

Five Steps to Make Your Voice Heard in Science and Technology Policy

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Respond to societal challenges with confidence so your scientific and technical knowledge has the impact it deserves

This five step plan will give you the leverage you need to enhance your competitiveness in public policy debates and for policy-related positions and assignments



Science
and
Technology
Policy
Academy

Providing Analysis, Evaluation, and Education
in Science and Technology Policy

WELCOME

If you're reading this guide, chances are some (or all) of the following may sound familiar:

- Traditional academic training has failed to provide you with professional development opportunities in policy and communication.
- You've heard about science and technology policy, but don't know what it looks like in your field, what you can do, or if policy is right for you.
- You have lots of ideas, but don't know how to narrow them down and frame them so they could result in action and be taken seriously.
- Your boss has given you a new policy-related assignment to evaluate a program or develop a new policy, and you need the knowledge and skills to make that assignment a success.

BUT YOU...

- Lack the time or resources to take a traditional academic class.
- Feel paralyzed because you don't know where to start.
- Don't have a mentor or peer community to guide you.



YOU ARE NOT ALONE

I've helped hundreds of scientists, engineers, and health professionals like you enter the world of science and technology and make their voices heard with the simple strategies revealed in this free guide, *Five Steps to Make Your Voice Heard in Science and Technology Policy*.

5 Steps to Make Your Voice Heard in Science and Technology Policy

I want you to know that it **IS** possible to make your voice heard in public policy debates, and that you can bring your scientific and technical knowledge to science and technology policy, whether it be a policy debate, a program evaluation, or a new step in your career. These five steps will help you to:

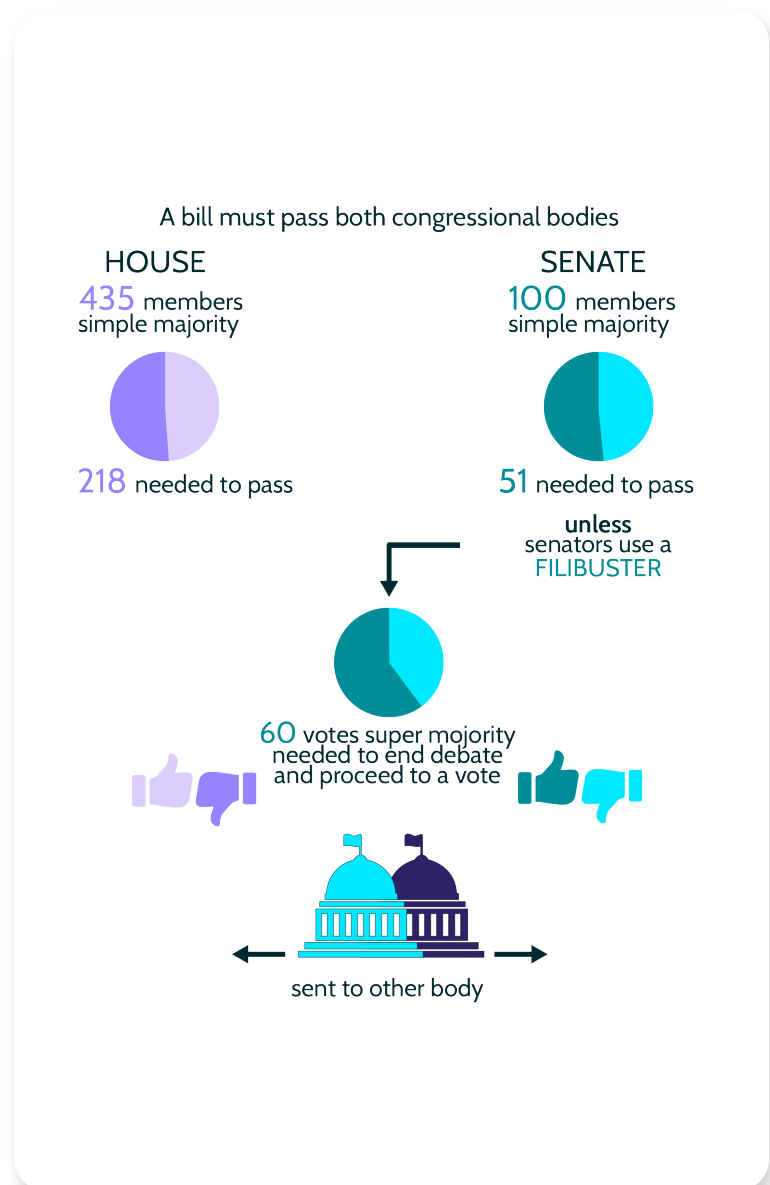
- Understand what policymakers want to know, so they are willing to listen to what you have to say.
- Conduct the evidence-based analysis you need to provide the answers to those policymaker questions.
- Develop the right communication tool to reach the policymakers who can act on your proposal.
- Give you the confidence to show you are a seasoned professional, so they say “yes” to discuss your idea, even if you are just getting started.
- Integrate your scientific and technical knowledge into science and technology public debates to create continued success.
- Start a new career, or enhance your existing career, even if you don’t have any experience in science and technology policy.



Understand the Possibilities of Science and Technology Policy

The first step in understanding how science and technology policy is developed by policymakers is looking at how an existing policy came to be. Here are some steps to get you started.

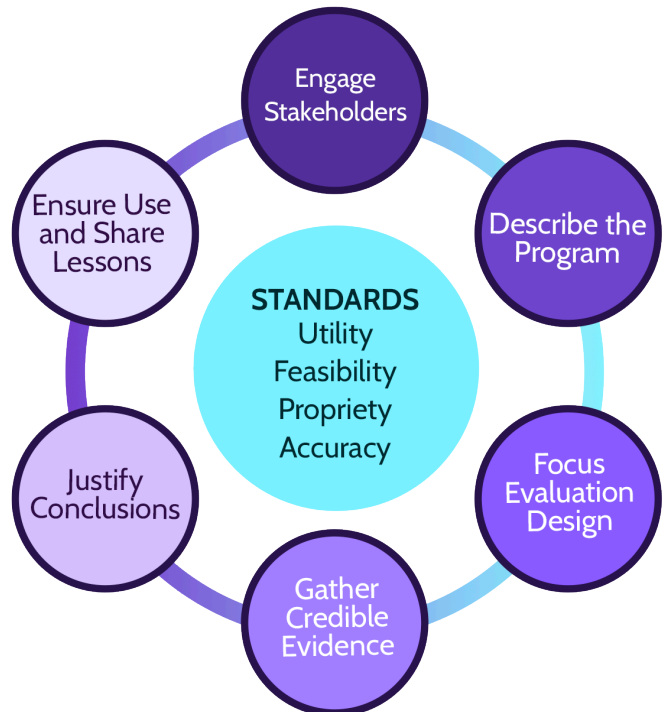
- 1 What is an example of a policy that has impacted you personally? (e.g., Affordable Care Act (Obamacare, 2010), National Science Foundation Act (1950), Department of Energy Act (1977), Morrill Act (1862, 1890), National Environmental Policy Act (1970)).
- 2 Go to Congress.gov (or the National Archives for older acts) and skim the text of the act or read a summary. Identify the key principles and provisions.
- 3 Go to YouTube and find a video that provides a history of how this act came to be (e.g., Frontline, Obama's Deal). Identify the key organizations that played a role in the bill's passage – both those that opposed and supported it.
- 4 How did the policy impact science and technology? What role, if any, did science and technology play in the policy's development? What was the societal goal of the act? Was it achieved?



Evaluate the Current Program

You may not realize that there is probably an existing program that addresses the societal challenge you're passionate about solving. So, one important first step is to understand the current programs and how well they are working to respond to that societal challenge.

One of the most important aspects of program evaluation is engaging the stakeholders to ask them what they think of the program. Equally important is understanding the perspectives of those who do not participate, but who could benefit from the program.



Source: [CDC](#)

Here are some ideas on how to better understand how a current program is working:

- 1 Look to see if an external organization, such as the Government Accountability Office (GAO), the National Academies of Sciences, Engineering, and Medicine, or a federal advisory committee has evaluated the program.
- 2 Visit the policy section of stakeholder organization websites to see what they say about the program, such as the American Cancer Society or the Natural Resources Defense Council. What do they think is working well? What is not working well?

Step 3

Conduct a Policy Analysis

Policy analysis, as illustrated in the figure below, provides a systematic process to analyze public policy options to respond to societal challenges such as COVID-19, climate change, and homelessness. It involves identifying the underlying problem (See Step 2), key decision-makers, stakeholders, policy questions, and policy options. These options are then analyzed to identify which is likely to be the most effective, efficient, equitable, and the easiest in terms of political acceptability. Once that analysis is concluded, the analyst makes a recommendation based on those criteria and communicates the results to policymakers and the public.

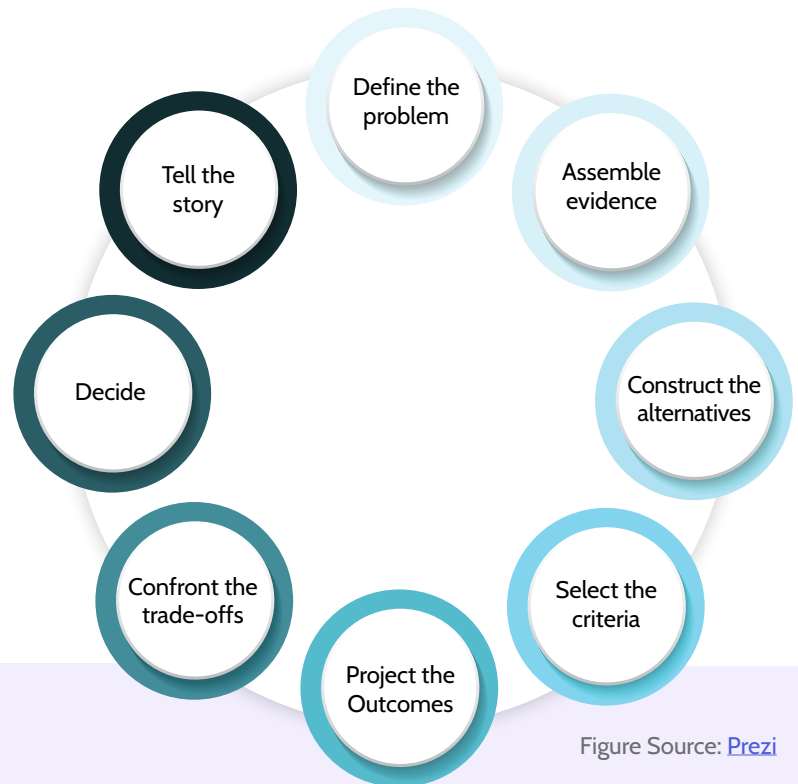


Figure Source: [Prezi](#)

Bardach's Eightfold Path FOR PUBLIC POLICY ANALYSIS

Here are some steps to think about as you begin your policy analysis:



- 1 What societal challenges are you passionate about where you can contribute your scientific and technical knowledge to solving that challenge?
- 2 What policy options might respond to that challenge?
- 3 Which policy option is the most effective, efficient, equitable, and will have the easiest time facing an always challenging political process?

Step 4

Communicate Your Message

Your analysis will not have any impact if you don't get your message out. So, another important step is to develop a strategy to communicate your message. You'll have to think about the timing of important policy events, which policymakers are the most important to reach, and how you will communicate your message in written, oral, and visual form. Your message will need to be clear, concise, and without jargon.



Step 5

Leverage Your New Knowledge and Skills

Your final step is to leverage the knowledge and skills that you've gained to create a portfolio of work that can exhibit your abilities. Some actions you can take are to:

- Join and volunteer for organizations like the [National Science Policy Network](#), [Engineers and Scientists Acting Locally](#), and your disciplinary societies' public policy activities.
- Write for publications that focus on science and technology policy like the [Journal of Science Policy and Governance](#), the [Federation of American Scientists Day One Project](#), and [Forefront](#).
- Learn about what's currently happening in public policy through webinars and workshops hosted by non-governmental organizations like the [National Academies of Sciences, Engineering, and Medicine](#); [Resources for the Future](#); and the [Association for the Advancement of Science](#).
- Follow job openings on [SciPolJobs](#) Twitter and your policy topic of interest.

Watch Out for this Common Pitfall

Each of us has an internal voice inside our head that keeps us from moving forward. Sometimes those voices may tell you that you don't have enough time, your research or other work is more important, or you're just not good enough compared to your peers.

When you believe this inner dialogue, you don't act. You settle into what you know, and are stuck in a position where you're not having the impact you want on society.

Don't let this happen to you! Take the time to gain the knowledge and learn the skills you need to move with confidence into the public policy arena. You didn't start your science, engineering, or health journey expecting to know everything right away, and the same is true with public policy.

You'll learn and gain confidence along the way with experience. You just need to take that first step in your journey into science and technology policy.



CONCLUSION

When you're entering a new world, you often don't know what you need to know to be successful. I hope that by reading this guide, you've discovered action steps you can take right now to make your voice heard in science and technology policy. By focusing on developing answers to common policymaker questions about your ideas, you can provide your policy ideas on how to respond to societal challenges with greater confidence.

Discover Your Next Steps

Bringing your innovative ideas into the world of science and technology policy is more, however, than any written document, website, or video can convey. Policy is very much a mentored experience. I was lucky to have fantastic mentors throughout my career who brought more depth to my analysis than my PhD classes on policy analysis and program evaluation.

I'd be honored to be your mentor so that you can begin moving from where you are now into the science and technology policy world with clarity and confidence. You're invited to have a complimentary, no-obligation conversation with me, where together we will develop your personalized "Pathway to a Policy Mindset" that will enable you to:

- Define your next steps on your journey into science and technology policy.
- Outline a specific plan for implementing those next steps.
- Make powerful forward progress, so you can bring your scientific and technical knowledge to bear on the societal challenge of most interest to you.

Together, we will take the steps necessary to transform and apply your research and critical thinking skills to public policy.



Schedule Your Complimentary
"Pathway to a Policy Mindset" Session [Here](#).

The Science & Technology Policy Academy: Pathway to a Policy Mindset

STEPS TO TRANSFORM
AND APPLY YOUR
RESEARCH & CRITICAL
THINKING SKILLS TO
PUBLIC POLICY

Result: Respond to Societal Challenges with Confidence

Leverage: Use New Knowledge and Skills to Enhance Policy-Related Position and Assignment Competitiveness

Evaluate: Assess Policy and Program Success

Optimize: Add Quantitative and Analytical Skills

Quick Start: Build Policy Analysis Skills

Foundation: Understand Possibilities of S&T Policy

About Deborah Stine

Dr. Deborah D. Stine is the Founder & Chief Instructor of the Science & Technology Policy Academy. She is a freelance consultant, policy analyst, writer, video producer, professor, teacher, trainer, and study director whose career has been dedicated to translating science and technology to policymakers, the public, students, and investors – AND translating policymakers, the public, students, and investors to the science and technology community.



She has taught classes at many organizations including the Foundation for Advanced Education in the Sciences at NIH, Rutgers University, the University of Idaho, Notre Dame, Princeton, Penn State, Ohio State, North Carolina State, Worcester Polytechnic Institute, Virginia Tech, and the MOST (Missouri) Policy Initiative. She was also a visiting professor in engineering studies at Lafayette College.

Consulting clients include the Energy Futures Initiative, Catalyst Connection (manufacturing), Cleaner Cooking Coalition, and West Virginia University, where she has acted as study director for two studies on the Waters of West Virginia and Carbon Dioxide Reduction.

She was Executive Director of the President's Council of Advisors on Science and Technology (PCAST) at the White House from 2009-2012, during the first three years of the Obama Administration. During that time, she was the study director on a wide variety of science and technology policy topics including advanced manufacturing, spectrum allocation, influenza vaccine production, nanotechnology, networking and information technology, ecosystems and the economy, and STEM education that led to Obama Administration initiatives.

At Carnegie Mellon, Dr. Stine was a Professor of the Practice for the Engineering and Public Policy Department and Associate Director for Policy Outreach for the Scott Institute for Energy Innovation from 2012-2018. Dr. Stine received the Carnegie Science Communication Award for her communication activities, particularly videos, for her work at Carnegie Mellon.

From 2007-2009, she was a science and technology policy specialist with the Congressional Research Service. There she wrote reports on many topics including a comparison of the Apollo program, Manhattan project, and Energy Research & Development programs; science and technology diplomacy; a primer on science and technology policy, ARPA-E, and the America COMPETES Act.

From 1989-2007, she was at the National Academies of Sciences, Engineering, and Medicine – where she was associate director of the Committee on Science, Engineering, and Public Policy; director of the National Academies Christine Mirzayan Science and Technology Policy Fellowship Program; and director of the Office of Special Projects. While there, she received the highest staff award from the National Academies. She was the study director for the Rising Above the Gathering Storm report that led to the America COMPETES Act and the establishment of the Advanced Research Projects Agency-Energy (ARPA-E).

Prior to coming to the Academies, she was a mathematician for the Air Force, an air-pollution engineer for the state of Texas, and an air-issues manager for the Chemical Manufacturers Association. She was also President of the League of Women Voters of Corpus Christi, and a member of the League's Texas Board of Directors.

She holds a BS in mechanical and environmental engineering from the University of California, Irvine, an MBA from what is now Texas A&M at Corpus Christi, and a PhD in public administration with a focus on science and technology policy analysis from American University. She resides in Pittsburgh, Pennsylvania.

