

Audio Transcript: (4) Module 4: Chemistry communication for advocates

4.1 Module 4 goal and objectives

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Module 4, *Chemistry communication for advocates* will tie everything you've learned together by emphasizing the important role that communication plays in your role as a scientist and a citizen. By the end of this module, you will have learned how to tailor a message to a non-specialized audience, specifically, to policymakers.

4.1.2 Module 4 objectives

There are three learning objectives that you will accomplish. First, you'll understand why it is so vital to communicate scientific data or science issues to non-scientists. Second, you will be introduced to 5 strategies that if recognized and practiced effectively, will help you communicate science simply. Third, you will have a chance to practice applying these 5 strategies as you would with policymakers.

4.2 Prepare an introduction

Please prepare a 2-3 sentence introduction of yourself. Include your name, occupation, and where you live, work, or attend school. Also include a summary of your technical expertise and the reason you enrolled in this workshop. Before moving on, reply to someone else's post, too.

4.3 Chemistry communication in everyday life

4.3.1 Who are chemists?

When you prepared your introduction, you were asked to include your technical expertise because this background is an important part of what qualifies you to speak with authority about scientific issues. The flip side to this expertise is that non-specialists will often assume research is the primary driving factor behind your personality. But no one is ever *only* a chemist! Chemists, like everyone else, wear many different hats and have many different roles in their communities. Outside of the lab, they have hobbies, are active, go shopping, travel, and spend time with families and friends. In other words, most chemists already interact with groups and people outside the lab. In interacting with these groups, you're already learning to communicate with non-specialized audiences!

4.3.2. With whom do chemists communicate

Similarly, in the professional world, you are not *just* in a lab doing research. To be successful in your career, you must interact with a variety of organizations from government, to offices, to businesses, to academic administrations. These groups are not necessarily made up of specialists, but nevertheless they will have influence over your work and the resources (such as the jobs or funds) you can access. Learning to communicate with different audiences will empower you to advocate for yourself professionally *and* as an advocate for chemistry.

4.4 5 Strategies for successful science communication

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To help you successfully communicate your science no matter the context, there are 5 Strategies you will learn to use; know your audience, distill your message, focus on why, tell your stories, and practice. The next slides will explain each strategy in greater detail.

4.4.2. 1. Know your audience

The first, and possibly most important strategy of communication, is that you must know your audience, then put your audience first. For instance, are you speaking to other researchers? Policymakers? The media or the public? You should be aware that each of these groups will have different interests and backgrounds. Second, it is up to *you*, the communicator, to meet your audience where they are or what they will understand and care about.

For example, if your audience is made up of specialists in your field, you will probably use technical language and may discuss research procedures. If your audience is made up of policymakers you will need to focus more on the potential impact of your research rather than the details of the research itself. Because your different audiences require a specific message, it is important to establish the prior knowledge of your audience if you don't already know it. In addition, it can be helpful to periodically pause and get confirmation that your audience is following what you are saying.

4.4.3. 2. Distill your message

The second strategy is to distill the most important parts of your message so as not to confuse your audience. In other words, you want to extract the most critical aspects of your message and ensure these are clear, concise, and contribute directly to your narrative.

In most cases, you will not be speaking with other specialists, so distilling your message means removing lengthy, complex, and jargon-filled descriptions. A more 'in the weeds' explanation may be the most technically correct, but if you leave your audience confused or alienated, no matter how accurate you are, you have not done a good job of communicating.

Sometimes this strategy means re-examining things that you take for granted. Being aware that some phrases have different meanings to different audiences, is key when choosing your words. Think about how the word 'cycling' might be interpreted differently in a biochemistry lab as compared to in a bicycle shop. Communicate only what will help your audience better understand your message.

4.4.4. 3. Focus on the why

The next strategy is to focus on *why* your audience should care about your research or scientific issue. Why is what you do important? Why should it be supported? Why is what you do relevant to everyday life? *Why should anyone besides you care?* Remember, this should be appropriately distilled for your target audience. In most cases, this means framing your message around the

‘why,’ not the ‘what’ of your science. For example, don’t talk about the structure of the molecules you might be making in lab, talk about how it contributes to making medicines to treat illnesses.

4.4.5. 4. Tell your stories

The next strategy is to use your ‘why’s’ to make stories, setting up a compelling narrative with relatable examples. If at all possible, structure your message as a narrative including a take-home lesson. Stories, personal anecdotes, and analogies are far more compelling and memorable than a string of facts. However, don’t forget that these stories and examples should be relevant to your specific audience. They should be as simple and direct as possible, and have a clear reason you’re including the examples. Examples of this strategy include talking about the personal process of becoming interested in your issue, or perhaps describing what negative consequences will happen if a certain action is not taken, or what positive benefits will result in supporting a specific initiative.

4.4.6. 5. Practice, practice, practice

Once you are comfortable with the first four strategies, the final strategy is to practice implementing them. Then practice more. Then keep practicing. Try out different versions of your message with different people in your life and see how much tailoring what you say makes a difference in what they understand. The more you practice, the easier it will get. As you will see in the following video, even a little practice leads to big improvements very quickly.

4.6 Practicing effective science communication

Now you have seen some examples of scientists speaking their science more simply by applying the 5 strategies, try determining for yourself if the following examples are good descriptions of research, or if they could use some more work. For example, in the first flash card: ‘my lab is synthesizing new classes of organometallic catalysts in order to create stereospecific copolymers with high tensile strength.’ Would you say this is good or bad communication? Don’t forget you have to know your audience! If you’re talking to other organometallic researchers, this description might not be detailed enough, but if you’re talking to a family member it is probably far too complex. The reality is, without knowing your audience you can’t tell whether it’s good or bad. For the next examples, check the hint on the flashcard to see who your audience is before typing ‘yes,’ ‘no,’ or ‘it depends.’

4.7 Prepare a new introduction

To practice everything that this workshop has covered, reconsider your personal introduction. Think about how you would now want to describe yourself, your expertise, and your ‘ask’ to a policymaker on Capitol Hill. Prepare another 2-3 sentence introduction with the content of this module in mind and notice how this introduction is different from your first. These brief and targeted descriptions are often called ‘elevator pitches’ because you should be prepared to give one, communicating all the vital pieces of information to your audience, in the time it takes to ride an elevator.

4.8 Module 4 key takeaways

4.8.1 Reminders for your advocacy meetings

Module 3 covered how to set up and what to expect in an advocacy meeting with a policymaker on Capitol Hill while this module covered strategies for how to communicate during that meeting. To have a successful advocacy visit, you will want to apply all of them together along with the broad knowledge of science policy and how it impacts the U.S. government. Last, keep these reminders: be an advocate for science; be prepared and flexible; be personable and polite; communicate your ‘ask,’ say thank you, and follow up.

As you prepare for your own advocacy meetings, you can always visit the ACS advocacy toolkit for refreshers and more information. *Remember, science doesn't speak for itself, but you have the ability to speak for science.*

4.8.2 Module 4 key takeaways

Two points should stand out to you after having completed module 4. The first is that becoming an effective communicator requires practice to master but will help you translate the issues you care about, including your science, to people outside the lab. The second is that you can use the 5 strategies for effective science communication to become better at this and to learn to frame your message to different audiences, including policymakers.