Washington Update

Karen Saxe

The American Mathematical Society has four physical facilities: our headquarters in Providence, RI; our Printing and Distribution Department in Pawtucket, RI; Mathematical Reviews/MathSciNet® Division in Ann Arbor, MI; and our Office of Government Relations (<https://www.ams.org/government/government>) in Washington, DC. This is the first in what will be a quarterly column highlighting the work of the DC office.

The staff based in DC run several AMS programs and activities that occur on an annual or bi-annual schedule. We also follow and respond in a timely manner to legislation and policies under consideration in Washington. In all of our activities, we work to get math “at the table” for important discussions with decision-makers that have the potential to impact mathematics research and mathematicians.

In this first column, I will present some of our regular activities, including an example response to a current government policy discussion.

Recent Activities of the Committee on Education

The AMS has five policy committees, each taking a long-range view of their areas of expertise, to provide advice to the leadership of the society, coordinate with other professional organizations, and communicate with membership. This office supports the work of two of these committees—the Committee on Education and the Committee on

Science Policy. I will discuss activities of the Committee on Science Policy in a later column.

This past October the Committee on Education hosted a daylong Mini-conference. The Mini-conference was open to the public, and invitations had been sent to department chairs at bachelor, masters, and PhD granting institutions. About seventy attended, including mathematics faculty members from all over the country; representatives from the National Science Foundation and National Academies of Sciences, Engineering, and Medicine; colleagues from other mathematics professional societies; and at least one Congressional staff member. Next year’s Mini-conference will be held on October 25; save the date and watch our website for details.

Mathematicians, other academics, and policy-makers gave presentations at the October Mini-conference. Christopher Edlay, Jr. (The Opportunity Institute, and former Dean of the University of California, Berkeley School of Law) shared perspectives on law, education policy, and equity. Ellen Hildreth (Wellesley College) described the role of mathematics in the study of the brain’s ability to process information, and Sonin Kwon (MassMutual Financial Group) described why mathematics education matters to the financial industry. Rachel Levy (Deputy Executive Director, MAA) spoke about how departments can best support our students as they pursue careers in all areas of business, industry, and government. Uri Treisman (Charles A. Dana Center, University of Texas at Austin) and I gave a presentation on the creation, evolution, and agenda of the Transforming Post-Secondary Education in Mathematics initiative (tpsemath.org). Jake Steel (US Department of Education) gave us an overview of the current administration’s priorities for STEM education, and discussed what

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we can all do better to support mathematics educators. Manil Suri (University of Maryland, Baltimore County) shared his perspective on a STEAM-related approach to general education mathematics and informal math outreach (STEAM refers to an expansion of STEM—Science, Technology, Engineering, Arts, and Mathematics). A full program and links to presentation slides are found at the Mini-conference website (<https://www.ams.org/meetings/coeminiconference>).

Involvement in Golden Goose Awards

From 1975 until 1988, Senator William Proxmire offered the Golden Fleece Awards; the Senator from Wisconsin thought it a good idea to publish a monthly bulletin highlighting what he viewed as the most frivolous and wasteful uses of taxpayers' dollars. The June 1987 award, as just one example, called out the Executive Office of the President for spending \$611,623 to fit one room with gold trim.

Many of the Golden Fleece Awards have gone to scientists, and these researchers' intentions have been presented unfairly, making them appear frivolous. Golden Fleece Awards have raised suspicion and hostility towards the notion of government spending on science and, indeed, toward science itself. Maybe you've heard of the shrimp on the treadmill (<https://www.npr.org/2011/08/23/139852035/shrimp-on-a-treadmill-the-politics-of-silly-studies>)? Or smiling bowlers (<https://www.psychologicalscience.org/observer/why-bowlers-smile>)?

In response, Representative Jim Cooper suggested attempting to temper growing animosity toward federal funds going to science. He aimed to give higher visibility to the great return on our federal investment in scientific research, and also show that successes in science are often unpredictable. The Golden Goose Award (<https://www.goldengooseaward.org>) was first awarded in 2012 and aims "to celebrate scientists whose federally funded research seemed odd or obscure but turned out to have a significant, positive impact on society."

The AMS is a contributing sponsor of the Golden Goose Award, and this brings good visibility to the AMS with Congressional members and other key players in DC who are science supporters. We attend a relatively exclusive Congressional lunch celebrating the winners, and also attend the award ceremony in the evening, hosted at the Library of Congress.

Mathematicians have been honored with this award. In 2013, Lloyd Shapley and David Gale (together with economist Al Roth) were recognized for their work on an algorithm to address the stable marriage problem (www.ams.org/publicoutreach/feature-column/fc-2015-03). This algorithm could be employed to match equal numbers of men and women with a partner (of the opposite sex) so that no two people of the opposite

sex would prefer each other over their algorithmically-assigned partner. Their original research was funded by the U.S. Office of Naval Research and may sound silly. However, results of this research have saved lives because it has now been used to improve our national kidney exchange program. The algorithm has also been adapted by urban school systems for school choice programs, and has been honored with a Nobel Prize. The scientific community makes nominations, and I encourage you to nominate a colleague; nomination instructions are found at the Golden Goose website (<https://www.goldengooseaward.org>).

Incidentally, the Golden Fleece Award has been resurrected (since 2015) by Representative French Hill and his most recent award went out in July. Not all of these highlight work of individual scientists, and many point to waste akin to the aforementioned gold trim. There are other congressional members who are challenging the value of the federal investment in scientific research. Senator Rand Paul recently introduced the BASIC Research Act (<https://www.congress.gov/bills/115th-congress/senate-bill/1973>) as part of his effort to convince others that there is a lot of "silly research" being done that does not deserve federal funding (www.sciencemag.org/news/2017/10/rand-paul-takes-poke-us-peer-review-panels). Supporting the Golden Goose Award fits in with the AMS Office of Government Relations' mission to advocate for robust and dependable federal funding for scientific research and to stress the value of the NSF's peer review system for evaluating proposals.

The AMS Response to Recent Government Policies on Open Access

This past fall was an active one on the "open access" front. In 2013, then presidential science adviser John Holdren issued a memo on open access requiring that published results of federally funded research be freely available to the public within a one year "embargo period" of publication (<https://obamawhitehouse.archives.gov/blog/2013/02/22/expanding-public-access-results-federally-funded-research>). Agencies have taken various paths to achieving open access. The Department of Energy, Department of Defense, and NSF—which together account for nearly three-quarters of all federally sponsored non-biomedical research articles—use the CHORUS data infrastructure service (<https://www.chorusaccess.org>) to comply with the 2013 memo requirement. Principal Investigators on NSF grants are responsible for meeting the public access requirements. The NSF maintains a useful website addressing many questions you may have about your obligations (<https://www.nsf.gov/pubs/2016/nsf16009/nsf16009.jsp#q3>).

The AMS has created two open access journals—mirror journals of the *Transactions* and *Proceedings*—so that authors

who want to publish in the open access setting can do so. In our model, an author submits to the editorial board of the parent journal (*Transactions* or *Proceedings*) and, following acceptance, is offered the choice to publish in the parent journal or the open access mirror journal. This separates the editorial decision from the business decision. The AMS website “About Open Access” describes which of our journals are open access and the various types of open access models available to AMS journal authors (<https://www.ams.org/publications/journals/open-access/open-access>).

The current administration is reviewing the 2013 directive and considering updating it. As it is now on the table, the AMS Associate Executive Director for Publishing Robert Harington and I have spent time with White House Office of Science and Technology Policy (OSTP) staff discussing the AMS as a publisher, and how policies—such as on embargo periods for federally funded research—can affect society publishers and AMS members. Surplus funds that the AMS makes from publishing activities—including subscription revenues from journals—go directly back into our programs to fortify the U.S. mathematical sciences community. These programs include the Joint Mathematics Meetings (jointmathematicsmeetings.org/jmm) and the Mathematics Research Communities (<https://www.ams.org/programs/research-communities/mrc>). As a society publisher, we are concerned that cutting back or eliminating the embargo period would reduce incentives for universities and other institutions to pay for journal subscriptions.

Open access is a global concern with a range of models in play, including emerging models such as the European Plan S (<https://www.scienceeurope.org/coalition-s>). Our “one-pager” expands on open access and mathematics research (<https://www.ams.org/government/dc-collaborations>). Open Science provides a good primer on open access (<https://openscience.com/green-gold-gratis-and-libre-open-access-brief-overview-for-beginners>). The Scholarly Kitchen blog (of which AMS Director of Publishing Robert Harington is a “chef”) is a source of opinion pieces on open access (<https://scholarlykitchen.sspnet.org/tag/open-access>).

The AMS Office of Government Relations writes a bi-weekly blog: <https://blogs.ams.org/capitalcurrents>. Posts include timely information on activities in Congress that affect mathematicians and the broader science community, historical tidbits on federal science policy, and opportunities for engaging with Congress and other policy makers.

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Credits

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