ComSciCon'17

Communicating Science Workshop 2017

June 8th - 10th, Cambridge, MA

#comscicon17

Table of Contents

(Click on page numbers to jump to page)

Welcome Letter

Dear ComSciCon Participant,

We are incredibly pleased to welcome you to ComSciCon 2017, the 5th annual Communicating Science National Workshop!

Since ComSciCon began in 2012, our goal has been to empower the graduate students who are poised to become future leaders in science communication, encouraging young scientists to expand the impact of research in their field to broad and diverse audiences as ambassadors for science and engineering. ComSciCon aims to connect these inspiring young scientists through our annual National Workshops and the many Local Workshops held nearly a dozen cities across the country, allowing them to collaborate on new projects and expand the reach of their own initiatives.

We believe that graduate students have the greatest potential of any group to revolutionize how the scientific community interfaces with our broader society. Through science outreach, writing, digital media, founding scientific organizations, and other entrepreneurial endeavors, ComSciCon participants will help shape the culture and perception of science for future generations.

In the following three days, you will meet some of the most accomplished and ambitious science communicators in America, exchange experiences and ideas through active discussion, collaborate together to revise your own works, and push the boundaries of your capabilities as a science communicator.

We are grateful, first and foremost, to the fifty remarkable graduate students from across the country that have traveled to Cambridge to pursue these goals. The opportunity for this cohort to meet, interact, and collaborate with each other is the fundamental function of ComSciCon. We thank the invited experts who have shared their time with us, guiding us towards these ends. And we applaud the sponsoring organizations and supporters of ComSciCon, whose enduring commitments have made this program possible.

We know the test of this workshop's success will be how its impacts carry on with you throughout your career, be it in research, education, journalism, policy, or elsewhere. We encourage you, from the moment you read this letter, to develop and maintain relationships with the participants of ComSciCon 2017, and reflect thoughtfully on how the principles discussed and exhibited here can be incorporated into your own practice. Thank you, again, and welcome to the ComSciCon community.

Yours truly,
The ComSciCon 2017 National Organizing Committee

Organizing Committees

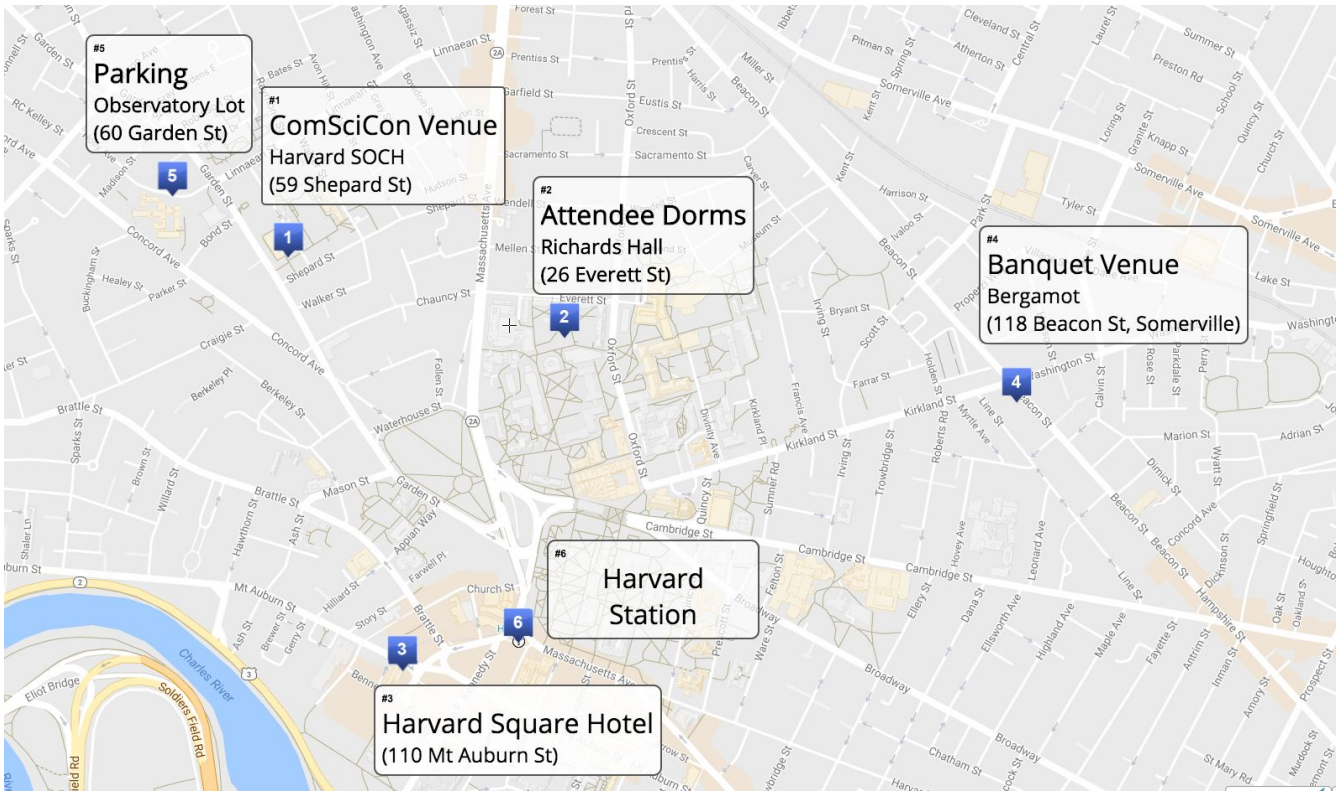
Local Organizing Committee	**Program Organizing Committee**
Ben Cook, *chair* (Harvard)	Rose Hendricks, *chair* (UC San Diego) Alison Caldwell, *vice-chair* (UC San Diego)
Phil Cowperthwaite (Harvard) Erin Dahlstrom (Harvard) Rodrigo Garcia (MIT '16) Olivia Ho-Shing (Harvard) Harshil Kamdar (Harvard) Susanna Kohler (UC Boulder '14) John Lewis (Harvard) Amber Medina (Harvard) Shannon Morey (MIT '13) Chani Nava (Harvard) Roxana Pop (Harvard) Nathan Sanders (Harvard '14) Ian Weaver (Harvard)	Reggie Bain (Duke University) Elizabeth Bajema (Northwestern) Alex Berardino (NYU) Will Chen (U of Washington) Molly Gasperini (U of Washington) Shayle Matsuda (U of Hawaii, Manoa) Aggie Mika (UC Boulder) Christina Sauer (Montana State)

Venue

More details on our website

The June 2017 ComSciCon national workshop will be held at the Harvard Sarvard Student Organization Center at Hilles (SOCH) at 59 Shepard St in Cambridge, MA, June 8-10th, 2017. Parking is located nearby at the Observatory Lot, 60 Garden St.

The Attendee Dorms are located at Richards Hall, 26 Everett St in Cambridge. Speaker accommodations are at the Harvard Square Hotel, 110 Mount Auburn St, Cambridge. The Friday evening banquet will take place at Bergamot, 118 Beacon St, in Somerville.



Communicating Science
National Workshop 2017

#comscicon17

Program Schedule

Thursday, June 8th, 2017

8:30 AM	Breakfast
9:00 AM	Welcome Address
9:20 AM	Panel 1: Media & Journalism • Piper Below, Assistant Professor, Vanderbilt • Adam Conner-Simons, Media Relations, MIT CSAIL • Ben Bergen, Professor, UC San Diego • James Dacey, Multimedia Editor, *Physics World* • Susan Curtis, Managing Editor, IOP Publishing
10:50 AM	Coffee Break
11:00 AM	Panel 2: Science Advocacy • Stephanie Fine Sasse, CEO, The People's Science • Fanuel Muindi, Assistant Director of Graduate Programs, Harvard • Willy Lensch, Chief of Staff, Harvard Medical School • Dietram Scheufele, Professor, U of Wisconsin-Madison
12:30 AM	Lunch
1:20 PM	Panel 3: Digital Storytelling (Sponsored by HHMI/Tangled Bank Studios) • Dr. Ali Mattu, Clinical Psychology, Host of *The Psych Show* • Nicky Case, Interactive Games and Simulations Developer • Gianna Savoie, Documentary Producer, Writer, and Professor • Susan Heilman, Museum of Science
2:50 PM	Coffee Break
3:00 PM	Mock Interviews & Concurrent Academic-Oriented Workshop
4:00 PM	Write-a-thon Expert Review
6:00 PM	Careers Mingle and Dinner
7:15 PM	Tangled Bank Screening
8:30 PM	Return to Dorms

Friday, June 9th, 2017

8:30 AM	Breakfast
9:00 AM	Panel 4: Communicating About Diversity Within Science • Lindsey Murphy, Creator/Host, *The Fab Lab with Crazy Aunt Lindsey* • Cassandra Extavour, Professor, Harvard University • Stephani Page, #BLACKandSTEM founder, post-doc UNC Chapel Hill • Dina Greene, Assistant Professor, U of Washington
10:35 AM	Coffee Break
10:45 AM	Diversity Discussion
12:15 PM	Lunch
1:15 PM	Keynote Address • Ed Yong, Staff Science Writer, The Atlantic
2:30 PM	Panel 5: Story Collider Panel and Workshop • Liz Neeley, Executive Director, The Story Collider • Nisse Greenberg, Storyteller/Producer, The Story Collider
6:00 PM	Group Photo
6:30 PM	Banquet Dinner

Saturday, June 10th, 2017

8:30 AM	Breakfast
9:00 AM	How to Run a local ComSciCon Event (Discussion/Breakout Time)
10:30 AM	Multimedia Poster Session
12:00 PM	Lunch
1:00 PM	K-12 & Concurrent Social Media Session
4:00 PM	Closing Remarks

Poster Session Schedule

Saturday, June 10th, 2017

Session 1: 10:30 AM - 11:30 AM	
Screen 1	**Margaret Cysewski** *The Learning Power of Real Objects*
Screen 2	**Dana Boebinger** *Science in the News: Engaging the general public in Boston and beyond*
Screen 3	**Sadie (Sarah) Witkowski** *RSG: Research Communication Training Program*
Screen 4	**Khadidiatou Sall** *SeeSD promotes STEM education in Senegal*
Screen 5	**Sara ElShafie** *The Science Hero's Journey: Story development workshops that enhance science communication*
Screen 6	**Christina Marvin** *SWAC: Exposing Graduate Students to Science Writing and Communication*
Screen 7	**Grayson Doucette** *Science on Tap - A Community Conversation*
Screen 8	**Laura Mast** *The Role of Feedback in STEM Competitions, powered by Populy Voting Systems*
Screen 9	**Molly Edwards** *Science In Real Life: a YouTube series for science outreach*
Screen 10	**Zack Brown** *GAU SciSnap: Quick Science Videos That Will Spark Your Curiosity And Make You Laugh!*

Poster Session Schedule

Saturday, June 10th, 2017

Session 2: 11:30 AM - 12:30 PM	
Screen 1	**Jaye Gardiner** *JKX Comics: Improving scientific literacy through science comics*
Screen 2	- **Empty**
Screen 3	**Mejs Hasan** *"Mr. Turtle Gets Sick" and other animations: Stories that kids can tell*
Screen 4	**Benjamin Sanchez-Lengeling** *Clubes de Ciencia Mexico (+ More!)*
Screen 5	**Anzar Abbas** *SciComm Training: For Student Scientists, By Student Scientists*
Screen 6	**JulieAnn Villa** *STEM Inquiry and Research (SIRs) at Niles West High School*
Screen 7	**eMIT** *Invited External Organization*
Screen 8	**JEI** *Invited External Organization*
Screen 9	**Astrobites** *Invited External Organization*
Screen 10	**Oceanbites** *Invited External Organization*

Invited Panelists and Speakers

Panel 1: Media And Journalism

Piper Below. I am an assistant professor at the Vanderbilt Genetics Institute, and my lab works to develop and apply computational methodologies to further our understanding of the genetic basis of human disease. Specifically, I focus on development of novel strategies for identifying and confirming genetic risk factors to complex traits including blood lipid levels, diabetes, obesity, Alzheimer's disease, cardiovascular disease, and metabolic traits via ascertainment of dense genetic, molecular, and phenotypic data. Outside of genetics, digital era science education and outreach is one of my passions. I am a full moderator (one of ~11) of the scientific community /r/science on reddit.com. This forum for scientific communication facilitates crowd-sourced interviews with prominent research scientists, has 17 million subscribed readers, and receives between 100k-500k unique IP pageviews per day.

@aconnersimons

Adam Conner-Simons oversees communications and media relations for MIT's largest interdepartmental research lab, the Computer Science and Artificial Intelligence Laboratory (CSAIL). Through his work MIT CSAIL's research has been covered in major general-interest and tech outlets more than 1,000 times over the last 2 years, including the Wall Street Journal, NPR and CBS News. He is also a freelance reporter who has written for the New York Times, The Boston Globe, the Huffington Post and Slate Magazine.

Benjamin Bergen is a Professor of Cognitive Science at UC San Diego, where he conducts research on language and cognition. He's the author of two books. *Louder than Words: The New Science of How the Mind Makes Meaning* (2012) asks how the brain manages to extract meaning from the language we see and hear around us. More recently, *What the F: What Swearing Reveals About Our Language, Our Brains, and Ourselves* (2016) examines how and why we swear.

	**James Dacey** is the multimedia editor at *Physics World*, the magazine of the Institute of Physics. He produces videos, podcasts and a range of other content about scientific research and its applications. Science journalism enables James to combine his academic background with his passions for creative storytelling and travel – so far he has been fortunate to report from various European countries, Latin America, the US, India and China. In addition to his multimedia work, James has also written for the *Guardian*, *SciDev.Net* and had a stint in Mexico writing for the *Guadalajara Reporter*.
	**Susan Curtis** is Managing Editor of the science journalism team at IOP Publishing, an international publisher of ebooks, journals, magazines and websites for the research community. Susan has more than 20 years experience of scientific publishing, and in her current role she manages 14 journalists working across the award-winning Physics World magazine and website, plus three specialist news websites covering nanotechnology, medical physics and environmental science.

Panel 2: Science Advocacy

 @thescientish @peoplesscience	**Stephanie Fine Sasse** is CEO, Co-Founder & Creative Director of The People's Science, a non-profit organization committed to engaging lifelong learners, promoting accessible evidence, and cultivating an informed citizenry. Previously, she developed educational technology and public exhibits for Oregon Health & Science University and completed post-bac research training at Harvard University from 2012-2017. She has co-authored over a dozen academic presentations and articles in developmental psychology, affective neuroscience, and science communication. In 2016, she served as the founding Editor-in-Chief of the Learning & the Brain blog. Stephanie has an Ed.M. in Mind, Brain, and Education studies from the Harvard Graduate School of Education (HGSE), where she was selected as the 2013 Leadership in Education Award recipient. In 2015, she received a Spark Grant Award from Harvard Initiative for Learning and Teaching for her work developing scientific literacy skills in undergraduate students. Through The People's Science, Stephanie has worked to bridge the gap between science and society through curriculum, multimedia campaigns, web platforms, and immersive art and science exhibitions.

 @FanuelMuindi @STEMadvocacy	**Fanuel Muindi** is the Assistant Director of Graduate Programs in the Department of Molecular and Cellular Biology (MCB) at Harvard University. He received his PhD in Biology from Stanford University and completed his postdoctoral work at MIT with Dr. Emery Brown. At MCB, he leads a team that oversees the operations of the PhD program. Fanuel is also the director and co-founder of the science advocacy think tank called STEM Education Advocacy Group. The group's work has been published in Nature, Nature Biotechnology, and Science, in addition to its own platform. The main mission for the group is to analyze, advise and advocate for science education groups around the world. Fanuel is originally from Tanzania. He enjoys writing, running, biking, and watching Star Trek TNG in his spare time.
 @DOC_DNA	**M. William Lensch,** Ph.D. is Chief of Staff of the Harvard Medical School. He is an outspoken and accessible "explainer" for biomedical research, commenting internationally in media ranging from the New York Times (online) to The Salt Lake City Tribune (Utah), and from Forbes Magazine to Sports Illustrated. He has presented across a broad range of forums from the federal government to local town-hall meetings and the Pontifical University Regina Apostolorum in Rome to Temple Ohabei Shalom in Massachusetts.
 @scheufele	**Dietram A. Scheufele** is the John E. Ross Professor in Science Communication and Vilas Distinguished Achievement Professor at the University of Wisconsin-Madison and in the Morgridge Institute for Research. He is a fellow of the American Association for the Advancement of Science and the Wisconsin Academy of Sciences, Arts & Letters, and a member of the German National Academy of Science and Engineering. In the past, Scheufele has been a tenured faculty member at Cornell University, a Shorenstein fellow at Harvard University, and a Visiting Scholar at the Annenberg Public Policy Center of the University of Pennsylvania. His consulting experience includes work for the U.S. Public Broadcasting System, the World Health Organization, and the World Bank.

Panel 3: Digital Storytelling	
 @AliMattu	**Dr. Ali Mattu** is a clinical psychologist who specializes in the treatment of anxiety and body-focused repetitive behaviors (trichotillomania/hair-pulling disorder and excoriation/skin-picking disorder). He aspires to bring psychology to everyone, everywhere by hosting THE PSYCH SHOW, writing about the psychology of science fiction at Brain Knows Better, presenting to the public, and advocating for the brain and behavior sciences through the American Psychological Association.
 @ncasenmare	**Nicky Case** plays with play. They make interactive games and simulations that help us understand the world, each other, and ourselves. Nicky is the creator of Parable of the Polygons (2014), Coming Out Simulator (2014), We Become What We Behold (2016), To Build A Better Ballot (2016), and LOOPY (2017).
 @OceanMediaInst	**Gianna Savoie** is an award-winning documentary producer, writer, and professor with nearly two decades of experience in Natural History filmmaking and a penchant for powerful storytelling that has led her to sink her teeth into some of the most critical conservation issues on the planet. Trained as an environmental biologist, she pairs her love of science with the art of filmmaking to craft stories that not only inform, but deeply resonate. Her Emmy-nominated work has been featured on PBS, NATURE, National Geographic, Discovery, and the BBC, as well as in theatrical documentaries and in print and web publications.

 @Suebaru16	**Susan Heilman** takes her lifelong love of science and uses it to inspire Museum of Science visitors through a variety of platforms. To name a few: She hosts guest scientists, makes indoor lightning, wrangles porcupines, digs up dinosaurs, produces the Museum podcast, and toys around with videos.

Panel 4: Communicating About Diversity Within Science

 @AuntLindsey	**Lindsey E. Murphy** is the creator, producer, and host of The Fab Lab With Crazy Aunt Lindsey, YouTube's #1 kids science web series that takes everyday science concepts and turns them into fabulous DIY projects. Since launching in 2010, the show has garnered partnerships with the likes of Scientific American Magazine, the New York Academy of Sciences, and has been published in countless family publications around the nation and internet.
 @redmakeda	**Dr. Cassandra G. Extavour** is a professor in the Department of Organismic and Evolutionary Biology at Harvard University. She received her bachelors from University of Toronto and her PhD from the Autonomous University of Madrid. She has received the Ellison Medical Foundation New Scholar in Aging Award as an assistant professor, and for her teaching and mentoring activities, she has been nominated for the Joseph R. Levenson Memorial Teaching Prize and the Harvard Graduate Women in Science and Engineering Mentoring Award.

 @ThePurplePage	**Dr. Stephani Page** is the founder of the #BLACKandSTEM online community, and currently post-doc at the University of North Carolina at Chapel Hill, where she also received her PhD. She has a B.S. in Chemical Engineering and M.S. in Biology from North Carolina A&T State University.
	**Dina Greene** began her academic career in Gainesville, Florida, following which she had a more-or-less linear trajectory to Seattle Washington (with stops in Atlanta, Salt Lake City, and Berkeley along the way). She is currently an Assistant Professor at the University of Washington in the Department of Laboratory Medicine where she directs the Chemistry section of the University hospital laboratory. Her research interests include: cardiac biomarkers, laboratory errors, laboratory operational efficiency, and how sex or gender influence laboratory testing.

Panel 5: Story Collider	
 @LizNeeley	**Liz Neeley** is the Executive Director of The Story Collider. She's a marine biologist by training. Studying the color patterns of tropical fish has, oddly enough, inspired all of her science communication work. She spent a decade helping scientists connect with the policy making and media worlds, and she convinced hundreds of researchers to get on Twitter. She's not sorry about that either (usually). Find her on twitter at @LizNeeley.

	**Nisse Greenberg** is an award winning storyteller and producer for the NYC Story Collider show and is the co-creator of shows such as Drawn Out Storytelling, Bad Feelings, and VHS Presents. He also teaches high school math and storytelling for The Moth.

Keynote Address	
 @edyong209	**Ed Yong** is a staff science writer at The Atlantic. His work has appeared in Wired, the New York Times, Nature, the BBC, New Scientist, Scientific American, the Guardian, the Times, and more. His first book I CONTAIN MULTITUDES—about how microbes influence the lives of every animal, from humans to squid to wasps—was published in 2016 by Ecco (HarperCollins; USA) and Bodley Head (Random House; UK).

Pop Talks Schedule

Surprise! You just ended up in the elevator with your personal hero. You have sixty seconds to explain to them who you are, what you do, and why your work matters.

ComSciCon will give you the opportunity to practice your elevator pitch in front of your peers and get instant feedback from them. We will feature a few pop talks by attendees in between sessions and before lunch each day. You will have one minute to introduce yourself and explain your research to the rest of the attendees. Please remember that not all attendees are experts in your field of interest, so avoid using jargon whenever possible. The audience has "Jargon" and "Awesome" cards in their folders. If they feel like you used jargon, they'll let you know. They can also let you know that you are awesome!

Thursday, June 8th, 2017		
Before Panel 1: Media & Journalism		
Mason Molesky	George Washington U.	Computer Science
Benjamin Sanchez	Harvard University	Chemistry
Jessica Karch	UMass Boston	Chemistry
Bethany Kraft	U. of New Orleans	Ecology
Ryan Venturelli	U. of South Florida	Chemistry
Before Panel 2: Science Advocacy		
Gina Mantica	Tufts University	Biology
Jesse Feddersen	Yale University	Astronomy
Sophia Tintori	UNC, Chapel Hill	Biology
Paul Levine	UC Irvine	Environmental Science
Molly Edwards	Harvard University	Biology

Before Lunch		
Shawntel Okonkwo	UCLA	Biology
William Meng	Michigan State University	Biology
Dana Boebinger	Harvard University	Psychology
Brittany Aguilar	Georgetown University	Psychology
Sara El Shafie	UC Berkeley	Biology
Before Panel 3: Digital Storytelling		
Christina Marvin	UNC, Chapel Hill	Chemistry
Margaret Cysewski	U of Alaska, Fairbanks	Engineering
Johanna Ohm	PSU	Biology
JulieAnn Villa	Northwestern University	Public Health
Michelle Atallah	Stanford University	Biology
Before Mock Interviews/Academic-Oriented Workshops		
Catherine Lambert	Cornell University	Environmental Science
Deepa Rao	MIT	Ecology
Jay Gardiner	U of Wisconsin-Madison	Biology
Christina Parker	UNC, Chapel Hill	Medicine
Laura Mast	Georgia Institute of Tech.	Engineering
Before Write-a-Thon		
Lauren Jabusch	UC Davis	Engineering
Paul Enriquez	NC State University	Chemistry
Aaron Blanchard	Emory and GIT	Engineering
Benjia Dou	U of. Colorado	Engineering
Katherine Wu	Harvard University	Biology

Friday, June 9th, 2017		
Before Panel 4: Communicating About Diversity Within Science		
Mariana Rocha de Souza	University of Hawaii	Biology
Mejs Hasan	University of North Carolina	Biology
Sarah Witkowski	Northwestern University	Psychology
Eric Earley	Northwestern University	Engineering
Michael Graw	Oregon State University	Environmental Science
Before Lunch		
Anzar Abbas	Emory University	Biology
Rachel Gulbraa	Yale	Environmental Science
Shannon Bayliss	U of Tennessee, Knoxville	Ecology
Zachary Brown	University of Rhode Island	Chemistry
Khadidiatou Sall	Oregon State University	Biology
Before Keynote Address		
Gabriela Serrato Marks	MIT	Environmental Science
Grayson Doucette	PSU	Engineering
Arthur Michaut	Harvard Medical School	Physics
Rachael Bonoan	Tufts University	Biology
Chris Lim	Yale	Biology
Before Panel 5: Story Collider		
Michael Zevin	Northwestern University	Astronomy
Jessica Noviello	Arizona State University	Astronomy
Amanda Grennell	U of Colorado, Boulder	Chemistry
Shao Min Tan	Cornell University	Physics
Grigori Guitchounts	Harvard University	Biology

Breakout Sessions and Workshops

Attendees will be assigned to these groups at the workshop

Mock Interviews

The mock interview session will provide tips on interacting with the media, including how to craft clear messages and field difficult questions. Then, you will spend most of the session getting practical experience and feedback while being interviewed about your research in front of a camera!

Academic Workshop

Do you want your teaching to be more engaging? More effective? Using interactive learning strategies is a great way to achieve this goal! In this session led by edX Chief Scientist Piotr Mitros, attendees will work in groups to learn a variety of interactive strategies that can be implemented in the science classroom.

K-12 Session

In the K-12 session graduate students will work with local area educators to learn how to develop content appropriate for a K-12 classroom setting. Graduate students participating in the K-12 session will be asked to write a 400-600 word "Bite" summarizing an exciting topic related to your research (it does not specifically have to be your research as long as it is in your field) in advance of the session. On the day of you will work with the educator to edit your "Bite" and translate it into a curriculum appropriate lesson plan.

Social Media Session

The social media workshop will be a hands-on workshop focused on expanding your social media net. It will include sessions focused on how to get set up on various social media platforms, how to engage with audiences on those platforms, and how to use visuals - like artwork, photography, and video - for expanding your reach and telling science stories in new ways.

Careers Mingle And Dinner

The careers mingle and dinner will be held on Thursday, June 8th. See the main screen for seating assignments.

Video Screening by HHMI Tangled Bank Studios

Howard Hughes Medical Institute (HHMI) is the leading private supporter of scientific research and education in the United States. Its scientists have made trailblazing discoveries that advance both human health and our fundamental understanding of how life works, and have garnered 16 Nobel Prizes. Its BioInteractive division produces and provides educational media to millions of students across the globe, and its grants program aims to transform science education in universities and colleges into a creative, interdisciplinary endeavor that reflects the excitement of real research.

HHMI Tangled Bank Studios is a production company established and funded by HHMI as an extension of its longstanding science education mission. Dedicated to the creation of original science documentaries for broadcast, theatrical and digital distribution, the company's award-winning programs address important contemporary issues and capture compelling stories of discovery across all branches of scientific inquiry.

We will be joined by Laura Helft, Senior Manager for Public Outreach and Evaluation, who will be hosting the screening.

TANGLED BANK STUDIOS

A Production Company of HHMI

tangledbankstudios.org @Tangled_Bank_

Poster Session Abstracts

(In Alphabetical Order by Presenter)

Anzar Abbas (Session 2, Screen 5)
SciComm Training: For Student Scientists, By Student Scientists

Not all universities provides opportunities for budding scientists to engage in popular science communication. Fortunately, there is a way for students to lead efforts to supplement their own scientific training with such opportunities. Student scientists, whether undergraduate or graduate students, are more likely to participate in science communication in their careers if they have the opportunity to participate in such activities early on. A group of students at Emory University founded a student-run organization called Emory SciComm with a mission to engage more student scientists in popular science communication. Though the effort started with limited resources and a small team, it has grown into an established organization that provides ample opportunities for popular science communication: Emory SciComm now produces its own online news publication and broadcasts its own science podcast. However, Emory SciComm's audience is limited, and mostly resides in the Emory community. Our future goals are to provide opportunities for members to not just produce for SciComm's own productions, but try and create opportunities for members to contribute to publications and productions outside of Emory. Such publications have a broader reach, and play better towards the goal of reaching a general, non-scientific audience. We wanted to propose partnerships between organizations such as Emory SciComm and established media outlets. Such partnerships would benefit both the media outlets in terms of generating content as well as contributing organizations such as Emory SciComm, which are helping train and inspire the next generation of science communicators.

Dana Boebinger (Session 1, Screen 2)
Science in the News: Engaging the general public in Boston and beyond

Science in the News (SITN) is a graduate student organization at Harvard with a goal that is two-fold: (1) to bridge the communication gap between scientists and non-scientists and (2) to effectively train the next generation of scientists to be able to communicate their research and engage with people of all backgrounds. SITN is the largest student-run science outreach group at Harvard, providing over 50 free events per year including a Fall and Spring lecture series, science cafes called Science by the Pint, various school outreach events, regular publication of articles on our online blog, and various social media
engagement events. In 2015, we launched a day-long science conference for the general public and are producing our third annual event this spring (themed "Planet Earth") with expected attendance of over one hundred members of the public. In the fall of 2015, we launched our podcast series entitled "SIT'N Listen," exploring topics ranging from GMOs and allergies to women in science. Earlier this year, we began an online art gallery featuring student-created images paired with a description of the science behind each artwork. Each of our events is entirely prepared and executed by graduate students, and covers topics spanning most scientific fields. Our model of peer-to-peer feedback, in conjunction with our large-scale engagement of members of the Boston-area public, allows graduate students to evaluate and hone broad communication skills. We believe Science in the News is a model for student science outreach that could be expanded to other institutions.

Zack Brown (Session 1, Screen 10)
GAU SciSnap: Quick Science Videos That Will Spark Your Curiosity And Make You Laugh!

In partnership with Graduate Assistants United (GAU), a team of URI graduate students have recently founded GAU SciSnap, a group dedicated to communicating science topics to the university community and general public. Our 10-second demonstration videos combine humor, music, and science to spark the curiosity of viewers, hopefully motivating them to pursue concepts in more detail on their own. These videos are posted through Snapchat, Twitter, Instagram and Facebook, with simple explanations of the demonstrations written for the Facebook posts. We have observed preliminary success, with two of our videos viewed more than 50,000 times on Snapchat stories. So far we have over 250 unique followers across Snapchat, Instagram, Twitter, and Facebook through word-of-mouth advertising. This poster will describe the recipe for a successful SciSnap. We are open to starting SciSnap groups at other universities, utilizing their resources to film unique snaps that spark the public's curiosity!

Margaret Cysewski (Session 1, Screen 1)
The Learning Power of Real Objects

Hot Times in Cold Places: Permafrost During Climate Change is a NSF informal science education project between the University of Alaska Fairbanks (UAF) and the Oregon Museum of Science and Industry (OMSI). The project goals are to increase awareness of permafrost and climate change in the U.S. through a national traveling museum exhibition, as well as in rural Alaskan villages by hosting community science nights. Permafrost is ground that stays frozen year-round in the Arctic, Subarctic, and high altitude regions, and now it is thawing from climate change. The project was inspired by the Permafrost Tunnel, a scientific research facility. For years, college students have learned about permafrost at the tunnel by experiencing it first-hand underground. But with limited access to the tunnel, our goal was to create displays that replicate the same experience. We use real objects taken from the tunnel that include permafrost samples, ice age vegetation, and ice age mammal bones. We have paired these with interactive displays, models of permafrost, educational games, and science tools. As part of the project, we are in the midst of researching how attributes of scale, resolution, uniqueness, and history of real, simulated and virtual objects impact the learning experience. From interviews during tunnel tours and community science nights, preliminary findings show that people connect the wonder of being in the tunnel and with the real objects while learning about climate conditions of the past, and then extrapolate thoughtful questions about current climate change and the science of permafrost.

Grayson Doucette (Session 1, Screen 7)
Science on Tap - A Community Conversation

Science is all around us; whether it's soil in our backyard, medicines in our cabinets, or batteries powering our devices. But scientific information can be hard to interpret even for the best of us. The Penn State Science Policy Society hopes to break down these technical barriers to benefit our community with Science on Tap. Science on Tap takes science out of the lab and into local bars so everyone can jump in on the dialogue. Every month, the Penn State Science Policy Society invites faculty from across campus to talk about their research with students and State College community members. From psychology to entomology, we aim to broaden the perspectives of all attendees to see the thousands of ways research being done on campus impacts our everyday life.

Molly Edwards (Session 1, Screen 9)
Science In Real Life: a YouTube series for science outreach

Science IRL is a YouTube series that provides the missing link between textbook science concepts and scientific research "in real life." You probably had to memorize the steps of PCR in high school, but what does it look like when a scientist actually does PCR in the lab, and how do scientists use PCR to answer their research questions? Hosted by Harvard University PhD student Molly Edwards, most episodes feature a guest scientist who demonstrates a lab or field experiment and discusses how it fits in with their broader research goals. By doing so, Science IRL aims to impact viewer attitudes toward science in the following ways:

1. Increase their enthusiasm for science
2. Favorably change their perception of scientists
3. Increase their familiarity with a variety of science careers

Last spring, Science IRL received a grant from the American Society of Plant Biologists to produce 10 episodes featuring the work of women plant biologists at leading research institutions across the country, including Harvard University, UC Berkeley, and Cornell University. This funding allows us to advocate for gender equality in STEM by providing young women with access to scientist role models who represent their identities. The grant includes robust dissemination and evaluation plans including a pre/post observational study being implemented in 20 New England high schools to assess whether Science IRL is meeting the learning objectives outlined above.

Sara ElShafie (Session 1, Screen 5)
The Science Hero's Journey: Story development workshops that enhance science communication

Communication experts agree that the most effective way to engage an audience with new information is to frame the content within a story. Studies show that audiences process and recall new information more efficiently if the content is structured as a story. Stories also humanize the storyteller, which can help scientists counter pervasive public misperceptions that scientists are non-relatable. Effective storytelling benefits from narrative training that is often not included in science communication workshops.

In consultation with artists at Pixar Animation Studios and educators at the University of California Museum of Paleontology, I developed a series of workshops that adapt story strategies from filmmaking for science communication. These workshops aim to 1) help scientists better articulate their research and career motivations, and 2) offer scientists practical tools to make their work accessible and engaging for any audience.

The hands-on workshops focus on principles of story development (e.g., character, conflict, stakes, and theme), and utilize an adaptation of the Hero's Journey model. I also use visual storytelling principles to translate scientific studies into visual language through strategic use of color, shape, layout, and visual cues.

I have run workshops at university campuses (14 to 175 participants/group) and a scientific meeting (350+ participants); in each case, most participants were graduate students in STEM degree programs. In post-workshop surveys, 93% of respondents indicated that they would use story strategies in future scientific presentations. Areas for future development include 1) using story to facilitate inclusion in science, and 2) data visualization through story methods.

Jaye Gardiner (Session 2, Screen 1)
JKX Comics: Improving scientific literacy through science comics

JKX Comics is a scientific comics coalition formed by graduate students at the University of Wisconsin-Madison who wanted a better way to communicate science to a lay audience (check us out at www.jkxcomics.com!). Our goal is to broaden the scientific understanding of our community, specifically targeting youths, on the science behind many things in our world (e.g. the common cold, biological processes, etc.) as well as the exciting research that is being done around the world (including our own). We feel that using comics and cartoons is a powerful way to disseminate science that is both easily accessible and memorable. Through our "Scientist Spotlight" series, we not only display the variety of research being conducted, but also the diversity of actual living scientists that make it all possible; hoping to provide inspiration to budding scientists and demonstrate that anyone can be a scientist. We further hope to increase our exposure to not only the public state and nationwide, but to other science communicators to create collaboration pieces; we believe that generating these comics is also a great learning tool for the public and scientists (burgeoning or established) alike. Contact us at jkxcomics@gmail.com and follow us on twitter/instagram/facebook with @jkxcomics and tumblr with jkxcomics.tumblr.com!

Mejs Hasan (Session 2, Screen 3)
"Mr. Turtle Gets Sick" and other animations: Stories that kids can tell

My poster would be about animation projects that I do with kids. To start these projects, I write a children's story featuring a girl or boy as the main character. Woven into the action of the story are issues like pollution, ecology, deforestation, and transportation and consumption habits. After writing the story, I find a classroom or library to partner with (thus far in Sweden or North Carolina) which I visit over several weeks. I first read the story to the children and we talk about the environmental issues underpinning it. I also teach them animation basics. Afterwards, each kid chooses a page for his/her own from the story to illustrate, narrate, and animate, under my guidance. I do the animation preparation to "set the scene" (using the kids' drawings and narrations), and also the extensive post-processing to put all the kids' animations together into a final film. When all is done, the kids and their parents have a viewing party! These projects require kids to use reading, computer, and even math skills (they have to pace actions on a timeline). However, the kids almost universally think animating is really cool, and don't notice all the skills they are being forced to practice. They also engage deeply with environmental messages. During the viewing party, the kids see how each person's page becomes part of a single story, so I think they learn about teamwork as well. I try to include kids of all races, all national origins, all economic levels, including refugees, and I hope these projects are a way to build trust and harmony.

Christina Marvin (Session 1, Screen 6)
SWAC: Exposing Graduate Students to Science Writing and Communication

The Science Writing and Communication Club (SWAC) at UNC-Chapel Hill provides graduate students with opportunities to explore science communication careers and develop writing and editing skills through our science blog, The Pipettepen. Founded by graduate students, this group formed as a response to the lack of training and resources for science communication careers. Throughout the year, we provide information on opportunities to engage with science communication professionals and facilitate local relationships with our annual seminar series and writing workshop. During the series, speakers from various fields provide personal career insights. At the writing workshop, students bring original writing samples to be workshopped with peers, plus local science writing experts. The Pipettepen blog provides even more hands on writing experience. With over 100 graduate students and postdocs serving as writers and editors, The Pipettepen offers great opportunities to showcase original work, ideas, and passions about science. Contributors also gain valuable experience in the use of copyright and publication websites such as WordPress. Overall, SWAC aims to expose graduate students to careers in science writing and communication, assist with professional development, and enable skill development through hands on writing and publication.

Laura Mast (Session 1, Screen 8)
The Role of Feedback in STEM Competitions, powered by Populy Voting Systems

Clearly presenting STEM ideas, whether the product of three years of research or three months, takes practice. There are now a wealth of opportunities for students of every age to showcase their work, whether it's at a K-12 science fair or invention convention, at an undergrad research day or senior design expo, or at a professional conference. Here, students can not only compete for fame, glory, and scholarships, but also educate others and learn to engage them as well. Thus, it is crucial for STEM competitions of all kinds to have their judges share their feedback with students, a process that for the event organizers represents a monstrous time sink, especially when added to other time, money, and human resources challenges. Populy Voting Systems, a Georgia Tech based start up, helps organizers streamline the judges' voting aspect, banishing paper ballots to the past. Judges complete their ballots online, and winners can be easily identified at the moment the competition ends. With a click of a button, scores, feedback, and ranking can be shared with the competitors, helping them to learn from the experience. This poster will cover what we've learned: best practices for organizing an event, common feedback elements for students and judges, and the importance of feedback as reported by competitors, their mentors and advisors, and organizers.

Deepa Rao (Session 2, Screen 2)
The Ocean's Charismatic Microfauna

In every local pond, river, and bay, water is teeming with microscopic life that forms the base of freshwater, estuary, and marine ecosystems. In a milliliter water droplet, there can be as many as one million microorganisms! Not only are they plentiful, they are also diverse. There exists an entire microbial ecosystem, including microscopic plants (the phytoplankton), bacteria, viruses, and miniatures crustaceans (zooplankton). Just within the phytoplankton alone, there exist many different shapes, strategies, and sizes, even more diverse than land plants. In fact, half of Earth's atmospheric oxygen is produced by the ocean's invisible forest of microscopic, drifting plants — the phytoplankton. That means every other breath you take is filled with oxygen once made by water-inhabiting phytoplankton. Satellite images now offer us a synoptic view of large-scale phytoplankton blooms that capture changes in ocean color from deep blues to milky white or green, depending on the phytoplankton species that is rapidly growing. Through a combination of photography, microscopy, and illustrations, we will capture captivating images of phytoplankton, zooplankton, and other micro-scale inhabitants of marine ecosystems. The goal of this project is to introduce the public to the ocean's charismatic microfauna.

Khadidiatou Sall (Session 1, Screen 4)
SeeSD promotes STEM education in Senegal

The colonial history of Africa has led to a serious disparity in the scientific literacy of its citizens. In 2014, World Bank Vice President Makhtar Diop highlighted this fact, stating that fewer than 25% of graduates from African institutions are in STEM fields. There is a general fear and lack of trust towards science, with people believing that it is foreign led and irrelevant to their lives. SeeSD promotes STEM education in Senegal. The goal is to foster curiosity and critical thinking starting from a very young age. To this extent, we offer regular hands-on workshops and training opportunities focusing on K-20 students. We have offered workshops related to biology, physics, chemistry, environment, 3D printing, coding, and electronics. We are also developing a MOOC platform named Afreecademy. More than half of the Senegalese have access to internet and Senegal has currently the fastest growth rates when it comes to self-paced e-learning in Africa. Afreecademy stands out from other platforms because it is set to provide contents in local languages (Wolof, French and other local languages). In Senegal, the most widely spoken languages are Wolof and French. By offering content in both languages, users will have the option of choosing which language they would like to learn in. A model like Afreecademy is required if we want to develop sustainably and preserve our culture and tradition. With 72% of the population speaking Wolof, I am optimistic that students will appreciate the opportunity to learn in their native language.

JulieAnn Villa (Session 2, Screen 6)
STEM Inquiry and Research (SIRs) at Niles West High School

In 2009, Niles West High School built a STEM lab- a dedicated space for students to pursue their project ideas. For the past eight years, a small group of high school teachers at our school, developed a curriculum to facilitate an independent STEM research program. There are three components to this program- a STEM Inquiry and Research (SIRs) class, and after school club, and a graduate student mentor program. In SIRs, students choose a topic, design a research project, and complete their investigation in our STEM lab. Students develop oral and written science communication skills for formal science competitions and interacting with the public and their peers. Writing a research proposal, applying for grants, and making a 60-second video summary are all parts of the SIRs research experience. We have developed a partnership with Northwestern University to create the MORE@Niles West program, pairing graduate student research mentors with high school students. Fifty to sixty students participate in this program annually. All students are eligible to participate in this program with many people taking SIRs for two years or more.

Sadie (Sarah) Witkowski (Session 1, Screen 3)
RSG: Research Communication Training Program

With so much groundbreaking research taking place at Northwestern, it is increasingly important to convey discoveries clearly and concisely to both expert and general audiences. Communication skills are vital and require diligent practice. The Ready, Set, Go program (RSG) was founded in 2012 to strengthen this skill set and promote the effective communication of science.

The 12-week program serves graduate and post-doctoral researchers, focusing on three fundamental components of communication: building confidence in all communication roles, enhancing the clarity of the message, and forming a connection with any audience. RSG Research Communication Training Program brings in experts from theater, journalism, education, marketing and design to train PhD students to better communicate their research to diverse audiences. Upon completion of the program, graduate students continue to hone their skills by giving presentations to local high school teachers through the Graduate Student Speaker Series. In this teacher professional development program, our students work together with the teachers, exploring ways to integrate the latest cutting-edge research into the high school curriculum.

Students are trained in K12 teaching methodology and in the development of inquiry-based activities, based upon their research. They are then ready to visit local high schools and work with teachers. The graduate students give 20-30 minute talks on their research, and provide examples of curricular resources appropriate for the classroom. They serve as the "content experts" as they work together with the teachers to make modifications and incorporate more research into their curricula.

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