Presenting Science for the Anxiety Averse

For a successful scientific career, presenting your work effectively is almost as important as obtaining results in the lab. But climbing onstage to showcase your results can be terrifying, especially for those who lack experience. And while scientists spend many years training to obtain scientific results, they're largely on their own when it comes to delivering an effective presentation -- and dealing with the anxiety it provokes.

So, how do you make your scientific talks less terrifying for yourself and more effective and enjoyable for all? The first step is to change the way you think about them. Here's how Luisa Le Donne, a theoretical physics masters student at Sapienza University of Rome (http://www.uniroma1.it/default_e.php), approaches her scientific presentations: "Talks are opportunities to learn," she says. "I really appreciate sharing knowledge, and I think the best way to handle a talk is to think of it like chatting and not like an exam." That's just one approach, but it's representative of a broader piece of advice: Thinking positive leads to positive results.

Feeling nerves

Most scientists feel nervous about the prospect of having all eyes on them as they present their research. And that's OK.

"When you get to the podium and your heart rate is going and the butterflies are in your stomach, just accept that [as] perfectly natural," says Gareth Mitchell, a science communication lecturer at Imperial College London (http://www3.imperial.ac.uk/) and presenter of Click (http://www.bbc.co.uk/programmes/p002w6r2), a technology-focused radio show on the BBC World Service.

But even if accepting this nervous reaction helps, you still should work to reduce and channel your nerves. It's a challenge scientists share with athletes, actors, and others who perform for a living.

"One way of overcoming performance anxiety is the use of visualization, which is seeing and hearing yourself performing well in the situation you are apprehensive about," says Aidan Moran, a professor of cognitive psychology at University College Dublin (http://www.ucd.ie). Moran, who has worked with many of Ireland's top athletes, says you should not picture yourself winning the race. It's better, he says, to focus not on the end result but on the various actions you need to take to get there. "Focus on preparation and completely ignore things outside of your control, like how people might react to what you have to say, which is the main cause of anxiety."

If you find it hard to think in pictures, "pick a couple of positive statements that are personal and meaningful and repeat them over and over in your mind." -- Richard Keegan

Preparation
The right frame of mind can get you only so far. "There’s no substitute for practice and knowing your stuff," says Keegan, who recommends listing all the things you need to do to prepare for your talk and then checking off each task as you complete it. Preparation has both direct effects -- making you the master of the material you’re presenting -- and indirect effects. "Knowing you’ve met your goals can provide a useful confidence boost," Keegan says.

Preparing means rehearsing. "I reckon you need to rehearse any talk or presentation out loud at least three times, because you need to check your structure, your timing and pace, and your delivery," says Sue Nelson, who, as co-founder of Boffin Media (http://www.boffinmedia.co.uk/), runs communication skills courses for university students in the United Kingdom. "Rehearse any presentation out loud and ask for honest but constructive criticism from a friend or colleague," she says.

Breaking the ice

The first few minutes of a talk can help you win, or make you lose, an audience, so try and find ways to get comfortable quickly. "To perform consistently well, it’s crucial to develop a pre-performance routine. You’ll find experienced people check out the venue, arrive in time, and go through their preparation systematically because they’ve done it every other time they’ve spoken and it has gone well," Moran says.

It can be useful to get a feel for who your audience is before starting. Bosnia-based remote-sensing consultant Aled Rowlands, who does a lot of public speaking, says he learned to combat his nerves by pitching his subject matter appropriately. "Try to speak to people in the audience beforehand to gauge their background and knowledge," he advises. "You can then tweak your talk slightly." Knowing that your talk is pitched right can make you more relaxed and your audience more receptive.

Thinking funny thoughts can have a similar effect. "When I get nervous before a live broadcast, I recall something ludicrous so it makes me smile. If you smile, your facial muscles and vocal chords relax. So think of something funny and you’re not going to sound shaky," says Nelson, who is also a BBC Radio 4 (http://www.bbc.co.uk/radio4/) and World Service (http://www.bbc.co.uk/worldservice/programmes/index.shtml) science presenter.

Staying calm during the presentation

Some people worry about going blank or panicking halfway through their talk. What works for Nick Howlett, a physics Ph.D. student at the University of Surrey (http://www.surrey.ac.uk/) in the United Kingdom, is handwriting a script. "Writing down a sentence is a very effective way of remembering it," he says. But don’t read line for line in your actual presentation, Nelson warns. Instead, she suggests taking a small card into your talk with a handful of prompt words written on it. "A presentation should be exactly that," she says. "It’s about engaging people, which is hard if you are just reading notes or slides."

To avoid getting flustered in the middle of a talk, Kayleigh Dodd, a medical genetics Ph.D. student at Cardiff University (http://www.cardiff.ac.uk/) in the United Kingdom, uses a simple prop. "Audiences can be quite intimidating if they have been working on the same stuff for a lot longer than you have," Dodd says. "On my first talk, I was really nervous and a bit shaky, and I kept forgetting to breathe! So I now like to take a bottle of water with me, and if I find I’m getting a bit flustered, I have a sip and take a deep breath."
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Question time
Better Presentations

In the coming weeks, Science Careers will be publishing a series of articles focused on improving the scientific presentation. This is the second article in that series. The first article profiled Leticia Britos Cavagnaro (http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2011_06_03/caredit.a1100049), a former biologist who co-founded a creative thinking company and isn't afraid to defy convention in scientific presentations.

One aspect of presenting that many scientists feel concerned about is the question-and-answer session at the end; after all, this is the only part of the presentation that you can't script. Bruce Sinclair, director of teaching in the School of Physics and Astronomy at the University of St. Andrews (http://www.st-andrews.ac.uk/) in the United Kingdom, recommends asking a practice-run audience of colleagues -- students, postdocs, and faculty members -- "to suggest a range of questions that might come up. You can then discuss those as necessary with appropriate advisers."

Also try and see questions as an opportunity to improve your research or your skills, not as a grilling. "Before my first presentation, I felt concerned about having critics in the audience who knew more about the topic than me," says Torsten Lüdge, a computational neuroscience Ph.D. student in the Department of Physiology (http://www.physio.unibe.ch/) at the University of Bern. "Now I feel more confident and try to use questions constructively instead of taking them as an attack."

And that may be the most important shift in perspective of all: No matter how exposed you might feel when delivering a scientific talk, you need to understand -- to feel in your bones -- that it's about the science and not about you. "You need to try and separate out your own self-worth from the arguments you are making," says sports psychologist Keegan. "If there is an issue with the theory or the data, it doesn't make you a bad person." As Le Donne suggests, a research talk -- and especially the Q&A portion -- is basically a chat about your research. So stay focused on the science, smile, remember to breathe, and you'll be fine.

More Presenting Tips

Actor and development coach Gary Bates and voice and communication skills trainer Philip Bliss, who sometimes work together, share their tricks for an effective presentation. Bates is an account director at Steps Drama Learning Development (http://www.stepsdrama.com) in London, and Bliss recently created an online resource (http://www.blissvoicetraining.com) for lecturers, academics, and students at Brunel University in London.

Before the presentation:

- Practice your talk’s bullet points in your mind at random times of the day.

- Imagine seeing everything that might go wrong in your right palm. Focus on these disastrous moments for a while. Then close your fingers, scrunch up the negatives, and throw them away.

During your presentation:
Articulate the consonant ends of words with a little more energy than in everyday speech to improve diction, ensure you don't go too quickly, and increase your energy and projection.

-Breathe from the belly and not from the chest. This slows you down, helps you articulate clearly, enriches your voice, and enhances your mental focus.

-Ensure the throat is relaxed and wide by dropping the shoulders and resisting tucking the chin down.

-Speak slower than you think you should.

-Make eye contact with as many people as you can, particularly at the far sides and front and back of the audience. Your voice will naturally travel to these focal points.

-Pause at the end of a major thought to allow the audience time to digest it.

-If someone interrupts, they may feel excluded. So make eye contact and really listen to their point. If the comment is their point of view, throw it back to the group, asking, "What do others think about this?"

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