

Communicating with Others about Your Research

Why It's Essential to Distill Your Message and Speak Simply

BY DOUG DOLLEMORE

We live in a world filled with lingo, jargon, and gobbledegook. Every occupation — from actors to Zamboni drivers — seems to have a specialized language that is understandable to only those “in the know.”

Alas, chemistry students, professionals, and other scientists aren't immune to this phenomenon. Just browse through a few issues of any ACS journal or an ACS national meeting technical program and you'll encounter many concepts like “Hopf map of quaternions” or “atom transfer radical addition.” Such words and phrases may be readily comprehensible to you and other chemists, but if you use them among your non-scientist friends and neighbors, you might as well be speaking Návi, Sindarin, or some other fantasy language.

Just imagine asking for a glass of fruit juice in a restaurant this way: “In a vesicle made from silicates, add the acidified liquid containing 2-hydroxypropane-1,2,3-tricarboxylic acid from *Citrus reticulata* to solidified particles of dihydrogen monoxide...” If the server gets that order right, you'd better leave a big tip!

Of course, that is an absurd example, but it does illustrate the challenge you face when trying to explain your research to the “real world” in a way that non-scientists can understand — and as a result, appreciate the work you do. And in that real world, you're going to need a sharp, clear,

and concise message to make your case during job interviews or when you're seeking funding from potential investors or government officials. And, yes, you might even have to take your description down a few notches when you talk to other scientists who aren't familiar with the terminology in your specific field.

The art of distillation

So how can you bridge this gap? How can you describe what you do and why it is important in a way that non-scientists can appreciate and embrace as passionately as you do? Surprisingly, the answer comes right out of the lab. Speaking simply boils down to distillation, one of the oldest and most commonly used purification methods in chemistry. But instead of liquids, we want you to distill your words and extract the essence of your *research* in a way that virtually anyone can grasp.

For starters, imagine that every word you say creates a jigsaw puzzle in a listener's mind. If they understand what you're saying, all of the pieces in their head will be face-up and they can easily put the puzzle together and comprehend what you're talking about.

But if you use words and phrases they don't understand, most — if not all — of the pieces will appear blank. And while they might try to piece together what you're describing, ultimately they'll likely give up and you'll see that ever-so-fun blank look sprout on their faces. So your first task is to find a common language so that you can share the common good that chemists do every day.

Your overall goal when communicating with others about your research is to put a human face on chemistry. And one of the best ways to do that is to tell a story. Stories, parables, and

folktales are a universal way to share information and ideas. Better yet, stories stick in listeners' heads like cotton candy to a child's fingers. Your story doesn't have to be elaborate, but it should convey a sense of what is new, surprising, exciting, or mysterious about your research.

I once interviewed a chemist who told me

12

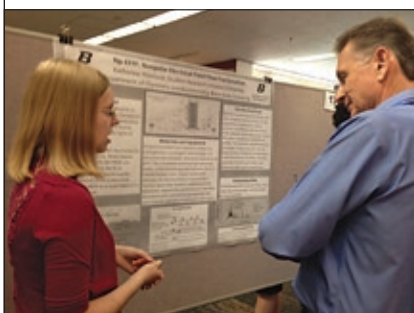


PHOTO: ACS/STAFF



PHOTO COURTESY OF OUACHITA BAPTIST UNIVERSITY



TOP: Strive to explain your research in a way that your audience can understand and appreciate.

BOTTOM: Students from the Ouachita Baptist University (Arkadelphia, AR) chapter participated in the Speak Simply poster contest at the 245th ACS National Meeting in New Orleans, and four received awards for their presentations.

Become an ACS Chemistry Ambassador Share the Chemistry... Imagine the Reaction!

Chemists help solve some of the world's biggest challenges and improve people's lives through the transforming power of chemistry. But not everyone knows that. By becoming a Chemistry Ambassador, you can help educate people about the importance of chemists and chemistry, while taking part in community activities that you find engaging and fulfilling.

Go to www.acs.org/chemistryambassadors. **IC**

a great story about how he got started on a particular project. He was intrigued by how mussels tenaciously cling to piers and sea rocks. So he wondered if he could make a glue that was just as strong. Well, like many scientific efforts, it took a bit more time and effort than he thought. But one day he realized the tofu he was eating for lunch had many of the same proteins that the mussels have in the secretions they use to cling to the rocks. Ultimately, based on this eureka moment, he developed an environmentally friendly, soy-based glue that is now being used in the plywood industry.

Who would listen?

Now, you might say that stories like the one above are few and far between. I don't think so. I suspect you, too, can tell a story about your research that resonates and is memorable.

When you tell your story, be conversational and use examples, metaphors, or analogies that are familiar to your listeners. Keep the idea of the jigsaw puzzle in mind as you speak.

Still don't think it can be done? Well, at the 245th ACS National Meeting in New Orleans, we challenged students who presented at an undergraduate research poster session to describe their work in a simple way that someone who isn't a scientist would understand and appreciate. In essence, we were asking them to become Chemistry Ambassadors (see box) and join nearly 9,000 of their fellow ACS members in helping to educate people about the importance of chemists and chemistry.

Tips from the winners

More than 50 students participated in the "Speak Simply" poster contest, and 16 of them won. The winners communicated simply, distilling their stories down to their very core. And their advice on how to do it yourself is well worth heeding.

Take Ryan James, a 2013 graduate of Ouachita Baptist University (OBU) in Arkadelphia, AR, for instance. "My research dealt with Ewing's sarcoma, a very aggressive pediatric bone cancer," he says. "No parent wants to see their child go through something like this. Sometimes we can forget about the human element when we're doing this type of research. But to the public, the human element is generally all they care about: how this research will benefit *them*. Basically, I wanted these judges to walk away knowing that we have a viable option to help cure these individuals of this very aggressive cancer without the dangerous treatment options available now such as chemo, radiation, or surgery."

"Always think about the consumer," James suggests. "Just like on a TV commercial, which tells you a bit about the product but then spends the majority of its time explaining how it is going to benefit

ACS Undergrad Speak Simply Poster Contest Debuts in New Orleans

Fifty-five students participated in a Speak Simply contest during the Undergraduate Poster Session at the 245th ACS National Meeting & Exposition in New Orleans earlier this year. The judges, who were distinguished chemists and ACS staff members, chose 16 winners, who each received a \$25 gift card.

Shapnil Bhuiyan, Wayne State University, Detroit, MI

Carly Engel, College of the Ozarks, Lookout, MO

Samantha Hughes, Central Connecticut State University, New Britain

Ryan James, Ouachita Baptist University, Arkadelphia, AR

Hollyn McCarty, Ouachita Baptist University, Arkadelphia, AR

Samantha Monk, Austin Peay State University, Clarksville, TN

Kiley Morgan, University of North Georgia, Dahlonega

Joshua Olexa, St. Mary's College of Maryland, St. Mary's City

Christa Riggs, Ouachita Baptist University, Arkadelphia, AR

Shantell Rolle, Florida International University, Miami

Kevin Romero, Linfield College, McMinnville, OR

Stephanie Steiner, Whitman College, Walla Walla, WA

Fred Tomlin, Whitman College, Walla Walla, WA

Greg Trieger, St. Mary's College of Maryland, St. Mary's City

Kelsey Willis, Ouachita Baptist University, Arkadelphia, AR

Nicole Yorden-Lopez, Pontifical Catholic University of Puerto Rico, Ponce

you... That's what I like to think of when people walk up to me."

Kelsey Willis, an OBU senior, suggests reviewing your presentation with a non-scientist. "It's the best way to determine the parts of your talk that contain too much scientific jargon," she says.

Shantell Rolle is a junior at Florida International University in Miami whose winning explanation described a way to use essential oils from the Brazilian pepper tree to kill mosquitoes responsible for spreading dengue fever. Rolle urges her fellow undergraduates to avoid focusing on the nitty-gritty details of their research. Instead, she advises, answer the following questions: Why is your work important? What is your ultimate goal? How will this make a difference in the world?

And if all else fails, you can always try following Kevin Romero's approach. The junior at Linfield College in McMinnville, OR, suggests eliminating science terminology from your explanation entirely.

"Every time you reference science words and phrases, you're going to lose a little bit of their interest," he says. "You're getting into a realm that they're unfamiliar with. So you have to find a way to convey your passion for the science without actually mentioning it. You have to find a middle ground. It may take you out of your comfort zone, but it closes the gap that your listeners have to bridge."

The bottom line is: no matter how you do it, try. Speaking simply and distilling your message down to its essential core will make a difference in your career and, ultimately, in the lives of others. **IC**



Doug Dollemore is a senior science writer in the ACS Office of Public Affairs.