QnAs with Davis Masten and Peter Zandan

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The scientific community is often overshadowed by competing interests when it comes to gaining public attention. As a result, scientific findings are sometimes not given due prominence, hindering their ability to inform and shape public opinion and public policy, say Davis Masten and Peter Zandan, members of the Presidents' Circle of the National Academies. Masten is a marketing research and branding expert and former chairman of Cheskin, a design consulting firm. Zandan is global vice chairman of Hill+Knowlton Strategies, a global communications and marketing firm. At the Arthur M. Sackler colloquium, "Science of Science Communication II" held in Washington, DC, September 23–25, 2013, the pair urged the scientific community to learn from how businesses communicate. Masten and Zandan share their views with PNAS.

PNAS: In your talk you emphasized your concern that the scientific community is less effective than businesses at communicating with the public. Explain your concern.

Masten: Companies spend roughly a trillion dollars per year on communications worldwide, and marketers spent \$9.5 billion

last year just on market research; that is, on research whose primary purpose is to understand how to connect with targeted audiences. That last number is probably many times more than what the scientific community spends on all communications put together, excluding education. In short, businesses are spending billions of dollars just to understand how to get better and better at communicating, whereas for the scientific community, communications are pretty much an afterthought.

Zandan: Our concern is that awareness and appreciation of science's value to society is being compromised by competing agendas. And it's not just business. Political groups, nonprofits, and others are more aggressive, organized, focused and, actually, more scientific about getting their message across than the scientific community. If scientists want to have their voices heard in the public debate, then they are going to have to do a better job of communicating.

PNAS: What are the scientific issues that you think could most benefit from a communications boost?

Zandan: Here's one example. Whether they know it or not, every day just about everyone endorses, employs, and relies on two of the bedrocks of science: (i) the scientific method and (ii) evidence-based knowledge. Why not start with reminding people that science is incredibly good at figuring out the world?

PNAS: Compared with current efforts, how can scientists engage public audiences differently?

Zandan: What I'm picturing would be much more interactive and engaging; for instance, maintaining a long-term relationship with students and using the Web as a vehicle for communicating. For most teachers, the educational relationship is over when students leave the classroom. However, the new social media platforms and mobile and video technology allow professors and universities to connect with audiences both over long distances and over the longer-term. I see a big opening for the scientific community to be more connected with the public going forward, and especially with millennials, who are savvy with technology.

PNAS: What proportion of research dollars do you think should go toward

Peter Zandan. Photo courtesy of Kady Dunlap.

communication? Should each grant come with a piece for communication?

Masten: It's hard and probably counterproductive to set an exact benchmark, but let's put the numbers in context. In some industries, spending 10% of a company's total budget on communications is normal. Beyond the numbers, though, the larger point is changing the culture of science. Communications is seen as part of the price of entry for an effective business, and it needs to be a bigger part of the thought process in science. The first step is for senior people within the science establishment to both say and believe that communications is important, and make it a strategic priority. Then you come up with a set of metrics, which everyone across science can look at, and begin to understand not only what the public thinks about science and what they want from it, but also what kind of return the scientific community is getting from their communications dollar.

PNAS: How can scientific findings, which tend to be difficult to explain in catch

Davis Masten. Photo courtesy of Christopher Ireland.

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phrases, compete with the catchy messages so often seen in the worlds of business and politics?

Zandan: There's a lot of science behind how businesses and politicians connect with people. They conduct research. It all starts with understanding who your audience is and what they want from you. That knowledge is the building-block of a real connection, and it's no accident that businesses start with their audience and work back to their message. Science communicators have to find out exactly what their audience is capable of hearing and then shape a story for that level of understanding.

PNAS: That raises the issue of how the scientific community can maintain the public's trust while increasing its media presence.

Zandan: It's not an either/or. We're not suggesting any compromise in integrity; we're suggesting an effective strategy for communicating. Contrary to what some people think, good communications is always about accuracy.

PNAS: At the talk, you discussed public/private partnerships to enhance science com-

munication. What would be an example of something you could see as working well?

Masten: A good example is the Science and Entertainment Exchange, a program championed by Ralph Cicerone, president of the National Academy of Sciences. Dr. Cicerone worked with Hollywood producers and directors Jerry and Janet Zucker. The Exchange provides scientific expertise to the entertainment community. Since starting, NAS has provided more than 700 consultations between the scientific community and the story drivers for many of the biggest TV shows and movies. It's been very popular in Hollywood, and it helps scientific ideas get out there in many different ways.

PNAS: You also talked about using a "bottom-up" approach for science communication. Explain what you mean by that.

Masten: Bottom-up science can mean citizen science. People learn about the science of their lives—and their world—through participation. Some people don't know that citizen science gave the scientific community some of its earliest indications of climate change through bird counts. An even

larger opportunity is the billions of smart-phone users expected in the coming years. These phones connect to other people but also to the hundreds of billions of sensors that will soon be embedded in nearly everything. Think of the big data possibilities of that.

Zandan: The Quantified Self movement is another good example of how people's appreciation of data can lead to a greater appreciation of science. The Quantified Self looks at heart-rate variability, blood oxygen, personal genome, air, soil, and water quality, and energy use, among thousands of measures. So much technology is available that allows individuals to approach their lives in a more scientific fashion. It's a good way to get people comfortable with the scientific method and the use of data.

Masten: Of course, not everything to do with citizen science is good science. Some things are appropriate for citizen science and some are not. We have to be careful, but when it comes to communications, the more we can understand who people are, the more we have an opportunity to make science relevant to them.