



The Alan Alda Center in New York uses improvisation exercises to boost science communication.

audiences. In this game, the instructor assigns the audience an identity, such as a high-school class or an academic tenure committee, without telling the speaker. The audience members behave in keeping with their identity, and the speaker has to interpret their cues to tailor his presentation to them — until the instructor assigns the audience a new identity and the speaker has to adjust seamlessly.

These improvisation exercises helped Philip Fernandes, a graduate student in astrophysics at Dartmouth who recently took the Alda Center course. “I realized that when I give a talk, I memorize it completely because I’m terrified I’m going to go blank, so it turns into this robotic reciting,” he says. Fernandes began watching audiences and reading body language. “If I see that I’m losing them, it’s my job to regain their interest.”

But it is not enough to simply be responsive to the audience. Presenters also need to give the audience something that will help them to forge a connection with the speaker and stay engaged. Alda teaches that the best hook is to include one’s personal perspective, regardless of the audience or venue, so that listeners can relate — although some researchers may not be comfortable with this approach at first because “there’s this idea that emotion doesn’t belong in science”, Fernandes notes. After taking the course and seeing how it improved her communication skills, Dartmouth ecology graduate student Jessica Trout-Haney was convinced that Alda’s approach had merit. “Telling a personal story has made giving talks much more authentic, and fun,” she says. Initially, she had concerns that inserting subjective personal details would signify her science was not objective. “But if we don’t connect with the audience, we’re doing a disservice to the science.” Improvisation helps participants to become more comfortable sharing a side of themselves that they may otherwise hide.

In some exercises, participants must trust the first idea that comes to them — and that thought is instinctive and personal.

Students are videoed giving a short research presentation before and after the course to show them their progress. Krithika Venkataraman, a graduate student in molecular and cellular biology at Stony Brook, says that she saw dramatic results. “I was more enthusiastic, more relaxed when I was up on the stage, and I had a smile on my face, which I didn’t have before,” she says. “I was able to face the audience and be energetic and enthusiastic about my science.”

DIVE IN

Trying improvisation for the first time can be nerve-racking, says Christine Urbanowicz, a graduate student in ecology at Dartmouth who took the Alda course. Despite her initial misgivings, she found it rewarding. When the group played imaginary catch during the first meeting, “I kept telling people, ‘don’t pass me the ball, don’t pass me the ball’, even though there wasn’t a ball”, she recalls. But now that she has completed the course, her confidence as a speaker has increased because she knows that she can handle unexpected situations. “Improv allows you to trust yourself enough to know that you’ll be able to figure out where you’re going with your presentation without having it memorized,” she says.

In fact, Urbanowicz has found the experience so helpful that she is spearheading an improvisation group for graduate students at Dartmouth so that she and her classmates can continue to practise and share their skills.

Trout-Haney, for her part, suggests that anyone who is unsure about whether improvisation is useful or right for them should “just take a deep breath and say, ‘yes, and’”. ■

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PATENTS

Leaving academia

Scientists who patent their discoveries seem more likely to leave academia than those who do not, says a study published on 5 December (B. Balsmeier and M. Pellens *Econ. Lett.* <http://doi.org/qhv>; 2013). The authors examined data for 1996–2005 from a survey of 263 academic researchers in Belgium created by the Organisation for Economic Co-operation and Development, and compared responses about career paths with publication and patent records. They found that for each additional patent, up to a total of two, the scientist was approximately a third more likely to leave academia. The authors speculate that patenting reflects an interest in commercializing results, which is better rewarded outside academia.

BIOMEDICAL RESEARCH

Physician–scientists

The number of US physician–scientists who conduct biomedical research as their primary profession has declined in the past 30 years, according to a report by the Federation of American Societies for Experimental Biology (FASEB) in Bethesda, Maryland. *Physician Scientists: Assessing the Workforce* finds that from 1982 to 2011, the proportion with medical degrees or MD–PhDs doing research fell from 3.6% to 1.6%. It attributes the decline to factors such as longer training periods and rising debt. But MD–PhD holders have an edge in a tight funding environment because of their skill set, says report co-author Howard Garrison, FASEB’s deputy executive director for policy.

WORKFORCE

NIH seeks models

In the wake of its 2012 report on the biomedical workforce (see *Nature* **492**, 167; 2012), the US National Institutes of Health (NIH) is again seeking proposals for computational models of that workforce, with the aim of tracking and mitigating long-term trends that threaten its size and diversity. Such trends include the rising number of biomedical-PhD holders who seek jobs outside academia and the lower numbers of female scientists who stay in academia after PhDs. Michael Sesma, a programme director for the NIH’s National Institute of General Medical Sciences, says that the agency needs models of dynamics, such as how people make career decisions. It will use them to develop grant and other programmes to address problem areas.