



## A WORD FROM...

Karen Saxe, Associate Executive Director of the AMS<sup>1</sup>

Courtesy of Macalester College/David Turner



I started working as the director of the DC-based AMS Government Relations team on January 2, 2017. President Trump was inaugurated on January 20, 2017. I have only worked with his administration. During the intervening years, we have had a (partial) government shutdown and a global pandemic. Both have affected the scientific enterprise and higher education in seriously detrimental ways, and the latter will certainly have long-term consequences for mathematics and mathematicians.

The pandemic is affecting the ways that mathematics is being done. Summer plans for conferences and other research collaborations have vanished or, at best, gone virtual. While virtual meetings have certainly had some upsides (e.g., broader participation at seminars), they do not easily facilitate casual conversation where creativity can flourish. For our students, these effects may be especially deleterious—it is one thing to have a Zoom meeting with a colleague with whom you have worked for decades, but how do graduate students and other early-career mathematicians begin and establish relationships now? It is more of a challenge for many. Institutions of higher education, still the primary employer of most mathematicians, are undergoing a very rough time. Some effects are felt on all campuses, and some are very particular to a given school. Consequently, there cannot be a “one size fits all” path forward. In all cases, however, these challenges necessitate careful thinking about the future in mathematics for our students, our own career flexibility, and our approach to teaching.

During the COVID-19 pandemic, I have been proud of the AMS. Internally, we are taking care of staff on the human resources level, and of the fiscal health of the Society. Looking outward, the staff is focused on what we can do to best help our community; a broad list of information and resources is found at <https://www.ams.org/home/covid-19>.

For my own work, the pandemic has meant relying even more heavily than usual on established relationships to support the mathematics community in legislative and other policy decisions. Here are three examples:

- The AMS was one of many science societies that the House Science, Space, and Technology Committee staff reached out to for ideas on how Congress could best address and mitigate impacts of the crisis on the higher education and scientific research communities. Our request, which I wrote together with the chair of the AMS Committee on Science Policy and submitted in April, suggests targeted funding for the National Science Foundation (NSF) to enable them to enhance programs focused on students and early-career mathematicians. We request extra funding for the Research Experiences for Undergraduates and Graduate Research Fellowship programs, as well as supplements to the Mathematical Sciences Research Institute program for additional support of postdoctoral visitors to the institutes. We also urge increased funding for the Advanced Technological Education and the Robert Noyce Teacher Scholarship programs.
- On April 22, President Trump issued a proclamation limiting the number of foreign workers in the US (<https://www.whitehouse.gov/presidential-actions/proclamation-suspending-entry-immigrants-present-risk-u-s-labor-market-economic-recovery-following-covid-19-outbreak/>). The AMS acted immediately, working to ensure that international student and scholar programs, including Optional Practical Training for F-1 students, not be included in future immigration bans. The AMS and the Society for Industrial and Applied Mathematics (SIAM) led a statement from the math community focusing on our concerns about the broad nature of the directive outlined in

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<sup>1</sup>The opinions expressed here are not necessarily those of the Notices or the AMS.

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Section 6 of the proclamation and the implications it carries for nonimmigrant visa programs and our international students (<https://bit.ly/2XhgYgT>). The AMS and thirty-five other scientific groups signed a similar letter (<https://www.aip.org/news/2020/scientific-groups-seek-change-cooperation-response-immigration-executive-order>). Both were delivered directly to the White House. Hundreds of you helped this effort by responding to my call to “Take Action” (<https://blogs.ams.org/capitalcurrents/2020/05/13/support-our-international-students-and-faculty-colleagues/>).

- On May 7, Representatives Balderson and Cox led a bipartisan effort to improve infrastructure for distance learning so that all students—including low-income and rural students—can truly engage with online learning, as they have been required to do during the pandemic. I was quoted in the press release (<https://cox.house.gov/media/press-releases/representative-tj-cox-leads-letter-urging-congressional-leadership-invest-rural>).

These three examples show the range of topics and people I work with regularly and underscore the value of ongoing relationships. The AMS DC office began teleworking in late March. Immediately, meetings with congressional staff stopped. However, as I write this in mid-May, (virtual) meetings are picking up again.<sup>2</sup> Meetings are with House and Senate staff, with Republicans and Democrats. When I meet them, I aim to fulfill AMS’s mission to

- promote mathematical research, its communication and uses;
- encourage and promote the transmission of mathematical understanding and skills;
- support mathematical education at all levels;
- advance the status of the profession of mathematics, encouraging and facilitating full participation of all individuals;
- foster an awareness and appreciation of mathematics and its connections to other disciplines and everyday life.

In addition to responding to issues as they arise, each year my office hosts biannual congressional briefings. These are organized and hosted together with the Mathematical Sciences Research Institute with the goal of “fostering awareness and appreciation of mathematics” and to “communicate its uses.” Each briefing is a bit different in the goals it helps achieve; their successes are sometimes apparent only much later. Our 2019 briefings illustrate this:

- In June, Jon Kleinberg (Cornell University) talked about “Addressing Threats and Vulnerabilities in Critical Interconnected Systems: Common Principles in Disease Outbreaks, Internet Malware, and Bank Failures.” This briefing turned out to be quite timely and helped establish mathematicians as a resource for modeling the spread of COVID-19.
- In December, AMS President Jill Pipher (Brown University) spoke about how—as the study of quantum computing has advanced—current systems that support national and economic security have become more vulnerable and thus necessitate new cryptographic protocols. Both senators and one of the two Rhode Island representatives attended, and this briefing really helped to solidify the AMS’s relationship to its home congressional delegation.

Every one of our briefings brings mathematics directly to Capitol Hill decision-makers and affirms how federal investment in basic research (primarily via the NSF) pays rich dividends for American taxpayers and helps the nation remain a world leader in innovation.

Your membership fees, together with the subscription rates paid by libraries for AMS journals and MathSciNet®, support AMS activities. In addition to the benefits that you, personally, might take advantage of—discounts for attending national

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<sup>2</sup>By the time you read this, I expect much will have happened since I wrote this in mid-May. I expect, for example, further proclamations from the White House on immigration, and further legislation on COVID relief and stimulus, including extra support for scientific research. In addition, regular appropriations may have moved forward for fiscal year 2021 (<https://www.ams.org/government/dc-budgetprimer>).

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and sectional meetings, the Education mini-conference, or the Chairs Workshop; discounts on books—your membership helps support graduate students, early-career mathematicians, and the larger mathematics community.

The AMS is not only the primary home society for many mathematicians working in academia, but is also the organizational channel that gives collective voice to the interests of our community. Your membership contributes to and ensures the presence of our collective voice in Washington, DC. You make it possible for the DC-based AMS Government Relations team to connect mathematicians and students to elected officials and other policy-makers.

I think it helps me in my work to be an eternal optimist. I am hopeful that one outcome of this devastating pandemic will be that the American public will have more trust in science, more curiosity about it, and more desire to understand it. Public interest will translate into congressional support. That tangible support will further mathematical research and provide the best education of the next generation of scientists.

I'm proud to work for an organization that supports all mathematicians and the discipline itself through research and teaching. That said, we cannot do our work without sufficient funds. Thank you, members, for your commitment to supporting the work that we all do.