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## Sharing Science - Speaking About Your Research in Public

### PROFILE

Caitlin Devor is a science communicator originally from Pittsburgh, Pennsylvania, USA. She writes to excite non-expert audiences about new scientific discoveries and empowers researchers to find their own voices as communicators.



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Science communication in a public speaking format can include presenting at a professional conference or your regular lab meeting, visiting schools, participating in a competition, speaking at Open Days or Open Campus, or at a public event in a museum or other casual venue. Before preparing any presentation, consider your objective. Generally, public speaking is a special event, less common than reading about research. What will your audience gain by listening to you speak, rather than just reading about your work themselves?

The best advice for all public speaking is to practice. To eliminate bad habits, you must know what they are. Record your practice sessions so you can critique yourself. While rewatching your recording, turn off the sound and observe your body language, then turn off the screen and listen to how you use

your voice. Focus on improving one skill at a time. Most importantly, remember that the audience is your friend — they want to enjoy listening to you and to see you do well.

### Preparing Your Script

While preparing your speech, remember that we naturally use simpler sentence structures when we speak than when we write. About 120 to 160 English words per minute is usually a comfortable speaking pace. Speaking slowly and clearly will give your audience a better impression than rushing through too much information.

Generally, verbal presentations need less data, more context, and stronger organization than written forms of science communication. If your presentation is overwhelming or confusing, your audience will only remember their negative experience.

If your presentation is interesting, your audience will want to find your publications after the event. Minimize jargon and, especially when speaking to non-experts, do not speak in acronyms. Your audience cannot consult a glossary or go back and re-read portions of your speech. Use your voice and purposeful hand gestures to help illustrate your ideas or emphasize any ordinal numbers (first, second) or list markers (one, two or A, B) to help your audience follow along. Use pauses purposefully. After you use unavoidable jargon for the first time, before transitioning to a new concept, and especially after you say anything important, pause. Pauses give the audience time to analyze and remember what you just said.

### Body Language and Vocal Power

Regardless of venue, try to sit or stand up straight and look your audience in the eye. If you struggle with eye contact, divide the audience into thirds and glance at people in each third for about five seconds before moving on to the next third. Consistent eye contact will project confidence and make the audience feel comfortable watching you. Pay attention to audience members' facial expressions, which provide useful feedback about what parts of your presentation are confusing, boring, funny, or interesting.

For the same reasons that you warm up your muscles before exercising, you should warm up your voice before speaking. Speak with a variation of high and low tones and mix quiet and loud volumes to keep your audience's attention. There are many effective vocal warm-ups popular with actors, but just taking some deep breaths and humming can help warm up your voice. Always use a microphone if one is available. Some members of the audience may have hearing loss or be seated next to a noisy air vent.

### Virtual Presentations

Due to the ongoing pandemic, many public speaking opportunities have become online-only events. The basics of speaking in front of a live audience also apply when speaking in front of a camera; however, there are some important adaptations. Clear audio is more important than HD video quality. Eliminate sources of background noise: refrigerator, washing machine, fan, and air conditioner. Place a light behind the camera to shine onto your face. A desk lamp or lighted cosmetic mirror can work well, but a flashlight on top of a stack of books gets the job done. Raise the camera to the same level as your eyes so the audience sees you at a natural conversation

angle. Stare directly into the camera lens as you speak. If you have trouble remembering where to look or feel strange talking to your camera, place a cute toy or sticker next to the lens so you have something friendly to guide your eyes. Whether you decide to sit or stand, stay close enough to the camera so that your facial expressions are clearly visible. Eye contact with the camera and a clear view of your facial expressions are what make up "good stage presence" in video recordings.

After you become a confident presenter, your presentation may feel repetitive to you, but remember that it is still the first time for your audience. Good luck!



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