

ScComm-U

Hosted by the Penn State Chemistry Graduate Student Association,
the Eberly College of Science Office of Science Outreach, and the
Graduate Women in Science



with Keynote Speaker

Dr. Larkin Hood

It takes brains: How we can recognize science communication as an intellectual act

April 8, 2022 from 12:30-6 PM EDT

April 9, 2022 from 9:30 AM-5:30 PM EDT



Day 1

1:00-1:50 PM

SciComm is a Two-Way Street

Dr. Jayatri Das

Science communication in our current world is a rapidly evolving practice. It's a balance of strategy, messaging, listening, and building relationships. With the diversity of platforms, audiences, and opportunities for engagement that are available today, we will talk about how to be intentional in identifying your goals for communication, applying evidence-based practice, and knowing how to assess impact.

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2:00-2:50 PM & 3:00-3:50 PM

Putting the "Outreach" in Science Outreach and Communication: How to Effectively Communicate Science through Outreach Activities

Caitlin Teti

Are you hoping to share your research with the public in an engaging way, but you're not sure where to start? Are you wondering how to take your complicated science topics or research and make them accessible for all audiences without "dumbing them down"? Have you never worked with the public before and you're not sure what to expect? Come learn about what science outreach is, what makes an effective activity or program, and how to craft an engaging and scientifically accurate outreach program from start to finish. We'll cover topics such as choosing an audience, examples of different outreach options with varying levels of time commitments, how to structure and implement engaging activities, ways to incorporate diversity and accessibility, and more!

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4:00-4:50 PM

Panel: Careers in Science Communication

Dr. Samantha Black, Dr. Gail McCormick & Dr. Emma Van Burns

In this panel focused on careers in Science Communication, each panelists will describe their career trajectories in science communication and answer any questions. You can pre-submit any related questions to the panel by emailing szc411@psu.edu.

5:00-5:50 PM

Lightning Talks: Science Outreach Experiences

1. *How To Get Involved in Science Outreach as a Penn State Undergrad*
Isabella Urbina

Learn how to get involved in science outreach within the university and surrounding communities. We'll discuss various events you can participate in, tips on how to increase involvement in your club or organization, and I will share a few lessons I've learned over my years in the position.

2. *Outreach opportunities as a graduate student and their benefits*
Dr. Sonic Cheon

As graduate students, we have not only more opportunities to participate in outreach work but also have ways to develop leadership skills that become extremely beneficial throughout grad school and beyond. In this lightning talk, I'll provide my experiences in participating in Outreach for 5 years and how I have leveraged this experience to make new connections, enrich the community, and develop an excellent resume for industry.

3. *Why strong sci-comm skills sets you up for success...wherever your career and life takes you*
Kristin A. Dreyer

Science itself serves as both a role model and vehicle for learning how to communicate effectively. Having strong communication skills makes you a desired hire, sought collaborator, solid leader, frequent award recipient, and more. These skills are also transferrable to other career options and personal life. I currently assist researchers in gaining sci-comm skills and watch the results as they master them. My own career is a testament to them, too. This talk will highlight key reasons why science outreach is a worthwhile professional development pursuit beyond the positive impact it has the potential to make on others

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6:00-6:30 PM

Networking Session and End of Day 1

All Attendees

Breakout rooms will be open to make new connections and continue any conversations you've started .

Day 2

10:00-10:50 AM

Sharing the solution space: Reaching reluctant people

Dr. Richard Alley

Extraordinarily strong scholarship shows the dangers of unrestrained climate change from fossil-fuel emissions of carbon dioxide. Many people have been deeply moved by these dangers, and are working hard to reduce them. But, many more people have not responded, often denying that there are dangers. The strong scholarship also shows that, compared to a business-as-usual future, efficient use of our knowledge on climate and energy will give a larger economy with more jobs, greater national security, and improved health in a cleaner environment more consistent with the golden rule. Emphasizing these good outcomes, and featuring a range of voices and stories, often reaches people who have not responded to the dangers.

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11:00-11:50 AM

Communication, Influence, and Audience

Alyssa Bienvenu Santos

Words are powerful—they have the ability to entice a listener or completely isolate them from the conversation in a matter of moments. Unfortunately, scientists often don't have nearly enough time to discuss the nuance of their science when having a conversation with a member of the public. In this workshop, we will discuss how to effectively communicate our science in a way that is clear, concise, and customized to our audience. We will consider some of the factors that affect decision making and how our communication can influence our listeners. We will also use concrete activities to sift through how the public might perceive the science that impacts their lives and what consequences of that science are most important to them.

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12:00-12:50 PM

Lunch Break

Take a short break from the screens and we'll be back in an hour!

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1:00-1:30 PM

Science Storytelling on Social Media

Dr. Samantha Yammine

Sharing science on social media can be overwhelming, especially when you only have to distill years of work into a few seconds to grab attention. In this 30-min talk, Science Communicator Samantha Yammine (aka Science Sam) will share 5 best practices for sharing science online through storytelling. With these tips in hand, you'll be armed to start sharing science and de-bunking where needed, no matter which platform you choose.

1:30-1:50 PM

Lightning Talks: Science Communication Using Social Media

1. *PlantTok: Science Communication on TikTok* **Elizabeth Kelly**

Short exploration on TikTok, "SciTok", and the lessons learned with science communication on a video-based platform.

2. *Science on IG* **Dr. Samantha Yammine**

Instagram is a behemoth of features, making it a rich medium for sharing science in an engaging manner... but also one that's hard to start. In this lightning talk, Samantha Yammine (@science.sam) will walk you through some of her favorite strategies for sharing science on Instagram, including a quick dissection of her approach to making science posts break through echo chambers.

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2:00-2:50 PM

Canva as a tool for easy and effective scientific visuals

Margarita (Maggie) Hernandez

Graphics are becoming increasingly important in communicating complex scientific concepts in an understandable way to diverse audiences. In this workshop, I will be covering how to use the software Canva, a free online graphic design tool that is user friendly and can be used to create social media posts, flyers, infographics, and so much more. We will work together to create your account, play with the general features available in their free version, and create a simple graphic based on your research field. Please be sure to have a computer readily available and think of a general topic you'd like to create a graphic for!

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3:00-3:25 PM

Outreach Opportunities at Penn State

Dr. Sonic Cheon

Come learn about the types of opportunities you can participate in at Penn State.

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3:30 - 4:00 PM

Science Communication Using Social Media - Q&A

Dr. Samantha Yammine, Elizabeth Kelly, and Margarita Hernandez

Previous speakers during our science communication using social media will be gathered to answer any questions you may have had during their talks.

Outreach Opportunities at Penn State - Q&A

Dr. Sonic Cheon

If you have any questions regarding the outreach opportunities and/or would like to sign up for one, please drop by to this designated breakout room!

4:10-5:15 PM

It takes brains: How we can recognize science communication as an intellectual act

Dr. Larkin Hood

Graphics are becoming increasingly important in communicating complex scientific concepts in an understandable way to diverse audiences. In this workshop, I will be covering how to use the software Canva, a free online graphic design tool that is user friendly and can be used to create social media posts, flyers, infographics, and so much more. We will work together to create your account, play with the general features available in their free version, and create a simple graphic based on your research field. Please be sure to have a computer readily available and think of a general topic you'd like to create a graphic for!

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5:15-5:30 PM

Closing remarks, acknowledgements, and raffles

Please stay after our final speaker to acknowledge the amazing volunteers that has helped made this happen and to see if you will win a science communication raffle prize!

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5:30 -6:00 PM

Networking and End of Day 2

All Attendees

Breakout rooms will be open to make new connections and continue any conversations you've started.



Dr. Jayatri Das

As Chief Bioscientist and Director of Science Content at The Franklin Institute, Dr. Jayatri Das helps us understand ourselves. How do our brains work? How do our neighborhoods affect our health? How will new technologies change our future? More importantly, she brings us all into the conversation. Das has led development of several exhibitions at Pennsylvania's most-visited museum—including Your Brain, a national award-winning exhibit about the neuroscience and psychology of the human brain—and directs programming initiatives to advance informal science education about materials science, nanotechnology, neuroethics and other areas of emerging science and their societal impact. Das earned undergraduate degrees in biology and biochemistry from Penn State and a Ph.D. in evolutionary biology from Princeton University, and is an invited Fellow of the Center for Neuroscience & Society at the University of Pennsylvania. Her work in the museum field has been honored with the American Alliance of Museums' Nancy Hanks Award for Professional Excellence.



Caitlin Teti

Caitlin Teti is an education program specialist who works for the Penn State Eberly College of Science Office of Science Outreach, where she leads a wide variety of outreach programs for various groups, including undergraduate and graduate students, K-12 audiences, faculty members, and the general public. In addition, she also works for the NASA Pennsylvania Space Grant Consortium and coordinates their outreach efforts across the state of Pennsylvania. She graduated with a master's in ecosystem management in 2021 and a bachelor's in geoscience in 2017, both from Penn State. Before her current position, she was an on-site director for Penn State's "Outdoor School", an environmental education camp for 5th graders

Caitlin chose her field towards the end of her undergraduate career when she realized she enjoyed talking about rocks more than she liked studying them and she's now grateful she has a career where outreach is her job one hundred percent of the time. She first became interested in science because her dad inspired her to always be curious about the world around her, which is a lesson she tries to share with her outreach participants. In her free time, she enjoys playing video games, doing anything outside, reading, and hanging out with her two cats: Perry and Chewie.



Dr. Gail McCormick

Gail McCormick is a communications strategist for the Eberly College of Science, where she writes press releases about research, manages the college's magazine, and provides additional communication support. Prior to beginning this role in 2017, she completed a scicomm internship with NSF-funded program EarthScope. She completed a doctoral degree in 2016 at Penn State, where she studied stress in lizards.



Dr. Samantha Black

Samantha Black, PhD, is Head of Content at Elemental Machines, a Boston startup developing the leading platform for laboratory operations servicing research, clinical, and quality control labs around the world. In this strategic position, she leverages a variety of content mediums to establish the company as a thought leader in the space and drive commercial success. Prior to joining Elemental Machines, Black served as Editor in Chief editor in chief of ScienceBoard, a life sciences media website where she was focused on creating authentic and engaging content that highlighted the technologies and people behind innovations leading to next-generation medicines. Black had also previously worked as a program manager at the National Postdoctoral Association. She received a PhD in nutrition from NC State University.



Dr. Emma Van Burns

Emma graduated from Penn State in 2019 with a PhD in chemistry. Her dissertation focused on driving polymerization reactions using nanoscale heat generated by plasmonic gold nanoparticles under pulsed laser light. After graduation, she joined AIP Publishing in Melville, NY as an Assistant Journal Manager, where she handles five journals across the physical sciences.



Isabella Urbina

My name is Isabella Urbina and I am a 2021 Penn State Alum. I majored in Material Science and Engineering and was the Outreach Chair for our professional society, Material Advantage, for 3 years of my undergrad. I now work at Northrop Grumman as a Material Process Engineer.



Dr. Sonic Cheon

Sonic Cheon is a recently graduated alum from Fairfax VA. After studying organic synthesis in undergrad at William and Mary with Dr. Robert Hinkle, he pursued graduate studies in materials chemistry at Penn State with Dr. Zarzar's group. He was the outreach chair for Chemistry Graduate Student Association for two years and now works at PPG as a product development chemist.



Kristin Dreyer

Kristin is the Program Director for Education & Outreach at the Penn State Center for Nanoscale Science, a large interdisciplinary materials science research effort funded by NSF. Her background spans science and education via B.S. degrees in both Physics and Secondary Education with an initial career teaching high school physics and mathematics, followed by an undergraduate curriculum position in Penn State's Physics Department. Shifting to informal education, her work evolved to focus upon outreach and broader impact interests within the academic research environment. An early highlight includes designing and implementing one of Penn State's very first themed summer science camps called Where Science and a Wizard's World Collide, an introduction to mechanics principles in physics inspired and disguised by the imaginary world of Harry Potter. In her current role at the Penn State MRSEC, Kristin strategically manages the Center's portfolio of local STEM outreach, education, professional development, and DEI-focused initiatives. Her work supports researchers in translating their science into educational content and activities that are accessible to K-12 students, teachers, and the public. It also includes career skill-building and networking opportunities for diverse cohorts of undergraduates and teachers who engage in summer research projects in faculty labs, as well as grad and postdocs. A recent highlight is the Mission: Materials Science website* project in partnership with The Franklin Institute in Philadelphia where graduate students in materials science designed DIY-at-home activities for kids, and video interviews connect each activity to current research. Her passion for improving diversity, equity, and inclusion in STEM fields has led to intentional efforts that support the retention of individuals who identify with underrepresented groups. Currently, Kristin is co-leading a Sustainable Lab Initiative at Penn State to create a tangible, educational, career skill-building, student engagement program to focus on the intrinsically resource-intensive and waste-producing laboratory setting. While still in its initial stage of development, this effort will improve operations, reduce waste and energy use where possible, promote mindful decision making, build awareness of daily behavioral practices and patterns, and inform researchers about available local resources that can support them in becoming an active partner in the pursuit of achieving the planet's essential global sustainable development goals. *<https://missionmaterialsscience.com/>



Dr. Richard Alley

Dr. Richard Alley (PhD 1987 Wisconsin; Evan Pugh University Professor, Geosciences, Penn State) studies the Antarctic and Greenland ice sheets to help predict future climate and sea-level changes. He has been honored for research, teaching, and service. He participated in the UN Intergovernmental Panel on Climate Change (co-recipient, 2007 Nobel Peace Prize), and provided requested advice to high government officials from both major political parties. He has authored or coauthored over 300 refereed scientific papers. He was presenter for the PBS TV miniseries *Earth: The Operators' Manual*, based on his book. His popular account of climate change and ice cores, *The Two-Mile Time Machine*, was Phi Beta Kappa's science book of the year. He is happily married with two grown daughters, one stay-at-home cat, a bicycle, and a pair of soccer cleats.



Alyssa Bienvenu Santos

Alyssa Bienvenu Santos is a Ph.D. candidate in the chemistry department at Penn State studying theoretical chemistry. Prior to her graduate career, she earned undergraduate degrees in chemistry and mathematics from the University of Louisiana at Lafayette. Outside of research, her passions include science education, outreach, and communication. She currently serves on the Eberly College of Science graduate student newsletter editorial team and is a co-instructor for the science outreach and communication course at Penn State. In her spare time, Alyssa volunteers as the head adoption counselor in the cat wing of Centre County PAWS and enjoys west coast swing dancing.



Dr. Samantha Yammine, "Science Sam"

Dr. Samantha Yammine is passionate about empowering people to explore science by making it more familiar, accessible, and inclusive. She does this in part by sharing interactive science commentary and research updates on Instagram through short videos, emoji-filled captions, and engaging pictures. She's created space for continued, multi-way dialogue about science that transcends geographical borders and the traditional gate-keeping of academia. A leader in digitizing science on social media, Samantha founded Science Sam Media to continue to grow the reach and impact of her science communication initiatives. Samantha always takes an audience-first approach to share complex topics in clear and entertaining ways. She is a frequently requested speaker and event host who loves engaging folks with anything science, anywhere & everywhere – she's hosted a livestream with an astronaut aboard the International Space Station, presented her research on the streets at Toronto's busiest intersection, talked ringside with Muay Thai fighters about performance anxiety, and showed off model and real brains at 1am in a Yurt during an all-night art festival. She leads interactive workshops on science communication, personal branding, and social media to teach scientists and STEM professionals the skills they need to share their science creatively.



Elizabeth Kelly

Elizabeth “Swifty” Kelly is a Ph.D. student in Plant Biology at Penn State. She got her start in science communication on TikTok in 2020. When not making TikToks or working in Penn State’s Biology greenhouse, she enjoys roller derby and teaching people in person about plants.



Margarita (Maggie) Hernandez

Margarita (Maggie) is a Ph.D. candidate in the Department of Anthropology at Penn State. Her research work centers on exploring diversity within Latinx populations, with a specific focus on understanding how differential ancestry and lived experiences are associated with adverse health outcomes. Maggie received her Bachelor’s degrees in Biology and Anthropology from the University of Florida and her Master’s degree in Anthropology from Penn State University. Prior to coming to Penn State, Maggie worked as a science educator at the Center for Precollegiate Education and Training at the University of Florida. She has extensive experience in outreach, science communication, and scientific visualization that she has employed throughout her career as a scientist.



Dr. Larkin Hood

Larkin Hood is an Associate Research Professor and Instructional Consultant at Penn State’s Schreyer Institute for Teaching Excellence. Since 2010 she has worked with hundreds of instructors from a variety of ranks and disciplines on teaching and learning topics. She managed the student docent program at the Burke Museum of Natural History and Culture in Seattle, Washington from 2006-2010. She has been doing outreach in archaeology with and for various stakeholders since 1996. She earned her doctorate in Anthropology in 2007 from the University Washington. Her research interests include teaching and learning in STEM, students as partners, faculty pathways through professional development in pedagogy, discipline-based pedagogy, and Indigenous Knowledge (IK).

Acknowledgements

We would like to thank all the volunteers and committee members who have spent countless hours making this workshop happen.

SciComm-U 2022 Committee Members

Sonic Cheon, Jessica Schulze,
Maggie Hernandez, Ashlee McGovern, Sarah Sheffield
Caitlin Teti, Alyssa Bienvenu Santos

SciComm-U 2022 Volunteers

Heidi Busse, Gaurav Dey,
Kelly Varnell, Morgan Vincent
Haley Young, Vinny Torres

Thank you to our sponsors, the Chemistry Department and Eberly College of Science Office of Science Outreach, whose donations made this conference possible

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