

Final Report to the  
IEEE-USA Government Fellowship Committee  
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I served this year in the office of Senator Ben Nelson (D-Nebraska). In my mid-year report, I discussed my responsibilities in the first half of the year. My activities in the second half of the year were similar to those in the first half, albeit at a much more relaxed pace. The Communications bill never garnered enough support to make it to the Senate floor, but it presented a wonderful up-close study of how political implications affect the formation and viability of legislation. The Innovation and Competitiveness bill similarly never made it to the Senate floor. I expect that both topics will be actively considered by Congress again next year, and many of the ideas contained in these bills will continue to mature during the next few years.

I'll leave you with a few thoughts about the relationship between the technology and policy communities and the role of Science Fellows. My experience this year is that there is little communication between the telecommunications technology and policy communities. In particular, there is a tremendous gulf between those who form telecommunications policy and those who conduct research on future networking technology. This gulf has repercussions for both communities.

On the telecommunications policy side, while policymakers often have substantial knowledge of the history of telecommunications policy, the vast majority have limited knowledge of the underlying technology. This is quite understandable, since Congressional offices have small staffs who together must cover every issue that Congress considers. However, I believe it is difficult to formulate good telecommunications policy without a strong understanding of telecommunications law, telecommunications technology, and telecommunications economics. While Congress has a number of mechanisms to solicit and receive expert advice, my experience this year on telecommunication issues is that staffers received the bulk of their information from lobbyists on various sides of each issue. In particular, I note that out of over a hundred witnesses that testified before the Senate Commerce Committee on telecommunications this year, there were few members of academia, and no networking researchers from academia. The Committee rarely received unbiased advice on information technology this year, and consequently it was often difficult for staffers to make heads or tails of some of the claims about technology.

On the telecommunications technology side, networking researchers are often unaware that the telecommunications policy that Congress writes may significantly determine whether the ideas that researchers generate ever make it into the marketplace. Few researchers are aware of Congressional activities, and few have had experience explaining the implications of technology upon policy or vice versa.

Science Fellows can thus make a substantial contribution toward helping to bridge these two communities. If a Fellow is placed in a role that recognizes the Fellow's knowledge about science and technology, and combines this with other staffers' knowledge about policy, then the outcome can be quite beneficial to all parties concerned. My role was of this type, and my knowledge was put to good use within the Senator's office. That said, there are only about 30 Science Fellows in Congress each year, and therefore the program is not a sufficient mechanism for Congress to obtain expert science and technology advice.

Ultimately part of the fault for this gulf lies with universities. We do not sufficiently expose science and engineering students to contemporary issues such as telecommunications policy, and we do not sufficiently expose social science and humanities students to engineering topics such as information technology.

My year as a Congressional Science Fellow has been a wonderful experience. I learned a tremendous amount about telecommunications policy, and about how policy is made. I return to academia with new motivation to do what I can to bridge this gulf, through interdisciplinary teaching and through research that combines networking technology and telecommunications policy. I strongly recommend this Fellowship to anyone who similarly wishes to work to bridge science and technology with policy.