

Bringing Scientists to the Federal Government: How Well Does It Work? An Evaluation of the AAAS Science & Technology Policy Fellowship Program

For nearly half a century, the American Association for the Advancement of Science (AAAS) and partnering science and engineering societies have brought outstanding scientists and engineers to the US government. Through the Science & Technology Policy Fellowships (STPF) program, they gain hands-on policy experience, develop new skills, and become part of an influential network of alumni committed to science and policy. Today, a cohort of 250 fellows bring their STEM expertise to the executive, legislative and judicial branches each year.

The STPF mission is to connect science with policy and foster a network of science and engineering leaders who understand government and policymaking and are prepared to develop and execute solutions to address societal challenges. The Goodman Research Group, Inc. (GRG) conducted a retrospective evaluation in 2019 to assess the impact of the program on fellows and host offices. GRG fielded 1261 alumni and 235 mentor (government staff who manage fellows) surveys and interviewed 24 alumni, 14 mentors, and seven key AAAS program staffers. The survey response rate was 46% among alumni and 38% among mentors.

Key Findings

- The vast majority of **fellows reported a high level of satisfaction** with the program, both overall (89%) and for specific aspects of the program. In interviews, fellows often cited transformative learning opportunities, a chance to be at the heart of important work, and belonging to the esteemed network of alumni fellows.
- Rating themselves on a scale of 1-10 before and after the fellowship, **fellows made dramatic gains in their knowledge** of the workings of government and in their ability to integrate science with public policy and collaborate with others. For instance, fellows' level of skill with respect to policy and science integration increased from 2.9 before the fellowship to 6.5 afterwards. Average gains in all areas measured were about 3 points.
- The challenges alumni spoke of in interviews, such as a steep learning curve, were usually also seen as opportunities for growth. **Fellows said they gained new skills** including collaboration, project management, adjusting to faster deadlines, and communicating technical topics to non-scientists.



“The STPF fellowship was the most valuable experience I have had to date. It was a true privilege to meet the people I did, get the experience and exposure provided, and serve in the public sector.”

- 95% of mentors and 84% of fellows agreed that **fellows made important contributions to their offices**. Common contributions included providing expertise to address complex problems and translating scientific content into more easily accessible terms, drafting briefing documents, analyzing data, and liaising with various office constituents.
- **Being a fellow is transformative and leads to lifelong science-policy integration**. More than 80% agreed or strongly agreed that they had participated in future science-policy integration activities as a result of the fellowship. STPF alumni have: worked on science policy position papers, held leadership roles in professional organizations, and shared their policy know-how with colleagues. 76% have advocated for specific policies.

“The fellowship opened the door... It’s like status on an airline. It gives you an opportunity, and they believe in you, without having a million and a half connections in your network.”

- For many fellows, the program has a **significant impact on career trajectory** and is a proven pathway to careers in policy. Right after the fellowship, 69% changed employment sectors. While the majority of fellows were affiliated with academic institutions prior to the fellowship, immediately after the fellowship, 24% went into academic positions, 42% went into government jobs (federal, state, local), and the remainder were split among

the nonprofit and for-profit sectors. It is worth noting that after the fellowship, these percentages remained relatively stable to the present time.

- **Host office mentors were very satisfied with the STPF program, their experience as a mentor, and the quality of the fellows and their work**. Almost all found fellows to be well prepared to contribute to the work of the host office. Most agreed that there were tasks accomplished that could not be done without fellows. In interviews, mentors said they themselves experienced learning and growth as a result of hosting a fellow, and a majority (77%) said they were very likely to host another fellow.
- A large majority of **mentors agreed that fellows were well prepared to fit in and contribute** in areas ranging from the ability to communicate to diverse audiences to the ability to take on leadership roles on projects and assignments. In most cases, mentors valued fellows’ general scientific knowledge more so than specific disciplinary knowledge.
- **With respect to personal characteristics such as age or STEM discipline, results were fairly uniform**. There was not a lot of variance among fellows when asked about satisfaction with or outcomes from the fellowship. For instance, a fellow’s career stage did not independently predict any of the outcomes. With the caveat that the survey fielded small numbers of responses from race/ethnicity subgroups, there is no evidence that overall satisfaction differed by race/ethnicity. There were only two effects of gender on outcomes. Women reported slightly greater gains in skills related to collaboration and to science-policy integration than did men, while men reported slightly higher totals of post-fellowship policy and leadership activities than did women.

Conclusion

Findings from the study demonstrate clearly that the S&T Policy Fellowships program is a strong and proven mechanism for bringing science and scientists to the federal government. A vast majority of fellows and mentors gave high marks to the fellowship program.

“We have long assumed that this program is highly effective. The outcomes can be seen all around us in the thousands of alumni working at the intersection of science and policy, and it serves as a model for virtually every other fellowship that brings science to all levels of government, at home and abroad,” said Sudip Parikh, CEO of AAAS, which manages the STPF program. “Now, we have quantitative evidence.”

Many of the alumni interviews struck a common note: Alumni would like to strengthen ties with the program and engage with each other in meaningful ways such as creating new collaborations, sharing information, and advocating for science. To that end, STPF currently seeks to engage alumni particularly in the area of recruiting future fellows. Fellows are invited to help publicize the program, encourage applications and advise staff of their success stories in creating value both during their fellowship time as well as subsequent careers. Other ways STPF may seek to engage alumni is to offer more ways for alumni to convene (virtually or not), collaborate and share information with each other, and provide educational and advocacy opportunities.

Many fellow and mentor respondents expressed a desire to see the program grow to include more host agencies and more fellows.

“STPF manages an extensive and complex portfolio of different contracting and funding mechanisms and agency relationships – that means that increasing the number of fellows would entail more than simply bringing on more staff,” said STPF Director Jennifer Pearl. “But we are always considering the optimal size of the fellowship program.”

Mentors also provided suggestions for how to improve the fellow selection and placement process and provide more guidance for host offices to determine the best tasks for fellows.

“The results and perspectives from this retrospective survey of our alumni fellows and mentors are invaluable,” said Pearl. “STPF strives constantly to employ data and insight to improve the fellowship experience for fellows and partners. We know that by using our resources to measure program impact and sharing findings with the science policy community, STPF is well poised to continue propelling the integration of science with policymaking.”