Being Persuasive: Lessons from Lawyers That All Scientists Need

Supplying information is not enough. Here are four courtroom techniques to help scientists make an impact.

Lawyers and scientists come from different backgrounds. Lawyers wield words and performance to convince the jury of their case. Scientists rest on facts to educate and inform. What can scientists learn from lawyers about effective communication? Credit: Matt Utecht, Mitchell Hamline School of Law

By Tamee Albrecht and Amy Hudson 4 February 2019

The greatest uncertainty in our planet's future lies in what next steps we take on climate policy. As scientists, our contribution is to improve understanding of how climate systems function. We build on

established research, make new discoveries, and provide facts to the global community. But simply presenting facts is not enough to inform the public's beliefs, change behaviors, or influence positions on policy [*Kahan et al.,* 2012].

In this atmosphere of urgency, we must do more than be messengers. Research on science communication offers helpful tips such as reducing complexity, getting straight to the point, and minimizing jargon [*Somerville and Hassol*, 2011; *Hassol*, 2008]. Here we look to another source for lessons on persuasive communication.

In summer 2017, we participated in the Expert Witness Training Academy (https://mitchellhamline.edu/expert-witness-training-academy/) – Effectively Communicating Science, a workshop (https://eos.org/project-updates/effective-communication-in-legal-and-public-policy-hearings) hosted by Mitchell Hamline School of Law, a law school in St. Paul, Minn., and funded by the Paleoclimate Program at the National Science Foundation. Over an intensive weeklong training, two dozen scientists joined law students in a mock trial [*Thorstad et al.*, 2017]. Each participant practiced the roles of lawyer and expert witness. Law faculty coached us in the trial's main components: opening statements, direct examination, cross-examination, and closing arguments.

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Talk about being out of your comfort zone. The lawyer's role was unfamiliar, to say the least. What did we know about delivering an opening statement? How are cross-examinations structured? When do we yell "Objection!"?

During this training, we learned strategies that lawyers use to communicate—specifically, to persuade juries of their client's position. Scientists do not aim to sway others toward a subjective stance, but we too need to convince our audience of the robustness (or, as lawyers might argue, the incontrovertibility) of our findings while remaining honest and objective.

To be more convincing, scientists should consider the following four communication strategies for oral presentations based on courtroom techniques. These strategies can help scientists be more engaging and relatable and will put them in a better position to effectively convey key facts about the pressing issues of our time. We present these strategies using examples from the role-playing exercises and mock trial we participated in as part of the Expert Witness Training Academy.

1. Speak to Your Audience's Values

Identify your audience, and then tailor your message and delivery to it. Scientists are accustomed to some of this: We target readers and journal editors each time we submit a manuscript. We reference

previously published articles and use consistent terminology to avoid alienating the journal's audience.

But when we write journal articles, we know that our readers are familiar with the background and conventions of the topics under discussion. Our readers already agree with us on the same basic premises, and together we find the same types of methods and evidence to be convincing. So not only are we tailoring our message to journal editors and readers, we also know that we're starting our discussion with the same set of values.

"Have you ever witnessed a natural disaster? What if you found out afterward—after your home had been destroyed or you lost loved ones—that it wasn't natural at all?"
The trick, then, is finding which aspects of your research resonate with a general—or even a skeptical—audience's values. When appealing to those audiences, find ways to link your science to universal values such as safety, family, and financial stability. To be an effective expert witness and communicator, you must make your listeners care (https://eos.org/articles/dan-rathers-vision-for-scientists-in-an-era-of-fake-news).

We turn now to an example from our expert witness workshop. One participant began her opening statement with a question for the jury: "Have you ever witnessed a natural disaster?"

Immediately, the expression on the jurors' faces changed. She continued, "What if you found out afterward—after your home had been destroyed or you lost loved ones—that it wasn't natural at all?"

With this appeal to her audience's values, she had the jury's undivided attention.

2. Lead Your Listeners with the Facts

When questioning expert witnesses, lawyers begin with short, general questions that gradually become more targeted. The sequence is carefully crafted to highlight information supporting their position. Done well, the lawyer draws out key facts supporting his or her position in a clear, stepwise fashion so the jury can easily follow along.

Here scientists must be cautious not to cherry-pick information and must be sure to present all available information objectively, acknowledging gaps in understanding. But by building upon the facts step by step and explaining what scientific uncertainty means in real terms, scientists can craft a more understandable message, as in this direct examination:

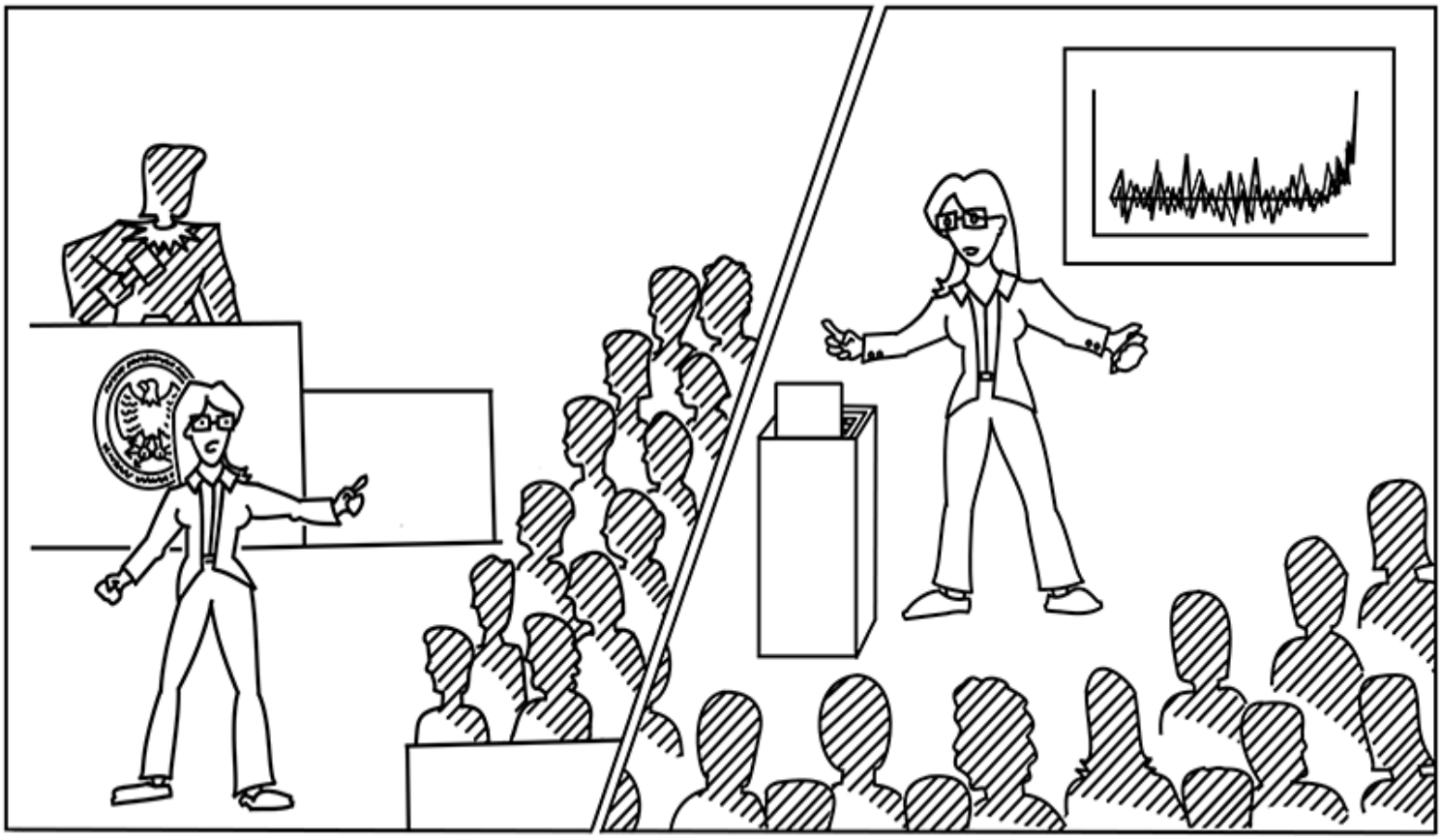
> ***Lawyer:*** *Based on your expertise, did weather modification cause the rain observed in Falls County?*
>
> ***Witness:*** *No. The procedure could not have produced that much rain. The amount of rain produced depends on how much product is used.*

> ***Lawyer:*** *Given the amount of product you used in this instance, how much rain did you predict?*
>
> ***Witness:*** *I filled the generators with only enough solution to produce 0.25 inch of rain per hour, maximum. The rain observed in Falls County reached 3 inches per hour. The generators simply did not have enough solution to produce the rain observed.*

Scientists need to lead listeners down the path to their conclusions. When conveying your message to an audience with different backgrounds and expertise, it is essential to meet your audience (https://eos.org/opinions/science-communication-post-expert-digital-age) where they are. Don't tell the entire story all at once: Introduce evidence piece by piece so the information builds slowly and sequentially, and you'll lead them to a more compelling conclusion.

3. Consider It a Performance

Like it or not, *how you say something (https://eos.org/agu-news/whats-your-superpower-science-communication)* is as important as, if not more than, what you say. Your words will not contribute as much as your tone, body language, and attitude.



Similar to lawyers presenting closing statements, scientists should use gestures and movements choreographed to emphasize main takeaways, such as counting a list of items with your fingers or demonstrating the size of something in relation to your height. Credit: Brandon Scott

Consider choreographing your movements. They should be deliberate, not distracting. Plant both feet on the floor, balancing your weight equally to prevent swaying. Square your shoulders toward your audience and draw your elbows away from your body—don't be afraid to take up more space. Use hand gestures or move in a way that helps emphasize key points. When you present a contrasting perspective, move to the other side of the room or change where your body is facing to signal the shift. Does this seem like acting? Fight your resistance to perform—you're more likely to come across as engaging and enthusiastic, not insincere.

I performed my closing statement with these points in mind: I began in the center of the room—I faced the jury and clasped my hands. I moved toward the plaintiff, my client, recapping our position. Then, I walked to where the defense team sat, turned my back on them, and listed the ways the defendant had erred, counting with my fingers. I pointed to the defendant when I said key words: negligible, wrongful, liable. To conclude, I walked back to the plaintiff, reclasped my hands, and asked the jury to rule in our favor.

4. Maximize Your Impact Through Repetition

Your audience is most likely to remember your first and last statements. This point should motivate scientists to craft memorable and concise introductions and conclusions.

Consider revealing your underlying message up front, returning to it throughout your presentation and at the end for maximum impact.
Begin with a hook—something intriguing to catch your audience's attention: a thought-provoking image, a question, or a startling statistic. Consider revealing your underlying message up front, returning to it throughout your presentation and at the end for maximum impact.

Listening to our mock trial jury deliberate at the conclusion of our trial, we were struck by which pieces of information the jurors found most persuasive or even remembered at all. Jurors forgot facts presented earlier in the case. Long-winded or confusing scientific explanations did not convince them. But jurors did recall points we made clearly and repeatedly and even echoed phrases and terms from the closing arguments.

Don't overestimate the audience's ability to follow along: They are probably hearing these facts for the first time. Unlike journal readers, this audience cannot reread a confusing paragraph to make sure they follow your point. Emphasize the main point by saying it slowly; let it sink in. Repeat key points throughout your presentation. Recall the common adage "Tell me what you are going to tell me, tell me, then tell me what you told me."

Wrapping It All Up

Now we'll take our own advice and tell you what we've told you. We have presented four ways scientists can use courtroom strategies to help audiences understand, remember, and engage with science. Like many scientists, we don't often practice being persuasive—we tend to think that proven facts and robust methodologies will speak for themselves.

Yet increasingly, scientists are finding this is not enough to convey findings (https://eos.org/articles/dan-rathers-vision-for-scientists-in-an-era-of-fake-news) that have potentially dire consequences for the planet and our well-being. And it's no secret that better communication is necessary. We are now seeing institutional support at the national and international level for science communication reform that goes beyond supplying information.

The Intergovernmental Panel on Climate Change recently published a comprehensive handbook [*Corner et al.*, 2018, p. 5]—their first communication guidance for report authors—featuring advice to "connect with what matters to your audience." The *National Academies of Sciences, Engineering, and Medicine*'s [2017] guidance underlines the challenges of addressing your audience's perceptions, beliefs, and potential misunderstandings when conveying science.

We clearly need better ways to connect society to science. By sharing our experiences going from lab to courtroom, we've highlighted communication strategies that are urgently needed by scientists to effectively inform policy and engage public opinion.

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References

Corner, A., C. Shaw, and J. Clarke (2018), Principles for effective communication and public engagement on climate change: A handbook for IPCC authors, Clim. Outreach, Oxford, U.K., https://doi.org/10.13140/RG.2.2.28717.38884 (https://doi.org/10.13140/RG.2.2.28717.38884).

Hassol, S. J. (2008), Improving how scientists communicate about climate change, *Eos, 89*(11), https://doi.org/10.1029/2008EO110002 (https://doi.org/10.1029/2008EO110002).

Kahan, D. M., et al. (2012), The polarizing impact of science literacy and numeracy on perceived climate change risks, *Nat. Clim. Change*, *2*(10), 732–735, https://doi.org/10.1038/NCLIMATE1547 (https://doi.org/10.1038/NCLIMATE1547).

National Academies of Sciences, Engineering, and Medicine (2017), *Communicating Science Effectively: A Research Agenda*, Natl. Acad. Press, Washington, D. C., https://doi.org/10.17226/23674 (https://doi.org/10.17226/23674).

Somerville, R. C., and S. J. Hassol (2011), Communicating the science of climate change, *Phys. Today, 64*(10), 48, https://doi.org/10.1063/PT.3.1296 (https://doi.org/10.1063/PT.3.1296).

Thorstad, L., et al. (2017), A practicum exercise for the Expert Witness Training Academy (EWTA), Mitchell Hamline Sch. of Law, St. Paul, Minn.

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