Researchers understand innately the value of participating in technical and professional conferences. Early-stage information exchange, chance encounters that lead to new professional and technical opportunities, and unexpected discoveries are among the most important outcomes of face-to-face, peer-to-peer interaction at scientific conferences. But how does one explain the importance of conference attendance and justify the need for a specific person to attend a particular conference? In particular, how do specialists quantify the value of knowledge and discovery to individuals who have never attended, let alone presented, at a technical conference?

Starting in 2012, this burden was placed on every U.S. federal government employee who wished to attend a conference sponsored by a non-government organization. After a series of well-publicized incidents involving federal employees and (non-technical) conferences, federal scientists were challenged to demonstrate the value and return on investment of their conference attendance to a diverse swath of stakeholders within the legislative and executive branches of government.

On the surface, this innocuous request appears to impact only a small number of people. In 2012, only about 15 percent of the 2.7-million-strong federal workforce employed by the U.S. executive branch were in occupations classified as science, technology, engineering and math.
Further, only 10 percent of the membership of The Optical Society (OSA) is employed by the U.S. government—a level typical of many other professional societies. So why all the fuss about U.S. government conference travel?

As one of us (JNM) stated at OSA’s Leadership Meeting in February 2013, although federal scientists and engineers (S&Es) are a minority, the restrictions on conference travel are not a minority issue. The restrictions on government travel to conferences impact all professional societies and, in fact, impact the United States as a whole. This was validated in a 2015 study conducted by the management consulting firm PMIC Inc., overseen by one of us (KD) as company CEO.²

**Federal S&Es as catalysts for science**

Most scientists are familiar with the chemical concept of catalysis. Catalysts initiate, speed up and sustain reactions, by lowering the “activation energy”—the energy required to start a reaction. Sometimes only tiny amounts of a catalyst are needed to start a reaction. But they must be present or nothing happens.

U.S. federal S&Es serve as catalysts in the global scientific enterprise. The catalysis that these workers promote impacts the nation’s health, safety, security and, ultimately, economic prosperity. From presenting early advances in the frontiers of science and technology to promoting U.S. standards internationally and ensuring that regulators remain aware of the latest techniques in food safety, conferences keep federal catalysts in the mix.

The PMIC study concluded that face-to-face scientific interaction is a mission-critical, core function of government science and technology. Without it, the “innovation gap” facing the United States will increase, a development that in turn puts at stake the country’s economic welfare and global stature.
The PMIC study was commissioned at the request of several federal agencies in an attempt to educate policy decision-makers about the effects of the conference travel restrictions. The intent was to use the study’s data and analysis to make clear to congressional and executive-branch officials that the restrictions, if continued without change, would carry long-term impacts for the nation. Although the report ostensibly addressed only the conference travel issue, it made a strong statement about the necessity for U.S. federal employees to be active participants in global scientific endeavors.

Using publicly available data provided by federal agencies; numerous interviews with academics, federal employees, and representatives from industry; and comments provided publicly through the “Your Story” website of the American Association for the Advancement of Science (AAAS), the PMIC study concluded that “the scientific method necessitates collaborative procedures” and that “technical and professional society conferences provide mission-critical venues for face to face interaction that cannot be replicated by telecom, web-based sessions or other remote methods.” The study further noted that “the risk of malfeasance on the part of governmental S&T members is extremely low, and the return on investment of their collaboration is extraordinarily high.”

Origins of the Problem

The problem began in 2012, amid a palpably anti-government environment on Capitol Hill. A series of incidents involving lavish spending on retreats by government agencies culminated in front-page headlines that detailed the indiscretions and misuse of taxpayer funds. This gave Congress ample rationale to restrict severely travel by government employees to conferences.
Before Congress acted, the White House Office of Science and Technology Policy (OSTP) intervened and made clear that a complete shutdown of all conference travel was inappropriate. The elements of a subsequent compromise were released in the White House Office of Management and Budget (OMB) policy memo on conference travel M-12-12 (OMB 12-12). In an effort to limit travel only to “mission critical issues,” agencies were required to report to Congress expenses related to travel to government-sponsored and non-government-sponsored conferences.

The unintended consequence of conflating travel conference limitations and budget was the establishment of new bureaucracies throughout the U.S. federal government. Not only were these new bureaucracies necessary to provide the reporting data requested, they also served as approving entities for travel to conferences. In most cases, the approving official was a senior executive far removed from the requester’s home organization.

Compliance with the new bureaucracy engendered by OMB 12-12 led to a dramatic increase in the time, cost and paperwork involved in obtaining conference travel approval. A lead time of three months was expected at a minimum, but four months was not unheard of and, in some agencies, approvals took six months. Even given this length of time, some could expect to receive approval the Friday before the weekend when a conference began. The inability to make travel arrangements on such short notice led many to cancel trips, which negated months’ worth of effort to seek travel approval.

Understandably, this had a chilling effect on conference attendance. U.S. federal employees, less certain about their chances to travel, simply stopped trying—and some even stopped working for the government. Professional societies soon took notice. At least one society
with a substantial fraction of members from the U.S. Department of the Army had to cancel meetings due to poor attendance.

A Coordinated Response

In response to workforce issues voiced by the government and business concerns voiced by professional societies, in July 2014, one of us (JNM) formed a working group of representatives from U.S. federal agencies, for example, the Department of Defense, the Food and Drug Administration, the National Institute of Standards and Technology, and the National Institutes of Health; and professional societies, such as OSA, SPIE, IEEE, the Materials Research Society (MRS), the American Chemical Society (ACS), the Association for Computing Machinery (ACM), the American Physical Society (APS), and AAAS. This working group met three times a year for two years exchanging information so that one constituency could help the other.

The government was not completely oblivious to the burden it had placed on its workforce. In late 2014, the U.S. Government Accountability Office (GAO) commissioned a study on the impact of the approval process. Its report, released in March 2015, concluded that, at least for the Departments of Defense and Energy, cost savings to the government were minimal. As much money was being spent on acquiring approval as was being spent on the actual travel.

GAO also stated it was unable to assess the long-term impact of the restrictions due to a lack of data. This deficiency led the federal representatives on the working group to commission the study conducted by PMIC. PMIC’s report was submitted to the sponsoring U.S. government agencies in December 2015.
A Grassroots Effort

Alarmed by the study’s findings, one of us (KD), in her position as the CEO of PMIC, embarked on a social-media and speaking campaign to bring the issue to the attention of Congress, laypeople, and the broader U.S. population. As a private-sector business leader with nearly 30 years’ experience in the world’s largest business management and consulting firms, PMIC’s CEO had never been confronted with such a preponderance of evidence that a relatively straightforward misclassification led to a situation that causes a clear and present danger to U.S. interests. The threat of technological surprise, as confirmed by 100 percent of the subject matter experts interviewed for the study and 97 percent of the data analyzed, led the PMIC CEO to launch Twitter’s #LetOurScientistsGo hashtag; to speak to leaders within the U.S. Army, Air Force and National Academy of Sciences; and to blog about the issue as a private citizen concerned about the unintended impact of OMB 12-12 on federal science. The response has been overwhelmingly supportive, with a wide array of public- and private-sector enthusiasts generating more than 100,000 social media impressions on LinkedIn and Twitter alone.

The Washington Post, which had covered not only the revelations that led to the travel restrictions but also their unintended consequences, covered the release of PMIC’s study.\textsuperscript{6} The Post’s article, which featured comments from one of us (JNM) in his position as ARL’s Chief Scientist in the U.S. Army Research Laboratory (ARL), helped to further the conversation with the public, but more is needed.

An Acceptable Resolution

The information exchange promoted by the working group meetings helped both government and professional societies to pursue their quests. With keener insight into the problems faced by U.S. federal employees, professional societies were better able to
communicate with Capitol Hill and were also willing to make accommodations for federal employees waiting for travel approval. Federal employees continued to press the case for changes in the approval process.

This year federal workers are finally returning to technical conferences. The resolution is one in which all sides (Congress, agency regulators, professional societies, and the workers) can claim some element of victory. For Congress and government watchdogs, the policies that led to the restrictions on conference travel and, indeed, the subsequent congressional legislation that requires federal agencies to report the cost of conference travel, remain in place. The approval process, however, has been streamlined.

In most cases, approval can be granted at lower levels of authority than previously. The practical impact to those staff who have to initiate the request is, when an approving official is familiar with attending conferences, the justifications for travel no longer require as much detail and elaboration.

Final(?) Comments

In the spring of 2016, the working group agreed to suspend its meetings until after the U.S. presidential election, as the group felt it could do little to initiate further change until the incoming administration’s policy landscape became clear. All parties agreed to touch base again in early 2017, and all agreed that the exchange had been fruitful and beneficiary.

The group made a strong statement about the role U.S. federal employees play in the science and technology enterprise and made the case for those employees to be present in technical venues. Although congressional legislation remains, much of its sting has been dulled through a common-sense approach to travel approval.
We propose that a joint working group is a model for future collaborative efforts concerned with other policy discussions, for example, export trade and open-access publishing, which also impact both government workers and professional societies.

Finally, we are indebted to the contributions to the working group from Joanna Carney (AAAS), Jennifer Douris (SPIE), Damon Dozier (MRS), Ray Garant (ACS), J.J. McGowan (National Institutes of Health), Pat Roach (Air Force Office of Scientific Research), Tracy Schario (OSA), Josh Shiode (AAAS), and Leslie Wheelock (Food and Drug Administration).

References

1 https://www.opm.gov/data/index.aspx
3 http://www.aaas.org/yourstory/submissions
4 https://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-12.pdf
6 http://wpo.st/gaW_1