

Charles Phelps Taft Research Center at the University of Cincinnati

Conference Proposal Application

Each section (I-IV) should be placed at the start of a new page. All required materials must be included in a single document, uploaded to the electronic submissions system, no later than 5PM on the published day of the deadline.

I. General Information

- a. Name: **XX**
- b. Department: **XXX**
- c. Position: **XXXX**
- d. Conference Title: **Public Engagement with Science**
We seek to organize a three-day workshop to bring together academics and practitioners across disciplines who conduct and research public outreach and engagement with science.
- e. Beginning and Ending Dates: **May 13-15, 2020**
- f. Conference Co-Chairs:
- g. Location of Events (dates and times): **Taft Center, 9:30am-5pm, May 13-15, 2020**
- h. Taft Disciplines Impacted: **Primarily Philosophy, but presenters will include faculty in Sociology and Communication, and workshop will be advertised to and open to the participation of faculty and graduate students in all UC programs with thematic connections, including the Taft departments of Anthropology, English and Comparative Literature, History, Journalism, Political Science, and Sociology.**

II. Budget

a. Budget Summary: Total estimated budget \$17,880

b. Subtotals

1. Invited Speaker & Participants: Travel & Accommodation Subtotal \$13,980

Cost estimates are based on previous rates and average costs from the Cincinnati area airport.

- A. Four (4) non-Cincinnati speakers. Calculations are based upon: Lodging (\$150/night x 4 nights) x4=\$2400. Additionally, airfare (\$565/flight) x 2= \$2,260. \$4,660
- B. Four (4) Early-career Philosophy Participants \$150/night x 4 nights = \$2,400. Airfare for 4 Early-career Philosophy Participants \$565/flight= \$2,260. \$4,660
- C. Four (4) Senior Participants \$150/night x 4 nights = \$2,400. Additionally, airfare for 4 Senior Participants \$565/flight= \$2,260. \$4,660

NB: No honoraria will be provided.

2. Sustenance Subtotal \$3,410

Lunch and snack breaks for an estimated 35 participants at each, with vegetarian, vegan, and gluten free dietary options. One conference reception for 75 participants. We anticipate local workshop participants will come for only part of the workshop, but we will encourage everyone to attend the reception and will also invite local community partners.

- A. Coffee and snack break twice per day: 3 days, \$5/person \$1,050
- B. Lunch for Attendees: 3 days, \$12/person \$1,260
- C. Reception: \$15/person \$1,125

3. Advertising Costs and Supplies Subtotal \$500

- A. Conference Promotion (online, list-servs, etc) \$0
- B. Flyer Printing Costs \$200
- C. Name Badges, Pronoun Stickers, Sharpies, etc. \$100
- D. Breakout activity supplies (science "kits," giant post-it notes, etc.) \$200

c. Cosponsors & Other Funding Sources: \$12,500

- o NSF conference funding pending (Science, Technology, and Society program): \$11,500 (portion of the total request that would go toward workshop expenses)
- o Center Budget \$1,000 (estimate of full uncommitted amount of budget)
- o Philosophy Department: Staff support and advertising services

d. Requested Taft Support: \$5,380

NB: If our NSF proposal is successful, this requested support will cover the remaining expenses so the conference is fully funded. If our NSF proposal is unsuccessful, we would use the \$5,380 from Taft to fund a scaled-down version of this workshop, using the funds to cover only travel costs of the invited speakers (1A above) and necessary workshop supplies (3B and D above).

III. Narrative Description of Conference

Conference Topic

The philosophy of science community has experienced a significant increase in "Socially Engaged Philosophy of Science" (SEPOS) in the early 21st century. SEPOS, broadly conceived, includes (1) conducting philosophical research with social relevance, (2) developing the practical implications of philosophical research (such as developing public policy), and (3) involving philosophy of science in public engagement with science endeavors, including science education, science communication, and citizen science. There are a number of philosophers of science working on SEPOS initiatives (1) and (2). In contrast, (3) has, to date, received less attention and is much less developed. This may in part be due to a lack of well-established bridges with other disciplines relevant to public engagement with science, including communication, education, and science and technology studies, among others. Thus, in our view, the discipline would benefit significantly from an organized effort to learn from those in other disciplines with expertise on public engagement with science and establish initial pathways toward philosophy of science's more active participation in public engagement with science efforts.

We seek to organize a three-day workshop in May 2020 to bring together philosophers of science and other academics and practitioners who focus on and research public outreach and engagement as it relates to science to discuss four key areas to public engagement:

- (1) Science communication, including public-facing events, writing, and social media,
- (2) Science education, including engaging with students and with educators about science,
- (3) Informal science education and outreach, such as through museums and libraries,
- (4) Scientific work with communities, such as citizen science and community-based research.

The first two days of the workshop will consist in morning and early-afternoon lectures from experts on each of these topics, followed by interactive breakout sessions in the late afternoon on each topic. The third day will focus on developing philosophy of science's potential to contribute to these areas of public engagement with science, focused with the questions: What do philosophers of science have to contribute to this area of public engagement? What are some ways in which that contribution be realized? What resources or discussions in other disciplines already exist? What research do philosophers need to do public engagement? What are potential challenges? Each breakout session will result in a white paper summarizing outcomes and next steps.

Significance

This workshop will provide knowledge development in the following four areas: (1) Providing information and training on public engagement with science from experts outside philosophy of science to visiting philosophers of science from across the nation, and academics in a variety of disciplines at the University of Cincinnati. (2) Providing space for philosophers of science to discuss both with each other and with members of other disciplines what philosophy of science might be able to add to public engagement. (3) Develop a better shared understanding of what resources exist within philosophy of science, within University of Cincinnati, and across other disciplines, organizations, and institutions. (4) Develop a series of resource white papers: documents that synthesize existing information on public engagement with science that can be used to conduct better and more informed public engagement and outreach. These white papers will be submitted for presentation at conferences in summer and fall 2020.

The end goal of this workshop is the development of new research networks between philosophers of science and other communities that focus on public engagement with science. Locally, the workshop also serves institutional goals for the University of Cincinnati's recently founded Center for Public Engagement with Science in strengthening connections with our community partners.

Advertising

The workshop will be advertised and promoted via list-servs (PSA, SPSP, HOPOS, PhilEvents, and others) and social media (Facebook, Twitter), encouraging 'sharing' of posts to academics in other relevant disciplines. We will make a special effort to advertise the workshop to those involved in centers and interdisciplinary departments with cognate missions. Additionally, we will encourage non-philosopher participation locally through the local participating organizations (Cincinnati Museum Center, Greater Cincinnati STEM Collaborative, the Cincinnati Project, etc.). The workshop will have free and open registration.

IV. Conference Details

a. Location of Events (dates and times):

All events will take place at the Taft Center (reservations have been made)

V.	Day 1	Day 2	Day 3
9:30am-12:00pm	Science Communication Session	Informal Science Education Session	White Papers Breakout Session
Lunch Break			
1:15-3:30	K-12 Education Session	Scientific Work with Communities Session	White Papers Breakout Session
3:30-5:00	Theme Breakout Session Part 1	Theme Breakout Session Part 2	Collective Discussion: Future Directions
Option 1	Panel: Doing Science Communication	Activity: Nature of Science in Informal Education Contexts	
Option 2	Activity: Nature of Science in K-12 Science Education	Panel: Experiences with conducting community-based research	

b. Schedule Details and Conference Participants (Name, Role, CVs):

Day 1

Welcoming Remarks & Workshop Overview (9:30am-9:45am)

Conference Co-Chairs will provide a short welcome to participants and outline workshop goals and aims.

Session 1: Science Communication (9:45am-10:45am; 11:00am-12:00pm)

This session addresses best practices and challenges of science communication. Even the most straightforward approaches to science engagement and outreach (such as op-eds, public talks, and news interviews) can be enhanced by learning about this area of research. Speakers will also extend discussions to more contemporary forms of engagement (such as social media).

Dr. Asheley R. Landrum is Assistant Professor of science communication in the College of Media & Communication at Texas Tech University and a media psychologist. Her work bridges theories from communication, psychology, political science, and public policy.

Landrum will discuss findings and implications from her research projects which include Socializing Science & Science Curiosity; Millennial Engagement with Science Media; The Alternative Beliefs Project; YouTube as the Primary Propagator of Flat Earth Philosophy; and The Role of Conspiracy Theories in Perceptions of Fake News About Science.

Dr. Stephen P. Depoe is Professor and Department Head of Communication at the University of Cincinnati. His research areas include environmental and health risk communication, particularly the role of the public in environmental decision-making, and public communication. He is currently the co-editor of a book series on Media and Environmental Communication; founding chair of the International Environmental Communication Association (IECA); and author of *Communication and Public Participation in Environmental Decision Making*. Depoe will discuss general best practices in science communication, especially as it relates to risk & decision-making.

Session 2: K-12 Science Education (1:15pm-2:15pm; 2:30pm – 3:30 pm)

This session addresses approaches to teaching in K-12 settings, NGSS science standards, and how academics in general and philosophers of science in particular can partner with local educators.

Dr. Michael Clough is Professor of Science Education at Texas A&M University. He taught high school biology and chemistry for seven years before moving to a university research and teaching faculty position. His work addresses the role of history and nature of science and technology in improving STEM education, STEM teacher education, and public STEM literacy; research-based pedagogical decision-making; and science teachers' crucial role in effective STEM education. Clough will discuss the current status of nature of science topics in these areas of STEM education.

Dr. Ted Fowler works for the Office of Education Innovations & Community Partnerships in the College of Education, Criminal Justice, Human Services, and Information Technology at the University of Cincinnati administering grant funded efforts to support underrepresented students pursuing STEM pathway study and careers. He is a member of the core leadership team of the Greater Cincinnati STEM Collaborative, which organizes and delivers STEM exploration programming for K-12 students across the tri-state area. He is co-director of the Southwest Hub of the Ohio STEM Learning Network, which supports establishing STEM schools and STEM programming in the region. Fowler will discuss working with and in local K-12 schools.

Breakout Sessions 1 (3:30pm – 5:00pm)

Option 1: Panel Discussion of Science Communication with Public Audiences. This panel provides an opportunity for expert practitioners of science communication to engage in discussion with participants about their own perspectives on the central questions of the workshop. They will also offer advice on how to best establish successful outreach in these more traditional contexts of communication. The panel will then be opened up for discussion and questions. UC's Communication Department Head, Stephen Depoe, will assist in finalizing community panelists closer to date. Likely panelists include:

- Thane Maynard, Cincinnati Zoo zookeeper, author and host of The 90-Second Naturalist, a 1½-minute science radio program.
- Chris Anderson, Executive Producer and Host, Science Around Cincy
- Science journalists from local Cincinnati newspapers

Option 2: Activity on the Nature of Science in K-12 Science Education. Philosophical research relates closely to main nature of science topics, including the recognition that there is no fixed, overarching scientific method; the reliance of theory on empirical evidence; the role of argumentation in science; how our existing ideas influence our observations (theory-laden observation); the importance of creativity in science; and ways in which scientific ideas are influenced by their social and historical context. This activity facilitated by Jacquart aims to relate philosophy of science research to the Next Generation Science Standards. Participants will work in small groups to develop philosophy of science activities for a given grade-level that address multiple NGSS standards. Jacquart will adopt workshop best practices from her expertise working for the American Association of Philosophy Teachers' Teaching & Learning workshops and Western University's Teaching Support Center to facilitate concrete workshop takeaways.

Day 2

Welcoming Remarks & Overview of Day 2 (9:30am-9:45am)

Potochnik and Jacquart will provide a day 1 summary and day 2 welcome to participants.

Session 3: Informal Science Education & Outreach (9:45am-10:45am; 11:00am-12:00pm)

This session addresses key features of informal science education settings and approaches. Speakers will focus on how education is approached in Museum curation and programming, as well as how informal learning settings might benefit adult learners.

Dr. **Rae Ostman**, associate research professor in the School for the Future of Innovation in Society, co-director of the Center for Innovation in Informal STEM Learning, and director of the National Informal STEM Education Network (NISE Net). Ostman has broad experience planning, developing, implementing, and studying museum exhibits, programs, media, and

other learning experiences in partnership with diverse organizations. She will lead an interactive session on techniques and strategies for creating informal learning programs and activities.

Dr. **Brenda Hunda**, Curator for Invertebrate Paleontology, and **Brian Pollock**, Manager of Museum Experience at the Museum of Natural History and Science at the Cincinnati Museum Center. Their expertise includes exhibit design, curation, educational programming development, and community outreach in the form of lectures and workshops. Dr. Hunda and Pollock will talk about their work, museum informal education structures, and what academics interested in working with museums should know.

Session 4: Scientific Work with Communities (1:15pm-2:15pm; 2:30pm – 3:30 pm)

This session addresses the theoretical and practical angles of citizen science and community-based participatory research.

Dr. **Abby Kinchy** is a sociologist working in Science and Technology Studies (STS). Her research examines the use of citizen science as a tool of social movements and as form of civic organizing. Her most recent publication on this topic, co-authored with Aya H. Kimura, is *Science by the People: Participation, Power, and the Politics of Environmental Knowledge* analyzes the tensions and dilemmas that citizen science projects commonly face. Her talk will discuss this work, as well as work on citizen science in STS research more generally.

Dr. **Jennifer Malat**, Associate Dean for Social Sciences, Professor of Sociology, and Director of The Cincinnati Project, which pairs College of Arts and Sciences faculty with communities and agencies that serve disadvantaged populations in Cincinnati to improve people's lives, particularly people who don't have a voice or who are marginalized. Her talk will discuss the development and foundation of The Cincinnati Project.

Breakout Sessions 2 (3:30pm – 5:00pm)

Option 1: Activity on Nature of Science in Informal Science Education. This activity, facilitated by Jacquart in consultation with Brenda Hunda and Brian Pollock, will involve adapting informal science education activities to focus on the nature of science. We will provide small groups with pre-designed "kits" – materials already used in museums, zoos, and other informal outreach settings. Each group will discuss how to modify their assigned kit to help develop a deeper understanding of the nature of science.

Option 2: Panel Discussion of Experiences with Conducting Community-Based Research. Conducting citizen science or community-based participatory research is highly context

specific. This panel will focus on participant experiences developing community-based research programs and the role this research can play in developing scientific literacy and engagement.

We expect participants to include:

- Dr. Abby Kinchy (visiting speaker from Session 4)
- Dr. Farrah Jacquez, Associate Professor of Psychology at the University of Cincinnati and member of the Cincinnati Project, whose research focuses on community-partnered approaches to health equity and partnerships with area schools to teach science inquiry to high school students.
- Dr. Carlie Trott, Assistant Professor of Social and Community Psychology the University of Cincinnati, whose research employs community-engaged research methods and applies interdisciplinary and action-based educational approaches to support STEM engagement by marginalized groups.
- Co-Director Tia Sherèe Gaynor or Jennifer Malat of The Cincinnati Project.

Day 3

Working Groups (9:30am-12pm // 1:15pm – 2:15pm)

Day 3 will more explicitly address what philosophers can contribute to public engagement with science initiatives. There will be four working groups, one on each of the four topics of the workshop.

During the working group session, each group will discuss the workshop's guiding questions:

1. What do philosophers of science have to contribute to this area of public engagement?
2. What are some ways in which that contribution be realized?
3. What resources or discussions in other disciplines already exist on this topic?
4. What work or research do philosophers need to do public engagement?
5. What are potential challenges that should be flagged for further research and discussion?

The white paper produced out of this discussion will serve as a kind of “beginners guide: how and where to start” document for philosophers of science interested in undertaking the identified kinds of public engagement and as a reference to further dialogue in the discipline.

To facilitate discussion and the development of the white paper reports, each group will be chaired by a local UC philosophy department member, assisted by a UC graduate student, and with identified senior faculty and early-career project leads. The graduate student will be largely responsible for assembling relevant resources discussed throughout the workshop, as well as follow-up work on the white paper after the conference through a funded part-time summer RA appointment. We will have an open application for UC graduate student

participation as the RAs, assigning a graduate student to each of the four groups based on their work's relevance. Likely graduate students to apply include Amanda Corris, Andrew Evans, Sahar Heydari Fard, and Guilherme Sanches de Oliveira – many of whom identify with an underrepresented group in philosophy. Other project roles are as follows:

Science Communication

- UC Working Group Chair: Lucas Dunlap + Graduate Student
- Senior Philosopher **Kevin Elliot**, professor at Michigan State University, with appointments in the Department of Fisheries and Wildlife and the Department of Philosophy. Elliot's research interests lie at the intersection of the philosophy of science and practical ethics. He is a member of MSU's newly formed Socially Engaged Philosophy of Science group.
- Early-Career Philosopher **Dan Hicks**, assistant professor in Cognitive and Information Sciences at UC Merced. Hicks is a philosopher of science, data scientist, and science policy researcher. Their research focuses on the role of ethical and political values in science and public scientific controversies.

Science Education

- UC Working Group Chair: Melissa Jacquart + Graduate Student
- Senior Philosopher **Sara Goering**, associate professor of philosophy at the University of Washington, with affiliations in the Department of Bioethics and Humanities, and the Disability Studies Program. Goering is also the Program Director for the UW Center for Philosophy of Children, an academic research center aimed at introducing children to philosophy.
- Early-Career Philosopher: **Rebecca Hardesty**, postdoctoral scholar at UC San Diego's Teaching + Learning Commons. Hardesty's work focuses on the intersection of science communication, science and technology studies (STS), science education, and history and philosophy of science in practice.

Informal Science Education and Outreach

- UC Working Group Chair: Angela Potochnik + Graduate Student
- Senior Philosopher **Kristen Intemann**, professor of philosophy at Montana State University. Intemann's recent book (co-authored with Inmaculada de Melo-Martín), *The Fight Against Doubt: How to Bridge the Gap between Scientists and the Public*, examines the role and consequences of dissent in science. She is also Director of the newly forming Initiative for Science, Technology, Ethics, and Society at her home institution.
- Early-Career Philosopher **Joyce Havstad**, assistant professor in Philosophy at Oakland University. Havstad works in philosophy of biology, chemistry, medicine, and paleontology. She engages in a number of public philosophy efforts including blogging and

panelist at Comic-Con. Prior to joining Oakland, she was a postdoc at the Field Museum of Natural History in Chicago, IL.

Scientific Work with Communities

- UC Working Group Chair: Zvi Biener (tentative) + Graduate Student
- Senior Philosopher **Alison Wylie**, professor of philosophy in the Social and Historical Sciences at the University of British Columbia. Her recent work involves Indigenous/Science research cluster taking shape at UBC, designed to build partnerships that embody a "practice of reconciliation," and require the cultivation of translational expertise on the part of all partners. Wylie has confirmed interest in attending the workshop but has not yet confirmed this specific role. In the event she is unable to assist, Michael Weisberg will serve as senior philosopher.
- Early-Career Philosopher: **Karen Kovaka**, assistant professor of philosophy at Virginia Tech. Kovaka's research focuses on life science and environmental science. She participates in community science initiatives in the United States and through The Galápagos Alliance, which works with local leaders and community in the Galápagos Islands to promote ecological and scientific understanding.

Other workshop attendees will choose the working group in which they are most interested to participate. We will aim to limit each group to about 10 people in order to ensure a manageable discussion.

In addition to the philosophers identified above, philosophers who have expressed interest in attending this workshop include: Matthew Brown (University of Texas at Dallas; Director of the Center for Values in Medicine, Science, and Technology), Julia Bursten (University of Kentucky), Eric Desjardins (Western Ontario, Associate Director of the Rotman Institute of Philosophy), Don Howard (University of Notre Dame; Reilly Center for Science, Technology, and Values), Jane Maienschein (Arizona State University, Director of the Center for Biology and Society), Sandra Mitchell (University of Pittsburgh, HPS Program), and Michael Weisberg (University of Pennsylvania; Director of the Pennsylvania Lab for Understanding Science).

c. Evaluation Committee: The UC chair, senior philosopher, and early-career philosopher in each working group (excepting Conference Co-Chairs Jacquart and Potochnik) will serve as the evaluation committee. Shortly after the conclusion of the conference, they will be anonymously surveyed regarding what went well, what could have been improved, and what follow-up steps are called for.