

## **iConference 2019 SIE Proposal [1000 words]**

**Title:** How do we promote public engagement with science?

**Organizer(s):** Noriko Hara, Indiana University Bloomington

### **Key Participants:**

Noriko Hara [panel chair], Indiana University Bloomington

Clinton McKay [panel member], Indiana University Bloomington

Bei Yu [panel member], Syracuse University

Peter Darch [panel member], University of Illinois Urbana-Champaign

Lo Lee [panel member], University of Illinois Urbana-Champaign

Yan Zhang [panel member], The University of Texas at Austin

Tao Chen [panel member], Google, Artificial Intelligence

### **Abstract:**

In recent years, information about science is becoming more easily obtained, circulated, and co-produced by the general public. The prevalence of online communication, including social media, offers resources for citizens seeking concise explanations of complex scientific issues. Similarly, the emergence of online citizen science projects provides ordinary citizens the opportunity to assist scientists in co-producing new scientific knowledge. These online platforms have created both opportunities and challenges for scientists and the general public when interacting with each other. This Session for Interaction and Engagement includes lightning talks by panelists and invites participants to discuss questions regarding public engagement with science as members of the iSchool community.

### **Description:**

#### ***Purpose and Intended Audience:***

The purpose of this SIE session is to discuss how to engage the public with science and come up with individual plans as iSchool scholars. Traditionally, scientific knowledge has been disseminated in a linear fashion—from the scientist to the general public via intermediaries like journalists. Yet today the process of knowledge dissemination is no longer linear. The general public—regardless of scientific background—can now take on the role of intermediary by writing and/or editing articles about scientific topics found on social media platforms like Facebook or Twitter. Furthermore, the accessibility to various platforms, such as wikis, have made it easier for laypeople to participate in the co-production of knowledge—whether it be analyzing pictures of the universe in GalaxyZoo (e.g., Wiggins & Crowston, 2015) or discussing autism on Wikipedia (e.g., Kane, Johnson, & Majchrzak, 2014). Simply put, the practice of producing scientific knowledge is no longer the sole province of experts; the boundary work (Gieryn, 1983) between experts and non-experts is being challenged (e.g., Einsiedel, 2014; Hara & Sanfilippo, 2017). This trend is most evident when considering scientific knowledge that is ostensibly controversial—for example, the human role in climate change, the effectiveness of

alternative medicine, the fuel efficiency of hybrid cars, or the alleged correlation between the Measles, Mumps, and Rubella (MMR) vaccine and autism. Contentious topics like these are increasingly being debated and negotiated on social media platforms to which experts and laypeople are both contributing (Liang et al., 2014; Setälä & Valiveronen, 2014). This further creates confusion among people who are looking for information online. Misinformation on the Internet is not a novel problem, but the proliferation of scientific misinformation on the Internet has become a major issue (Del Vicario, Bessi, Zollo, Petroni, Scala, Caldarelli, et al., 2016). The misinformation of health information in particular creates a problematic situation when new studies coming out contradict previous studies. Because health information has an immediate impact on people's lives, any kind of misinformation can have deadly consequences.

The intended audience for this discussion is scholars in the iSchool community, including doctoral students who are interested in interacting with the general public.

***Proposed activities:***

The proposed session will be divided into three sections. First, the panelists will discuss individual projects related to public engagement with science in the form of a lightning talk (5-7 minutes). Noriko Hara and Clinton McKay will share their study of user engagement among participants in the "Science" subreddit, which identifies motivations and factors that encourage participation. Peter Darch and Lo Lee will discuss how projects manage volunteer behavior to optimize their pursuit of the following two primary, and sometimes contradictory, goals of online citizen science projects: engaging and educating as many members of the public as possible, and generating knowledge products regarded as credible by other researchers. Bei Yu will talk about her science misinformation research in which she used big data and natural language processing techniques to assess health news quality and to design intelligent tools for assisting users in identifying potentially distorted/exaggerated health claims in online resources. Yan Zhang will present her research on how health consumers evaluate the quality of online health information and discuss differences between consumers and healthcare professionals in the use of criteria and objective properties of information in appraisal. Lastly, Tao Chen will share her research on how images are used to promote vaccine messages in Twitter, and how Twitter bots and trolls amplify the vaccine debates.

Next, the audience will be divided into small groups (4-5 people each) and discuss the following questions:

- What are some major differences between laypeople and experts concerning their understanding of scientific information?
- Is consensus a reliable predictor of information quality, and can it effectively reduce the spread of misinformation?
- What is the best strategy for promoting public engagement with science?
- What should the iSchool community do?
- What are you going to do?

Finally, we will facilitate a whole group discussion regarding the above five questions and allow the audience to ask their own questions to the panelists.

***Relevance to the Conference/Significance to the Field:***

The topic of this SIE session is relevant to anyone who engages in knowledge production. As iSchool scholars, it is our responsibility to reach out and inform the general public on the topic of science. In particular, this topic is relevant and timely to the iSchool community because we study information dissemination, information seeking, and knowledge sharing. We are experts in this topic, yet we have not identified winning models for how to engage with the public in scientific topics. With the participation of this SIE, we hope that our audience will not only learn the current research on this topic, but will also have a chance to apply these research findings to their own practices of engaging with the public.

**Duration:** 90 minutes

**Special Requirements:** LCD projector

**References:**

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