

FDSC 497A
Scientific Communication in Undergraduate Research
Fall 2015

Course Instructor: Charlene Van Buiten
335 Rodney A. Erickson Food Science Building
cbv109@psu.edu

Office Hours: Mondays 10:00 – 11:00 or make an appointment via email

Meeting Time: Wednesdays 4:40 – 5:30 **Location:** 252 Ag Engineering

Prerequisite: Concurrent enrollment in an independent research program

Course Description

If a tree falls in the forest and no one is around to hear it, does it make a sound?

If a scientist makes a discovery and doesn't know how to tell people about it, does that discovery still have impact?

Knowing how to communicate effectively is a **key skill** in being a successful scientist. This **discussion-based** course provides a foundation of the development of oral and written skills that are important for effective communication in the field of scientific research. This will be done by highlighting the **theory and practice** of five common communication methods used in scientific careers: **critical reading** of primary literature, **grant-writing**, **poster presentation** and design, **oral presentations** on research and related work, and **peer review**. As a member of this course, you will receive a uniquely well-rounded experience in the undergraduate research experience, practicing skills that are important for any scientific career.

Course Objectives

By the end of this course, you will be able to...

- ... **Present new scientific ideas** in the form of a **written grant proposal**, using existing research to develop your research question, plan your approach and hypothesize your outcomes
- ... **Orally communicate scientific research** to a group in both technical and non-technical settings
- ... **Design presentation aids** (posters, PowerPoints) to effectively supplement your public speaking
- ... **Critically read and discuss** published or proposed scientific research, employ constructive criticism as a tool for discussion-based learning

Required Materials

There are no required materials for this course.

Assignments & Grading

Grant Proposal	
Written Proposal	20%
Oral Presentation	5%
Published Research	
Oral Presentation (General Public)	10%
Poster and Presentation	10%
Scientific in the Media	
Oral Presentation (News Brief)	10%
Independent Research	
Oral Presentation	15%
Poster and Presentation	20%
Class Participation	10%

Resources

This course is all about developing your communication skills and being able to tell the world about your research! Two invaluable resources for you to learn more about the impact of your research are...

1. Fellow lab members: your PI/postdocs/grad students/other undergrads/lab technicians. Take the opportunity to ask questions and participate in lab meetings.
2. Literature: Science Direct/Web of Science/Web of Knowledge/Google Scholar/PubMed (NIH)

Classroom Expectations

In order to create an environment where everyone feels comfortable, I expect that everyone will treat each other with respect and courtesy. All criticism must be constructive!

Distractions to the students around you (repeatedly coming in late, conducting side conversations, inappropriate use of a cell phone/laptop, etc.) may result in a penalty to your grade.

Course Schedule

This schedule is subject to change. You will be notified by email or during class about any changes, but it is your responsibility to make note and keep track of changes once they have been announced.

Date	Topic	To this class, you should bring...
Aug 26	Introduction; How to Write a Winning Grant Proposal	
Sept 2	Identifying a Scientific Goal	<u>Two</u> specific aims for your grant. Be ready to discuss and share with the class.
Sept 9	Notebook Discipline	Grant Proposal (First Half)
Sept 16	How to Give Scientific Presentations	Completed Grant Proposal
Sept 23	Mock Study Section Process	Peer Review sheets filled out, ready to discuss with the class.
Sept 30	Oral Presentations – Grant Proposal	Grant Proposal Final Copy
Oct 7	How to Read a Scientific Paper; How to Give a Poster Presentation	
Oct 14	Oral Presentation – Published Research for the General Public	Research paper powerpoint
Oct 21	Poster Presentation of Paper	Research paper poster
Oct 28	Science in the Media	A news article about a recent scientific discovery
Nov 4	Oral Presentation – Media Article	Media article powerpoint
Nov 11	Guest Lecture: What to Do After Earning Your Bachelors Degree	
Nov 18	<i>***Individual meetings will be scheduled within this time block to go over oral presentation slides.***</i>	
Thanksgiving Break		
Dec 2	Oral Presentations – Independent Research	Independent research powerpoint, final (printed) copy of your poster
Dec 9	Poster Session – Independent Research	

Disability Statement

Penn State welcomes students with disabilities into the University's educational programs. Every Penn State campus has an office for students with disabilities. The Office for Disability Services (ODS) Web site provides contact information for every Penn State campus: <http://equity.psu.edu/ods/dcl>. For further information, please visit the Office for Disability Services Web site: <http://equity.psu.edu/ods>.

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation:

<http://equity.psu.edu/ods/guidelines>.

If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. You must follow this process for every semester that you request accommodations.

Academic Integrity Statement

Penn State and the College of Agricultural Sciences take violations of academic integrity very seriously. Faculty, alumni, staff and fellow students expect each student to uphold the University's standards of academic integrity both in and outside of the classroom. Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts. Academic integrity includes a commitment not to engage in or tolerate acts of falsification, plagiarism, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others (see [Faculty Senate Policy 49-20](#) and [G-9 Procedures](#)) <http://studentaffairs.psu.edu/conduct/codeofconduct>).

Academic Integrity Guidelines for the College of Agricultural Sciences can be found at <http://agsci.psu.edu/students/resources/academic-integrity>.

Plagiarism will not be tolerated in this class. If you are unsure of what constitutes plagiarism, please familiarize yourself with the University's Academic Policy or just ask!