The American Association for the Advancement of Science (AAAS) is the world’s largest general scientific society, and publisher of the journal *Science* (www.sciencemag.org). AAAS was founded in 1848, and serves some 262 affiliated societies and academies of science, reaching 10 million individuals. *Science* has the largest paid circulation of any peer-reviewed general science journal in the world, with an estimated total readership of one million. The non-profit AAAS (www.aaas.org) is open to all and fulfills its mission to advance science and serve society through initiatives in science, international programs, science education, and more.
WORKING WITH CONGRESS
A SCIENTIST’S GUIDE TO POLICY

Kasey Shewey White
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Important forces bring science and government together. Congress makes decisions that directly affect researchers through the allocation of funding and guidelines for its use. Meanwhile, science and engineering contribute to understanding a host of policy issues at the forefront of congressional debate ranging from perennial topics such as national security and climate change, to emerging issues such as nanotechnology and synthetic biology.

There are, however, stark differences in the way science and policy develop, leading to what C.P. Snow has described as the “two cultures.” Science is systematic, driven by data and discovery while policy is ad hoc, driven by personal and constituent concerns. Scientific advancement is inherently based on skepticism and advanced through consensus while policy is adversarial, dependent on compromise.

Communication and understanding differences in how these processes develop is the key to bridging the gap between the mutually dependent “cultures” of science and government; this book aims to provide this information for scientists. Chapters 1 and 2 provide background on congressional organization and the legislative process, while Chapter 3 discusses in detail the communication strategies that one can utilize and presents a list of the top ten rules for working with Congress:
Top 10 Rules for Working with Congress

1. Know Your Goal.
3. Conduct Detailed Background Research.
4. Use Your Knowledge of the Legislative Process to Determine the Timing of Your Course of Action.
5. Be Clear and Succinct.
6. Understand Congressional Staff and Their Influence.
7. Provide Concrete Suggestions.
8. Present Support of Science as a Means to Meet National and Local Goals, Not an Entitlement.
9. Be Willing to Say “I Don’t Know”.
10. Follow Up Appropriately.
As you begin your interactions with Congress building upon these guidelines, consider the capacity in which you are acting. Scientists have traditionally been most comfortable in the role of providing scientific information, but that is changing and more scientists weigh in on policy issues in a visible way. Be clear to yourself — and your contact in the congressional office — whether you are simply presenting scientific information or advocating for a position.

This book builds upon earlier volumes (1992, 1996) of *Working With Congress* by William G. Wells, Jr. and would not be possible without his research and interviews of congressional staff or the contributions of Albert H. Teich, Bonnie Bisol Cassidy and Stephen Nelson to those versions.

Many science policy experts contributed to the review and content of this book. A special thanks to Laura Pomerance, David Goldston, Kei Koizumi, Jack Crowley, Erin Heath, Stephen Nelson, and Phillip Chalker for their insights and expertise, and to Samantha Pearlman, Meagan Biwer, Jamie Wheeler, and Catherine Kolf for their research and editorial assistance.
A Letter to Scientists on Working With Congress

In Congress, there are many caucuses formed by like-minded Members on issues ranging from bicycles to Azerbaijan. Sometimes a Caucus has fifty members, sometimes 250. We often joked over the years that together, we made up the entire “Physics Caucus” of the House of Representatives, and that our meeting room could be an elevator or a phone booth, if we could find one with a chalkboard!

While it is amusing to joke about the number of scientists in Congress, the size of the “Physics Caucus” is a symptom of the lack of scientific expertise in Congress. Fewer than four percent of the Members of Congress are scientists, engineers, or health professionals. By comparison, approximately forty percent of the Members list law as their profession. Because most Members of Congress had their last mathematics or science course in high school, they tend to shy away from the scientific and technical issues. This is troubling because legislators are increasingly required to make decisions involving highly scientific and technological components that are either ignored or misunderstood.

This is why you should work with Congress: to help shed light on the scientific and technological aspects of issues being debated in Washington. Your participation in the policy process is vital, because Congress and the public do not approach problems with the same analytical techniques that
come naturally to scientists. Unfortunately many scientists are averse to political engagement, even if they are quick to criticize decisions made by policymakers, particularly decisions about science. As a member of the scientific and technological community, and a citizen in a democracy, you have a responsibility to participate in your government.

The participation of members of the scientific and technological community in the policy process is a critical piece of sustaining the components that fuel our nation’s greatness. Our country owes much to science, its application, and its practitioners. Our quality of living, including our health, transportation, economy, and other aspects of our daily existence, have been improved by innovation derived from scientific research and creative thinking. Our country is the world’s leader in science, technology, and innovation, but this status is not guaranteed forever. Individual scientists can help the U.S. stay competitive by communicating the importance of their work to policymakers.

If the scientific and technological community is not involved in policy, the voice of science and technology is removed from the policy equation. Worse yet, if the scientific and technological community remains aloof, other people, less knowledgeable about science and technology, will have greater influence on policy. Congress used to have an in-house professional office dedicated to providing technological assessment services, but it has been closed for a decade. Despite the efforts of outside organizations and groups left to fill in this gap, Members of Congress are not getting all that they need in terms of scientific and technological assessment. In addition, legislators have very little time to track scientific or technological advances and make reasoned, logical determinations of their impacts on industry, nations, and education. Individual scientists advocating for science will alleviate some of the lack of science expertise in the Congressional policy-making process.
Your goal should be to serve as a resource to Members and their staff. There is an excess of information on the Hill, and the responsibility of the staff is to distill the good information and relay it concisely and clearly to the Members. Staff may turn to experts for assistance with this task. Additionally, Members of Congress rely on both local and national experts for advice and feedback on legislation, and many Members of Congress develop ad hoc or formal advisory boards for this purpose. Scientists who have served as a dependable resource may find that after several visits, a Member may reach out to you for advice in this capacity. This type of relationship requires a consistent investment of time and energy, and will not happen overnight.

In order to effectively work with Congress, scientists need to become more aware of the complex nature of policy. This will clarify the place of science in the policy process and assist you in understanding your role as an advocate for science. For example, it can be frustrating for scientists to observe policy decisions that don’t seem to “agree” with the scientific consensus or do not seem to have been determined logically. Scientists have a process to determine their research path, and although the result may be uncertain, the path is clear. By contrast, legislators have to balance among multiple stakeholders. Each issue presents a true many-body problem with variable forces between and among the bodies. No bank of parallel processors could solve the real-life policy problems confronting Congress. As you come to understand the policy processes we think you will begin to appreciate not only the complexity of the problem, but also the beauty of the American system for finding solutions. Your understanding of the policy process will help ensure that this equation includes science.

Representative Vernon J. Ehlers  
Michigan’s 3rd Congressional District  
(retired)  

Representative Rush Holt  
New Jersey’s 12th Congressional District
The concept of the American Dream is deeply rooted in the nation's history and values. It is a belief that anyone can achieve success and prosperity through hard work, perseverance, and dedication. This idea is enshrined in the founding documents of the United States, such as the Declaration of Independence and the Constitution, which emphasize the principles of liberty, equality, and the pursuit of happiness. The American Dream has been a source of inspiration and aspiration for generations, driving individuals to strive for better lives and contribute to the growth and prosperity of the nation. It continues to shape the cultural and political landscape of the United States, influencing policies, social norms, and individual expectations.
At first glance, the structures and procedures of Congress can appear complicated, but this intricate organization provides the backbone to America’s political and legal systems. Understanding this system can give citizen scientists and engineers insight into how to best shape communication with congressional members and staff. This chapter provides information on the legislative process, congressional leadership, committees and other congressional organizations, as well as the role of congressional staff. In addition, to make this publication as timely as possible, the AAAS website www.aaas.org contains an analysis of the current political context for science and technology.

THE LEGISLATIVE PROCESS: How a Bill Becomes a Law

Congress has many functions, but passing legislation is one of its most visible duties. A bill must navigate a complex path from its introduction, through both chambers, and to the President to become law — a path that most bills do not complete. Members of the 110th Congress introduced nearly 14,000 pieces of legislation, but only about 3 percent of the bills were signed into law. Many bills only reach the first stage: each bill that is introduced, formally known as a resolution, is assigned a number (preceded by H.R. in the House and S. in the Senate) and referred to the committee(s) that has jurisdiction over the issue. (See Legislative Process flowchart, page 14).

In general, the first step in moving legislation forward is for a committee, or one of its subcommittees, to hold one or more hearings to examine the topic of the legislation. For a bill to advance, a committee holds a “mark-up” session for members to vote on the bill and any proposed amendments. Most bills are accompanied by a document, often referred to as the “report” or “report language,” that contains more detailed guidance to departments and agencies than is provided in the bill. Though reports do not carry the force of law, they are generally followed by the agencies.
LEGISLATIVE PROCESS

Legislation may begin in either chamber. Similar proposals are often introduced in both chambers.

Measure introduced in the House

Measure referred to committee, which holds hearings and reports measure to the House

OR

For important measures, special rule reported by the Rules Committee and adopted by the House

Leadership schedules measure for floor consideration

House debates and can amend measure

House passes measure

Measure introduced in the Senate

Measure referred to committee, which holds hearings and reports measure to the Senate

Leadership schedules measure for floor consideration

Senate debates and can amend measure

Senate passes measure

Measures must pass both the House and the Senate in identical form before being presented to the President.

One chamber agrees to the other chamber’s version

OR

Each chamber appoints Members to a conference committee, which reconciles differences and agrees to a conference report

OR

House and Senate exchange amendments to bill and reach agreement

House approves conference report

Senate approves conference report

Legislation presented to the President.

President signs measure

Measure becomes law

If President doesn’t sign measure into law within 10 days

If Congress is in session, measure becomes law

If Congress is not in session, measure does not become law ("pocket veto")

If Congress is not in session, measure does not become law, unless both chambers override veto by 2/3 majority

President vetoes measure

Measure becomes law
Once through committee, legislation is placed on the Calendar for a floor vote. Bills are not taken up in sequential order; the leadership in the House and Senate decides what will reach the floor and when. In the House, most bills first go to the Rules Committee to determine the procedures under which the bill will be considered. The House Rules Committee has effectively become an arm of the majority leadership and is crucial in passing legislation. These rules can significantly affect a bill’s fate, as they control the amount of debate that can take place, the number of amendments that may be offered, and even which amendments are admitted. The House must vote to approve the rule before it can begin action on the legislation, but the rule is very rarely defeated. Some bills are placed under “suspension of the rules” and never go to the Rules Committee. This process, which is directed by the Speaker of the House, allows a bill 40 minutes of debate, no amendments, and a requirement of two-thirds of the votes to pass (a “super majority”). In the Senate, the Committee on Rules and Administration is much less powerful than its House counterpart. Instead, the Senate relies on informal negotiations and agreements by the senators (“unanimous consent agreements”) to develop rules that govern debate.

After floor debate, the chamber votes on the bill. If passed, it is then sent to the other chamber to begin the process anew, though often the House and Senate are concurrently considering legislation. In some cases, a bill is passed in identical form by both chambers and sent to the President. In other cases, when the House and Senate pass different versions of a bill, agreement between the two chambers must be reached, either informally or through the use of a conference committee. A conference committee is comprised of members from both chambers and is established temporarily to reconcile the differences between the two measures. The agreement from the conference committee cannot be amended and must be voted up or down by each chamber.

Once the House and Senate pass a bill in identical form, it is then sent to the President. A bill becomes law if signed by the President or if not signed within 10 days when Congress is in session. If the President vetoes the bill, Congress can override the veto and make the bill law by obtaining a vote of two-thirds of those present with a quorum (a simple majority of their respective members) in each chamber. A “pocket veto,” when the President does not sign a bill within 10 days while Congress is out of session, cannot be overridden.
HOUSE AND SENATE LEADERSHIP

The House Leadership

The House leadership derives much of its power from holding the levers on the use of rules and procedures. Effective use of these rules and procedures permits the majority party to achieve its policy or procedural objectives. But this can be taken only so far; ultimately, the leadership — both majority and minority — must persuade members who represent different constituencies, values, and interests to support legislation before the House.

The role of Speaker of the House carries with it prestige and extensive power. The Speaker is recognized in the Constitution and designated as next in line behind the Vice President to succeed the President. While formally elected by the entire House, the majority party effectively chooses the Speaker. The Speakership combines policy and partisan leadership with procedural prerogatives.

An elected Majority Leader is the Speaker’s principal deputy. Both House and party rules are silent on the formal duties of the Majority Leader, who is chosen by the party caucus. In practice, the Majority Leader serves as the party’s floor leader, negotiator, strategist, and spokesperson.

On the other side of the aisle, an elected Minority Leader is the titular head of the minority party. The functions of this position have included monitoring the progress of bills through Congress and forging coalitions with like-minded colleagues from the majority party. Another important role is the promotion of party unity and political leadership in seeking a return to majority status.

On the next rung of the party leadership ladders are the Majority and Minority Whips. Whips in each party meet regularly within the party to discuss strategy and issues. For both parties, whips aid the top leaders in gathering intelligence, encouraging attendance, counting votes (“whip counts”), and persuading colleagues, often sending “whip notices” with pertinent information on upcoming floor agenda items. Since the principal whips are elective posts, they have been seen as the path to majority or minority leadership positions. The other whip positions (deputy, assistant, regional) are appointive.

The Senate Leadership

The Senate is an institution suffused with individualism and independent operators, a place where legislation can be held up by a single senator. There is large deference to minority views and all senators typically have ample opportunities to be heard on the issues of the day.
Compared with the House’s complex rules and voluminous precedents, the Senate’s rules are brief and often set aside. For example, in the House, debate remarks and bill amendments must be germane to the issue or bill being discussed, while in the Senate there are far fewer constraints concerning the relevance of what a senator has to say. Furthermore, in the Senate several key procedural votes — such as limiting debate — require 60 votes rather than a simple majority. These characteristics present dramatic challenges to the leaders, majority and minority alike, in performing their roles, as they must rely heavily on personal skills, persuasion, and negotiation to advance legislation.

The President of the Senate, as defined by the Constitution, is the Vice President of the United States. However, except for ceremonial or unusual occasions, the Vice President seldom presides over the Senate and votes only to break a tie. The Constitution also provides for a President Pro Tempore to preside in the Vice President’s absence. In practice, the majority party senator with the longest continuous service performs this role, although other senators serve on a rotating basis. When a senator on the Senate floor says, “Mr. President,” the reference is to the President Pro Tempore. For practical purposes, however, the Majority Leader acts as the head of the majority party, as its leader on the floor, and as the leader of the Senate. In the same way, the Minority Leader heads the Senate’s minority party and acts as its leader on the floor. Neither of these positions is mentioned in the Constitution; both are subject to elections with secret ballots at the beginning of each Congress.

As in the House, there are majority and minority whip systems in the Senate. Their purposes include “whip counts” of votes, gathering votes, and planning party strategy.

COMMITTEES IN CONGRESS

In the work of Congress, committees are at the center of things institutionally: in policymaking, budgets, revenues, investigations, oversight of federal agencies, and public education. Committees use multiple tactics for addressing issues, ranging from legislation and hearings, to private letters and meetings, to investigative reports. While floor actions often refine the legislative products of committees, the committees are the means by which Congress sifts through thousands of bills and tens of thousands of nominations annually, along with considering hundreds of issues and proposals. Congress has a complicated organizational structure with more than 40 committees and 150 subcommittees.
Committee Assignments

Committee assignments are central to the organization of Congress and to the ability of members to influence policy in areas in which they are interested. Members, particularly in the House, say that committees are central to their personal goals, and most of their legislative activities revolve around their committee and subcommittee assignments.xi

Committee assignments are made under party rules and processes, while the number of committees and subcommittees that a member can serve on or chair is set by both chamber and party caucus rulesxii. Democrats and Republicans in the House and Senate set their own rules for assigning membership to committees, grading committees by level of importance. Membership on some committees, such as the Ways and Means Committee in the House, is exclusionary, meaning that it is the only committee on which a member can serve. Other powerful exclusionary House committees include the Appropriations and the Energy and Commerce Committees. The Senate, unlike the House, does not have exclusionary committees.

Senators usually divide their time and attention among a larger number of committee assignments than representatives. Moreover, senators have greater latitude than representatives to influence the agendas of committees other than those on which they serve.

Committee Leadership

A member of the majority party chairs each committee. Chairs of committees control the agenda and, along with the Ranking Minority Member, lead the respective majority and minority committee staffs. Although seniority used to be the sole criterion for advancement to committee and subcommittee chairmanships, it is now only one of a set of factors used in filling these key positions. These days, other factors, such as loyalty to party policy positions, are also taken into account by the leadership when making assignments. Throughout congressional history, rules on term limits for leadership positions, which are set in the rules for each session of Congress, have been variable. For example, in 2009 the Democratically-controlled 111th Congress eliminated the six-year term limits for House committee and subcommittee chairs that were adopted during the Republican Revolution in the mid-1990s, while the Republicans maintained the term limits for their partyxiii.
Types of Committees

Committees vary considerably in importance and influence. The basic types are select, joint, and standing. Most committees are standing committees, which are permanent congressional entities, established by law or by House or Senate rules. These committees continue from one Congress to the next, though they can be changed by the leadership. Standing committees process the vast majority of the daily business related to lawmaking, investigations, and oversight. From the thousands of bills introduced, these committees choose a limited number to consider and send to the floor for possible enactment into law. Thus, they are also the burial grounds for most legislation.

Select (or special) committees are meant to last no longer than one session of Congress (a two-year period). However, some, like the House and Senate Select Committees on Intelligence, “just keep going” and take on the nature of standing committees. Joint committees — of which there are four standing — are comprised of both senators and representatives. Joint committees are used when the House and Senate agree that the institutional interest of Congress as a whole should take precedence over the interests of either house. The standing joint committees are the Joint Economic Committee, the Joint Committee on the Library, the Joint Committee on Printing, and the Joint Committee on Taxation.

For those who work with Congress, one of the most important distinctions to bear in mind is the fundamental difference between authorizing and appropriating committees. In principle, authorizing committees, of which there are many, produce bills that set policy, create regulatory functions, establish federal agencies and programs, and recommend budgets at certain levels. They also have oversight responsibilities for the programs and operations of federal agencies within their jurisdiction. Appropriations committees, in contrast, produce the legislation that actually funds the programs, taking into account the authorizations.

In reality, however, Congress can pass an authorization bill that is signed into law but for which no appropriation is ever enacted. In this sense, a program is authorized but does not really exist because the appropriations committees never allocated the money to implement it. Indeed, there are billions of dollars of such unfunded authorizations on the books. For example, the scientific community celebrated the signing into law of the America COMPETES Act in 2007, which authorized large increases in physical science research and education spending. Those increases, however, did not come to fruition during the appropriations process. In part, this type of situation arises
because overall limits on discretionary spending enacted by Congress mean there is not enough money in the pot to fund all enacted authorizations. In other cases, it arises because appropriations committees disagree with authorizing committees.

Overlaps between authorization and appropriations committees can create tension. In addition to controlling funding given to authorized programs, appropriations committees can create policy through their bills by including directives to agencies in the report that accompanies the bill. The trend to fund many agencies in a single bill (often referred to as an “omnibus”) and pass emergency spending (“supplemental”) bills for routine funding needs has also strained the authorizing-appropriations process. These large bills often contain policy riders that are not debated during the policy process and provide another avenue to fund programs without regard to authorizations.

Appropriations Committees focus their efforts on programs that are subject to annual funding decisions, known as discretionary spending. In contrast, mandatory spending (often referred to as “entitlement spending”) includes spending that is made pursuant to laws other than appropriations laws, such as Medicare, Medicaid, and Social Security, and is not subject to annual efforts to establish spending levels. Those programs are overseen by the Senate Finance Committee and the House Ways and Means Committee, not the Appropriations Committee.

The Appropriations Committee is often confused with the Budget Committee, but they have different areas of jurisdiction. The House Budget Committee and the Senate Committee on the Budget prepare a budget resolution that sets out a broad blueprint for the Congress with respect to the total levels of revenues and spending for the government as a whole. The Appropriations Committee in each chamber prepares the legislation that actually enacts spending policies, with responsibility for discretionary spending to enforce the budget.xiv

Committees Addressing Science

Congress makes decisions that directly affect researchers through the allocation of funding for federal agencies and guidelines for its use, often referred to as “policy for science.” The amount of funding for scientific research is the main way that scientists see congressional influence in policy for science. Funding can come through general appropriations to federal agencies or congressional allocations to specific projects, often referred to as “earmarks”. Congressional directives can also influence the way funds are spent or research is conducted. The ban on using federal funds to create
or destroy an embryo for research is an example of the way in which policy created by Congress
directly affects researchers. The ban was created in 1995 by a rider, known as the Dickey-Wicker
Amendment, to an appropriations bill. This amendment prohibited use of Department of Health and
Human Services (HHS) (including the National Institutes of Health [NIH]) funding from being used
to create or destroy human embryos for research purposes. The amendment has been included
annually in the relevant appropriations bill.

Many authorizing committees come into play in developing policy for science through oversight
of federal agency activities and authorization bills that direct agency activities. The House Committee
on Science, Space, and Technology has jurisdiction over some of the federal research agencies, such
as the National Science Foundation (NSF) and the National Aeronautics and Space Administration
(NASA). Other agencies that fund scientific research fall elsewhere. For example, the House Energy
and Commerce Committee oversees biomedical research, while the House Natural Resources
Committee has jurisdiction over fisheries research. Oversight of some agencies, such as the
Environmental Protection Agency, falls under multiple committees xv.

Similarly, in the Senate, agencies such as the National Oceanic and Atmospheric Administration
(NOAA) and NASA are overseen by the Committee on Commerce, Science, and Transportation,
while the Health, Education, Labor, and Pensions Committee has jurisdiction over the National
Institutes of Health.

For policy issues with a scientific component (“science for policy”), such as ocean policy or
climate change, the list of interested committees is even more expansive. The U.S. Commission on
Ocean Policy found that more than 55 committees and subcommittees oversee ocean-related statutes
— illustrating the difficulty in crafting a comprehensive ocean policy xvi. Similarly, every standing
House committee in the 110th Congress held a hearing on climate change, each covering the aspect of
climate change under its particular jurisdiction. In addition to the relevant science, these committees
also examine economic, ethical, and constituent concerns.

The House and Senate Appropriations Committees also divide scientific research among
many of their subcommittees. The number of subcommittees has fluctuated through the years.
The 109th Congress condensed 13 appropriations subcommittees in each chamber to 10 in the House
and 12 in the Senate, and the next Congress made further changes that resulted in both chambers
having 12 subcommittees. The chart on page 22 shows which subcommittees oversaw science
agencies in the 111th Congress.
APPROPRIATION SUBCOMMITTEES FOR SCIENCE

AGRICULTURE

U.S. Department of Agriculture (except Forest Service)

COMMERCE, JUSTICE, SCIENCE

National Aeronautics and Space Administration
Department of Commerce —
   National Institutes of Standards and Technology
   National Oceanic and Atmospheric Administration
National Science Foundation
Office of Science and Technology Policy

DEFENSE

Defense Department (military) —
   Defense Advanced Research Projects Agency

ENERGY AND WATER

Department of Energy
Forest Service (USDA)

HOMELAND SECURITY

Department of Homeland Security

INTERIOR AND ENVIRONMENT

Department of the Interior —
   U.S. Fish and Wildlife Service
   U.S. Geologic Survey
   Environmental Protection Agency

LABOR, HHS, EDUCATION

Department of Education
Department of Health and Human Services —
   National Institutes of Health
   Center for Disease Control and Prevention
This means that, in a limited budget environment, some scientific agencies are competing directly against each other for funds in the same appropriations subcommittee. Moreover, they are competing against other nonscientific programs within their subcommittee for funding. For example, the Commerce, Justice, and Science Appropriations bill includes NOAA, NASA, and NSF as well as the Department of Justice. Because of a limit on the total amount of that bill, members have attempted to reduce funding for NSF in order to increase funding for Justice Department programs.

In addition to the oversight powers of the relevant committees, a broad range of investigative responsibilities are assigned explicitly to the Senate Committee on Homeland Security and Governmental Affairs and the House Committee on Oversight and Government Reform. Some recent areas of interest for these investigatory committees include alleged politicization of science, scientific fraud, and misinterpretation of global environmental data.

OTHER CONGRESSIONAL ORGANIZATIONS

Formally, Congress does its work through individual offices, through committees, and on the floor of the House and Senate. The informal side of congressional organization goes well beyond this to a variety of other informal groups, which include caucuses, coalitions, and conferences. These informal groups may be based on party affiliation (Republican Conference, Democratic Caucus), issues (House Oceans Caucus, Congressional Research and Development Caucus), geography (Northeast-Midwest Coalition), gender (Women’s Caucus), or ethnicity (Congressional Black Caucus).

In the 110th Congress, the House had approximately 300 caucuses registered, with a range of activity and influence. The Senate has fewer, and they do not have to register. Caucuses provide a forum for like-minded members to hold strategy sessions, gain insight on legislative proposals, or hold public briefings to raise awareness of a topic. Because most caucuses are bipartisan, they can unify members with vastly different agendas on issues that they hold in common.

Partisan caucuses and committees play an important role in developing policy. These are not formal committees for legislative business, but rather solely partisan organizations. The undergirding organizational structures in both the House and the Senate are the Democratic Caucus and the Republican Conference. As partisan organizations, they develop party policies, communicate policy
research and information to senators and representatives, and host regular discussions among members to promote unity in their parties. Significant partisan organizations in the House include the Democratic Steering and Policy Committee, the Republican Policy Committee, and Republican Steering Committee. In the Senate, party policies are developed and supported by the Democratic Policy Committee, the Democratic Steering and Outreach Committee, and the Republican Policy Committee; though these groups help party members advance party priorities, they are non-binding and Senators maintain a strong tradition of independence.

CONGRESSIONAL STAFF: Unelected Lawmakers?

Members of Congress simply cannot handle the heavy workload on their own; they must rely extensively on their staff — so much so that those on staff have been called unelected lawmakers. Throughout the many stages of congressional policymaking, staff play an active part. Policy proposals arise from many sources inside and outside the government, and congressional staff are positioned to be able to develop, advance or hinder these proposals. Staff actively engage in negotiating with members, lobbyists, outside interest groups, and executive branch officials on issues, legislative language, report language, and political strategy\textsuperscript{xviii}. Staff are deeply involved in preparing committee agendas, planning hearings, conducting investigations, recruiting witnesses, and drafting reports, amendments and legislation.

In contrast to many other organizational settings, the staff organizational pyramid in congressional offices is often flat, and many of the professional staff have direct access to the member. There is a palpable team spirit present both in personal and committee offices.

In the House, each member is provided the same allowance for staff salaries. Representatives are allowed a maximum of 18 total staff for their Washington and district offices. In the Senate, personal office staffing is allocated on the basis of state population: senators from states with small populations, such as South Dakota, get a far smaller allocation than do senators from large states, such as California, to address constituent issues.

Separate from the staff of members, each congressional committee employs its own staff. The average number of committee staff is 68 employees in the House and 46 employees in the Senate,
though differences exist between committees based on budgets and work load. The majority party controls most committee staff and resources, but a portion is shared with the minority.

While some people in key positions on the Hill have been there for years, many others serve for only a short time. The average tenure of a House legislative assistant is less than 2 years\textsuperscript{xix}. Because of the diverse nature of policy issues, staff are mostly generalists. Very few have a scientific background; many have a law or political science degree.

Many staff are necessarily partisan both in their orientation and in their congressional activities. Since most staff members are appointed by a partisan, they may be expected to — and most often do — reflect the partisan orientation of their patron. Professional experts coming into the congressional staff system or working with it must be aware of and sensitive to these features of Congress\textsuperscript{xx}. Another characteristic of congressional culture to keep in mind is that personal staff tend to be somewhat more parochial in their outlook than committee staff. They have distinct and natural tendencies to assess the value or importance of an initiative in terms of its impact on their district or state, as well as on the member's re-election prospects.

**Personal Office Staff Roles**

The staffing and structure of congressional offices vary considerably, particularly between the Senate and House. In general, most personal offices include the following staff roles:

**Chief of Staff / Administrative Assistant (AA)**

There is usually one senior staff person, more or less in charge of the staff, who is often called the administrative assistant (AA) or chief of staff\textsuperscript{xxi} The AA is usually the most powerful personal staff person. Some members work with many staff directly, while others prefer a more hierarchical approach through the AA.

**Legislative Director (LD)**

The legislative director (LD) develops broad legislative strategies for the office. The LD coordinates the work of the legislative assistants and generally covers specific policy issues as a senior legislative assistant.
Legislative Aides / Legislative Assistants (LA)
Legislative aides (LAs) — personal and committee — have lead roles in identifying issues and developing legislative positions. Among their tasks are conducting research, gathering background data on specific legislative matters, and drafting legislation and remarks. They can be assisted in their efforts by legislative correspondents, staff assistants, and interns.

Particularly in the House, legislative aides cover many topics. The portfolio for an aide responsible for science, for example, may also include national security, agriculture, and military issues.

Legislative Correspondent (LC)
Legislative correspondents (LCs) work in a support role to legislative aides. The correspondent title reflects their task of answering mail sent to a member of Congress.

Fellows
A number of private organizations — and even a few executive branch agencies — sponsor congressional fellows. Two examples of science-related fellowship programs are the Robert Wood Johnson Health Policy Fellowships for midcareer health professionals and the AAAS Congressional Science and Technology Policy Fellowship. Begun by AAAS in 1973, the latter program allows approximately 35 Ph.D.-level scientists and engineers to work as professional staff (usually similar to a legislative aide) in congressional offices for a year. Many of the fellows have stayed in Washington as full-time congressional staff, continuing to provide a scientific perspective on policy issues.

Appointment Secretary, Personal Secretary, or Scheduler
The personal assistant handles scheduling and is often referred to as the appointment secretary or scheduler. Appointments with the member in Washington are generally organized by the scheduler in consultation with the relevant legislative assistant. Meetings with staff are arranged directly with the staff member.

Caseworker
The caseworker responds to constituent requests and helps resolve constituent concerns related to issues such as Social Security, Medicare, passports, etc. A growing trend is to locate most caseworkers in the district offices, rather than in Washington D.C.
**Press Secretary / Communications Director**

The press secretary works to ensure that constituents and the general public are aware of the actions of the member. Press offices also monitor media coverage that the member receives inside and outside the district.

**Committee Staff Roles**

Typical position titles held by professional staff with committees include staff director, chief counsel, counsel, professional staff member, and press assistant. Professional staff perform a wide variety of tasks related to examining and advancing legislation. Committee staff are also mostly responsible for scheduling, planning, and organizing hearings, as well as for writing reports and drafting legislation.

Committee administrative staff have a variety of titles, such as the chief clerk, clerical assistant, secretary, hearings assistant, documents clerk, and file clerk. These staff schedule hearings, markups, and other meetings, receive visitors, handle phone inquiries, and maintain and archive committee records.\(^{xxiii}\)

**DUALITY OF CONGRESS**

The policies, procedures, and staff of Congress described in this chapter reflect how the work of Congress can be divided into two broad categories: lawmaking, which includes budgets, appropriations, authorizations, other legislation, and oversight; and representation, which includes serving constituents, as well as building and reinforcing political support. Understanding these two worlds — or the “Two Congresses” as dubbed by Davidson and Oleszek — is crucial to the person who hopes to influence a Member of Congress. When a member listens to your opinion on the substance of a scientific issue, he or she is listening and taking into consideration both roles — that of legislator and that of representative.

The Congress of most textbooks and the daily network television news is the lawmaking institution described in this chapter, performing constitutional duties and handling legislative issues. But there is a second Congress, the representative assemblage of 540 senators, representatives, and delegates who share a common experience that their political lives and electoral prospects depend upon the support, goodwill, and perceptions of voters in their districts and states. This leads to
arrangements that are built on service to constituents in all its forms. From making appointments to military academies, to responding to letters and requests, to arranging tours of the Capitol, congressional staff devote many hours each day to serving the needs of their constituents.

As former Speaker Tip O’Neill said, “All politics is local,” and the debates in Congress often reflect the tension between making effective laws and best reflecting their constituents’ views and needs.

References

i Congress collectively is composed of 100 senators, 435 representatives, and a total of five delegates from the District of Columbia, the Commonwealth of Puerto Rico, and several territories.

ii Paul Singer, “Members Offered Many Bills but Passed Few,” Roll Call, December 1, 2008, p. 3.

iii While congressional documents are commonly referred to as bills, there are actually four different legislative measures in Congress: resolutions (the most common and preceded by “H.R.” or “S.”), joint resolutions, concurrent resolutions, and simple resolutions. For a joint resolution (similar to a resolution but used for slightly different purposes), the number is preceded by “H.J.Res.” in the House and “S.J.Res.” in the Senate. In the House, numbers for concurrent resolutions (the means by which Congress establishes a rule within itself, aimed at changing congressional procedure or establishing a new body) and simple resolutions (similar, except they are one-chamber documents) are preceded by “H.Con.Res.” and “H.Res.”, respectively; in the Senate, “S.Con.Res.” and “S.Res.”, respectively.


v David and Oleszek, p.255.


vii Davidson and Oleszek, p. 163.

viii The term “whip” was adapted from usage that arose during the Eighteenth Century in the British Parliament — as are many other procedures, customs and practices of the U.S. Congress. Originally used in fox-hunting, the whip kept the pack of hunters and dogs under control. The sense of the adaptation seems rather obvious, describing the job to motivate and coordinate members to execute party strategy in voting and policy.


x Davidson and Oleszek, p. 195.


xviii Davidson and Oleszek, pp. 218-219.


xxi The title “administrative assistant” is a carryover from the days when an office staff consisted of only a secretary or two.

xxii Davidson and Oleszek, 141.

Congress is increasingly addressing complex science-related issues. Stem cell research, climate change, voting technology, fuel cells, biosecurity and agricultural policy are among the many issues with a scientific component facing Congress. Despite the prevalence of science-based issues and the importance of developing policy for science, few members of Congress or their staff have backgrounds in science.

Members of Congress can turn to the congressional support agencies — Congressional Research Service, Government Accountability Office, and the Congressional Budget Office — for objective analyses on science policy issues. They also obtain information from a variety of informal resources, such as other members, interest groups, and lobbyists. In addition, they receive vast amounts of information from interested parties, including constituents and the media.

The information received is not uniform in its quality. Conflicting reports from groups with different viewpoints can make it difficult to determine the scientific consensus, particularly for those not deeply familiar with the nature of science, the peer-review process, and principles of uncertainty. Many scientific reports are conducted or funded by entities that have a financial or political interest in the issue at hand, which is often perceived by policymakers to affect the study’s findings. Thus, though information is not in short supply, information in a format useful to staff and members is not as easy to find. Members and staff need timely analysis and synthesis of information to better inform their decisions.¹ During a hearing on sources of scientific advice for Congress, Rep. Rush Holt (D-NJ) summed up the current situation, stating: “We do not suffer from a lack of information here on Capitol Hill, but from a lack of ability to glean the knowledge and to gauge the validity, credibility, and usefulness of the large amounts of information and advice received on a daily basis.”²
Members of Congress do not base their decisions solely on the scientific merit of issues; instead, they factor in the other aspects of addressing an issue. Many scientific topics intersect economic, national security, ethical and moral issues. Thus, although scientific information and analysis is abundant, decisions are based on many additional outside factors, with constituent opinion, party priorities, and other interests holding weight.

INTERNAL SOURCES: Other Members and Staff

In addition to the formal structure of committees and hearings, there is a vast, uncharted flow of information and advice among the members themselves. Members cannot have expertise in all areas, so they turn to trustworthy or influential colleagues as necessary. Over time, members develop their own personal networks based on assessments of who is reliable, trustworthy, and knowledgeable, as well as those who share their party affiliation and political philosophy. They depend on these networks and contacts for everything from advice on election campaigns to what position to take on a given issue.

An important implication for outsiders seeking to work with Congress is that some members have more status and greater influence in certain policy areas than other members. This status is independent of formal organizational roles and depends more on how a member is viewed on a personal level by his or her colleagues. Assessing how influential a member is in these terms is not easy but should be part of your intelligence-gathering operation. Putting it bluntly, you can harm your chances of success if your main contact is not well regarded or is seen as having little influence within Congress. Similarly, members that are closely associated with an issue may not always be the most effective ones to convey information on that topic. For example, a known liberal supporting environmental regulation will likely have less sway than a conservative member on the same topic outside of traditional environmental circles.

CONGRESSIONAL SUPPORT AGENCIES

Three agencies — the Congressional Research Service, Government Accountability Office, and the Congressional Budget Office — support the work of Congress. Although none focus solely on science, they each provide valuable analyses on scientific issues. Their nonpartisanship, objectivity,
and responsiveness to the requests of members make them valuable resources that members hold in high esteem, although each agency has occasionally encountered tensions. One explanation of members’ overall positive appraisal for the agencies may lie in an observation by Davidson and Oleszek:

“Allike committee or personal aides, these agencies operate under strict rules of non-partisanship and objectivity. Staffed with experts, they provide Congress with analytical talent matching that in executive agencies, universities, or specialized groups.”\(^{iv}\)

These agencies are not chartered to provide information to the executive branch or to the public. However, electronic publishing has greatly increased the dissemination of their reports and other documents.

**Congressional Research Service**

The oldest and most widely used of the congressional support agencies is the Congressional Research Service (CRS), a unit of the Library of Congress. Established in 1914 as the Legislative Reference Service, it focused initially on the preparation of law indices and digests; it continues that service today. The Legislative Reorganization Act of 1970, which changed the agency’s name to the Congressional Research Service, gave it a new emphasis on policy research and analysis. Since then, the CRS staff has grown from 200 to more than 700, and a number of new topics and units have been created, including a Resources, Science, and Industry Division.

CRS offers variety and versatility in its services. In one sense it reflects its library origins by providing quick responses to thousands of congressional requests annually for factual information. In another way, its policy research and analysis roles are illustrated by the publication of a large number of reports — more than 2,000 each year. These include the widely-used Issue Briefs, reports on many topics important to Congress, a Digest of Public General Bills and Resolutions, and summaries of major legislation. Technically, CRS reports are not available to the public, but, in practice, many of them are distributed outside Congress through members’ offices and through the Internet.

The short preparation times, urgent deadlines, and confidentiality of many CRS products often preclude a formal outside review. To compensate, CRS has established a rigorous internal review process. First, a report is reviewed by peers within the author’s division and, if appropriate, by analysts in other divisions for accuracy and analytical quality. After this peer review, the report is
given a division-level review to ensure that it meets standards of technical accuracy and congres-
sional needs. Next, the Review Section of the Office of Policy reviews the document for compliance
with CRS standards of balance and objectivity, as well as for responsiveness to congressional needs,
clarity, and timeliness. If the Review Office believes that additional peer review is necessary for
technical content, it has the authority to request such a review. When time and confidentiality
considerations permit — for example, for reports and issue briefs that are written in anticipation
of congressional requests — outside review is strongly encouraged.

In addition to supplying written products, CRS responds to member and committee requests
to conduct briefings, analyze issues, and hold seminars for members and staff on a wide range
of subjects.

**Government Accountability Office**

The Government Accountability Office (GAO) is Congress’s premier field investigator, domestici-
cally and internationally. Directed by the Comptroller General, who is nominated by the President
and confirmed by the Senate for a 15-year term, GAO, as described by Oleszek, “conducts audits of
executive agencies and programs at the request of committees and members of Congress to make
sure that public funds are properly spent.” GAO was established in 1921 as the General Accounting
Office, together with the Bureau of the Budget (now the Office of Management and Budget).
Comptroller General David Walker explained the reason behind its 2004 name change to Government
Accountability Office, “Our old name ... had not kept pace with GAO’s evolving role in government...
financial audits are only about 15 percent of GAO’s current workload. Most of the agency’s work
involves program evaluations, policy analyses, and legal opinions and decisions on a broad range of
government programs and activities both at home and abroad.”

GAO issues reports on programs and agencies that support science and technology, as well
as issues that contain a strong science component. The focus, however, is “typically not on the
implications of scientific discoveries or technological activities but instead on government program
implementations and finances.” GAO has issued several reports through a pilot program in technol-
ogy assessment that began in 2002 on topics including biometric technology for border security and
cybersecurity for critical infrastructure. A 2006 analysis of the GAO pilot program found “early
results are quite encouraging,” but noted that many changes would need to be made to increase
its capability.
The products of GAO’s reviews can take several forms, including testimony by GAO representatives before congressional committees; oral briefings for members of Congress and staff; and written reports addressed to Congress, a requester, or an agency. They are subject to stringent quality review procedures within the agency. Federal agencies and other parties affected by or related to GAO reviews are often given the opportunity to comment on draft reports — especially when the issues are sensitive, controversial, or include significant recommendations for action by the agency head or Congress.

Congress has directed that GAO reports be given wide distribution, in contrast to the limited distribution of CRS products, and the agency has responded by publishing many studies on its website.

Because of the investigative nature of GAO products, the independent stance of the agency is especially important. The Comptroller General is appointed for a fifteen-year term for just this reason: independence. In seeking to provide useful and credible analyses and information to Congress, the Comptroller General and the agency insist on planning, performing, and reporting their work independently and objectively.

GAO reports often put forth controversial policy recommendations. GAO reviews can lead to congressional hearings, enactment of legislation, and significant administrative changes in the ways that executive branch agencies do business. It is no surprise, then, that the GAO and executive branch agencies often end up in disagreements and confrontations over findings, conclusions, and recommendations arising from GAO investigations.

**Congressional Budget Office**

The Congressional Budget Office (CBO) provides economic, policy and budgetary analyses in support of the congressional budget and legislative processes. The subject matter of the agency’s work is extremely broad, however, given that the budget of the federal government covers a wide range of activities and plays a major role in the U.S. national economy as well as the international economic scene.

CBO was established under the Congressional Budget Act of 1974 and was designed to be an integral part of a new approach to dealing with budget activities in the congressional setting. The Congressional Budget Act was intended to strengthen the ability of Congress to deal with the
federal budget and to restore the balance of budgetary power, which a number of analysts and participants believed had tipped too much toward the executive branch. ix

With a staff of about 225, CBO publishes reports on the budget, estimates tax receipts and government expenditures, makes economic forecasts and projections, estimates the cost of legislative proposals (not always to the liking of their sponsors), and conducts background studies and policy analysis. x

By law, CBO is required to produce a cost estimate and mandate statement for every bill reported by a congressional committee. CBO is well known for “scoring”, or “scorekeeping”, which is the analysis CBO undertakes to ensure that the cost or revenue figures incorporated in a proposed budget or program are accurate. CBO also performs analytical studies at the request of a congressional committee or subcommittee; the congressional leadership; or, as time permits, individual members and is often asked to testify before congressional committees. CBO’s work includes legislative proposals with a strong scientific component, such as analyses of the next generation of space exploration vehicles or the costs of legislation to mitigate climate change.

Another well-known CBO product is its annual report to the House and Senate Budget Committees. One component of this report is a document providing economic and budget projections for the next five years; the other component is a plan for reducing the budget deficit. Included is an illustrative list of programs compiled from legislative proposals, the President’s budget, congressional and CBO staff, other government entities, and private groups that could be cut and how much it would save the federal government; selected science and technology programs have appeared on the list.

The CBO Director is appointed by the Speaker of the House of Representatives and the President Pro Tempore of the Senate using recommendations received from the House and Senate Budget Committees. The Director is appointed to a four-year term that begins on January 3 of the year that precedes the year in which a presidential election is held, and there is no limit on the number of terms a director can serve. The director appoints a deputy director who serves the same term as the director.

CBO has established a detailed set of procedures related to preparation of its products and maintenance of quality standards. These include the use of an extensive set of detailed guidelines and questions to be addressed, internal and external reviews, extensive coordination among CBO units, and full clearance by the director’s office before a report is released publicly. xi
OFFICE OF TECHNOLOGY ASSESSMENT

From 1973 until 1995, the Office of Technology Assessment (OTA) and its advisory panels of experts studied policy questions with scientific and technical implications. Even though it is still authorized, OTA funding was abolished after Republicans took control of both the House and Senate in the 1994 elections, as part of a reduction in the size of congressional staff. Efforts to recreate an entity focused on science and technology policy continue in Congress, with legislation to re-fund OTA or create a similar agency having been introduced during multiple recent sessions of Congress.

THE NATIONAL ACADEMIES

Though not a congressional support agency, the National Academies serve as an important source of scientific information for Congress and the federal government. Comprised of the National Academy of Sciences, the National Institute of Medicine, the National Academy of Engineering, and the National Research Council (NRC), the National Academies are a collective of private, nongovernmental organizations. Created by President Lincoln in 1863, the National Academy of Sciences was chartered to “investigate, examine, experiment, and report upon any subject of science or art.” Today, the National Academy of Sciences, the National Institute of Medicine and the National Academy of Engineering are honorific societies, consisting of members elected by their peers. During World War I, the National Research Council (NRC) was created to provide advice regarding military preparedness. Today, the NRC is the working arm of the National Academy of Sciences and the National Academy of Engineering, carrying out most of the studies done in their names.

Most of the studies carried out by the NRC are done at the request of government agencies, Congress, and states. Congress requests studies through legislation or through report language that accompanies legislation and generally funds reports through appropriations to a federal agency.

The NRC draws upon high-level scientists (often, but not necessarily members of the National Academies) to write peer-reviewed reports. The reports undergo an extensive review process to ensure they maintain the Academies’ goal of “providing independent, objective, and non-partisan advice with high standards of scientific and technical quality.” Reports undergo external peer-review to ensure that the report addresses its charge, findings are supported by the scientific evidence, and the report is objective. Sponsors of the reports are not involved in the review process.
Even with the volunteer effort of the scientists on the panel, NRC studies are expensive, often costing as much as $1 million. Although some reports can be completed quickly, it generally takes 12-18 months to complete a report. Analysts have categorized the use of the NAS as “most appropriate when a high-end ‘Cadillac’ treatment of an issue is called for and the prestige and depth of talent available to the Academies are thus particularly suitable.”

THINK TANKS

Think tanks — non-governmental research institutes that focus on policy-relevant issues — mushroomed after 1970 and cover the spectrum to express various partisan, political, and ideological views. “We’ve got think tanks the way other towns have firehouses,” noted Washington Post columnist Joel Achenbach. Many think tanks address scientific issues and engage Congress by developing policy proposals, preparing reports, analyzing legislation, sponsoring forums, and organizing lectures on Capitol Hill. Think tanks generally receive funding from private donors, though some are funded by interest groups.

INTEREST GROUPS

Interest groups, including lobbyists, play an active part in congressional activities. Interest groups perform important functions: informing Congress and the public, stimulating public debates on key issues, and making available to Congress all sorts of information and points of view on proposed legislation and oversight activities. Specifically, Congress can look to interest groups for support for legislation and candidates, draft legislation, analyses of competing proposals, draft speeches, answers to questions (usually provided promptly), questions to ask at hearings, and a host of other things. In short, an interest group that is “plugged in” can operate in some ways as an extension of a member’s or committee’s staff.

While it is true that interest groups can provide a variety of benefits to those in Congress, a key challenge for members and their staffs is to use the information and assistance provided by interest groups without becoming bound to their wishes and specialized agenda. In a direct warning, political scientist R. Douglas Arnold states that in regard to governmental resources, “interest groups usually have their own ideas about proper allocation, and they seldom coincide with Congressmen’s predilections.”
Of course, not all interest groups are equal in terms of access or influence. Oleszek’s conclusion\textsuperscript{xviii}, shared by many members and staff, is that an interest group’s ability to influence congressional activities is based on several factors:

- The quality of arguments and information
- The size, cohesion, and intensity of the organization’s membership and the ability to mobilize them
- The group’s ability to develop alliances — temporary or permanent — with other organizations
- Its financial and staff resources
- The vision and shrewdness of its leaders

Science policy is influenced by several types of interest groups, including universities, scientific and professional societies, and advocacy groups. In addition to conducting their own activities described below, a growing number of scientific organizations, including universities and coalitions, have hired lobbying firms to advocate for funding and policies of interest to them. Although this is not a new practice, it appears to be a growing trend. While the increased presence in Washington helps the scientific community have a voice in discussions, it has also brought it criticism that scientists — who are perceived as very credible in many studies\textsuperscript{xix} — are now just another interest group.

**SCIENTIFIC SOCIETIES, PROFESSIONAL ORGANIZATIONS, and UNIVERSITIES**

Many universities, scientific societies, and professional organizations have created government affairs or public policy offices. The organizations often conduct activities to promote higher education and increase funding for research as well as contribute to broader policy discussions that impact the conduct of science, such as security requirements for sensitive research and how scientific results are disseminated. They also serve as scientific resources for members and staff. These offices, although generally very small, are an excellent place for scientists to begin their involvement in congressional affairs. Most monitor issues of interest to the scientific community, provide training sessions for working with Congress, and sponsor “fly-in” days whereby they shepherd scientists through congressional visits.

Most scientific societies are 501(c)(3) (non-profit charitable) organizations. They can engage in lobbying activities so long as those activities do not represent a “substantial” amount of the
organization’s expenditures, often considered to be up to 20% for the first $500,000 of exempt-
purpose expenditures and a declining percentage of additional funds. Lobbying activities should
not be confused with partisan political activity, such as campaign contributions, which is prohibited
for 501(c)(3) organizations.

Scientific societies and universities have joined forces on many issues of common interest,
creating coalitions in support of agencies, such as the National Science Foundation, and issues
including stem cell research, education, competitiveness, and natural hazards. Founding Director of
the MIT Washington Office John Crowley explained, “The research community draws its strength in
Washington from working together on issues of common concern… The great diversity in our ranks
— especially in terms of geography, research interests, and personal/political connections — also
helps us forge strategic alliances with other industries that share many of our goals.”

OTHER SCIENTIFIC ORGANIZATIONS

Some nonprofit organizations advocate on behalf of a membership drawn largely from the
scientific community. The Federation of American Scientists was founded in 1945 by scientists who
had worked on the Manhattan Project to develop the first atomic bombs and is known for its work
on security policy. The Union of Concerned Scientists grew from collaborations between students
and faculty members at the Massachusetts Institute of Technology in 1969 to focus on environmental
health and safety issues.

Still other groups advocate for issues of concern to the scientific community. In the biomedical
field, Research!America works to increase funding for biomedical research, while the Coalition
for the Advancement of Medical Research (CAMR) aims to increase support for stem cell research.
Some efforts involve organizations outside the scientific community, such as the Council on
Competitiveness, which draws upon business and university leaders to advocate for policies —
from funding to intellectual property — to increase U.S. innovation.

CAMPAIGN SUPPORTERS

Political action committees (PACs) have been established by various interest groups to raise and
contribute funds to political campaigns. The 1980s and 1990s saw a large growth in the number of
PACs and in the amount and significance of their donations. The scientific community has traditionally stayed away from PACs and other campaign activities but has started to wade into new territory. Ian Sample described the environment during the 2004 presidential campaign season: “The traditional strategy of keeping heads well down when it comes to politics has given way to outright activism” with the establishment of a PAC entitled Scientists and Engineers for Change, which has since changed its name and mission away from funding campaigns and become a non-profit organization.xxiii

THE MEDIA

No single influence is more important to Congress than the media. To put it simply, members and staff live by what they read, watch, and hear in the media — as well as by what they create for the media. This involvement ranges from current newspaper headlines to blogs to television to small-circulation but influential journals. The new media is adding to both the scope and pace of media operations. A 2009 study found that nearly three-quarters of Washington insiders regularly use new media tools such as text messaging, social networking, instant messaging, Twitter and blogs.xxiv

The emergence of the new media, along with the trend toward a 24-hour news cycle, has profoundly affected congressional deliberations, often eliminating deliberative periods with instant polls, interviews and e-mail responses.xxv

Many members and staff obtain their science information from the mainstream media, although coverage of scientific issues is declining in those sources and some have suggested that journalism is ill-equipped to portray the nuances of scientific uncertainty and advances. For example, a recent studyxxvi found that the majority of stories in newspapers were structured on the journalistic norm of balanced reporting, giving the impression that the scientific community was equally divided on whether or not humans were contributing to global warming. Only 35 percent of stories emphasized the role of humans, a position which more accurately reflects scientific results.

A study of American daily newspapers found that 24 percent of papers have cut science coverage and only 10 percent of editors said they considered science and technology reporting “very essential” to the quality of their news productxxvii. Earlier research found that of the 95 newspapers that published special science sections in the 1980s, only about 35 still did in 2005.
CONSTITUENTS: Bridging the Two Congresses

Because of the duality of Congress as both a representative and a lawmaking body, constituent views and findings often have equal or greater weight than any of the above information sources. Members of Congress often turn to trusted experts in their district, both on scientific questions and broader questions surrounding policy. The following chapter provides suggestions for scientists to help improve their ability to communicate with their elected officials.

References


iii For a more in-depth discussion of these agencies, see Carnegie Commission on Science, Technology and Government, Science, Technology and Congress: Analysis and Advice from the Congressional Support Agencies (Carnegie Corporation of New York, NY, October 1991).


vii Morgan and Peha, p. 110.


ix A Profile of the Congressional Budget Office (September 1990), pp. 1-9.


xii Morgan and Peha, p. 119.

xiv Morgan and Peha, p. 37.


xxii Jack Crowley remarks at 2004 AAAS Leadership Seminar.


Many in Congress have called on scientists to become more active, including Ph.D. physicist Representative Vernon Ehlers (R-MI). In an address at the AAAS Forum on Science and Technology Policy in 2010, he told the scientists, “The gulf between the scientifically minded and those who are not scientifically minded is still tremendous. I think we are keeping far too quiet about what we know and how we would go about solving problems. We have so much to offer this country … solutions to various difficulties.”

This chapter offers recommendations on how to heed this call and work most effectively with Congress. Much of the advice comes from congressional members and staff who were surveyed for this and earlier versions of this publication. Remember, working with Congress is not a privilege; it is your right. But effective engagement takes skill, knowledge, and practice.

One challenge of providing information to Congress is its scope: “In Congress, there is no center or focal point. No advice can be directed toward Congress in totality. …Individual Members of both the House and Senate can be informed and counseled by frequent contact with prominent scientists, engineers, and economists in their own constituencies.”

Anyone seeking to influence or communicate with Congress must recognize that members and staff shoulder a tremendous workload and are under intense time pressures. Indicators of congressional workload, such as time in session, committee meetings, and floor votes, show that it has doubled over the past fifty years. Committee hearings have so proliferated that members have conflicting schedules and cannot attend all the hearings of the committees and subcommittees to which they belong. Overall legislative business has grown in scope and complexity as well as in volume.
Members must balance these legislative responsibilities with attention to constituent concerns and re-election. Communication from constituents is also increasing, as the increased use of technology and the Internet has revolutionized the way people communicate with elected officials. A recent study found that Congress received more than 201 million messages in 2004 — a fourfold increase since 1995\textsuperscript{iv} — and that number increased again to 300 million in 2008.\textsuperscript{v} Davidson and Oleszek observe that “not only are constituents more numerous than ever before; they are educated and served by faster communication and transportation.” However, despite the influx of correspondence, congressional staff sizes have changed little since the 1970s.

In addition, intense pressure to raise money for re-election has grown in recent years. Expenditures for congressional campaigns have more than doubled in the past 25 years\textsuperscript{vi}. In 2006, the average winner of a House race spent $1.3 million while the Senate victors spent $9.6 million. In 2010, congressional candidates again set new records for spending and spent approximately $2 billion, the equivalent of $4 million for each congressional seat.\textsuperscript{vii} As members of Congress cannot engage in campaign activities from their offices, fundraising events occupy much of their time outside the office, even in nonelection years.

Staffers work comparably-long days, and face the same overload of information as members of Congress. In a single day, a staffer will receive hundreds of e-mails, letters, faxes and mailings offering information about various legislative issues. (See “Congressional Staff and Members Saturated with Information” chart, page 48)

Thus, as you plan for your interaction with Congress, your goal is to not get lost in the overwhelming workload of a congressional office. Brevity, clarity and courtesy are most important qualities for effective interactions.

Though the type of communication (meeting, phone call, e-mail) will vary depending on your goal, several preparation issues remain constant. The following “Top 10” rules will help ensure that your efforts are beneficial to you and your member.
Cup Runneth Over

“Every day, generally, you get just via e-mail two to three times as much information as you can ever get through in any given day. Some of it you just learn to simply ignore. Some of it you decide is important and you actually read every day. And the rest of it gets skimmed. For example, the end of the day is always going through everything that was stacked up throughout the day to figure out if I’ve missed anything important.”

House Member Organization Staff
CONGRESSIONAL STAFF AND MEMBERS SATURATED WITH INFORMATION

Information Load Builds Steadily Throughout the Day

Mental Saturation

Cumulative Daily Information Intake

Hungry for Information

Day Begins
Bearing the Information Load

- 200 inbound e-mails from advocacy groups, constituents, and colleagues
- 25 e-mail alerts
- 5 news websites
- 150 headlines
- 15 Internet searches
- 5 Washington-focused publications
- 4 newspapers
- 3 news magazines
- 8 hours of (background) cable news
- 3 hours of radio news
- 5 online newsletters
- 5 Congressional Research Service reports
- 2 hours of committee hearings
- 300 pages of documents from leadership’s office
- 75-page report from Congressional budget office
- 25 faxes from interest groups
- 20 publications, position papers, fact packs received by mail
- 30 phone calls
- 4 lobbyist meetings

Day Ends

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Top 10 Rules for Working with Congress

1. Know Your Goal.

Every visit, call, or letter should have a purpose, even if the purpose is as general as asking your representative to support scientific research or to simply establish a relationship with a member of Congress or a staffer. You may wish to ask for additional funding for a specific program or discipline, or offer your expertise in an area of science that ties into one or more of the large concerns facing Congress at any given time — for example, national security, health care, or the state of the economy. Determine what you hope to accomplish and plan accordingly.

As part of this process, know the capacity in which you are acting. Are you a science arbiter providing technical information to policymakers? Or an issue advocate, pressing for a policy position? Or attempting the role of an honest broker that examines the scope of choices available to the decisionmaker? Be clear to yourself — and your contact in the congressional office — whether you are simply presenting scientific information or advocating for a position.

Researcher Ken Caldeira, who has briefed many members of Congress, summed up this distinction and his preferred role: “I think that, as scientists, we have the ability and the right, if not the obligation, to speak as concerned and informed citizens. But it is useful to keep those roles separate. We have no particular priestly role where we have greater weight than anyone else” when it comes to policy-making.

One important goal to keep in mind is to forge a relationship with members of Congress and staff. Over time, each develops a network of individuals on whom he or she comes to rely for advice, information, suggestions for prospective witnesses, evaluations of reports, assessment of people, and so forth. You can become a valued source for these types of queries based on your performance, reliability, and credibility. Building such a relationship can eventually result in your serving as an informal advisor by providing information, opinions, and perhaps more formal studies on matters of importance to the member. Because the average tenure for congressional staff is less than two years, building relationships is an on-going process.
Understand How Congress Works and Makes Decisions.

Members and staff don’t expect you to be an expert on Congress, but they do appreciate (and have more respect for) those who display an awareness and understanding of what is going on — both in the legislative process and especially the conditions they face. Among other things, these conditions include severe time constraints, competing demands for legislative and budget priorities, and the imperatives of re-election. Chapters 1 and 2 of this book provide additional information about how Congress works.

Members and staff say that one of the most difficult things to get scientists and engineers to understand is the tough reality faced by members of Congress in balancing competing interests, building working alliances, and achieving acceptable compromises. One staffer pointed out that there is “a frequent misperception that a member will vote against one of his or her constituencies if only you will give them the correct facts.” Unlike science, politics can’t be reduced to empirical facts and figures; many factors come into play. Former Rep. Sherwood Boehlert (R-NY) explained some of these competing factors, “In most cases, science has to inform policy making, but it isn’t determinative. Pretending that science is going to settle a dispute that is really about values or money or anything else just leads to muddled thinking and distorted debates that are damaging to both science and policy in the long run.”

Indeed, it is rare that an initiative is not substantially modified through compromises and trade-offs before a final policy decision is made or a law is enacted. This means that you may lose, even if you have a good case. It also means that you should not take it personally and should keep trying. “Be pleasantly persistent,” advised a staff member. Rep. Peter Visclosky, Chairman of the Energy and Water Development Appropriations Subcommittee, articulated this concept to Department of Energy Office of Science Director Raymond Orbach in a March 2008 hearing, stating, “I am very mindful of the importance of federal funding for research and development in the area of physical sciences. If you don’t receive your full request for science research, it’s not because of lack of support for your Office, but the necessity of balancing competing needs that have nothing to do with science that is at issue.”
Conduct Detailed Background Research.

Before each communication, it is vital to know as much as possible about the issue and the member’s background on the issue, including voting record, committee assignments and other previous actions. As one staffer exclaimed, “Can you believe this person didn’t even know which party my boss belongs to?”

Your university and professional society government relations offices can be very helpful with this stage. Government relations professionals can often provide the background information necessary for a successful visit as well as provide introductions to key staff and possibly accompany you to meetings.

Begin by learning where a member of Congress stands politically on various issues and how the member fits into the congressional power structure. Try to learn if the member already has a view on your issue or has supported relevant legislation. One senior staff person advised, “Know what is on the member’s mind in terms of recent concerns. Check recent hearings and floor debates.”

You should be prepared to explain why the member should share your position (if he/she does not already) and to answer questions that may be posed in response to your statements. As much as you can, offer concrete suggestions on your issue. Be prepared to support your statements with specific arguments and relevant facts.

If you are talking about specific legislation, you should know the bill’s number, title and status. It is also useful to understand the legislative background of the issue. Has similar legislation been proposed before? What happened? For what reasons was it unsuccessful? Has anything changed since that time?

Much of this information is online. All congressional personal and committee offices have websites, and many members of Congress are using web tools such as Twitter and Facebook to communicate with constituents. The Library of Congress [http://thomas.loc.gov](http://thomas.loc.gov) and congressional committee and personal websites (available from [www.house.gov](http://www.house.gov) and [www.senate.gov](http://www.senate.gov)) are good starting places for this research. Additional resources are listed on the AAAS website [www.aaas.org](http://www.aaas.org).

Use Your Knowledge of the Legislative Process to Determine the Timing of Your Course of Action.

Timing is vital to the success of your efforts. Weighing in too late with your opinion can mean the legislative train has left the station. As one committee staff director put it, “It was a good set of suggestions, but we’d already reported the bill out of committee two days ago. They thought we
could fix it on the floor. Well, maybe — sometimes. But they should have come three months ago when it was still in subcommittee.” On the other hand, coming too early can be just as bad. A good effort can be wasted “if it is too early and other matters are dominating the legislative agenda. We only handle so many things at a time,” according to a senior staff person.

Your background research, combined with monitoring issues through your professional society, congressional websites or news media, will help determine your timing and course of action. If you are asking for cosponsorship or support of a bill, it is often best to communicate early in the process via meetings or correspondence, depending on the complexity of the issue. When you are advocating for a specific vote or action, it is most effective to e-mail or call about a week before the scheduled vote. If time is very short, calls are most effective. For issues that do not yet have legislation or a particular timeline, providing technical information earlier rather than later may be more helpful. A long-term relationship may begin and be maintained at any time with meetings and letters, although each interaction should have a purpose.

Also, keep the congressional calendar in mind. While activity in the congressional environment seldom comes to a complete halt, it does vary over the course of the year. A member observed, “There is a much better chance of having an in-depth discussion with me during a recess period, whether in person or on the telephone.” This advice applies to meetings with staff as well. In general, congressional recesses (also known as district work periods) last one to two weeks and correspond with holidays. A longer recess usually takes place in late August. The congressional schedule is available on the House and Senate websites. In addition, the House and Senate are generally in session Tuesday, Wednesday and Thursday, making Mondays and Fridays better days to reach congressional contacts.

Be clear and succinct.

The majority of members of Congress and staff are not scientists. Even at the risk of some oversimplification, be concise. Keep messages simple, don’t be too detailed, and don’t overwhelm your listeners with technical jargon. Remember the time constraints faced by members and staff and use their time wisely. One staffer recommended adopting the BLUF format commonly used by the military — Bottom Line Up Front.
Understand Congressional Staff and Their Influence.

While it is important to remember that members of Congress are elected and their staff are not, staff play influential roles in the congressional setting. Do not make the mistake of looking down on congressional staff or underestimating their ability to help or hinder you, even if the person happens to be very junior, which is very common. Chapter 1 contains additional information on the role and background of staffers, whom some have called “unelected lawmakers.”

Provide Concrete Suggestions.

A recurring theme from staff is that too many people bring problems to Congress and “look to us to devise a solution instead of presenting a plan for us to consider, modify and perhaps adopt,” said one staffer. State your problem or issue clearly and suggest what action is needed. Work carefully at honing your request or advice or information so there is no doubt about your issue, your position, or what you are asking for. Do this by working out a proposed answer to your request or by presenting a plan of action to accomplish what you desire. Members and staff appreciate proposals for action that are clear and articulate and show that they have been thought through before presentation.

Present Support of Science as a Means to Meet National and Local Goals, Not an Entitlement.

Members and staff react negatively when they are presented with arguments in support of science that they see as being cast in “entitlement terms.” In their words, scientists and engineers should not “convey an attitude of being inherently deserving in contrast to other seekers of the public largesse,” and support for science should be “presented in terms of helping to meet national needs, or to achieve societal goals, not as an entitlement owed to scientists.”

Members are most interested in learning how a given issue affects their home district. For example, how will the research funding that you are supporting translate into jobs or student scholarships within the district? In addition, explain the importance of your issue from a national perspective. For instance, how will it affect U.S. economic competitiveness, national security or quality of life? What will be the effect on your profession, industry, or community?

Senator Scott Brown (R-MA) cited the local impact as his reason for supporting the America COMPETES Act, a bill that authorized funding increases for several research agencies: “I have heard
from a broad coalition of universities, businesses, and educators in my home state of Massachusetts about the positive impact of the COMPETES Act on our economy. I have listened closely to my constituents’ concerns and have concluded that reauthorization of this legislation is absolutely necessary to the long-term economic health of Massachusetts and the United States as a whole.”

9 Be Willing to Say “I Don’t Know”.

If you don’t know the answer to a question, say so, and offer to find out the answer. Follow up promptly. Your credibility can sometimes be enhanced by saying “I don’t know” if you don’t. If pressed, you might speculate and label your response appropriately. Enough people violate this rule to cause members and staff to underscore how strongly they feel about trusting what a person says.

A related point suggested by a number of congressional staff is “Don’t oversell your case.” Work hard at building your credibility; it is a tremendous asset, even if your issue is weak or unpopular. To further enhance your credibility, acknowledge as accurately as you can those who disagree with you or are opposed to what you are suggesting, and tell the member or staff person as best you can why this is so. Don’t make them research this information or be surprised by your opponents.

10 Follow Up Appropriately.

Seldom will a single interaction be all that is necessary to achieve your objective. Possibilities range from a simple follow-up telephone conversation or two to an extended period of working with staff. Conceivably, other members of Congress might become involved. Take this into account and be certain that follow-up commitments can be met before you offer them. Before you leave any meeting with a member, try to have clearly identified the name and contact information of the staff person who will be your principal follow-up point of contact. Finally, it is useful and appropriate to ask if there is any additional staff you should contact about the issue.

Aim toward building long-term relationships with members of Congress and staff. Remember your allies, and thank them often. These are more than simple courtesies; they are also the hallmarks of polished professionals. Keep track of your advocates, and look for ways to express your appreciation. Private thanks are sometimes appropriate, but also look for public ways to thank them for their contributions, such as letters to the editor.
These 10 rules will guide you through any communication with Congress, but the details of your interaction will vary, depending on if you are meeting with a member or staff, using the phone, or sending written correspondence. This section contains additional resources for these various interactions with Congress.

MEETINGS

One of the most frequent ways in which individuals and organizations work with Congress is through scheduled, formal meetings. Such meetings are generally held to discuss constituent requests, pieces of legislation, programs, and proposals. They are also excellent opportunities for establishing relationships with members and staff.

Members and their staff are overwhelmed with information. Without enough time to exhaustively research this information, staffers instinctively turn to sources that they trust. Thus, formal meetings are the best way to introduce yourself, develop long-term relationships, and build this trust. In addition, the relationship that you cultivate will increase the impact of any later communication, including letters, e-mails or telephone calls.

Members of Congress and their staff are usually happy to meet with constituents. As elected representatives, they know that listening to constituents’ concerns is a major part of their responsibilities. However, the key to a successful meeting is showing that time with you is well spent. This means being prepared to operate within the member’s timeframe and to provide information that will be important to them.

Because of the nature of the congressional schedule, meetings must be scheduled in advance. Never stop by without an appointment, except to drop off information or an interesting recent article with the receptionist.
Arranging a Meeting

If you are the person scheduling the meeting, you must decide with whom you wish to meet: personal office and/or committee staff. Meeting with individual members or their staff gives you the opportunity to most directly influence how a member will vote. In this case, you should only ask to meet with your own delegation. It is usually easier to get a meeting with a representative than a senator, since the representative has fewer constituents and therefore fewer meeting requests.

Committee staff usually write major legislation, including appropriations bills, and may be more appropriate for legislative discussions. Each committee is comprised of two separate staffs: one affiliated with the majority party and one with the minority party. You should consider whether you want to meet with one or both. (See the “Congressional Staff” section in Chapter 1 for a complete explanation of staff roles.)

To set up a meeting, call as far in advance as possible. The House www.house.gov and Senate www.senate.gov websites have tools to help you identify your representatives and links to their contact information.

Meetings with committee staff are arranged directly with the staff. For personal office visits, the member’s scheduler will often be your initial point of contact. When you contact the scheduler, you will need to provide the purpose of the meeting, how many people will attend the meeting, and how many of those people live or work in the district. You may be asked to fax or e-mail this information, as well as the names and affiliation of the meeting attendees.

If the member is unavailable, ask for a meeting with the legislative assistant who handles your issue. Congressional staff often serve as the gatekeepers. Don’t underestimate their value by thinking you have been passed off to an underling. Congressional staff can be powerful and influential.

If you are scheduling multiple meetings, leave plenty of time between meetings to allow for meetings that run late and time to walk between distant offices.
Planning Your Meeting

Take the time to review the 10 rules and conduct the necessary research before your visit. Create a one-page document that summarizes your key points. Preparation of this document has two benefits. First, it provides you an opportunity to ensure that you can communicate your message succinctly. Second, it provides you with a document that the staff can keep that will serve as a reminder of your meeting.

Be especially careful in planning group presentations. It may be ego-gratifying for every member of a group to have some part in a presentation (or there may even be a valid technical reason for this), but group presentations should be used sparingly, with caution and careful planning. One person must be in charge and manage the individual presentations smoothly but firmly. This should be a constituent if possible. Everyone can answer questions.

At the Meeting

Being on time is critical. However, because congressional schedules are unpredictable and votes are sometimes held at the last minute, you should be prepared for sudden schedule changes and delays. Much goes on in the congressional environment that is beyond the control of individual members and staff.

You should arrive at the meeting dressed in professional attire. Washington is known for its formality, and suits are the norm on Capitol Hill.

An initial meeting will generally last approximately 15 minutes. When the meeting begins, introduce each scientist in your group, including credentials and affiliation, and be sure to say if you are a constituent. You will initially have about 5 minutes to convey your message, and you must be able to present a clear, non-technical explanation of your position within that time. If your initial explanation captures the member’s attention, you will have more time later to speak. A senior staffer noted that staff will usually need to ask questions to discern whether a member will support the issue; she advised scientists to make sure they allow time to answer questions posed by the staffer.

If the person you meet agrees with you, then feel free to say thank you and cut the meeting short. Don’t continue the meeting for the sake of having it — the staff will appreciate the message and your brevity.
In closing the meeting, offer to be a resource to the member and staff in your area of expertise and leave behind the one-page document you prepared. You may also wish to bring brief, non-technical handouts, such as a newsletter, if appropriate.

**Follow up**

After the meeting, follow up with a thank-you e-mail that expresses your willingness to provide information or assistance in the future. Meetings are a way to build a long-term relationship, and letters emphasize your willingness to work with staff over the long term — not just when you want something.

If you have participated as part of an organized visits day, tell your contact about the meeting. Government affairs representatives will often conduct additional follow-up, and it is useful for them to know your contacts, topics of discussion, and general tone of the meeting.

**Informal Meetings**

Staff and members of Congress are tremendously busy, and drop-in or informal meetings are rare. An exception to this rule is constituent breakfasts or coffee hours. Many members hold weekly or monthly events that are open to all constituents. Members see these as an important outreach activity, and they provide you with an opportunity to meet staff to begin or maintain a relationship. These are often informal and best suited for less detailed conversations.

**Meeting Advice Wrap-Up**

On any given day, members and staff will be talking with many different people on many different subjects in all kinds of meetings. Knowledgeable people who present their message with clarity, who make their request or offer simply and concisely, and who generally make it easy for the member or staffer to help them are such a rarity that they will be remembered, helped if at all possible, and called upon in the future.

**Working with State and District Offices**

State and district offices offer a relatively easy way of gaining access to members and staff who may be difficult to see in Washington. Members are often more relaxed and able to focus on
constituents in the home district, with many developing “home styles” that “shift the focus of
c constituency linkage from representation to presentation.”xii

Meeting with the member in the district may be less formal, but that doesn’t mean you
should be any less prepared. Use the same preparation as you would for a meeting in Washington.

Many representatives and senators have walk-in appointment periods in their state and district
offices. Find out where these offices are located, the schedule for such periods, and the procedure
your member follows to fill the time slots. You can obtain locations and telephone numbers through
your local library or telephone directory, by calling your member’s Washington office, or by
looking on their website.

Most congressional offices place legislative and budget staff officers in Washington. The state
and district offices are more likely to be staffed to handle a variety of constituent services. Although
this does not mean that you cannot discuss your issue with a local staffer, you could well be referred
to the issue person in Washington. Even so, the district and state staff will usually make every
effort to be helpful.

The time your member spends in the district gives you a special opportunity to show science
and technology at work by arranging visits to local laboratories, colleges and universities, events at
local scientific societies, or company facilities. These events give members a valuable window into
how scientists and engineers operate and interact, and it provides a more informal opportunity to
convey the importance of policy and budget decisions in scientific areas. You can work with the local
offices in requesting the participation of your members in local chapter or regional meetings of your
societies. If you give enough notice and have some flexibility in your request, members say that the
chances are good that they can appear. As a practical consideration, publicize the event and do
your best to ensure a good turnout.

Members say they are interested in visiting district organizations where interesting work is
being done or where they have an opportunity to talk with workers. As one representative said:
“Over the years, we have developed good relationships with a number of researchers at universities
in my district.” He identified these relationships as among the most favorable of his experiences
working with the scientific and engineering communities. You, too, can work at developing such
relationships. The benefits are mutual: Your work gets exposure to the member, and the member
gets information as well as exposure to your colleagues.
WRITTEN CORRESPONDENCE

Although letters were once the mainstay of congressional communication, their efficiency and effectiveness have decreased dramatically in the wake of security screenings since the 2001 anthrax attacks that routinely delay mail for 2-4 weeks. Furthermore, the use of electronic devices, like BlackBerrys, has increased the need and ability to communicate information nearly instantaneously.

Staff overwhelmingly prefer electronic communication to hard copies.xiii Much of the correspondence that once took place by mail, such as a letter to ask for a meeting, to describe a problem that calls for some action, or to provide information, now takes place via e-mail.

Faxing is another alternative for communicating information. Bear in mind, however, that congressional offices are overwhelmed by incoming fax traffic, much of it unsolicited. Use this mode of communication judiciously.

Do not let the ease of electronic communication beguile you into careless planning and preparation. Maintain the same high standards in e-mail (or faxes) as you would in a traditional letter, and always think before you hit the “send” button.

As in formal visits, your written correspondence will be most effective if you target your elected representatives. Others are less likely to read your mail and will likely delete it without reading it. One notable exception includes letters to committee and subcommittee chairs and ranking members, at their committee addresses, when writing about legislation under the committee’s jurisdiction.

Congressional websites are good sources of contact information and many provide e-mail submission forms. To avoid spam and mail from non-constituents, many members use e-mail websites that require you to enter your address or other information. If sending an e-mail, take time to send separate letters to each member. E-mails copied to many recipients will often be deleted before they are read. If you are including an attachment, one senior staff member recommended using word processing software for the attached document rather than a locked format (i.e., PDF) to increase the ease of access to the information.

Although you can write contacts in the district office, it is generally best to send correspondence about legislative matters to the Washington office. Letters/e-mails should generally be addressed to the member of Congress, even if you anticipate that staff will read them initially, unless you are corresponding directly with a staffer.
Among the most useful letters and reports are those that provide information in an easy, readable, and understandable form. As one staff member observed, “I find them useful if they contain constructive comments on pending legislation, especially if they represent consensus positions taken by reputable groups.” A staff director suggested that the most useful letters include information not easily available otherwise. Tie your letter to a member’s district or state interest. Several congressional staff underscored that “good anecdotes” are always helpful.

Brevity is a word that comes through often in talking with members and staff about correspondence. As one staffer said, “An A-Number One letter for me is one page.” A clear, concise, well-reasoned presentation of an issue, problem, or request is what is desired. Keep each letter to a single topic.

On the other hand, don’t assume familiarity with your issue. It is not always clear to a member or staff person just why they should become involved with you or your issue, so part of your letter must be devoted to making this case concisely. It is also important for you, as advised by a senior staff person, “to describe what else has been done — that is, what you have done to help yourself, other than to contact Congress.”

A little personal information, such as your scientific background or place of employment, is necessary if you are unknown to the proposed recipient. Clearly indicate your address, telephone number, and times you are available. The correct address style is:

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The Honorable __________
United States House of Representatives
Washington, D.C. 20515
Dear Representative __________:

The Honorable __________
United States Senate
Washington, D.C. 20510
Dear Senator __________:
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A one-page letter could follow this format:

In the **first paragraph**, explain your reason for writing. Give the name and number of the legislation that you are addressing, and clearly state the action you are requesting. If you are a constituent, say so, and briefly include relevant personal or professional information.

In the **second paragraph**, describe the importance of the issue from a national/local (i.e., not self interested) perspective.

In the **concluding paragraph**, restate your request. Thank the member for consideration of your views. If it is a technical issue, you may offer your assistance.

**Two Cautions**

Be wary of using mass mailings or form letters. Congressional staff widely believe that form letters are sent without individuals’ knowledge, and the use of e-mail has furthered this perception. Staff are overwhelmed with e-mails sent in large numbers by orchestrated campaigns. If you send such a form letter, it is likely to end up in the spam filter and not read by your intended target.

Finally, be mindful of the frequency of your correspondence with staff or members. Some staff and members will shudder and show voluminous files from “pen pals” who spend much of their time writing letters to the office, or so it seems. Don’t take a friendly response to your letter as an invitation to undertake an ongoing correspondence.

**Follow-up**

Don’t be surprised to receive a form letter in response to your communication. A non-committal form letter indicates that the member has not made a decision on the issue or does not yet wish to reveal his position. In this situation, encouraging other constituents to write letters is much more effective than writing a second letter.

Most importantly, send a thank-you letter when the member does what you request. This shows that your community is following the member’s actions, and it is a powerful incentive for the member to pay attention to future communications.
Correspondence Advice Wrap-Up

Remember your goal in preparing any correspondence is to get it read and acted upon. Make it easy to read. Organize your material with care. Work to make it concise and clear. And test it on others before sending it. Individualized letters have the best chance of being read, as compared to a form letter or tear-off card. Letters that are polite and politically realistic are better received than polemics and are more likely to join the select stack of letters that go to a member for a personal look.

TELEPHONE

The phone is the quickest way to communicate your position on legislation that is coming up for a vote. When time is short, it is often the best option and an easy way to share information with a staffer with whom you have developed a relationship. It is, however, much less meaningful than a letter.

The Capitol switchboard is (202) 224-3121. When you call, ask for your member. Once connected, ask to speak to the legislative assistant handling your issue.

If you are calling about a specific vote, your message should be short and to the point, and likely the only information that will be passed along is your position — vote yes or no. When you call, reference the name and number of the legislation about which you are calling. Provide your name, address, pertinent background, and your position on the legislation with 1-2 sentences that explain your position in non-technical terms.

When you are calling about an issue that requires more than “vote yes” or “vote no,” prepare a checklist. Making the checklist will help you to avoid the problems of rambling or conveying confusion because you’re not sure you covered everything you intended.

Stating your business clearly and quickly is essential. Get your name, organization, and purpose out on the table. If you have a personal connection with the individual you are asking for, use it. Very often, you will be going through a busy receptionist, so have this information ready.

As much as possible, do your homework before making a call, although it is quite acceptable to call someone for advice on who the right person is to contact. However, do not waste the time of
a busy staff person asking for routine information on legislation or other matters that is readily available in databases or published sources, such as the House and Senate websites or Thomas, the Library of Congress website. Additional resources are available on the AAAS website www.aaas.org.

Avoid using telephone calls for complicated subjects. Not every subject or problem is appropriate for handling on the telephone. Typical staff advice was “if the issue is complicated, make an appointment. Don’t even try to use the telephone.” Still others said they preferred a letter in advance of a telephone conversation, especially if they did not know the person.

Be patient but persistent. Remember that members and staff are under horrendous time pressures. As one staff person described it, “We may not be able to return calls immediately or even the same day. And some staff return calls late in the day, so you may want to consider leaving a home number.” Others observed there was nothing wrong with being persistent if you have not heard back after several days. Just try again, with politeness and aplomb.

Remember that telephone calls based on outrage and demands don’t go over well. As a citizen, you can exercise your First Amendment rights to call anyone in government and tell them how rottenly you think they are running things. However, such calls seldom lead to anything. Several staff pointed out that “Rudeness doesn’t help. And I don’t respond very well to demands that I do something.”

Depending on the nature of your telephone conversation, you may wish to consider a follow-up note. It may be a simple “thank you” or, as one staffer suggested, a summary of the details of the issues discussed during the call.

**Telephone Advice Wrap-Up**

While Congress is extremely open to telephone calls, don’t abuse this openness with trivial and poorly planned calls. Prepare in advance with a checklist. Identify yourself — with a referral if possible — and get to the crux of your business promptly. Never be rude or demanding; politeness, patience, and persistence will pay off.
**Hearings**

As discussed in Chapter 2, much of the legislative business occurs in committees, with hearings as the public centerpiece. With thousands of witnesses appearing annually — perhaps a dozen or more at any one hearing — there is a distinct and difficult challenge for any witness “to rise above the clutter.” This section aims to provide guidance for those who have been invited, generally by the committee chair or ranking member, to testify.

**PREPARING TESTIMONY**

Earlier advice on intelligence gathering applies here as well: find out what is really going on. Consult and work with committee staff members as far in advance of the hearing as possible. You can learn much about how best to focus your remarks on issues of interest to the committee, get a better understanding of the turf and the personalities, and pick up general advice on how to present yourself most effectively. You can ask who else will be testifying and what their key points will be so that you will be better prepared to respond to positions taken by these individuals. You can learn why the hearing is being held and gain a sense of how controversial it will be. Unless you are appearing under a subpoena (a special circumstance not covered here), consider the committee staff as allies who can ease the way for you. Sometimes they will tell you in advance what questions their bosses are likely to ask, because they often draft these questions. Often, committee staff members will work with you to develop questions that might help clarify an issue. For another resource, you can watch previous committee hearings on-line to better understand the format and dynamics of the committee.

Your employer’s or professional society’s government relations office is another resource. In addition, many organizations have established policies and procedures for vetting testimony that you would need to follow if testifying on their behalf.

You will prepare two versions of testimony — written and oral — and both will become part of the written record. The oral testimony is generally limited to five minutes, whereas the written testimony can be longer. You can include details in your written statement that you will not have time to discuss in your oral testimony.

Your oral testimony should summarize your written testimony and emphasize the most important parts. It should be crafted and presented so as to set the stage for a good question and
answer session with the committee members. As one senior staff person put it, “The idea is to get a dialogue with the members while you are there. They can read your statement while you are elsewhere if you grab their interest.”

Prepare your remarks with simplicity, brevity, and clarity. These are guidelines that run through all aspects of working with Congress, but they must be emphasized in preparing testimony. A staffer advises, “Your audience doesn’t have a scientific or technical background, so write for the layperson.”

You should answer — or attempt to answer — the questions asked in your invitation letter or telephone call. Take the opportunity to make your own pitch only after responding to the needs of the committee and its invitation.

Your main message should come through early. While it is acceptable to provide a background summary, don’t overdo it. As staff explained, the committee must be able to understand “where things stand; what needs improving or changing” from your testimony. One senator called for a statement to highlight the most compelling data and to have a distinct “bottom-line orientation.” Another congressional staffer said, “We like statements that convey facts, contain original analysis, and clearly state a position.”

In presenting your case, it is quite acceptable to be candid and forthright — as long as you are sure of your facts. A senior staffer put it this way, “You can be frank, but factual.” If your situation calls for the use of information that needs to be qualified, do so; where appropriate, characterize as best you can the nature or range of uncertainty. As one staff member explained, “You’re here as an expert witness in the court sense, not as a truth-seeking scientist, and it’s OK to advocate a point of view.”

There is a balance to be achieved here: congressional testimony is not a scholarly document, but it should be well-researched. Avoid voluminous footnotes; brief citations are in order. Also, statistics, graphs, and charts can be desirable if they make clear points and are used with discretion.

Check in advance on the desired format of the statement and comply with committee administrative requirements. A number of items can, collectively, make or break your testimony, or at least strongly influence the way it is received. Submit your written statement with the required number of copies by the deadline requested by the committee; this will vary, but it is often forty-eight hours in advance of a hearing. Bringing your statement with you on the day of the hearing is not acceptable. Submitting testimony in advance of the hearing enables staff and members to review your statement and prepare questions for the hearing. This greatly enhances your opportunities for dialogue with committee members.
AT THE HEARING

Arrive well in advance of your scheduled appearance. Arriving early affords you a few minutes with committee staff with whom you may only have talked on the telephone. It is even possible that you may obtain some last-minute intelligence on the hearing that could be of value in your presentation.

It is important to listen to the witnesses preceding you and to the member’s opening statements. It is impressive to the committee when, later, you can refer knowledgeably in your own presentation to some earlier point made by another witness or, better yet, a member.

PRESENTING ORAL TESTIMONY

Make sure that you prepare your oral testimony — usually five minutes — in advance, rather than “winging it” from your written statement. You should also ensure you are thoroughly familiar with your statement. This cautionary note is offered primarily to those who may be delivering testimony that has been prepared by others.

Be prepared for, and don’t take personally, interruptions for floor votes and members to attend other committee hearings. Even if they are not able to attend the full hearing, members will be able to read your statement and their staff will likely still be in attendance.

Be careful about going off on tangents. According to members and staff, this is the error most frequently committed by witnesses, especially those who attempt to summarize without good planning. But even experienced witnesses can fall into this trap as an interesting idea occurs to them and they pursue it. Strict discipline, careful preparation, and practice are essential to avoiding this serious problem.

Recommendations from staff, members and Arch Lustberg, the author of Testifying With Impact, include:

- Speak clearly.
- Avoid looking down at the table; seek eye contact with members. One senator said, “Talk to me.” If you are able to speak directly to the members without reading your testimony, all the better.
Be direct and assertive but not overbearing; convey an air of confidence about yourself and what you are saying.

Be animated. It is the kiss of death to sit and read a statement in a monotone. Try to convey your message with excitement, enthusiasm, and liveliness.

Tell a story, use examples and imagery, and strike a balance: don’t be too technical, but don’t talk down to your audience either. Avoid jargon. Be relevant. Make analogies to other important issues that, based on your intelligence gathering, might be important or familiar to the members and the chairperson.

While the name of the game is to “rise above the clutter,” it can be dangerous and counterproductive to use unusual or shocking attention-getters, particularly without discussing them with staff in advance. If you are going to pass around some item for inspection, be sure it is on point and does not distract the committee from your main message. Gimmicks should be avoided; caution and finesse are in order. This does not mean that controversy is inappropriate or that you cannot be provocative under the right circumstances.

Jokes fall into the gimmick category and should be used only with extreme care and finesse. Quips or putting a humorous twist on some event or comment during the hearing are fine if they fit and if they are spontaneous. However, unless you are good at this, it is better to stick to your testimony and avoid the comedian role.

In your prepared statement, you can use such charts and figures as you think necessary. In your oral statement, however, you must be much more selective, if you use any at all. “Your time is short, so think carefully about what you might gain by the use of such techniques,” reminded a staff member. Think, too, about the logistics of such items, including who will show them and room lighting. Charts and graphs can serve a useful purpose and be very effective in conveying a point, but make sure they are well designed before you decide to use them. Another staffer observed that “busy charts are guaranteed to lose your audience.” Ask in advance if it is appropriate to bring board charts or digital presentations.
QUESTION AND ANSWER PERIOD

After all the witnesses on a panel have presented their testimony, the committee will conduct a period of questions and answers. Although the rules vary by committee, each member generally has five minutes during each round for questions of the panel or other statements. Keep these time limits in mind as you answer the question; members will often cut you off if you talk too long.

In answering questions, remember the following:

- Anticipate questions and prepare for them. In particular, work with staff to identify potential areas of interest on the part of members.
- Answer questions concisely and directly. As with your oral summary, don’t go off on tangents. If members want more, let them follow up by asking for it.
- Draw on your written statement as well as your experience to reinforce your points or to make additional ones.
- If you don’t know the answer to a question, say so. If pressed, give qualifiers or ranges of uncertainty with whatever response you decide to make. Offer to provide the answer for the record, in writing, if you would like to do so.
- It is acceptable to equivocate at times with a “yes, but...” answer, but don’t overdo it. As one senator put it after listening to several “on the one hand...and on the other” statements, “We need more one-armed scientists.”
- In a panel setting, you may be asked a question by name or it may come to the panel at large. In the latter case, let good manners and common sense prevail. Neither a question hog nor a shrinking violet should you be. If another witness is tending to dominate the responses and you really do have something to say, assert yourself. If a question is addressed to the entire panel, it is sometimes helpful to glance at your fellow panelists and quickly gauge who is most anxious to answer first.
- Don’t lose your cool. You can differ politely with another witness or even a member, but do it with grace and good humor.
- Although you can disagree politely, don’t be overly critical of the testimony of others. Remember, hearings often are deliberately set up to hear opposing points of views.
AFTER THE HEARING

The hearing is not really over when the chairperson gavels the committee into adjournment after the last witness has finished. For the staff, there is still the hearing record to complete and possibly a report to be prepared along with associated legislation. You, as one of the witnesses, will be involved in the post-hearing process.

Respond promptly to questions submitted for the record. It is customary in many congressional hearings for individual members and the staff (on behalf of the committee) to submit questions in writing to a witness for an answer later. Think of this as an opportunity to expand on your written statement or your presentation at the hearing. It is possible to negotiate downward the number of questions and the length and nature of the response requested if the request seems onerous. On the whole, committee staff are quite cooperative in this respect and understand the limits of individuals. The main point is for you to respond promptly on those questions that you choose to answer. You may also take this opportunity to offer additional comments on questions posed to you earlier in the hearing itself.

After the hearing, you will be sent an excerpt of the transcript of the hearing record. This will contain both your oral statement and any questions-and-answer exchanges that took place on the day of the hearing. You will be given the opportunity to correct any mistakes made in the transcription process. Although the details vary by committee, in general you will not be permitted to rewrite your testimony or to fix grammatical mistakes to make your remarks look better. As in responding to questions for the record, it is important for you to respond quickly to the request by the committee.

After the hearing, contact the committee staff for a post-hearing critique. Even if only by telephone, you should make a follow-up contact to determine how the staff thinks the hearing went. It would be especially valuable for you to hear how your presentation and appearance were received. This type of critique will not always be possible to get, but many staff are inclined to be helpful in this regard.

The hearing is only one part of the process, and it will be important to follow up to see what, if anything, happens as a result of it. Depending on the outcome, you may want to consider additional actions in contacting Congress.
Beyond Communicating with Congress

Although this book provides strategies for working with Congress, the tools can be applied to influencing science policy in a variety of settings.

Scientists seeking to influence policy should also consider working with the Executive Branch. Opportunities exist for scientists to serve on executive branch advisory committees, comment on proposed legislation, and discuss budget and research priorities. The Federal Register is the official daily publication for rules, proposed rules, and notices of federal agencies and organizations, as well as executive orders and other presidential documents. Your university or professional society government affairs staff can direct you to this and other resources.

Local legislatures, school boards, and planning commissions all address issues with a scientific component and can benefit from greater involvement by scientists. Possible roles for scientists include providing information, advocating for proposals, or working on campaigns. Other resources exist for those seeking to go beyond these advisory roles. For example, the nonprofit Scientists and Engineers for America held its first training session for scientists and engineers interested in running a campaign in 2008, providing tools for scientists to directly influence policy and bridge the gap between the two worlds.
References


vi Davidson and Oleszek, p. 67.


xii Davidson and Oleszek, p. 136.


xv http://elections.sefora.org/.
Science The Endless Frontier

“It has been basic United States policy that Government should foster the opening of new frontiers. It opened the seas to clipper ships and furnished land for pioneers. Although these frontiers have more or less disappeared, the frontier of science remains. It is in keeping with the American tradition — one which has made the United States great — that new frontiers shall be made accessible for development by all American citizens.”

— A Report to the President by Vannevar Bush, Director of the Office of Scientific Research and Development
Science The Endless Frontier, July 1945