USC School of Pharmacy
Pharmacy Undergraduate Programs

Spring 2023 BPSI-415: Science Talk

Coordinators:

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Office Hours:	See Announcement on Blackboard

Course Weight:	2 Units (course meets 2 hours per week)

Day/Time/Location:	Tuesday and Thursday, 1:00 pm-1:50 pm in KAP 137

Catalogue description: Students will learn to effectively prepare and present science to others. Included are storytelling, informative, commemorative, persuasive speeches, interviews, and scientific presentations.

Introduction

Throughout the course, we will discover how the successful communication of science relies on many factors, including the expectations of the audience, the purpose of the writer, as well as the context and genre of the communication. By examining these factors, we will improve our rhetorical knowledge, and develop strategies for succeeding in a variety of communication forms and speaking settings. We will gain experience in generating and developing research topics, translating complex scientific and technological developments for multiple audiences, and effective communication in multiple scientific settings. Ultimately, improving our writing, speaking, and knowledge of scientific communication will help us succeed at USC and beyond.

Objectives

By the end of this course, students should be able to:
- Write clear, accurate and informative prose about topics in STEM for scientific and non-scientific audiences
- Understand and apply how to write and speak about topics within science at a level consumable

by the public
- Deliver clear, concise, and well-organized oral presentations in multiple scientific settings
- Develop a research question/topic for further study
- Provide constructive feedback on scientific communication to peers and self

The course will educate students on the different forms of scientific communication and how they can be used to make science accessible and interesting to a range of audiences. The themes of this course include (1) rhetorical analysis; (2) engaging translation (scientific to plain language); (3) publicity and social media; (4) investigative research; (5) print media; (6) interviews; (7) presentations; and (8) peer and self feedback. The class will allow each student to develop and practice each of these themes in the context of an individual research topic or question throughout the semester. All students will submit a capstone portfolio at the end of the semester to demonstrate their mastery of these themes.

Communication Method

If you have questions or concerns, please contact Dr. Burkhardt (aburkhar@usc.edu) or Dr. Asatryan (asatryan@usc.edu). Your email will be attended to as quickly as possible within a 48-hour window. For more urgent or pressing issues, please contact the instructor via telephone (listed at the top of the syllabus).

Description of Assignments/ Evaluation and Grading

Evaluation will be based 12 assignments and presentations, each building up to submission of the final capstone portfolio at the end of the semester.

Description	Points	Weight
Assignment 1: Selection of research topic/question	10	5%
Assignment 2: Abstract	10	5%
Assignment 3: Curriculum vitae (CV)	10	5%
Assignment 4: Data presentation and peer feedback	10	5%
Assignment 5: Poster generation and presentation	10	5%
Assignment 6: Elevator pitch and peer technical summary	10	5%
Assignment 7: Slides and presentation for scientific audience	20	10%
Assignment 8: Slides and presentation for lay audience	20	10%
Assignment 9: Interview	10	5%
Assignment 10: Online article and peer re-write	20	10%
Assignment 11: Video and peer abstract	20	10%
Assignment 12: Final capstone portfolio	50	25%
Total	*200*	*100%*

Attendance at all classes is expected. Participation will include completing the weekly assignments and contributing to the peer feedback activities. It is expected that each student will generate their own

research topic question that will be the focus of all subsequent assignments and will be the focus of the final capstone portfolio.

Assignment 1 (5%): All deliverables affiliated with the course assignments will be based on the research topic or question identified by each student. Students will have the first two weeks of the course to identify a topic or research question that will be the focus of their scientific communications for the remainder of the semester. The research topic or question should be based in the STEM field, but does not need to be associated with a topic the student is currently working on in research or the focus of their major studies.

Assignment 2 (5%): Abstracts are one of the most common formats of written scientific communication for a scientific audience. Abstracts are typically 100-500 words in length and do not include figures. In that short amount of text, the study question, purpose, experimental design, results, conclusions and future directions must be communicated. Students will prepare a 250-300 word abstract draft on their research topic. The abstracts will be reviewed and edited by the course coordinators. A finalized version of the abstract that incorporates these edits will be included in the final capstone portfolio.

Assignment 3 (5%): In STEM fields the curriculum vitae (CV) is used in place of a resume. CVs emphasize the academic accomplishments of the scientist, with a focus on education and contributions to their field. CVs are developed over the lifetime of a scientist and are included in both academic and industrial job applications, grant and fellowship proposals, used for merit review, and are commonly circulated to faculty when a scientist gives an invited presentation at another institution. Students will prepare a personal draft CV that will be reviewed and edited by a peer. A finalized version of the CV that incorporates the peer review and any subsequent updates will be included in the final capstone portfolio.

Assignment 4 (5%): The presentation of scientific data is critical to ensure the audience understands the purpose, result and conclusions of your experiment and overall research study. To accomplish this, communicating the findings from a data figure must be clear and concise and requires the scientist to distill the data down to its most important components for a presentation. Students will select a data figure from a published manuscript related to their research question and prepare a 5 minute (maximum) presentation to the class. All students will provide peer feedback to the presenters.

Assignment 5 (5%): A poster is one of the most common forms of both written and spoken communication in STEM and are a hallmark of scientific conferences. Posters provide a brief overview of the research topic and include an abstract, data, conclusions, future directions and acknowledgements. The poster needs to contain enough information that someone can walk through the information on their own and reach the same conclusions as the scientist who created it. Students will create a digital poster on their research topic in PowerPoint (or similar program) and present it to their peers for feedback. A finalized version of the digital poster that incorporates the peer feedback will be included in the final capstone portfolio.

Assignment 6 (5%): An elevator pitch is a form of spoken communication in science that is designed to quickly catch someone's attention without the use of any visual aids (i.e. slides, poster, etc). The idea is that if you get on the elevator with someone on the ground floor and begin "pitching" your concept or idea, you have explained it such a way that your audience has a good understanding of your concept or idea by the time you reach the top floor of the building. Although rarely conducted in an elevator anymore, this style of communication is used regularly

in both academia and industry to secure funding for a project, entice collaborators to join your project, and to sell yourself in the course of an interview. Students will generate their own elevator pitch (2 minutes maximum) on their research topic and create a technical summary of their partner's pitch to provide peer feedback on the clarity and impact of the elevator pitch.

Assignment 7 (10%): Generating and giving presentations is an important part of sharing work and achieving recognition in the larger scientific community. This assignment requires the generation and presentation PowerPoint slides (or similar program) on the student's research topic or question. The presentation should be targeted at an audience in STEM that has a good foundation in basic science. The presentation should take no more than 7 minutes; there is no limit on the number of slides as long as they are all presented in the time provided. All students will provide peer feedback to the presenters. A finalized version of the slides that incorporate the peer feedback will be included in the final capstone portfolio and presented during the final week of the course.

Assignment 8 (10%): Not all presentations sharing the results of your work will be given to an audience in your specific field or even an audience of your scientific peers. Scientific communication to a lay audience using plain language is an important skill to cultivate. This assignment may use the same slides generated for Assignment 7, although additional slides and/or changing of technical terms in the text may be needed to achieve effective communication to the assignment's intended audience. Similarly, the language used in the presentation may need to be changed to effectively communicate the topic to a lay audience. The presentation should take no more than 7 minutes with no limits on number of slides. All students will provide peer feedback to the presenters. A finalized version of the slides that incorporate the peer feedback will be included in the final capstone portfolio and presented during the final week of the course.

Assignment 9 (5%): Interviews require a candidate to focus their scientific communication skills inward to market and sell themselves as a commodity the company is currently missing. The communication skills needed to perform well in an interview are usually only "practiced" in the course of a live interview and scientists can go years between changing jobs, thus allowing these skills to become rusty. Students will be paired up and role play interviewer and interviewee, switching roles halfway through the class. Students will receive credit for participating in the mock interview and for uploading their interviewer questions to Blackboard.

Assignment 10 (10%): Blogs and other styles of online articles about science have become an important tool to communicate complex scientific concepts and findings to an audience outside your own field of STEM. These articles must communicate this information in a context that makes it relevant for a broad scientific audience, while also gently educating them about the field and why the finding is important without speaking down to them. Students will write a blog or online style article about their research topic (maximum 2 pages). In class, students will exchange articles with their partner and then re-write their partner's blog/online article for the lay public. Both writing samples will be submitted.

Assignment 11 (10%): Social media offers an opportunity for science and scientific findings to be widely disseminated using creative and unique approaches. For this assignment, students will generate a brief recorded Zoom video (5-10 minutes) about their research topic intended for a lay (public) audience. Visual aids may be included but are not required. The videos will be shown in class, after which students will be paired up and tasked with generating an elevator pitch based on their partner's "social media" video.

Assignment 12 (25%): The final capstone portfolio will include finalized versions of previous assignments in the course:

- Abstract
- CV
- Digital poster
- Slides for scientific audience (presentation given in class)
- Slides for lay audience (presentation given in class)

Required Texts

Selected written works will be made available and will contain current articles, studies, and information related to the topics for this course. In addition, the selected written works will be supplemented with a variety of source materials including online resources, media outlets, and cinema.

Course Outline

This course will be in the format of a directed seminar/lecture under the guidance of the instructor for the specific session. During each session the instructor will engage the students with questions and draw comments or interpretations primarily based on the assigned reading. Students are expected to ask questions and participate in an interactive fashion. Because this is an area of rapid change in policies, the readings may vary from one term to the next. Additional readings for each section that may be of added use are listed in the table below.

Course Schedule

Week	Date	Subject	Instructor	Assignment Due to Blackboard by Next Class Meeting Time
Week 1	1/10/23	Introduction and course overview	Burkhardt	
	1/12/23	Why communication matters	Burkhardt	
Week 2	1/17/23	Identifying and selecting a research topic	Burkhardt	
	1/19/23	In class topic workshop		#1: Final selection of topic
Week 3	1/24/23	Communicating through writing I -- Journalism, technical and executive summaries	Burkhardt	
	1/26/23	In class discussion		
Week 4	1/31/23	Communicating through writing II -- Abstracts & manuscripts	Burkhardt	
	2/2/23	In class abstract workshop		#2: Abstract on topic
Week 5	2/7/23	Communicating through writing III -- CVs & Cover Letters	Burkhardt	
	2/9/23	In class CV workshop		#3: Own Curriculum Vitae
Week 6	2/14/23	Communicating through presentations I -- Data	Chiarelli	
	2/16/23	In class data presentation & peer feedback		#4: Peer feedback
Week 7	2/21/23	Communicating through presentations II -- Posters	Borzage	
	2/23/23	Poster presentation & peer feedback		#5: Own digital poster & peer feedback

Week 8	2/28/23	Communicating through presentations III -- Chalk talks and elevator pitches	Burkhardt	
	3/2/23	In class elevator pitches		#6: Technical summary of partner's elevator pitch
Week 9	3/7/23	Communicating through presentations IV -- Slides for Scientific Audience	Burkhardt	
	3/9/23	Communicating through presentations IV -- Slides for Teaching/Lay Audience	Burkhardt	
Week 10	3/14/23	*Spring Break*		
	3/16/23	*Spring Break*		
Week 11	3/21/23	Student presentation of slides & peer critiques		#7: Own slides & peer feedback
	3/23/23	Student presentation of slides & peer critiques		#8: Own slides & peer feedback
Week 12	3/28/23	Communication through presentations V -- Interviews	Burkhardt	
	3/30/23	In class mock interviews		#9: Interviewer questions
Week 13	4/4/23	Communication through social media I -- Blogging/online journalism	Burkhardt	
	4/6/23	In class blog/online article writing for lay public		#10: Own article and re-write of partner's for lay audience
Week 14	4/11/23	Communication through social media II -- YouTube and Twitter	Burkhardt	
	4/13/23	In class video workshop day		
Week 15	4/18/23	Video viewing, elevator pitches		#11: Social media video on topic, text of elevator pitch from partner's video
	4/20/23	In class portfolio workshop day		
Week 16	4/25/23	Final presentations		
	4/27/23	Final presentations		
Final Exam	5/10/23	Final Capstone Portfolio Due		#12: All final capstone portfolio components

A Note About Providing and Taking Peer Feedback

Our course discussions and presentations will require students to be open to feedback to improve their presentation and communication skills. This happens in spaces where peers feel empowered to provide and receive help from one another. Our classroom represents one of these spaces and disrespectful and hurtful criticisms will not be permitted.

When you are presenting, try to remember that peer questions are being asked in the spirit of intellectual curiosity and peer feedback is being given to aid in your mastery of scientific communication. When you are asking questions of your peers be mindful that the presenter is not an expert on their topic and is not expected to answer questions outside the scope of the course assignments and activities; when providing feedback be respectful and constructive in your comments. Scientific communication is a skill that is mastered over a lifetime and _everyone_ can benefit from feedback on their scientific communication

skills, including the course coordinators and guest lecturers.

A rising tide raises all boats – let's work together to raise the level of **everyone's** scientific communication skills.

Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Statement on Academic Conduct and Support Systems

Academic Integrity:

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity's website, and university policies on Research and Scholarship Misconduct.

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

Counseling and Mental Health - *(213) 740-9355 – 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

988 Suicide and Crisis Lifeline - *988 for both calls and text messages – 24/7 on call*
The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

Relationship and Sexual Violence Prevention Services (RSVP) - *(213) 740-9355(WELL) – 24/7 on call*
Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - *(213) 740-5086*
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - *(213) 740-5086 or (213) 821-8298*
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - *(213) 740-0776*
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - *(213) 740-0411*
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - *(213) 740-2101*
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - *UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - *UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call*
Non-emergency assistance or information.

Office of the Ombuds - *(213) 821-9556 (UPC) / (323-442-0382 (HSC)*
A safe and confidential place to share your USC-related issues with a University Ombuds who will work

with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - *(323) 442-2850 or* otfp@med.usc.edu
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.