

## **Audio Transcript: (2) Module 2: Chemistry advocacy within the U.S. government**

### ***2.1 Module 2 goal and objectives***

#### **2.1.1 Module 2 goal**

Module 2, *Chemistry advocacy within the U.S. government*, will help you get involved and identify the areas in the federal U.S. government that engage in science policy.

#### **2.1.2 Module 2 objectives**

There are three learning objectives with this module. You will be able to compare and contrast the roles and powers of the executive and legislative branches of the U.S. government. Second you will distinguish between the concepts of “science for policy” and “policy for science” that frame how science policy is applied in practice. Third, you will identify the entry-points for chemists like you to get involved in the policymaking process.

### ***2.2 U.S. government organization***

#### **2.2.1 Engagement at different levels**

Governments exist at all levels, as does the opportunity to get involved in advocacy. People can engage at the global level via international organizations like the United Nations or the International Monetary Fund. At the national government level via the Congress or federal agencies. At the state level via governors, state legislative bodies, or state agencies. And last but not least, at the local level via mayors, school boards, city councils, and agencies. Traditionally, ACS has focused on the United States at the federal level. This will be the main focus of this workshop, however the lessons you will learn about engagement can largely be applied across the board.

#### **2.2.2 U.S. government organization**

The U.S. government is divided into three constitutionally mandated branches. The legislative branch makes laws and is split into a bicameral Congress, which consists of the House of Representatives and the Senate. The executive branch carries out, or executes, the laws, and consists of the president of the United States, the vice president; the president’s appointed advisors including the cabinet, and the departments and agencies they lead. Finally, the judicial branch evaluates laws, including adjudicating disputes, and consists of the U.S. Supreme Court and other federal courts. While this workshop will not focus on the judicial branch, it plays an especially important role when the first two branches are in conflict.

#### **2.2.3 Interacting branches: Clean Air Act case study**

A case study of the interplay between the three branches in science policymaking can be found in the Clean Air Act, which is a U.S. federal law designed to curb air pollution on a national level. Congress passed the Clean Air Act in 1970, which officially set National Ambient Air Quality

Standards into law. There had been previous precedent with earlier standards. The Environmental Protection Agency, the EPA, and individual states were then tasked with implementing the national standards by identifying how to regulate pollutants to meet these standards.

In 1977 and 1990, Congress passed amendments to the Clean Air Act to address shortcomings of the earlier legislation, such as combatting new issues and challenges not foreseen with the original legislation. In turn, these amendments changed how the EPA had to implement the Clean Air Act. Throughout this process, the justice system was adjudicating complaints that the EPA's implementation was either too stringent or too lenient when compared to the written law. Depending on the outcomes of these court cases, the EPA changed its implementation accordingly. The Clean Air Act is still in effect today and continues to undergo changes prompted by actions by the three branches of government.

### ***2.3 How the U.S. government sets science policy***

This activity, which features an infographic that will recur throughout this module, gives a broad summary of how science policy is set by the U.S. government. It illustrates how the executive and legislative branches interact with each other and the public. It also shows how scientists can play a role both as part of the government and as members of the public. Use the bar at the bottom of the graphic to isolate specific relationships.

The typical pathway of science policy begins with voters, who elect and influence policymakers in both the executive and legislative branches. Congress writes laws that direct the executive branch to do things, including program authorizations, funding determinations, and setting research priorities. The executive branch, headed by the president, makes these things happen but has significant discretion as to HOW they happen based on the president's priorities and appointments of leaders. Agencies then set specific policies via rulemaking. Both legislation and rules can be influenced by the will of the public and expert advice from scientists. So, if you're not an elected or appointed policymaker, you have two opportunities to get involved in the policymaking process; voting and advocating, or advising and reviewing.

### ***2.4 The executive branch***

#### **2.4.1 The executive branch**

To understand more specifically how each of these two branches impact and are impacted by science policy, this module will look at the executive branch first.

#### **2.4.2 Executive branch organization – cabinet level**

The executive branch is composed first and foremost of the president of the United States who relies on a number of departments, agencies, and offices to implement laws and help advise on matters of state. The highest level of these advisors are the appointed members of the president's cabinet, who typically head a federal department.

### **2.4.3 Executive departments**

These 15 federal departments administer rules and regulations on behalf of the president for issues of state, treasury, defense, justice, the interior, agriculture, commerce, labor, health & human services, housing & urban development, transportation, energy, education, veteran's affairs, and homeland security. The department seals below are ordered according to the Presidential succession. Which of these departments do you think engage in some form of science policy? Drag a 'yes' to the drop zone below the seal of departments you think are involved, to some degree, in science policy and a 'no' to drop zone below the seals of departments you think are not.

### **2.4.4 The executive branch – agencies and offices**

The executive branch is not limited to cabinet members and departments, but is also organized into more specialized agencies and offices.

### **2.4.5 Executive agencies and offices**

Federal agencies and offices tend to have specific roles. Some, as those shown here, are intrinsically linked to science policy and even work with the American Chemical Society when need arises. Some agencies are a subset of larger departments, such as the National Institutes of Health, the NIH, which is under the U.S. Department of Health and Human Services, or the National Oceanic and Atmospheric Administration, NOAA. Other agencies operate independently, such as the Chemical Safety Board, the CSB, or the National Science Foundation, NSF. Last, there are executive offices that are supervised by staff that work directly with the president. For instance, the Executive Office of the President contains both the Office of Science and Technology Policy, OSTP, and the Office of Management and Budget, OMB. Independence, or lack thereof, can change the policy priorities of agencies and offices depending on the president and their agenda.

## ***2.5 Scientists in the executive branch***

### **2.5.1 Science in the agencies**

Chemistry and science are fundamentally linked to policy through the executive branch and its agencies. For instance, agencies decide what scientific research to support through programs like the NSF's 10 Big Ideas. It should be noted, however, that the funds supporting these programs are not from the executive branch itself but rather allocated from Congress. Some agencies do conduct research themselves, such as the National Institute for Standards and Technology and the National Institutes of Health, which maintain lab spaces and researchers. Finally, agencies sometimes make regulations based on research; for instance, the regulatory bodies of the Environmental Protection Agency, the Centers for Disease Control and Prevention, and the Food and Drug Administration. In looking at the roles agencies fill, it is important to remember the frameworks of 'science for policy' and 'policy for science.' Some agencies fall more into one category than the other, but most are a mix of the two.

### **2.5.2 The roles of scientists in the executive branch**

Scientists themselves can be involved in the executive branch, although this branch is not inherently structured for direct input from citizens. The main ways to get involved are by employment, serving on advisory committees, and commenting on regulations.

### **2.5.3 Employment**

The first way to be involved in policymaking in the executive branch is to work directly for the federal government. There are two kinds of employees that make up the bulk of executive agencies. The first are political appointees, such as the heads of agencies whom this workshop has already touched. They directly implement the president's priorities and ideally have a familiarity or experience with the subject matter with which they are working. Dr. Kelvin Droegemeier, for instance, is a meteorologist who currently heads the White House Office of Science and Technology Policy, but the next administration will appoint a new director of OSTP.

The second kind of federal employees are career civil servants, civilians employed by the federal government to operate the agencies and execute their missions. Ideally, they have institutional knowledge and subject matter expertise. Typically, these employees stay employed through changes in administration. While you may not be in a position to be a political appointee, you may want to contribute your scientific expertise to policymaking by becoming a career civil servant.

### **2.5.4 Advisory committees**

Another way that scientists can impact executive policymaking and implementation without being a federal employee is by serving on a scientific advisory committee. There are over 200 such committees on which scientists serve. The role of advisory committees is to explain what science predicts and the likely consequences of different policy choices. Essentially, they inform policy decisions, but they don't themselves make policies. The executive branch then uses expertise provided by members of advisory boards to make policies or change policies.

Members of advisory committees come from diverse backgrounds in all realms of science and technology to provide a balanced set of recommendations to the executive branch. Two examples are: the EPA Science Advisory Board and the NSF STEM Education Advisory Panel. ACS sometimes provides letters of support for qualified individuals who wish to serve in such a capacity.

### **2.5.5 Comments on regulations**

Perhaps the most accessible way to be involved in executive policymaking is by submitting comments on proposed rules. Before agencies can implement a new rule or change an existing one, they must solicit and respond to input from the public. This is your opportunity as a scientist to easily weigh in on issues. At [federalregister.gov](http://federalregister.gov), you can submit a comment during the proposed rule's comment period, which is typically 30 to 60 days from when proposed rules are

first posted. Commenting is a great way to help shape the debate and put science on the record. ACS staff monitor proposals and provide comments on behalf of the Society.

## ***2.6 Summarizing the executive branch***

Below are a couple of statements focused on overarching concepts for the executive branch that you have covered so far. Review the three phrases and select the correct phrase based on the material provided in this module.

## ***2.7 Scientists in the legislative branch***

### **2.7.1 The legislative branch**

The next step in learning how the U.S. government interacts with science policy is to more closely examine the legislative branch, which is vested with the power to make laws and fund the rest of the government.

### **2.7.2 116<sup>th</sup> Congress: House of Representatives**

The first chamber of Congress is the U.S. House of Representatives, which represents districts within the states. The decadal census dictates the allocation of the 435 total members to a certain amount of congressional representation per state. Whichever party has 218 seats or more makes up the majority. Members of the House of Representatives are elected on two-year terms. This infographic shows the makeup of the current class of the House of Representatives.

### **2.7.3 116<sup>th</sup> Congress: Senate**

The second chamber of Congress is the U.S. Senate, in which every state is allocated two Senators to total 100 legislators. As a result, the party with 50 or more Senators controls the majority. Senators serve on a six-year term where one third of the body is up for election every two years during the normal election cycle. This infographic shows the makeup of the current class of the Senate.

### **2.7.4 Congressional support staff**

Once elected to the House or Senate, a member of Congress doesn't operate in a vacuum. They are supported by their staff, both at home and in their D.C. Capitol Hill offices. The size and power of each office depends on a number of factors, including the seniority of the member of Congress, the number of constituents they represent, and the funds available to them. Staff occupy both inward and outward facing roles to support their member of Congress and that member's priorities. Further distinctions between these roles and how they relate to the way you might interact with them will be covered in the next module.

### **2.7.5 Congressional committees**

Aside from working to address issues that are specific to a member's personal goals, or district or state concerns, each member of Congress serves on a certain number of committees. Committees handle specific duties and topic portfolios because not every member of Congress can focus on everything. Membership in a specific committee allows the member of Congress to

develop expertise in specific issues under the committee's jurisdiction. As is the case with executive agencies and departments, science is integral to most policy matters in some way, but some committees are more involved with science policy than others. For example, the House Committee on Science, Space, and Technology; the Senate Committee on Commerce, Science, and Transportation; and the Appropriations Committees of both chambers, work closely with scientists on issues of science for policy *and* policy for science. As scientists, you can and should be involved in communicating the merits of funding scientific research and the value of incorporating science in the legislative process.

### **2.7.6 House SS&T committee (Science for policy)**

An example of one of the most important committees to science policy is the House Science, Space, and Technology Committee, also known as SST. There are ways in which this committee addresses policy for science, for instance, it oversees agencies like NASA, NSF, NIST, OSTP, and research and development activities at many other federal agencies such as the EPA and NOAA. However, the larger role for SST is science for policy, as they often use science to inform policy decisions. ACS often partners with SST to address issues of concern to chemists. Titles of recent committee hearings below.

### **2.7.7 Appropriations committees (Policy for science)**

One of Congress's most important constitutionally mandated roles is to create a national budget, sometimes called 'the power of the purse,' or more formally, the appropriations process. This makes appropriations a key area for advocacy as well as a classic example of policy for science. To briefly review the budget process, the president will make a budget request, which is essentially a wish list based on administration priorities. This request goes to Congress where spending amounts are established in the form of budget resolutions – this is a blueprint without force of law - before actual funding levels are allocated in the appropriations bills drafted by each chamber. Once any differences between the House and Senate appropriations bills are resolved, the president can sign the bills into law, setting the budget for the next fiscal year. If an agreement can't be reached in the usual time frame, temporary measures called continuing resolutions are passed to keep the government from shutting down until an agreement can be reached. In a normal budget cycle, there are 14 appropriations bills that fund the entire government, but chemistry is impacted only by some of these. ACS tracks how chemistry will be impacted by each year's budget.

## ***2.8 Scientists in the legislative branch***

### **2.8.1 The roles of scientists in the legislative branch**

There are a number of ways that scientists can be involved in policy in the legislative arena. The main ways to get involved are by employment, providing scientific expertise, and providing constituent input. Mostly, this is because the legislative branch is inherently structured for direct input from citizens.

### **2.8.2 Employment**

The first way you can be involved in the legislative branch is to work for Congress. Legislative employees can be categorized into two categories: congressional agencies and congressional staff. Congress has agencies, which provide information to legislators such as the Congressional Research Service, CRS; the Government Accountability Office, GAO; and the Library of Congress. Additionally, congressional staffers, who were mentioned earlier, provide specific scientific and technical expertise to manage portfolios that usually include science and technology issues.

### **2.8.3 Scientific advisors**

Another way to be involved in the legislative process is to serve as a scientific advisor. These advisors testify at committee hearings and congressional briefings to provide their expert opinion on scientific topics. You can also volunteer with scientific organizations, such as ACS, who already provide advice to Congress. For instance, you can participate in society-sponsored Hill visits, sometimes called ‘fly-ins’ to speak with your member of Congress about pre-determined issues.

### **2.8.4 Scientific input in the legislative process**

Finally, perhaps the most important way to be involved in the legislative process is as a constituent. Your members of Congress are beholden to you because they were elected to represent your interests. You can email, call, or even meet with your members of Congress and their staff because it is their job to listen to the concerns you have as both a citizen and a scientist.

## ***2.9 Constituent involvement in the legislative process***

Congress’ main job is to pass legislation (including funding through appropriations) to address the perceived needs of constituents. But the process of successfully legislating is long and arduous. There is no guarantee that any piece of legislation will succeed once it is introduced. For instance, in the 116<sup>th</sup> Congress as of January 1<sup>st</sup> 2020, over 10,000 pieces of legislation had been introduced, but just over 100 passed into law. Navigating the legislative gauntlet is challenging and often relies on garnering bipartisan support in Congress or following vocal public preferences. That said, your input can help to influence which pieces of legislation will be successful. On the image below, click on each step (or box) to see if constituents have the opportunity to impact legislators. A note at the bottom will explain the correct answer and why it is so.

## ***2.10 Module 2 key takeaways***

### **2.10.1 WE NEED YOU**

Now that you know you can talk to Congress, it is up to you to do so! The next module will focus on the logistics of how to talk with Congress.

### **2.10.2 Key takeaways**

Congratulations on completing module 2, *Chemistry advocacy within the U.S. government*. Some key takeaways are: there are opportunities to engage in science advocacy in both the executive and legislative branches of the U.S. government. Distinguishing between the roles of ‘science for policy’ and ‘policy for science’ will help you be a more deliberate and effective advocate. Chemists have a unique set of skills and knowledge that you can use to help impact the policy process.