Assessment of Communicating Science 2013: A Workshop for Graduate Students

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Abstract. Effective science communication is imperative for the sharing of scientific ideas, continued funding and support from policy makers, and education of the public. Science graduate students are a prime group to target for communication training, as they will be our future scientists, educators, and EPO professionals. To provide such training, we created Communicating Science 2013, a professional development workshop for STEM graduate students. This workshop taught graduate students from around the nation to effectively communicate science to both their peers and to the public. To learn about graduate students’ attitudes toward science communication and establish the workshop’s efficacy, we surveyed the participants both before and after the workshop. This assessment probed topics such as communication preparation the participants have already received, how science communication is perceived in their home department, and what participants hoped to gain from the workshop. We describe the workshop and report a few of the assessment results here.

1. About ComSciCon 2013

The Communicating Science 2013 Conference, or ComSciCon 2013, is a multi-day science communication workshop for graduate students in science, technology, engineering, and math (STEM) fields. It was held for the first time in June 2013 in Cambridge, Massachusetts for a group of 50 graduate students who were selected from a pool of over 700 applicants. ComSciCon was fully organized by a team of nine graduate students (the organizing committee is listed in the acknowledgements) to address the lack of training and professional development opportunities for young scientists who wish to learn to communicate with their peers and with the public more effectively.

1.1. Panel Sessions

ComSciCon participants attended seven panel sessions featuring 21 professional science communicators. Panel sessions included topics such as engaging non-scientific audiences, interacting with the media, sharing science with scientists, non-academic publishing, and communicating using multimedia. The list of panelists spanned a broad range of science communication professions and included journalists, editors, press of-
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ficers, educators, and fiction authors. During panel sessions, the experts spoke about their work and backgrounds and answered questions from workshop participants.

1.2. Pop Talks

Workshop participants each gave a one-minute talk about their research at a level appropriate for the general public to the rest of the group. Each member of the audience was armed with two signs that they could hold up during the talk: one that read “JARGON” to flag language that was too specialized for a general audience, and one that read “AWESOME” to identify when the presenter explained something particularly well.

1.3. Write-a-Thon

At the end of the first day of the workshop, students participated in a “write-a-thon,” a several-hour session during which they each created an original piece of science writing using the lessons they had learned that day. The following day, they met in small groups to peer-edit each other’s work. After participants updated their drafts, they met with the experts from the panel sessions to receive professional feedback on their writing. Many of these articles have since been published in outlets partnering with ComSciCon, such as Scientific American, Natural History Magazine, and Astronomy Magazine.

1.4. Poster Session

ComSciCon participants were invited to take part in an e-poster session on the final day of the workshop. Roughly 20 attendees submitted posters on the communication and outreach initiatives that they were leading, and the posters were displayed on digital poster boards during the workshop.

2. Survey Results and Discussion

As a component of ComSciCon 2013, participants were asked to fill out a survey both before and after the workshop. The survey probed topics that include previous training the attendees had received in science communication, the state of the field for students interested in science communication today, and how the participants felt the workshop had affected their abilities to communicate science.

2.1. Previous Training

Participants were asked what training they had previously received in science communication; Figure 1 summarizes their responses. Of the participants, 27% reported that they had never before received any formal communication training and 44% had received formal training only in communicating with other scientists, but not with groups such as the public, school children, or the media. These responses illustrate the need for programs such as ComSciCon to provide communication training to young scientists as a part of their professional development.

2.2. Support for Communicators

ComSciCon attendees were also asked to report how supportive they considered others to be of those who take part in activities that engage the general public. This question was intended to gauge the state of the field for young scientists today who attempt to
pursue science communication and outreach activities during the course of their academic careers. Figure 2 summarizes the responses from participants. Responses tended to indicate a reasonably supportive environment. Some 70% to 75% of participants reported their scientific fields, faculty in their department, and advisors to be either “fairly supportive” or “very supportive.” That percentage is even higher—nearly 90%—when describing their peers.

2.3. Some Workshop Outcomes

ComSciCon participants were asked to report their level of confidence in their science communication skills in several categories, including their confidence submitting an article to a popular science publication and their confidence in their ability to communicate with other scientists. Figure 3 demonstrates their responses both before and after the workshop. While an increase in participants’ confidence is not statistically significant in any category due to the small numbers involved ($N = 50$), the general trend toward higher confidence levels after the workshop is clear.

3. Conclusion and Further Work

Feedback from ComSciCon 2013 participants and the invited panelists indicates that the workshop was successful in providing useful information to participants, improving their abilities and their confidence in science communication, and providing the opportunity for networking with professionals and peers who share their interests. ComSciCon 2013 is continuing to be assessed in order to improve the workshop for future iterations, to further establish what environment currently exists for young scientists who seek to interact more with the general public, and to learn what professional development opportunities they are looking for.
Figure 2. Perceived level of support for scientists who engage the public, from a) participants’ scientific fields, b) faculty in participants’ departments, c) peers in participants’ department, and d) participants’ advisors.

Further evaluation and a six-month follow-up survey will help to establish which lessons from ComSciCon were best retained, whether the connections that participants made during ComSciCon evolve into continued relationships, and whether participants’ science communication habits and abilities have quantitatively improved as a result of what they learned at the workshop.

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Figure 3. Participants’ reported confidence in a) submitting an article to a popular science publication, and b) ability to communicate with scientists. Confidence before the workshop is shown by the lighter bars (left); confidence after the workshop is shown by the darker bars (right).
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