-writing opportunities.
- Participate in these sessions at JMM 2023 (you can read more about them and register for item 4 at the JMM website [https://jointmathematicsmeetings.org/meetings/national/jmm2023/2270\\_intro](https://jointmathematicsmeetings.org/meetings/national/jmm2023/2270_intro)):
  1. AMS Advocacy Training Session—"Advocacy for Mathematics and Science Policy" (Thursday, January 5, 9:30–11:00 am, place TBD)
  2. AMS Committee on Science Policy Panel Discussion (Friday, January 6, 2:30 pm–4:00 pm, place TBD)

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3. AMS DC-Based Policy & Communications Opportunities (Friday, January 6, 4:30–6:00 pm, place TBD)
  4. AMS Professional Enhancement Program (PEP) —“Using your voice for influence and impact: Incorporating mathematics into public discourse” (Wednesday and Friday, 9:00–11:00 am, place TBD)
- Volunteer for the AMS Committee on Science Policy (or other committees that do work that regularly touches on policy and/or politics, including the Committee on the Human Rights of Mathematicians or the Committee on Education). You can read about all AMS committees on our website: <http://www.ams.org/about-us/governance/committees/gov-committees>. You can nominate yourself or others here: <https://www.ams.org/committee-nominate>.
  - Visit, write, or call your elected members of the US Congress either in DC (virtually or in-person) or via their district or state staff.
  - Write an op ed for your local newspaper.
  - Apply, and encourage your students to apply, for our fellowships, which you can learn about at the aforementioned JMM session “AMS DC-Based Policy & Communications Opportunities” or at our website: <https://www.ams.org/government>.

Outside of math-specific advocacy efforts, there are groups committed to enhancing engagement between scientists and policymakers. You can join some of these as an individual, you can follow them on twitter, and you can read their posts online. Here are a few recommended groups:

- Engaging Scientists & Engineers in Policy Coalition (<https://www.science-engage.org/>)
- American Association for the Advancement of Science —at their website, under “What We Do” you will see a few links specifically highlighting their work devoted to policy and advocacy (<https://www.aaas.org/>)
- Federation of American Scientists (<https://fas.org/>)

Now, let’s suppose you have decided to visit your congressional delegation. What might you talk to them about? Know that the AMS Office of Government Relations staff is here to help you prepare, schedule, and facilitate your meetings. It is best to go in with one or two specific topics to discuss. Here are some potential topics of conversation; these are in our regular suite of conversation topics with Congress:

- The NSF is a relatively small federal agency. It is the only science funding agency without its own labs; it has no “in house” research program. It is the only science funding agency to support curiosity-driven science across all fields. It invests heavily in enhancing STEM education. It often flies under the radar in Congress and does not get much attention—as compared to some other science-funding agencies like the Department of Energy

(DOE) and the National Institutes of Health (NIH). Yet, it supplies over 70% of all federal funding for research in mathematics done on college and university campuses.<sup>1</sup> Who is going to make sure the NSF is getting the money it needs to continue to support our work? Who is going to meet with congressional members and tell them how NSF funds have been critical to their own career? To their students? To teachers and kids in their districts and states via NSF-funded education and outreach programs? Who is going to give concrete examples to tell them how NSF investments in fundamental research of decades ago have resulted in technologies like GPS and MRIs that they depend on today? *You can give your representatives a constituent’s view on why Congress should give robust and stable funding to the NSF in its annual budget.*

- **Foreign talent** has been critical in our nation’s ability to be a global mathematics powerhouse. There are threats to our leadership position as other countries invest much more heavily in fundamental research than they have in the past and as the United States keeps old and creates new barriers for international students and scholars who want to study and work here. The Keep STEM Talent Act—introduced in the House by Representative (and PhD physicist) Bill Foster (IL-11) and in the Senate by Senator Richard Durbin (IL)—is a bill that has been endorsed by the AMS (<https://www.ams.org/government/government/letters-statements-legislation>) and which would support easier paths to lawful permanent residence for graduates with advanced STEM degrees. *You can give a constituent’s view on why your members of Congress should sign on to cosponsor this bill.*<sup>2</sup>
- Strengthening education in the mathematical sciences and making sure that each and every American student has access to high-quality education is also critical from moral, economic, and national security standpoints. We promote government programs that strengthen **domestic talent** including the Department of Education’s Graduate Assistance in Areas of National Need program (GAANN), increased Pell grants, and the many NSF funding opportunities reaching the “missing millions.” The bipartisan HBCU RISE Act is one example of a bill that would boost research capacity of faculty and increase research opportunities for students at Historically Black Colleges and Universities (HBCUs). This bill was introduced by Senators Chris van Hollen (D, MD) and Thom Tillis (R, NC) and is endorsed by the AMS. *You can give a constituent’s view on why your members of Congress should sign on to cosponsor this bill.*
- Mathematics can inform and mathematicians can help educate congressional members and their staff as bills are written. Over the past few years, staff members have

<sup>1</sup><https://www.nsf.gov/about/budget/fy2023/toc.jsp>

<sup>2</sup>*Introduced legislation changes year to year, so all bills mentioned are simply to give an impression.*

asked for our **mathematical expertise** on differential privacy as applied in the 2020 Census and on mathematical algorithms. To be more precise on the latter—and to give examples—bills have been introduced to address concerns about data-driven algorithms and algorithms' uses, misuses, and biases. These bills include the Kids Internet Design and Safety Act and the Platform Accountability and Transparency Act. The former would stop manipulative marketing and curb other harmful content that threatens young people online, while the latter would “support research about the impact of digital communication platforms on society by providing privacy-protected, secure pathways for independent research on data held by large internet companies.” Mathematicians with deep content knowledge have been called on to provide feedback on proposed legislative language and to serve as witnesses at congressional hearings.<sup>3</sup> If your members of Congress serve on relevant committees—like the Senate Committee on Homeland Security and Governmental Affairs (HSCAG),<sup>4</sup> your input could help form their opinion as they consider these important matters. *You can bring content expertise to inform legislative staff as they draft bills.*

This same list of topics is fodder for op eds, and your social media efforts. And, our Take Action opportunities are most often on topics that fall into one of these buckets.

If you are going to meet with your congressional delegation, please reach out to me—the AMS Associate Executive Director, Government Relations (kxs@ams.org) for materials, and prepping. I know that some of you will be nervous about meeting congressional members and their staff. Keep in mind that they are just people, and most often are curious and pleasant to talk with.

It's on us to advocate for the mathematical sciences. We have the stories—we just need to tell them.



Karen Saxe

#### Credits

Photo of Karen Saxe is courtesy of Macalester College/David Turner.

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**Congress 2022**  
PRIMA



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#### Registration

<https://prima2022.primamath.org/#>

Public and Plenary Lectures  
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Registration dates:  
Regular Reg: Aug 1 - Oct 15  
Late Reg: Oct 15 - Dec 9

For queries please contact the PRIMA Organizing Team  
at [events@pims.math.ca](mailto:events@pims.math.ca)

<sup>3</sup>As one example, Cathy O'Neill testified in fall of 2021: <https://www.hsgac.senate.gov/hearings/social-media-platforms-and-the-amplification-of-domestic-extremism-and-other-harmful-content>

<sup>4</sup>You can always find committee members online: <https://www.hsgac.senate.gov/about>