



SciComm Virtual Conference Schedule

Times listed are Central Daylight Time (CDT). [Conversion link](#)

All activities will occur via Zoom webinar or Zoom meeting.

Workshops are designed to be full learning experiences – please plan to be on time and stay for the entire workshop.

Wednesday, August 17, 2022

- 11 a.m.-12:30 p.m. **Workshop 1: Dione Rossiter** (see page 4)
Join Zoom Meeting Room A/General Session
- 12:45-2:45 p.m. **Workshop 2: Jacqueline Goldstein** (see page 4)
Join Zoom Meeting Room D
- 1:00-2:30 p.m. **Workshop 3: Disan Davis** (see page 5)
Join Zoom Meeting Room B
- 3:00-5:00 p.m. **Workshop 4: Beth Malow and Steve Saltwick** (see page 5)
Join Zoom Meeting Room C
- 5:00-5:30 p.m. *Break*
- 5:30-6:45 p.m. Welcome Remarks
Panel 1: Community-Engaged Science (see page 6)
Panelists: Wendy Deschene, Joyonna Gamble-George, Ted Hibbeler, Louise Lynch-O'Brien, Jeff Schmuki, Lee Ann Woolery
Moderator: Doug Golick
Join Zoom Meeting Room A/General Session
- 6:45-7:00 p.m. *Break*
- 7:00-8:00 p.m. **Keynote Speaker 1: Darrion Nguyễn** (see page 7)
Moderator: Jocelyn Bosley
Join Zoom Webinar

Thursday, August 18, 2022

- 10:00-11:00 a.m. **Keynote Speaker 2: Raychelle Burks** (see page 7)
Moderator: Kiyomi Deards
Join Zoom Webinar
- 11:00-11:30 a.m. **Featured Speakers; 2 concurrent sessions** (see pages 10-11)
Dietram Scheufele, Join Zoom Meeting Room A/General Session
Beth Shirley, Join Zoom Meeting Room B
- 11:35 a.m.-12:10 p.m. **15-minute Oral Presentations; 2 concurrent sessions**
11:35-11:50: *Chloe Bowen; Caela Barry* (see pages 15-16)

Join Zoom Meeting Room C
Join Zoom Meeting Room D
5-minute break to switch zoom rooms
11:55-12:10: *Courtney Dunn; Crystal Uminski* (see page 17)
Join Zoom Meeting Room C
Join Zoom Meeting Room D

12:10-12:30 p.m. *Break*

12:30-1:00p.m. **Featured Speakers; 2 concurrent sessions** (see pages 11-12)
Lee Ann Woolery, Join Zoom Meeting Room A/General Session
Jane Maienschein, Join Zoom Meeting Room B

1:05-1:40 p.m. **15-minute Oral Presentations; 2 concurrent sessions**
1:05-1:20: *Elizabeth Barnes; Rachel McMillan* (see pages 18-19)
Join Zoom Meeting Room C
Join Zoom Meeting Room D
5-minute break to switch zoom rooms
1:25-1:40: *Amber Schiltz; Nicole Kelp* (see pages 19-20)
Join Zoom Meeting Room C
Join Zoom Meeting Room D

1:40-2:00 p.m. *Break*

2:00-3:00 p.m. **Keynote Speaker 3: Emily Calandrelli** (see page 8)
Moderator: Heather Akin
Join Zoom Webinar

3:00-3:15 p.m. *Break*

3:15-4:30 p.m. **Panel 2: Communicating Complexity** (see page 6)
Panelists: Bradley Allf, Wendy Bohon, Matt Brown, Disan Davis, Mariah Gladstone, Ramesh Laungani, Scott Prinster, Jess Watkins
Moderator: Jocelyn Bosley
Join Zoom Meeting Room A/General Session

4:30-4:45 p.m. *Break*

4:45-5:30 p.m. Online Networking Bingo
Join Zoom Meeting Room A/General Session

5:30-6:00 p.m. *Break*

6:00-7:00 p.m. In-Person Networking Activity, Happy Raven, Lincoln, NE

7:00-9:00 p.m. **Science Slam and Announcement of Film Festival Winners**
In-Person Watch Party and Live-Streamed (Skype and YouTube)
Happy Raven, 122 N. 11th St, Lincoln, NE 68508

Friday, August 19, 2022

- 10:00-11:00 a.m. **Keynote Speaker 4: Corey Gray** (see page 9)
Moderator: Jocelyn Bosley
Join Zoom Webinar
- 11:00-11:30 a.m. **Featured Speakers; 2 concurrent sessions** (see pages 13-14)
Athena Ramos, Join Zoom Meeting Room A/General Session
Adam Shapiro, Join Zoom Meeting Room B
- 11:35 a.m.-12:10 p.m. **15-minute Oral Presentations; 2 concurrent sessions**
11:35-11:50: *Andrew Howley; Crystal Powers* (see page 21)
Join Zoom Meeting Room C
Join Zoom Meeting Room D
5-minute break to switch zoom rooms
11:55-12:10: *Pallabi Kundu; Nadine Vincenten* (see page 22)
Join Zoom Meeting Room C
Join Zoom Meeting Room D
- 12:15-12:30 p.m. **Closing Remarks**
Join Zoom Meeting Room A/General Session
- 12:30-1:00 p.m. *Break for in-person attendees; Conference ends for virtual attendees*
- 2:00-5:00 p.m. **In-Person Events:** Turbine Flats, 2124 Y St, Lincoln, NE 68503
Panel 3: Ethical Responsibilities in Science Communication (2-3 p.m., see page 6)
Panelists: Matt Cohen, Steve Lahey, Kim Morrow, Larry Scharmann
Moderator: Beth Lewis
Closing Reception (3:15-5 p.m.)

SciComm Organizing Committee Co-Chairs:

Heather Akin and Jocelyn Bosley, University of Nebraska–Lincoln

Hosted by :



Sponsors: School of Biological Sciences, College of Engineering, Department of Physics and Astronomy, University of Nebraska State Museum, College of Journalism and Mass Communications, Nebraska Governance and Technology Center, Midwest Science Engagement Consortium

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Workshops Wednesday, Aug. 17

Zoom Room A – Workshop 1 11:00 a.m. - 12:30 p.m. CDT

Recognizing Systemic Racism in Science Communication

Dione Rossiter, Science at Cal, University of California, Berkeley



The importance of increasing public understanding of scientific issues, like the environment and health, is rising. As a result, scientists are learning the importance of making their work more accessible. But at the same time, there are still marginalized communities that aren't well served by mainstream science media and traditional educational systems. In addition, women and people of color are faced with long-lived cultural and societal prejudices that perpetuate inequality. By directly involving specific communities in the science communication processes, addressing issues of increasing importance to the communities, and presenting scientific role models and spokespersons from within those communities, we can begin to ensure that science communication and education really are available and accessible **to all**.

Dione Rossiter, Ph.D., is a Science Communication, Engagement, Marketing, Education and Outreach Specialist who has previously worked with non-profits, universities, and for-profit businesses to improve their science engagement efforts. She is currently the Executive Director for Science at Cal, a program that shares the excitement and relevance of UC Berkeley research with public audiences by creating opportunities for the UC Berkeley STEM community to engage with the public.

Zoom Room D – Workshop 2 12:45 p.m. - 2:45 p.m. CDT

Inclusive Coaching: An MIT Comm Lab Train-the-Trainer Curriculum

Jacqueline Goldstein, MIT Communications Lab



Dr. Jacqueline Goldstein is an Instructional Designer with the MIT Communication Lab, where she primarily develops and leads workshops training engineering graduate students in communication and peer-coaching best practices. She is particularly interested in the impact of academic science communication on scientific understanding, collaboration, identity, and equity.

Dr. Goldstein earned her Ph.D. in Astronomy, minoring in Science Communication, at the University of Wisconsin - Madison. She has been a radio host on Madison public radio, has led training workshops with Storyform Science, and is the co-creator of the science communication research blog SciCommBites. She is currently an ARIS (Advancing Research in Society) Fellow working to develop a guide for inclusive broader impacts. Dr. Goldstein is a queer, first-generation American, originally from San Francisco, California. She is passionate about community and hiking.

Zoom Room B – Workshop 3

1:00 p.m. - 2:30 p.m. CDT



Democratizing Science through Wonder and Awe

Disan Davis, RockEDU Science Outreach, Rockefeller University

Science is an emotional endeavor undertaken by people. Acknowledging the emotions involved in scientific discovery—including wonder, awe, uncertainty, and fear—can help people engage thoughtfully with scientific ideas and information. We believe this approach to science engagement is broadly accessible and perhaps particularly impactful for people from historically and systemically marginalized communities. In this workshop we will define wonder and awe based on current literature and offer strategies for prompting wonder. In small groups, we will explore dimensions of centering wonder and awe in science engagement and apply these frameworks and ideas to your own science communication efforts.

Disan Davis is a scientist and educator striving to share her curiosity and love of science with others. Her experience as a certified middle and high school teacher has provided a foundation in educational theory and philosophy that guides her work in science outreach and informal educational settings. Now as a mom, she is curious about a whole new set of questions about life, development, and learning. At RockEDU, the collective science outreach and engagement efforts out of The Rockefeller University, Disan oversees RockEDU Online, advises on several of the LAB Initiative programs, and coordinates Teacher Professional Development.

Zoom Room C – Workshop 4

3:00 p.m. – 5:00 p.m. CDT



‘Depolarizing Within’ for Science Communicators

Beth Malow and Steve Saltwick, Braver Angels



Braver Angels is a citizens' organization uniting red (conservative) and blue (liberal) Americans in a working alliance to depolarize America. This workshop will focus on applying Braver Angels skills to reducing polarization in science communication. ‘Depolarizing Within’ refers to the critical work we need to do within ourselves, and within our peer groups (in other words, with other science communicators) so that our messages about science can be more credible and effective.

Dr. Beth Malow is a neurologist at Vanderbilt University Medical Center, with an interest in applying civil discourse skills to science communication. She develops and moderates workshops for Braver Angels. Steve Saltwick is a Senior Fellow of Braver Angels focusing on key strategic initiatives for advancing its mission. He began his career as a neuroscientist and has academic publications in Science and book chapters in Academic Press.

Daily Panels

Wednesday, Aug. 17

Zoom Room A

5:45 p.m. – 6:45 p.m. CDT

Community-Engaged Science

Panelists: Wendy Deschene, Joyonna Gamble-George, Ted Hibbeler, Louise Lynch-O'Brien,
Jeff Schmuki, Lee Ann Woolery

There is no one-size-fits-all approach for engaging communities in science. This panel brings together individuals from various communities, affiliations and disciplines to share and discuss the unique ways (as well as the how and the why) in which they have engaged communities in science.

Thursday, Aug. 18

Zoom Room A

3:15 p.m. – 4:30 p.m. CDT

Communicating Complexity

Panelists: Bradley Allf, Wendy Bohon, Matt Brown, Disan Davis, Mariah Gladstone, Ramesh Laungani,
Scott Prinster, Jess Watkins

The complexity of scientific problems and processes is a persistent challenge for science communicators—one to which we often respond by trying to overcome or omit complexity as we share scientific ideas across the bounds of disciplinary expertise. Scientists themselves are sometimes taught to deny or devalue certain forms of moral and epistemic complexity under the auspices of "objectivity" and "parsimony." This panel will bring together scientists, artists, and humanists to discuss how and why we should develop science communication strategies that acknowledge, clarify, and contextualize complexity rather than trying to suppress it.

Friday, Aug. 19 – IN-PERSON ONLY

Turbine Flats, Lincoln, NE

2:00 p.m. – 3:00 p.m. CDT

Ethical Responsibilities in Science Communication

Panelists: Matt Cohen, Steve Lahey, Kim Morrow, Larry Scharmann

The recent increase of public interest in the ongoing reality of climate change represents an important change in our culture. Despite the evidence of the need for change that has been obvious to scientists for decades, it has only been in the past several years that the public has been prepared to stop denying the reality we face. Community churches have become one of the important social venues in which people can discuss climate change. In this panel, a group of leaders of religious organizations from Lincoln will gather to discuss how climate change has become an issue requiring change in engagement with society. The added problem of the politicization of this issue requires attention to the ongoing problems defining religious discussion of this problem.

Keynote Speaker Wednesday, Aug. 17

**Zoom Webinar
7:00 p.m. – 8:00 p.m. CDT**

Darrion Nguyễn

Lab Shenanigans

Communicating Science in the Age of Social Media

Darrion Nguyễn of Lab Shenanigans is a Houston-based science content creator. Upon receiving his Bachelor of Science and Arts in Biochemistry and Theatre, respectively, at the University of Texas at Austin, Darrion has grown to become a prominent science communicator and educator. His background training in theatre and passion for STEM has allowed him to effectively incorporate relatable humor with science topics and convey them through his videos. Named the “Bill Nye of millennials”, Darrion seeks to make science accessible, propel STEM communication, and empower people to learn science by combining popular memes and concepts from biochemistry.



Keynote Speakers Thursday, Aug. 18

**Zoom Webinar
10:00 a.m. – 11:00 a.m. CDT**



Raychelle Burks

American University

Social Chemistry: Tips, Clicks, and Engagement Online

Social media continues to be a valuable tool for STEM education and communication. This talk will focus on online engagement strategies, inclusive practices, and usable tips for scientists seeking to engage with their communities online.

After working in a crime lab, Dr. Raychelle Burks returned to academia, teaching, and forensic science research. Her research team is focused on the development of field portable colorimetric and luminescent sensor arrays for the detection of analytes of mainly forensic interest such as explosives, chemical weapons, controlled substances, and latent prints. She writes a science-meets-true crime column called “Trace Analysis” for Chemistry World. Beyond forensics, Dr. Burks collaborates with colleagues in a variety of fields on projects where low cost and reliable rapid screening methods are needed. An in-demand science communicator, Dr. Burks regularly appears on TV, in podcasts, at large

genre cons such as DragonCon and GeekGirlCon, and other venues to converse on chemistry, forensic science, and STEM meets pop culture. She is the 2020 recipient of American Chemical Society's Grady-Stack Award for Interpreting Chemistry for the Public. She is a member of several local, national, and international committees, task forces, and projects focused on social justice and STEM. In 2021, Dr. Burks was listed as one of the "6 women who are changing chemistry as we know it" by BBC Science Focus Magazine.

Zoom Webinar

2:00 p.m. – 3:00 p.m. CDT, Thursday

Emily Calandrelli

'Emily's Wonder Lab'

Science and Empathy



My talk will go over my career as a science communicator and discuss how growing up in Appalachia has impacted the way I talk about science with unwelcoming audiences.

Emily Calandrelli is the host and co-executive producer of the hit Netflix series "Emily's Wonder Lab." Each episode features Emily and a group of kid-scientists as they learn about STEAM through experiments and fun activities. Emily is also an executive producer and Emmy-nominated host of FOX's "Xploration Outer Space" and was a correspondent on Netflix's "Bill Nye Saves the World."

Emily, who was named to Adweek's "11 Celebrities and Influencers Raising the Bar for Creativity in 2017," is also an accomplished writer and speaker on the topics of space exploration, scientific literacy, and equality. Her chapter book series, "The Ada Lace Adventures," centers on an 8-year-old girl with a knack for science, math, and solving mysteries with technology. The second book in the series, "Ada Lace: Sees Red," was included in the National Science Teachers Association's list of best STEM books for 2018. The third book, "Ada Lace: Take Me To Your Leader," was part of the initiative from NASA and CASIS, Story Time from Space where the book was launched into space and read by an astronaut aboard the ISS to an audience of kids. The fifth and most recent book in the series, "Ada Lace: and the Suspicious Artist," was released in February 2019. All five books in the series are available at Barnes and Noble as well as Amazon. Earlier this year Emily released a children's book, "Reach for the Stars," an uplifting book about love and shared discovery.

Emily frequently gives talks about the importance of science literacy, the benefits of space exploration, and the challenges for women in STEM careers for clients like Google, Pixar, MIT, Texas Instruments as well as to dozens of K-12 schools across the nation. Her first two TEDx talks, "I Don't Do Math" and "Space Exploration Is The Worst," have garnered over 1 million views on YouTube.

Prior to her work in science communication, Emily attended West Virginia University, where she received Bachelor of Science degrees in mechanical engineering and aerospace engineering, and MIT, where she received two Master of Science degrees, one in aeronautics and astronautics and the other in technology and policy. Through her work, she wants to make science relatable, easy to understand and more exciting today than ever before in history.

Keynote Speaker Friday, Aug. 19

Zoom Webinar
10:00 a.m. – 11:00 a.m. CDT

Corey Gray

Caltech

A Gravitational Wave Runs Through It



Late summer 2015 gravitational waves from colliding black holes were directly detected for the FIRST time, EVER by LIGO (Laser Interferometer Gravitational wave Observatory). In one fell swoop gravitational wave astronomy was born, and the lives of many changed at the speed of light. This first signal passed right through the earth, and left ripples of stories in its wake. Corey Gray shares his story of working with LIGO for almost two decades with NO detections, the historic discoveries, and the journey of how a reluctant science communicator ties his Blackfoot culture to astrophysics and learned the importance of bringing your whole self to your work and sharing with others. In a Robert Redford voice: “Eventually, pairs of black holes merge into one, and a gravitational wave runs through it.” (Corey Gray by way of Norman Maclean and Albert Einstein)

Corey Gray is Scottish & Blackfoot and a member of the Siksika Nation of Alberta, Canada. He grew up in southern California and received Bachelor of Science degrees in Physics and Applied Mathematics from Humboldt State University (HSU).

After undergrad, he was hired by Caltech to work for the astronomy project, LIGO (Laser Interferometer Gravitational wave Observatory) in Washington State. At LIGO, Corey worked on teams to both build and operate gravitational wave detectors.

The LIGO Scientific Collaboration (LSC) made historic news in 2016 by announcing the FIRST direct detection of gravitational waves, which helped prove a prediction made 100 years earlier by Albert Einstein! This also won founders of LIGO the Nobel Prize in Physics for 2017.

Corey is proud to be Indigenous. He recruited Sharon Yellowfly (his mom) to translate scientific documents for LIGO into the Blackfoot language. He has been invited to give talks around the US & Canada.

In his free time, Corey likes to backpack, travel, salsa dance, cross-country ski, go to pow wows, share science with the public, and kayak (with a wooden kayak he recently built).

Featured Speakers Thursday, Aug. 18

**Zoom Room A– Session 1
11:00 a.m. – 11:30 a.m. CDT**



Dietram Scheufele

University of Wisconsin–Madison

Is There Such a Thing as Too Much (Concern About) Trust?

The combusive mix of an ongoing COVID pandemic and the ghosts of Trump presidency past have led scientists to declare a trust emergency. If we could just restore trust, the theory goes, polarization, anti-vaccine sentiments, and climate denialism could all be eradicated. Unfortunately, this hypothesis disintegrates quickly when we look at the empirical evidence and the normative ideals underlying it. Not only is absolute trust in science an undesirable ideal democratically, there's little evidence that trust has eroded significantly in most countries, or that anti-science sentiments are correlated with a lack of epistemic appreciation for science. So what does this mean for communication? How can we meaningfully connect with audiences about emerging and sometimes contested science? And, how can we balance the tensions between having to get public buy-in to urgent policy challenges like COVID, while maintaining long-term trust in science as our best way of producing knowledge?

Dietram A. Scheufele is the Taylor-Bascom Chair in Science Communication and Vilas Distinguished Achievement Professor at the University of Wisconsin-Madison and in the Morgridge Institute for Research, and a Distinguished Research Fellow at the University of Pennsylvania's Annenberg Public Policy Center. Scheufele is an elected member of the American Academy of Arts and Sciences, the German National Academy of Science and Engineering, and the Wisconsin Academy of Sciences, Arts & Letters, and an elected fellow of the American Association for the Advancement of Science and the International Communication Association. He currently co-chairs the National Academy of Sciences, Engineering, and Medicine's Standing Committee on Advancing Science Communication and the consensus study committee on Addressing Inaccurate and Misleading Information about Biological Threats. He also serves on NASEM's Division of Behavioral and Social Sciences and Education (DBASSE) Advisory Committee, the Board on Health Sciences Policy, and the LabX Advisory Committee. Since 2012, he has co-organized five NASEM Colloquia on the Science of Science Communication. Over the course of his career, Scheufele has held fellowships or visiting appointments at a number of other universities, including Harvard, Penn, the Technische Universität Dresden, the Ludwig-Maximilians-Universität München, the Westfälische Wilhelms-Universität Münster, and - most recently - the Universität Wien. His consulting portfolio includes work for DeepMind, Porter Novelli, PBS, WHO, and the World Bank.

Zoom Room B – Session 1
11:00 a.m. – 11:30 a.m. CDT

Beth Shirley

Montana State University



Dissociative Framing: Communicating Past Climate Denial

How do we communicate effectively about complex scientific issues such as climate change, GMOs, or the novel Coronavirus when the very terms used to describe the phenomenon have become politicized? This talk will discuss a rhetorical concept called "dissociative framing" that offers a way to present information by finding common ground with specific audiences and developing consensus about what is important while avoiding what divides us. Dr. Shirley's research is focused on communicating with rural communities about climate change, and the concepts presented here are applicable across issues and audiences.

Beth Shirley is an Assistant Professor of Technical Communications in the English Department at Montana State University. Her research focuses on bringing together traditional and scientific knowledges toward engaging rural communities in science communication. She has participated in research projects with communities in Utah, Ohio, and Morocco, and is most recently involved in a collaboration with faculty in the College of Agriculture at MSU toward developing communication models for building sustainable agritourism practices across the state of Montana.

Zoom Room A – Session 2
12:30 p.m. – 1:00 p.m. CDT



Lee Ann Woolery

Citizen Artist™

Citizen Artist™ - Offering transdisciplinary practices, tools and communication platforms for the advancement of science.

Lee Ann Woolery is the Founder and Research Director at Citizen Artist™ a participatory science research platform, employing alternative research methodologies to study ecological systems change and address critical environmental issues. At Citizen Artist™ we work with individuals and communities in scientific research, addressing community driven issues, empowering citizens to get involved, those who may have been overlooked by conventional science.

Dr. Woolery is an interdisciplinary researcher, educator, scholar, and a practicing artist of over 30 years. With a focus on divergent ways of knowing, she pioneered Art-Based Perceptual Ecology, the alternative field-based research methodology used at Citizen Artist™. She holds a Ph.D. in Environmental Studies from Antioch University New England and a master's degree from The School of The Art Institute of Chicago. Her field study in desert ecology was conducted in the Sonoran Desert and findings that support

'other ways of knowing' can be seen in her dissertation: Art-Based Perceptual Ecology as a way of knowing the language of place.

Woolery currently teaches art-based research methodology courses on-line through the Citizen Artist™ platform. She has taught 'Art-based Research Methods' courses in the Ph.D. program on Sustainability Education at Prescott College and the University of Washington's Graduate Program on Education, Environment and Community at IslandWood, Bainbridge Island, WA. While teaching at the University of Missouri-Columbia, Woolery co-led a summer science communication camp for high school students: The Arts As A Portal to Science, held in collaboration with MU's Bond Life Sciences Center, where she also taught a session on: The visual image as a language to communicate science.

Zoom Room B – Session 2

12:30 p.m. – 1:00 p.m. CDT

Jane Maienschein

Marine Biological Laboratory



Talking About Abortion: Defining Terms of Debate

In part because Roe v. Wade seemed to have settled many issues about abortion, for many people, we have had too little reflective discussion in the US. We tend to stand apart and yell how obviously wrong “they” are. Yet there is room for navigation of our currently troubled waters. This talk will lay out some of the challenges and urge us to promote open and honest discussion where we can. As a starting point, we cannot have meaningful debate if we do not share our terms. Meaningful discussion will therefore require work to define terms. By social convention, dictionaries provide definitions, often time-honored historically accepted definitions. According to standard accepted definitions: “Contraception” is not “abortion.” A “miscarriage is not an abortion.” A fertilized egg in a glass dish is not a “pregnancy.” An “embryo” does not have a “heartbeat” as early as 5 weeks, nor does it feel “pain.” Yet many seek to impose their own non-standard meanings on these terms. Misuse of such key terms, including in Dobbs, leads to confusion and encourages yelling rather than working together. We can do better.

Jane Maienschein specializes in the history and philosophy of biology and the way biology, bioethics, and bio-policy play out in society. She also serves as Fellow and directs the History and Philosophy of Science Project at the Marine Biological Laboratory in Woods Hole, Massachusetts.

Professor Maienschein and her team focus on the history and underlying assumptions in development, genetics, and cell biology. They analyze epistemological standards, theories, and laboratory practices and combine that with their studies of people and institutions, as well as the changing social, political, and legal context in which science thrives.

She served as fellow with the U.S. House of Representatives during the 105th Congress.

Professor Maienschein has filled many leadership roles at ASU and with professional societies including as president of two international organizations, panels with NIH, NSF, NEH, and committees at the National Academy of Sciences. Founder and director of the Biology and Society Program and Center, she promotes education and research at the intersection of biological science and society, with an emphasis on effective communication about science.

Featured Speakers Friday, Aug. 19

Zoom Room A – Session 3
11:00 a.m. – 11:30 a.m. CDT



Athena Ramos

University of Nebraska Medical Center

Communicating Public Health Science with Diverse Communities

We all know that communication is at least a two-way street, but oftentimes, some people and some communities have more access to scientific information than others. How information is shared, what information is shared, when and through what messengers? These are real challenges for the field of public health that strives to protect and improve the health of people and communities. The COVID-19 pandemic has brought to light many struggles for science communication including the need for developing trust, engaging with individuals and communities, and leveraging both established and innovative communication channels to reach diverse audiences. During this presentation, we will discuss the science and art of health communication, community engagement, and provide brief examples related to communicating science to essential workers during the COVID-19 pandemic.

Dr. Athena Ramos, Ph.D., MBA, MS, CPM, is an Associate Professor in the Department of Health Promotion and is affiliated with the Center for Reducing Health Disparities, the Central States Center for Agricultural Safety and Health (CS-CASH), and the Global Center for Health Security at the University of Nebraska Medical Center (UNMC) in Omaha. She leads a Latino outreach and engagement team and serves as principal investigator for multiple community-based health and social research and education initiatives in such areas as occupational health and safety within the agrifood system, immigrant integration, and community well-being. She has over 20 years of experience developing and implementing social, health, and human service programs with culturally diverse populations. She strives to bring a sense of hope and vitality to the work she does both professionally and personally.

Ramos has been honored numerous times for her commitment and dedication to making Omaha and Nebraska a healthier, more inclusive, and vibrant place to live, work, and play. She was recognized as one of the “40 Under 40” by the Midlands Business Journal, one of the Ten Outstanding Young Omahans, the American Heart Association’s Advocacy Volunteer of the Year, the Nebraska Latino American Commission’s Inspiration Award recipient, and a WCA Tribute to Women Honoree. Recently, she was awarded the Carruth J. Wagner Faculty Prize in Public Health from the UNMC College of Public Health for her work during the pandemic. Ramos is married and is the mother of four children.

Zoom Room B – Session 3
11:00 a.m. – 11:30 a.m. CDT

Adam Shapiro

Historian



On the Seventh Day, God Created Science

Science and religion are often presented as opposites, and despite decades of scholarship presenting more nuanced accounts of that relationship, it seems like the spectre of conflict haunts the way that scientific ideas are communicated to religious communities. Questions that have served as the titles of well regarded books, like “Can a Darwinian Be a Christian?” or “Can You Believe in God and Evolution?” speak as if the friendliest possible relationship between religion is that of merely logical non-contradiction. Metaphors of science and religion as distinct territories or domains can coexist peacefully with a sufficiently guarded DMZ. Against the strident militarism of the conflictarians - whether fundamentalist religious or atheist, we are offered the milquetoast mewling of mere compatibility. As forms of religious antisience have become increasingly incorporated into the political pandemonium of religious nationalism, these militant metaphors become ever more wedded to a conflict between facts and fascism.

Against all of this, I propose to examine the potential for new narratives of science and religion that aren’t limited to a range between sanguinary pseudoscience and phlegmatic feats of logic. Drawing on the history of natural theology and what we might consider its modern heirs, we ask: What if religion and science are able to strengthen one another? How then might we be able to communicate science more effectively?

Adam R. Shapiro is a historian of science and religion. His work looks at the way that religious societies communicate and interpret ideas about science and technology, and the way that narratives of science-religion conflict give shape to cultural and political controversies. His first book, “Trying Biology” (University of Chicago Press, 2013) explored how the early antievolution movement in the U.S functioned as an expression of political opposition to education reform and the expansion of compulsory schooling in America. His most recent book, with Thomas Dixon, is “Science and Religion, A Very Short Introduction” (Oxford UP, 2022.) His articles on a range of science and society topics have also been published in The Washington Post, The Atlantic, American Scientist, Aeon, Undark, and several other venues.

Abstracts: Oral Presentations Thursday, Aug. 18

**Zoom Room C – Session 1
11:35 a.m. – 11:50 a.m. CDT**

Exploring Black Undergraduate Biology Students' Experiences Learning about COVID-19 and Communicating about COVID-19 to their Communities

Chloe Bowen, Middle Tennessee State University

Black scientists are known to be important and trusted sources of information within Black communities about medical decisions (Pietri et al., 2018). COVID-19 vaccines are increasingly being discussed in biology classes (Adkins-Jablonsky et al., 2021; Sagita & Permanasari, 2021), and these vaccines have the potential to mitigate the disproportionate toll of COVID-19 on Black communities. However, due to historical and modern experiences, there are high concerns about the safety and effectiveness of vaccines among this population (Quinn et al., 2017). Our Black undergraduate biology students represent the next generation of Black science professionals and will increasingly be seen as trusted sources of information within their communities about vaccines. However, it is unknown the extent to which undergraduate biology students are taking on this role of science communicator within their communities, if they feel prepared to be science communicators, and how we can better prepare them for these conversations. In this study, we explored the communication habits of Black undergraduate biology students about COVID-19 and COVID-19 vaccines. We interviewed 23 Black undergraduate students from 13 institutions in a variety of biology backgrounds. We asked students to describe their experiences communicating about COVID-19 and COVID-19 vaccines to those in their community, how their identification as a scientist and their racial/ethnic background influence how they communicate to their community about COVID-19, experiences learning about COVID-19 in their classes, and what they think biology instructors could do to help them feel more confident about communicating to their community about COVID-19. We found that students were using limited strategies for communicating effectively. Students primarily communicated to their community about COVID-19 using facts, and some students conveyed shared values. Students mentioned times in which they were able to convince others to receive a COVID-19 vaccine, but they weren't always effective. Students frequently described times in which they avoided discussing COVID-19 with those in their community to avoid conflict or because they feel like they will not be successful in changing the person's mind. Students mentioned that their identification as a scientist and their racial/ethnic backgrounds made them feel a responsibility to be boundary spanners when communicating about COVID-19 to their communities. Many students mentioned that learning about COVID-19 in their classes helped improve their confidence communicating about COVID-19. However, some students who learned about COVID-19 said that it didn't improve their confidence communicating because they didn't learn effective communication strategies. Many students didn't learn about COVID-19 at all in their classes, which made them unconfident in their ability to communicate. Most students state that they would be more confident in communicating about COVID-19 if their instructors integrated COVID-19 topics into their class. These results indicate that instructors should consider teaching about core science communication principles in addition to content knowledge when teaching about COVID-19 vaccines to improve students' confidence in their ability to communicate about COVID-19 to their communities.

Zoom Room D – Session 1

11:35 a.m. – 11:50 a.m. CDT

International #ObserveTheMoon Night: A Global Network of Community Events

Caela Barry, NASA's Goddard Space Flight Center / ADNET Systems Inc.

International Observe the Moon Night is an annual, worldwide public engagement program. Each autumn, everyone on Earth is invited to celebrate together by taking part in celestial observations, learning about lunar science and exploration, and honoring cultural and personal connections to the Moon. The program has grown steadily since its inception in 2009. In 2021, an estimated 500,000 observers participated across 122 countries. The next International Observe the Moon Night will take place on Saturday, October 1, 2022.

International Observe the Moon Night's goals are to unite people across the globe in a celebration of lunar observation, science, and exploration, as well as provide information, a platform, and resources in order to: raise awareness of NASA's lunar science and exploration program; empower people to learn more about the Moon and space science and exploration, using Earth's Moon as an accessible entry point; facilitate sharing of Moon-inspired stories, images, artwork, and more; and inspire continued observation of the Moon, the sky, and the world around us.

We interpret the term "observe" broadly. Participants join the celebration in a range of ways, including going outside and looking up, creating lunar-themed poems, paintings, and projects, telling Moon stories, and exploring lunar science resources. All are invited to share their observing experiences via social media (#ObserveTheMoon) and a collaborative Flickr group (<https://flickr.com/groups/observethemoon2022/>).

Local community events are at the heart of International Observe the Moon Night. NASA and the program coordinating committee provide infrastructure and resources, including an event database, "How to Host an Event" guides, shareable graphics, hands-on activity recommendations, and cutting-edge lunar science content. Informal educators, science communicators, teachers, librarians, community leaders, families, and curious people all over the world bring the program to life.

Registration is open to individual observers, private/household events, and public events. Local event scheduling is flexible. International Observe the Moon Night always takes place when the Moon is around first quarter. This phase offers excellent viewing opportunities along the terminator (the line between night and day), where shadows enhance the Moon's cratered landscape. In order to enable broader participation, our database accepts events timed up to one week before and after the primary program date.

International Observe the Moon Night is sponsored by NASA's Lunar Reconnaissance Orbiter mission and the Solar System Exploration Division at NASA's Goddard Space Flight Center, with many contributors.

Zoom Room C – Session 1
11:55 a.m. – 12:10 p.m. CDT

Wild Online: Why Digital Conservation Education Matters

Courtney Dunn, Zoolife TV

In today's world, digital platforms are elevated to an important status they hadn't taken part in before: science communication. Most importantly, accessibility to education of subjects such as wildlife conservation and zoology has become much more common and more engaging through their use. This talk will explore jumping out of your comfort zone for conservation by using digital platforms to reach niche audiences that may not be reached otherwise. Oh, and, did we mention this talk will be hosted from a virtual reality aquarium? It will be!

Zoom Room D – Session 1
11:55 a.m. – 12:10 p.m. CDT

Nerdy All Day and All Nite: How to start a "Nerd Nite" in Your City

Crystal Uminski, University of Nebraska–Lincoln

Nerd Nites are fun-yet-informative monthly events geared toward adult audiences that are hosted in 100 different cities around the world. Nerd Nites are typically held in bars or similar venues and involve a series of informal 20-minute talks from community members who share their passion for their unique hobbies, interests, or careers. In this presentation, you'll learn the history of Nerd Nite, get instructions for becoming a "Nerd Boss" by starting up an official chapter of Nerd Nite in your city, and hear tips and tricks for putting together effective and engaging Nerd Nite presentations.

Zoom Room C – Session 2

1:05 p.m. – 1:20 p.m. CDT

Exploring Undergraduate Biology Students' Science Communication About COVID-19

Elizabeth Barnes, Middle Tennessee State University

Science communication education for college science students could improve future science communication, but little is known about how college science students are currently communicating. Further, the diversity of college students exceeds the diversity of current scientists in terms of race/ethnicity, religion, and political affiliation, making them potentially important influencers within communities for which there is significant skepticism about science. In this study, we explored the science communication strategies of college biology students from different racial/ethnic, religious, and political backgrounds about their communication about COVID-19 and COVID-19 vaccines. We surveyed 538 biology students in the Southeastern United States when COVID-19 vaccines were first becoming available to the public and thus represented a critical time for implementing effective science communication. We surveyed students about how often they communicated with others and how prepared they felt to communicate accurately. We found that many students were communicating frequently but did not feel prepared to communicate accurately, particularly about vaccine safety and effectiveness. We asked students to describe how they would respond to someone outside of class who was skeptical of masks and vaccines and many students reported using potentially ineffective communication. Most students' responses indicated a deficit view of science communication in which students said they would use facts to help people understand better. Many students described using negative communication strategies such as being accusatory or dismissing the other person's perspective. Additionally, we asked students to report their religion, political affiliation and race/ethnicity and ran regression models to see if students from different groups were more or less likely to communicate or have misconceptions about COVID-19. We found differences among religious, political, and racial/ethnic groups that could impact these students' communication to their communities that are similar to trends seen in the broader public. Thus, college science students are influenced similarly by their identities as the public. Importantly, students who were religiously affiliated were also more likely to have concerns about the vaccines than non-religious students, but communicated to others just as frequently and felt just as prepared to communicate accurately as non-religious students. These results indicate that some college science students may be learning to take a deficit approach to science communication and may need to learn more effective science communication principles. Further, instructors may need to implement culturally competent instruction for students from a wide range of religious, political, and racial/ethnic backgrounds to make communication training effective.

Zoom Room D – Session 2
1:05 p.m. – 1:20 p.m. CDT

Analysis of Inclusivity of Published Science Communication Curricula for Scientists and STEM Students

Rachel McMillan, Colorado State University

There has been an increased push for STEM students and scientists to be trained in science communication. Science communication researchers have outlined various models of how scientists interact with non-scientists—including deficit, dialogue, and inclusive approaches. Ideally, science communication should embrace the inclusive end of the spectrum, with an inclusive model incorporating cultural funds of knowledge, multiple ways of knowing, social and political contexts, and encouraging scientists to learn as well as teach. However, science and science communication tend to be inequitably distributed, with only certain voices and perspectives owning the narrative. We wanted to analyze whether published science communication curricula for STEM students and scientists exhibit features of an inclusive approach to science communication. We analyzed n=81 published science communication trainings. We found an increase in such publications over the past two decades. We coded the trainings according to their science communication model, finding 40.7% deficit, 39.5% dialogue, and 19.8% inclusive. Trainings for STEM undergraduates were least likely to provide training in the skills of inclusive science communication. Finally, only 24.7% of publications included evaluation of efficacy of curriculum using an externally validated scale or framework. These findings present opportunities: While it is positive there are more published science communication curricula, science education and communication researchers should develop and publish more inclusive science communication trainings for STEM students. Additionally, undergraduate students can and should begin their training in science communication with a focus on inclusivity rather than deficits. Finally, science education researchers should develop more standards for evaluating efficacy of inclusive science communication training.

Zoom Room C – Session 2
1:25 p.m. – 1:40 p.m. CDT

Learning Through Inquiry: The Power of Asking Better Questions

Amber Schiltz, Nebraska Game & Parks Commission

One of the most effective tools in science education and engagement is people's own curiosity and interest in the subject. In this presentation we'll learn about inquiry based learning, an effective way to light the flame of curiosity for science in both students and adults. We'll also dive into the science and art of asking better questions and how this leads to greater learning outcomes and deeper connections and understanding of conservation education subjects.

Zoom Room D – Session 2
1:25 p.m. – 1:40 p.m. CDT

***Examining Inclusive Science Communication Training as a Tool
to Support Historically Disadvantaged STEM Students***

Nicole Kelp, Colorado State University

Diverse participation in STEM is critical to scientific and societal progress, yet students of low socioeconomic status (SES), first generation college (FGC) students, and students of color (SOC) are underrepresented in STEM fields. There is a critical need to explore alternative mechanisms of engaging students in STEM to promote the retention and career success of students from historically excluded groups. The interdisciplinary topic of science communication presents a unique avenue to engage students, emphasize the connections between scientific topics and social justice issues, and encourage the value of diverse perspectives in STEM. Previous studies have shown that training in science communication, such as oral presentations, can increase students' science identity and confidence, leading to higher STEM retention. Other previous studies have shown that empowering students of diverse backgrounds via the asset-based community cultural wealth model can increase science identity and confidence and thus STEM retention. We hypothesized that training students in an inclusive approach to science communication may have a synergistic effect in supporting their science identity and confidence. To examine the impact of inclusive science communication training on students' values and attitudes toward STEM and science communication, a 1-hour inclusive science communication workshop was developed and piloted in two first-year seminar courses for biomedical science majors and neuroscience majors at a large land-grant university. Pre- and post-workshop surveys indicated that the workshop led to a significant improvement in students' identity/belonging and confidence/self-efficacy in science, as well as their identity/belonging and confidence/self-efficacy in science communication. These effects were stronger for SES, FGC, and SOC students. Focus group discussions after these workshops indicated that students needed further reinforcement of inclusive science communication concepts. To further support this growth, we have created scaffolded science communication trainings to teach an inclusive approach to technical science communication skills—such as science writing, giving scientific presentations, and reading scientific articles—throughout STEM curricula. Such trainings can prepare STEM students to be more inclusive and more effective science communicators, as well as empower their identity and confidence as scientists and science communicators.

Abstracts: Oral Presentations Friday, Aug. 19

Zoom Room C – Session 3 11:35 a.m. – 11:50 a.m. CDT

Reconnecting with Nature for Better Science Communication

Andrew Howley, The Biomimicry Institute

In science communications about living creatures, specific choices of language, perspective, and content can get our readers or viewers to connect more deeply with those organisms. This isn't just good storytelling—it aids comprehension, retention, and contextual understanding, and can help ensure ethical application of the knowledge gained. It's part of the vision that shapes AskNature.org from the Biomimicry Institute, but it has wide applicability, and AskNature's chief editor is eager to share what they've learned in teaching others to learn from nature.

Zoom Room D – Session 3 11:35 a.m. – 11:50 a.m. CDT

Making Sense of a Complex World: System and Network Mapping as a SciComm Tool

Crystal Powers, Nebraska Water Center

Helping people understand how your data impacts their world is the key to science communication. In this session we'll explore system and network mapping as a tool to organize complex data into relationship maps. I will share applied examples of organizing large teams, synthesizing projects across dozens of organizations, and visualizing complex topics. Plus you will be introduced to free programs to make your maps come alive!

Zoom Room C – Session 3
11:55 a.m. – 12:10 p.m. CDT

Outreach Event about Dancing Spiders

Pallabi Kundu, University of Nebraska–Lincoln

My research delves into the different modes of communication using different signals in wolf spiders. Many spiders use visual and substrate-borne vibratory signals for mating; however, *Schizocosa retrorsa* wolf spiders also use another type of signal for courtship—air particle movement or near field sound. If male and female spiders are left in the dark and on granite that does not transmit substrate-borne vibratory signals, males that wave their legs more have a higher chance of mating. Based on this research published in *Frontiers in Ecology and Evolution*, I developed several activities and evaluation tools to engage people of all ages looking for a fun engaging event. My communication goals include: i) informing about general biology; ii) the different signals used, focusing on air particle movement; iii) courtship strategies of wolf spiders *Schizocosa retrorsa*; and iv) raising excitement about spiders in general.

Zoom Room D – Session 3
11:55 a.m. – 12:10 p.m. CDT

Finding our Common Thread through Conversation

Nadine Vincenten, pgEd at Harvard Medical School

DNA is at the core of life, and new technologies are increasing our understanding of this code. These genetic tools are opening the door to stunning possibilities - including new medical therapies, crops that can tolerate climate change, and ways to combat the spread of diseases.

Who will benefit from these technologies? How can we ensure they do not become tools of injustice? The potential is great, but the stakes are high.

The Personal Genetics Education Project (pgEd.org) is a non-profit organization housed at Harvard Medical School that is leading a movement to expand conversations about the personal and social impacts of genetics. For the past 15 years, our dedicated team of scientists, social scientists, and educators has led workshops in schools, libraries, museums, places of worship, conferences, the halls of US Congress, youth groups, and community spaces. pgEd engages people on any aspect of genetics they find riveting (e.g., healthcare, ancestry, or privacy), aiming to increase trust and confidence—trust that information is shared transparently and confidence that genetics is relevant and understandable without a degree in science. We engage with people from all walks of life, so we all feel more empowered to ask questions and make informed decisions at the moments when genetics touches our lives.