

about a solid week of work spread out over two months to build his presentation, entitled “But on <insert favourite service> I get <insert favourite feature> for free!” A cinematic work with video footage and background music, it won the conference’s prize for the best lightning talk, which Furter says was his primary goal. “I got my 5 minutes of fame,” he says.

It wasn’t the first time that Furter had stretched convention for a lightning talk. In 2016, he did an entire talk in rhyme, featuring lines such as: “In Open Stack, an account is created, and that’s how the user is authenticated.” It became part of a tradition of untraditional talks at the TNC. In 2018, a speaker asked the crowd to turn on the torch setting on their smartphone and wave it (or “swipe”) to the left or right throughout the talk, a sort of live version of the Tinder dating app but for computer-security concepts, not companionship. “Some people try to be original, and some people just try to get their idea across,” Furter says.

The one thing that’s not negotiable at TNC conferences is time. A large clock starts counting down as soon as a talk begins, and the audience will clap a speaker off as soon as 5 minutes are up.

Charlton has observed that some conferences are a little lax about lightning-talk time limits, especially if the speaker is a prominent scientist. But if one speaker after another goes over the mark, the whole point of the session can be lost. “Lightning talks are supposed to be wonderfully efficient,” he says. “But it becomes a complete nightmare and a traffic jam. People are lucky if they can get to dinner at eight o’clock in the evening.”

Charlton says conference organizers should think about their overall mission before packing a session with lightning talks. In some cases, the motives might be a little less than pure. “I don’t think it’s always driven by scientific excellence,” he says. “They want to make the agenda look busy.”

Torabi says past lightning-talk sessions at the Health Data Research conference have gone well, both for participants and for the audience. The format there has changed over the years. When she gave a lightning talk about stroke risk and atrial fibrillation in 2019, each speaker had only one minute and one slide to deliver their message. “We were running on and off the stage,” she says. The speakers this year will have a relatively generous 4 minutes and no stage to worry about, but the basic approach will remain the same: short talks about big topics. The reward, it’s hoped, will be another successful conference briefly illuminated by lightning.

Chris Woolston is a freelance writer in Billings, Montana.



A good presentation will elicit useful questions and ideas for future research.

POLISHED TALKS BENEFIT CAREERS — AND SCIENCE

Despite the competing demands on their time, researchers have many reasons to hone their presentation skills. **By Dave Rubenson**

In my experience as a presentation coach for biomedical researchers, I have heard many complaints about talks they attend: too much detail, too many opaque visuals, too many slides, too rushed for questions, and so on. Given the time scientists

spend attending presentations, both in the pandemic’s virtual world and in the ‘face-to-face’ one, addressing these complaints would seem to be an important challenge.

I’m dispirited that being trained in presentation skills, or at least taking more time

What do scientists need to learn?

Formal training in scientific-presentation techniques should differ significantly from programmes that stress the nuances of public speaking.

The first priority should be to master basic presentation concepts, including:

- How to build a concise scientific narrative.
- Understanding the limitations of slides and presentations.
- Understanding the audience's time and attention-span limitations.
- Building a complementary, rather than repetitive, relationship between what the speaker says and what their slides show.



The training should then move to proper slide design, including:

- The need for each slide to have an overarching message.

- Using slide titles to help convey that message.
- Labelling graphs legibly.
- Deleting superfluous data and other information.
- Reducing those 100-word text slides to 40 words (or even fewer) without losing content.
- Using colour to highlight categories of information, rather than for decoration.
- Avoiding formats that have no visual message, such as data tables.

A well-crafted presentation with clearly drawn slides can turn even timid public speakers into effective science communicators.

to prepare presentations, is often not a high priority for researchers or academic departments. Many scientists feel that time spent improving presentations detracts from research or clocking up the numbers that directly affect career advancement – such as articles published and the amount of grant funding secured. Add in the pressing, and sometimes overwhelming, bureaucratic burdens associated with working at a major biomedical-research institute, and scientists can simply be too busy to think about changing the status quo.

“An effective presentation can enhance the research and critical-thinking skills of the audience.”

Improving presentations can indeed be time-consuming. But there are compelling reasons for researchers to put this near the top of their to-do list.

You're not as good as you think

Many scientists see problems in colleagues' presentations, but not their own. Having given many lousy presentations, I know that it is all too easy to receive (and accept) plaudits; audiences want to be polite. However, this makes it difficult to get an accurate assessment of how well you have communicated your message.

With few exceptions, biomedical-research presentations are less effective than the speaker would believe. And with few

exceptions, researchers have little appreciation of what makes for a good presentation. Formal training in presentation techniques would help to alleviate these problems (see 'What do scientists need to learn?').

It can help with your own research

A well-designed presentation is not a 'data dump' or an exercise in advanced PowerPoint techniques. It is a coherent argument that can be understood by scientists in related fields. Designing a good presentation forces a researcher to step back from laboratory procedures and organize data into themes; it's an effective way to consider your research in its entirety.

The audience could have insights

Overly detailed presentations typically fill a speaker's time slot, leaving little opportunity for the audience to ask questions. A comprehensible and focused presentation should elicit probing questions and allow audience members to suggest how their tools and methods might apply to the speaker's research question.

Many have suggested that multidisciplinary collaborations, such as with engineers and physical scientists, are essential for solving complex problems in biomedicine. Such innovative partnerships will emerge only if research is communicated clearly to a broad range of potential collaborators.

It might improve your grant writing

Many grant applications suffer from the same problem as scientific presentations – too much detail and a lack of clearly articulated

themes. A well-designed presentation can be a great way to structure a compelling grant application: by working on one, you're often able to improve the other.

You must reach a different crowd

As their career advances, it is not uncommon for scientists to increasingly have to address audiences outside their speciality. These might include department heads, deans, philanthropic foundations, individual donors, patient groups and the media. Communicating effectively with scientific colleagues is a prerequisite for reaching these audiences.

Better talks mean better science

An individual might not want to spend 5 hours improving their hour-long presentation, but 50 audience members might collectively waste 50 hours listening to that individual's mediocre effort.

This disparity shows that individual incentives aren't always aligned with society's scientific goals. An effective presentation can enhance the research and critical-thinking skills of the audience, in addition to what it does for the speaker.

Scientific leaders have a responsibility to provide formal training and to change incentives so that researchers spend more time improving presentations.

A dynamic presentation culture, in which every presentation is understood, fairly critiqued and useful for its audience, can only be good for science.

Dave Rubenson is director of the scientific-communication firm nobadslides.com