



Poster Session Abstracts

(in alphabetical order by presenter)

Aggie Mika (Session 1, Screen 1)

Science Buffs: a STEM research blog run by grad students at the University of Colorado Boulder

Science Buffs is a STEM research blog at CU-Boulder run by graduate students who love science and have a thing for science journalism (check us out at sciencebuffs.org). We aim to engage the general public in the incredible research at CU-Boulder as well as promote topical science news, issues, and policy. Regular posts include features on recent CU publications and multipart series on topics like bad science reporting, the health benefits of exercise, and the importance of science-driven issues in the current presidential election. We also profile CU graduate students with our popular “Grad Student Snapshot” series, where we highlight students’ eclectic and extraordinary interests in academics and beyond. We’re looking to cultivate a stronger social media presence and find new ways to further engage our local community, as well as audience’s state and nationwide. As we grow, we hope to connect with a greater group of science communicators so as to share ideas on how to effectively inform and excite the public about all things STEM.

Alison Caldwell (Session 1, Screen 2)

Using YouTube For SciComm: It's Not Rocket Surgery, It's Brain Science!

Social media is a new and emerging avenue ideal for science communication across a broad variety of formats. In particular, streaming video services are extremely popular, with the success of platforms such as Vine, YouTube, Periscope, and Facebook Live drawing millions of viewers engaging with content every day. To take advantage of this popular format, we have developed Neuro Transmissions, an educational YouTube channel dedicated to breaking down neuroscience for a broad audience. Through the use of concise, clear explanations and simple but accurate animations, we aim to engage the public on a variety of subjects. Since launching in September of 2015, we have amassed over 1,000 subscribers and have added Spanish subtitles and closed captioning to enhance the accessibility of our videos. Topics we have covered thus far include Neuro 101, highlighting concepts like “What is a Neuron?” and “How Do We See?”, and pop culture topics like “The Science of Jedi Mind Control”. As the channel grows, we hope to expand our topics to discuss neurological disorders and higher-level cognition, as well as answering questions submitted by our viewers. Through these efforts, we hope to get members of the public interested in and excited about the brain.

Amanda Freise (Session 2, Screen 1)

Creating SciComm Opportunities at UCLA and Beyond

SciComm Hub, a collection of resources about careers in science education, outreach, writing, policy, and more, was created to help PhD students interested in jobs outside the traditional career path. In an effort to build community locally, we organized a student group, SciComm Hub @ UCLA to build on the resources offered by the website and hold events and trainings about science communication skills. Most notably, we produced an 8-week scicomm workshop series, inspired by past ComSciCon and Alan Alda Center for Communicating Science trainings in addition to our own research, which was well-received at UCLA. Our other community-building effort, the @IAMSciComm twitter account, has become a well-known forum for engagement and discussion about science communication. Finally, in an effort to provide young scientists with an opportunity to practice writing for a lay audience (a critical skill that is often not recognized by graduate training programs), several UCLA students created Signal to Noise Mag: a nonprofit online publication that utilizes a peer editing process to encourage scientists to share their science with the world and improve their writing and communication skills.

Anna Fagre (Session 2, Screen 10)

Microphile: A collaborative blog on infectious disease

Microphile is a collaborative blog focused on infectious disease news and research comprised of entries by graduate students and scientists passionate about sharing science with the general public. Writing an entry for Microphile is a great way to practice your hand at communicating science in lay terms and also to promote your own research. The blog is



broken up by categories: Spillover, From the Field, Microbytes, and Transmission. “Spillover” contains personal research summaries, providing a broken down explanation of contributor’s research projects including methods, results, and importance. “From the Field” is for the lighter side of things – jokes, anecdotal narratives, or horror stories from your work (for example, that crazy disease you got while doing field work in the Amazon while collecting data for your PhD). “Microbytes” features infectious disease discoveries and updates in the media today. Is there something newsworthy happening that you’d like to summarize for us? Submit it here. Lastly, “Transmission” is a message board to promote and facilitate networking and communication between visitors. Contact microphileblog@gmail.com to get involved today! [www.microphile.org]

Anya Burkart (Session 1, Screen 6)
Synapse: the MIT Biotech Report

Synapse: the MIT Biotech Report is an online news source developed by graduate students to inform students and young professionals about the biotechnology industry and entrepreneurship in this sector. Launched in April, the report releases a new interview with a successful founder or CEO of a biotech startup every other week. Future expansions of coverage include providing resources for young people starting biotech ventures as well as profiles of recently IPO-ed companies looking to hire. Synapse has gained great readership since its founding and seeks to connect bio-oriented students to the broader biotech industry.

(Victoria) Ashley Villar (Session 1, Screen 4)
Taking a Bite out of Your Science

Astrobites is a daily “Reader’s Digest” of astrophysics research written by graduate students in astronomy which has been operating since 2010. Our goal is to present one interesting paper per day in a way that is accessible to undergraduate students — especially those who are just beginning their studies. In addition to current research, we also write on academic life, graduate school and how to excel in astronomy research which provides readers with a unique source of guidance through the world of academia. Astrobites has inspired the creation of several sister sites in other scientific fields, include oceanography (Oceanbites), particle physics (Particlebites) and chemistry (Chembites). These efforts bridge the gap between classroom work and research in any field, and we’re happy to help anyone create their own Sciencebites!

Carla Dario (Session 1, Screen 5)
Making Waves: "A Glass of the Sea" Traveling Exhibition on Marine Biodiversity

A Glass of the Sea is an immersive and interactive traveling exhibition on the astounding discoveries of the Verde Island Passage within the Coral Triangle. Recognized as the apex of marine biodiversity the Verde Island Passage is located in the Philippines, home to approximately 540 species of coral (out of the world’s 600 coral species) and about 2000 species of fish (out of the world’s 6000 species of fish). The exhibition was inspired by a study published in the 2014 PLOS One journal entitled Using Environmental DNA to Census Marine Fishes in a Large Mesocosm where a small sample of ocean water provides a picture of biodiversity (specifically for fish) in an area. A Glass of the Sea is a project of The Mind Museum (Manila, Philippines) in collaboration with USAID and The California Academy of Sciences who have shared their research on documenting biodiversity in the Verde Island Passage.

The exhibition invites you to experience the narrative of the sea, the beauty of the science behind it, and your role in its protection and conservation. Bringing the sea into the city, the exhibition has traveled to 5 cities in the Philippines catering to over 50,000 people thus far.

Carrie McDonough (Session 2, Screen 12) – External Organization
Oceanbites.org: Oceanography Research for Broad Audiences

In 1876, the HMS Challenger completed the world’s first oceanic research expedition, bringing back news that the deep seas were teeming with life, and characterizing the ocean’s complex currents and chemistry for the first time.

Oceanography has captured the public imagination ever since. While broad audiences are interested in ocean research,



studies often make their way to the public in short, oversimplified snippets, leaving many readers hungry for more information. Finding out more about a study can be challenging; journal articles are often extremely detailed and full of jargon that can be difficult even for other scientists to parse. Inspired by astrobites, oceanbites provides explanations of cutting-edge oceanography research aimed at an audience with a high school science education. The site was founded with two goals in mind: to make new research more accessible to the non-expert public and to provide graduate students with the opportunity to practice honing messages for broad audiences. Currently, about 20 grad students from 10 universities around the world contribute regularly to the site. We publish one article per weekday, as well as occasional posts on science communication and popular media related to marine sciences. We are currently working to increase the involvement of undergraduates in producing content for the site by collaborating with summer undergraduate fellows at URI to produce blog posts about their research in oceanography.

Christin Monroe (Session 1, Screen 3)
Princeton ACS STEM Outreach and Professional Development

We have designed a unique STEM outreach program that will bring together selected high school students and teachers, graduate students and professional scientists from the triad of academia, industry and government. This program will expose all students to the vast array of opportunities that exist in STEM fields, stimulate entrepreneurship, and will be composed of professional development workshops and career seminars, including Shirley Tilghman, president Emerita of Princeton University, to prepare students for these careers. The program will culminate with a one-day trip for the high school students to the Fall 2016 National ACS Meeting in Philadelphia. A meeting with Donna Nelson, ACS President is planned. The high school participants will also put together a final presentation describing a significant discovery in Chemistry taken from primary literature, with help from their graduate student mentor. Our marquee event will feature Bassam Shakhshiri, the 2012 ACS President, well known for his “Science is Fun!” chemical demonstrations. The event will be followed by a networking dinner. Workshop topics include: 1) networking strategies, 2) interview strategies, 3) advice on resume building/ LinkedIn profiles, 4) menteeing and mentoring, 5) navigating primary literature and presentation strategies and 6) scientific entrepreneurship.

Eleanor Lutz (Session 2, Screen 7)
Bite-Size Biology: Sharing science with animated GIFs

Some of the most interesting science topics are concepts we can't visualize easily: gravity, evolution, or even global warming. It's a challenge to explain these complex ideas, and I think it's important for researchers to try creative techniques in communicating science. Tabletop Whale is a blog that illustrates biology using animated infographics. I think that GIFs are great for showing complicated changes through space and time. For example, so far I've animated respiration cycles, embryo development, muscle contraction, and 3D virus structures. Because short, animated GIFs are fun and easy to share on the internet, I've been able to share my science animations with many people and amass half a million hits on my website. I'm always looking for fun collaborations, so please email me at tabletopwhale@outlook.com if you'd like to chat! I'm also happy to help if you'd like to learn how to make science animations of your own.

Elizabeth Bajema (Session 1, Screen 7)
Analytical Chemistry Meets Citizen Science

The Paper Analytical Device (PAD) project brings together an urgent public health need with hands on science outreach. The urgent public health need? Counterfeit medicines. Believe it or not, up to 30% of medicines sold in developing countries are expected to be counterfeit. To compound the problem, those same areas of the world often lack the scientific resources and personnel to analyze medicines. With this need in mind, PAD project researchers set out to develop a low cost, user-friendly analytical device to screen medicines. Once a prototype was developed, a need arose for large scale analytical validation. Thus, a major outreach project was initiated in which members of the public could analyze a “pill” sample with a Paper Analytical Device, given only simple instructions. The outreach project enabled researchers to determine the analytical accuracy and ease of use of the PADs. The non-scientist participants, who ranged in age from middle schoolers to senior citizens, contributed to a science project that meets a real world need.



Erin Satterthwaite (Session 2, Screen 4)

Experience, Engagement, and Excitement: Promoting ocean literacy and observational skills through “Marine Scientist for a Day” K-12 outreach program

Experiential education uses active engagement in the process of learning to make education exciting and memorable. Graduate students at UC Davis Bodega Marine Laboratory (Bodega Bay, CA) developed “Marine Scientist for a Day” outreach program to promote marine stewardship and develop observational skills in K-12 students. We use hands on activities, field notebooks, inquiry-based experiments, student led presentations, and field trips to teach students about the importance of observation in marine science and develop ocean literacy. We believe that connecting people to the ocean through interactive, hands-on, place-based environmental education experiences are important to foster marine stewardship. What ways have you promoted ocean literacy or environmental education and stewardship? What environmental and science skills do you think are most important to teach students? We welcome new ideas, suggestions, and discussions around experiential education and environmental/marine stewardship.

Jacqueline Gamboa (Session 1, Screen 8)

Electrons, SCAPING, and Magic!

This poster will feature various approaches taken to develop science outreach programs for the university and local communities. The Big Electron is a science radio show that started in Spring 2013 at Mizzou’s student radio station KCOU. It airs weekly during the spring and fall semesters and it has expanded to podcasts available online. SCAPING (Science Communication and Public Engagement) is a student organization on campus that focuses on training graduate students to become science communicators. SCAPING collaborates with the Life Sciences Division to host Science Café, a monthly event that brings speakers to talk about science in a casual setting and it’s open to the public. Magic of Chemistry is an outreach program that brings graduate students and girl scouts troops from the Mid-Missouri area to a daylong workshop where girl scouts do hands-on chemistry experiments. These are some of the ways graduate students can get engaged in science outreach and communication, showcasing the work that is being done at the university and engaging the community of all-ages.

Jared Mondschein (Session 1, Screen 9)

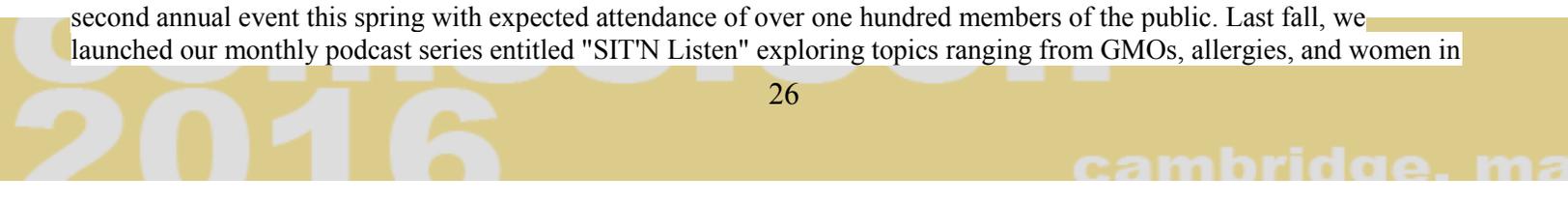
The Penn State Science Policy Society

The Penn State Science Policy Society is a graduate student-run organization founded in 2014 with a mission to help graduate students engage elected officials and teach them how to be advocates for their science. To date, we have successfully accomplished this goal via the following ways: (1) we have held events where graduate students directly engaged an elected official (or their surrogate), (2) we have hosted (and/or have scheduled) several speakers with careers in science policy, including science advocacy, budget analysis, public relations, etc., and (3) we have sent 3-4 students to Washington D.C. for a science policy workshop/Congressional Hill Day in conjunction with the National Science Policy Group (NSPG) and the American Association for the Advancement of Science (AAAS). Follow us on Twitter @PSUSciPolicy and on Facebook!

Jessica Sagers (Session 2, Screen 3) – External Organization

Science in the News: a model for graduate student training and effective public engagement

Science in the News (SITN) is an 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 30 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 second annual event this spring with expected attendance of over one hundred members of the public. Last fall, we launched our monthly podcast series entitled "SIT'N Listen" exploring topics ranging from GMOs, allergies, and women in





science. Each of our events is entirely prepared and executed by graduate students, and covers topics spanning most scientific fields. Our model of peer-peer feedback, in conjunction with our large-scale engagement of members of the 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.

Kate Fehlhaber (Session 2, Screen 6)

Knowing Neurons: A creative neuroscience education website by young neuroscientists

Today's students use the Internet to clarify complicated topics and explore newsworthy developments. Unfortunately, brain research is often misrepresented in the popular press, and few online resources explain fundamental neuroscience concepts. Knowing Neurons is a neuroscience education website that encourages anyone to learn about the brain in a creative, curiosity-driven format. Articles at Knowing Neurons feature recent neuroscience discoveries and summaries of basic neuroscience ideas in ways that are easy to understand and aided by powerful visuals.

Scientists have a responsibility to communicate their work to the general public in a way that is accurate without being dry, uncomplicated without oversimplification, and exciting without exaggeration. Few graduate programs offer their students any opportunities to practice science communication, a skill that is becoming increasingly important as social media more directly connects scientists to the public. Knowing Neurons aims to give young (graduate student and postdoctoral scholar) neuroscientists the opportunity to hone their communication skills by educating people about the brain. Using diverse formats, ranging from blog-style posts and poster-size infographics to podcast-style interviews and animated YouTube videos, contributors have the creative freedom to create content that casual learners and professional educators can use at home or in the classroom alike.

Liz Albertorio-Saez (Session 2, Screen 11)

Science at your fingertips: Developing an educational platform for science centers to engage and train scientists to communicate current scientific research.

Science at your Fingertips aims to create interactive platforms to promote the collaboration between science centers and universities. These interactive platforms will provide science communication training to graduate students and researchers. We have successfully designed a series of workshops aimed to familiarize scientists with the concept of Informal Science Education (ISE). These interactive workshops are based on training protocols developed by the Portal to the Public (PoP) network, a National Science Foundation funded initiative from the Pacific Science Center to help connect public audiences with the science happening in their communities. We have impacted over 20 graduate students and post-docs who created several hands-on demonstrations for the general public at the Rochester Museum and Science Center.

The goals of the interactive platforms are: (1) provide professional development in science communication to graduate students and researchers, (2) recruit graduate students and researchers to communicate their current research findings to the science center's public audience, and (3) provide a physical forum to create and complete outreach programs and broader impact activities.

Our long-term goal is to catalyze the adaption of this model in more science centers and higher education institutions across the United States.

Mallory Nobles (Session 1, Screen 11)

The Code for Success in Engaging Young Female Students in Tech

Two years ago, I started a computer science club for female middle school students at Pittsburgh Public School's Science and Technology Academy. The club meets for two hours a week and over thirty students have participated in the club since its inception. Our club has covered curriculum developed by Girls Who Code & Technovation. Girls Who Code is a national non-profit whose goal is to bridge the tech gender gap by showing girls the accessibility, relevance and diversity of computing related jobs. Technovation is an international competition that prompts girls to develop apps that address needs in their community. My poster will document how these activities have positively impacted the club members' views of computer science and other tech related subjects and careers. I will report results from an end of year survey given to the students and cite quotes from the participants about their experiences in the club. I will also discuss challenges I encountered while leading the club and best practices I discovered for our club. Finally, the poster will cover future plans for the club.

**Maryam Zaringhalam (Session , Screen)****Using podcasting to engage in policy & advocacy from the Ivory Tower**

Science Soapbox is an online resource at the intersection of science, policy, and advocacy. The project is the brainchild of three graduate students from the Rockefeller University coming from scientific backgrounds spanning addiction, chemical biology, and infectious disease. Collectively, we realized that there are few voices raising awareness of the impact policy has on the progress of the scientific endeavor — from funding mechanisms that make research possible to creating collaborative connections among practitioners of science across the globe. As graduate students working within the confines of our own institution, we were faced with a conundrum: how can we create a direct channel outside the Ivory Tower to thinkers influencing the affairs of our own community and country? And how can we disseminate that information to our community and beyond? This inspired us to create Sciencesoapbox.org, launched last year to provide both a centralized resource for federal funding of science research and podcasts with thinkers working at the policy-science junction. Here, we focus on Science Soapbox's podcast, as we believe the platform presents an ideal forum for academia's trainees like ourselves to engage in conversations around policy, research, and advocacy, and to broadcast those conversations beyond our own community.

Rachael Alexandroff (Session 2, Screen 2)**Johns Hopkins University Public Outreach: Teaching Physics and Astronomy in Baltimore City Classrooms**

Over the past five years the Johns Hopkins University Physics and Astronomy Department has created a dedicated outreach program targeted at supporting STEM education in Baltimore City public and charter schools and staffed entirely by graduate student volunteers. Our goal is to provide underserved student populations in Baltimore City with hands-on physics and astronomy demonstrations and activities by harnessing the resources of the department. We believe students from any grade level and any background should be able to see themselves in science careers and we aim to inspire that vision. Additionally, we want to provide insight into the physical world for students with varied interests enabling them to understand physics phenomena in their daily lives. Our program includes physics lectures and demonstrations as well as shows with two portable planetaria built in coordination with the World Wide Telescope Ambassadors effort at the Harvard-Smithsonian Center for Astrophysics with funding from an Ignite Baltimore grant and the Johns Hopkins Alumni Association. Original planetarium shows are written and recorded by members of the department and made available online. As graduate students, we are in a unique position to straddle the line between student and scientist helping to make this program effective.

Rianna Murray (Session 2, Screen 5)**Volatile organic compounds and particulate matter in childcare facilities in the District of Columbia: Results from a pilot study**

Many young children in the U.S. spend a significant portion of their day in child care facilities where they may be exposed to contaminants linked to adverse health effects. Exposure data on volatile organic compounds (VOCs) and particulate matter (PM) in these settings is scarce. We conducted a pilot study in which we characterized indoor concentrations of select VOCs and PM in 14 urban child care facilities in Washington, DC. We also administered a survey to collect general health information on children attending these facilities, information on general housekeeping practices and proximity of facilities to potential contaminant sources. We detected six of the seven VOCs in the majority of child care facilities with detection frequencies ranging from 71% to 100%. ICCs for the VOCs measured ranged from 0.32 to 0.75. Child care facility median concentrations for PM_{2.5} and PM₁₀ were 20.1 mg/m³ and 26.3 mg/m³, respectively. Given that exposures to environmental contaminants during critical developmental stages may have long lasting impacts on children's health, larger studies are needed to characterize and identify sources of exposures to these and other indoor contaminants to develop exposure mitigation strategies.

**Shelley Chestler (Session 1, Screen 12)****ENGAGE: hands-on science communication training for graduate students**

ENGAGE is a program at the University of Washington that puts on a seminar each year that trains graduate students to talk about their science in a way that is both engaging and accessible to the general public. Topics included in the ENGAGE curriculum include storytelling, distilling vs. dumbing down ideas, and audience consideration. After taking the course, our partnership with Town Hall Seattle allows students to give a talk about their research as part of the ENGAGE Science Now speaker series. The special thing about ENGAGE is that it is a program for graduate students, organized by graduate students. It was started by a group of students in the UW Astronomy department who realized that communication training was a gap in their graduate student education. Each year, the instructor for the course is chosen from the previous year's students. In addition, the instructor is supported by a Board of Directors who assist with curriculum changes and in-class activities such as improv games and giving feedback on student practice talks.

Stephanie Sasse (Session 1, Screen 10) – External Organization**The People's Science: A three-pronged approach to improving the relationship between research and society**

The People's Science (TPS) is a research-driven organization dedicated to improving the relationship between science and society. Prior literature has characterized contemporary barriers between researchers and the public as threefold: (i) lack of a public service- and communication-orientation in scientific culture, (ii) lack of public understanding of the nature of science, and (iii) lack of 21st century information literacy skills education. By synthesizing relevant theories and data, leading workshops and focus groups with researchers and citizens, and piloting potential platforms, TPS has designed a suite of initiatives to dismantle these barriers. Particularly relevant to the ComSciCon community, we have designed three open platforms. The first, **The Field**, is an interface for researchers across disciplines to share lay summaries of their work with the public, and for the public to track and interact with labs and individual scientists. The second, **#ShareYourScience**, is a catalog of freely available training tools and outreach opportunities, as well as a campaign to increase the visibility and accessibility of outreach efforts in science. The third, **Jiminy**, is a curated site where researchers rate pop resources and create lists of their recommended resources within neuroscience and psychology, so that the general public has an insiders' look at the content they can trust. These initiatives work in tandem with our public skill development and STEM education efforts to build sustainable infrastructure in service of responsible application of knowledge. We continue to critically evaluate our programs and iterate based on new research, feedback, and public needs.

William Chen (Session 2, Screen 8)**Using games to overcome the challenges of climate science communication**

Anthropogenic climate change is one of, if not the greatest threat facing human societies today. Yet, the general public's understanding of climate change is limited. One study from Yale reports that only 8% of Americans have a good understanding of climate change and its impacts. The reality is that climate change is a complex issue that is difficult to communicate properly. What if we could communicate these complex ideas through a medium that is easier to understand? Today, over a billion people around the world play games in some capacity. Earth Games UW is a group of scientists, game developers, educators, and students based out of the University of Washington who seek to take advantage of the immersive and interactive qualities of games to raise awareness about the impacts of climate change in ways that traditional science communication avenues cannot. Our goal is to inspire and motivate action on environmental issues.