Introduction to applied science communication: digital platforms and public engagement
(BIOG 3500) SYLLABUS

Do you want to use digital platforms to reach your audience and communicate science effectively beyond conference seminars, posters and journal articles? Learn how to create science communication strategy to tell your story effectively! Sharing scientific discoveries with the public is no longer solely the job of professional communicators, rather a skill that all scholars should have. This course is co-taught by biologists, librarians, and communication professionals who will lead students through a series of hands-on experiences. Students will learn real world examples from librarians on consuming information, evaluating evidence and contributing information to online resources, such as Wikipedia. Students will learn from local science café curators and science podcast producers about reaching the public effectively; and from scientists and communication professionals on how to build a communication strategy plan using modern digital platforms. The course follows the "crawl, walk, run" approach to develop the capacity of students to solve increasingly challenging problems with greater independence. Students fill their science communication "tool box," learning how to engage a non-scientist audience. They will be introduced to video production, podcasts, Wikipedia editing, public science events, social media platforms, blogging and press release writing. After gaining basic skills with these communication platforms and tools, students will work in groups and apply their skills to a topic of their own research interest. They will convey information from biology related journal articles to the public, using digital communication tools. Students will actively participate in a local science event evaluation (www.sciencecabaret.org) and learn how to start a science cafe on their own. Students will receive feedback from their peers and their instructors and by the end of this course they will become more effective science communicators.

LEARNING OBJECTIVES

By the end of this course…

1. Students will demonstrate how to engage the public in a scientific dialogue using a science communication strategy plan.
2. Students will learn how to translate scientific journal articles into easily consumable content for the public.
3. Students will gain hands-on experience with digital communication platforms and learn how to prepare information suitable for those platforms
4. Students will understand and apply the components of science literacy.
5. Students will improve their critical thinking skills as they analyze and evaluate potential media information sources. By doing so, students will gain a deeper appreciation for how information is produced and consumed.
6. Students will develop skills necessary for today's education and tomorrow's employment.

COURSE INSTRUCTORS

Mark Sarvary, *Senior Lecturer, Neurobiology and Behavior* mas245@cornell.edu
Kitty Gifford, *Curator of Public Science Events* kmg277@cornell.edu
Kelee Pacion, *Life Sciences Librarian, Mann Library* klp92@cornell.edu

CLASS TIME AND LOCATION

Tuesday and Thursday 2:55-4:10 pm in 103 Mann Library (Stone Computing room)

HOW WE WILL ASSESS YOUR KNOWLEDGE AND SKILLS:

Component	Percent of Grade
Presentation on digital communication platform	10
Press Release	10
Individual 1-minute video	10
Science Café attendance and poster	10
Social media assignment	10
Group projects & sci comm strategy plan	30
Attendance and participation	10
Feedback: Peer-review of group presentations	10
Total:	***100%***

To gain applied science communication skills, you will complete hands-on assignments throughout the semester. You need to attend ***Science café*** presentations in Ithaca (sciencecabaret.org) to observe how scientists engage with the audience. Transportation and dinner will be covered by the course. To complete the ***social media assignment***, you need to use social media tools to communicate about your science café experience, other science events and your research topic**.** Make sure to use #CUSciStory in your posts. You will use a broad range of communication platforms to engage with the public about a published research topic of your choice. The research can be your own, your advisor's/PI's or a scientific journal article. By the end of the course you will create a sci comm strategy plan, and implement it, using the tools in your sci comm toolbox. You will give and receive ***feedback*** (project review) and will be able to modify your plan accordingly.

Final letter grades: your final performance in the course *will not* be based on the performance of other students (e.g. no curve). The general guidelines for letter grades: 90-100%: (A+, A, A-); 80-90%: (B+, B, B-); 70-80%: (C+, C, C-); 60-70%: (D+, D, D-); below 60% is F. Exact cut-off points will not be known until the day of letter grade assignment. We do not offer extra/bonus assignments.

Incompletes: Cornell policy dictates that an incomplete be arranged only when a student has substantial passing equity in the course (i.e. all requirements for the course have been completed satisfactorily except for a term paper or final exam) and the reason for failure to complete all course requirements is convincing to the instructor and beyond the student's control. If you feel that you deserve an incomplete, you must contact Dr. Sarvary and provide legitimate documentation.

CALENDAR :

Week	Topic	In class activity	Assignment due
Week 1 - Class 1 & 2			
Aug 22	Course Introduction; Pre-course questions. Communication theory.	Course requirements, introductions. What do you want to get out of the class? Pre-assessment questionnaire	
Aug 24	Storytelling and messaging	How to create your science story.	Read: https://aeon.co/essays/once-upon-a-time-how-stories-change-hearts-and-brains
Week 2 - Class 3 & 4			
Aug 29	From lab to public I.: the decision-making process of using social media in science communication	Strategies to use social media to communicate science. Learn Hootsuite to manage social media. Choose a platform from the conversation prism to present on.	
Aug 31	From lab to public II.: Radio podcast; YouTube video	Learn about how radio podcasts & videos can tell a story concisely, while keeping it entertaining. Present the social media platform to your peers.	Two slide presentations of the social media platform selected in the last lab. In the context of sci comm.
Week 3 - Class 5 & 6			
Sept 5	The importance of evidence and how to locate it	Information and scientific literacy training. Search engines. Primary and secondary information.	
Sept 7	Media literacy: Evaluating evidence	How to validate information and use citation management programs.	Find a journal article (primary literature) that you will use for storytelling.
Week 4 - Class 7 & 8			
Sep 12	Turn your journal article into a press release; Pitch it to a journalist:	How to turn a journal article into a press releaset. How to get your research picked up by news outlets.	

Sep 14	Writing exercise	Press release - peer review and editing Re-purpose content for other platforms	
Week 5 - Class 9 & 10			
Sept 19	From lab to public II.: using digital tools to engage the public in science events: science cafes & conferences	Science Cafés provide the public the opportunity to learn about scientific discoveries. Learn how digital tools and media relations are used for these public science events.	Attend the science café tonight at 7pm in Downtown Ithaca. Transportation and dinner provided. Use digital tools to communicate about it.
Sept 21	Creating and editing a video	Learn how to make and edit a video	
Week 6 - Class 11 & 12			
Sep 26	Individual video presentation on the selected journal article/topic	Learning about the different communication platforms from student videos.	Create and bring a 1 minute video on the journal article or its topic.
Sept 28	Editing Wikipedia	Learn about Wikipedia editing. Find one or two Wikipedia articles related to your project. Use talk page to suggest changes	
Week 7 - Class 13 & 14			
Oct 3	Who is your audience?	How to conduct survey, learn about your audience. the IRB approval process and many more.	Attend the Science Cabaret tonight and survey the audience. Transportation and dinner provided.
Oct 5	Editing Wikipedia	Relocate articles related to your project using your Watchlist. Respond to recommendations or changes made using talk page. Add text, figures, table to these articles	
Week 8 - Class 15			
Oct 10		Fall break. No Class.	

Oct 12	The power in your voice: podcasts in sci comm	Examples of using podcast in sci comm. Outline writing and podcast recording.	
Week 9 - Class 16 & 17			
Oct 17	Your science marketing plan: choose digital tools to tell your story	Discuss a plan of how to communicate their science story to the public using the various platforms.	
Oct 19	Walk the walk I. : Create your sci comm strategy plan and work on your project	Instructors will be helping your group with project preparation.	
Week 10 - Class 18 & 19			
Oct 24	Walk the walk II. : follow your sci comm strategy plan and work on your project	Instructors will be helping your group with project preparation.	
Oct 26	Group presentations I.	Show the class how your group told the story. Which platforms you used and how.	Peer-review sheets to provide feedback on the presentations
Week 11 - Class 20 & 21			
Oct 31	Group presentations II.	Show the class how your group told the story. Which platforms you used and how.	Peer-review sheets to provide feedback on the presentations
Nov 2	Response to the reviewers	Discuss what feedback you received from classmates, instructors and the public. Start revising your sci somm strategy plan accordingly.	
Week 12 - Class 22 & 23			
Nov 7	Successful science communication campaigns	Compare good campaigns to your improved applied science communication strategy.	Find and discuss successful sci comm campaigns
Nov 9	Big data communication: Community literacy and citizen science		

Week 13 - Class 24 & 25			
Nov 14	Planting the seed of science literacy through science cafes	Start creating a poster showing how public science events can be started and assessed.	
Nov 16	Work at home: groups will work on their part of the poster.		
Week 14			
Nov 21	No class	Thanksgiving	
Nov 23	No class	Thanksgiving	
Week 15 - Class 26 & 27			
Nov 28	Sci comm career panel	Meet a science communicator panel and discuss the future of sci comm	Come with questions prepared for the panel
Nov 30	Public science event evaluation presentation: presenting the poster. Run with it: did you learn how to tell your story effectively? Course evaluations & Feedback. Reflection on the science communication experience.	Discuss and present the product of the science cafe poster and discuss how to start a science cafe in your home town.	This is the students' chance to evaluate the tools they learned, and to evaluate the course. Roundtable with the instructors to have a final discussion of the projects.