

## ENG 800: Ethics and the Responsible Conduct of Research

**Director:** Sarah Hokanson ([sch1@bu.edu](mailto:sch1@bu.edu))  
**Program Administrator:** Emma Zheng ([yzheng93@bu.edu](mailto:yzheng93@bu.edu))  
**Faculty instructors:** See below

**Location:** Photonics Colloquium Room (PHO 906, 8 St. Mary's Street, 9<sup>th</sup> floor)  
*\*Week 10 (12/10) class meets at Morse Auditorium (602 Commonwealth Ave.)*

### Course goals:

Provide an ethical foundation for research and scholarship in STEM and social science disciplines and satisfy existing compliance requirements associated with National Institutes of Health and National Science Foundation awards.

**Course schedule:** All classes (except week 10) will be held from 11-11:50 am on Tuesdays at the Photonics Colloquium Room (8 St. Mary's Street, 9<sup>th</sup> floor).

Date	Session	Co-Instructor(s)	Pre-work
Week 1 (10/1)	Contributing to inclusive research environments	Angelique Harris	CITI training: BU RCR Program for Doctoral candidates and Post-Docs: All Audiences
Week 2 (10/8)	The critical role mentoring relationships play in research settings	Mo Khalil	
Week 3 (10/22)	Peer review	Richard Primack	
Week 4 (10/29)	Authorship	Tom Tullius	
Week 5 (11/5)	Data and sample management	Sergio Fagherazzi	
Week 6 (11/12)	Experimental design	Masanao Yajima	
Week 7 (11/19)	Rigor and reproducibility	Michael Economo	
Week 8 (11/26)	Conflict of interest and foreign influence	Michael Dietze	CITI training: Undue Foreign Influence
Week 9 (12/3)	Communicating Science for societal impact	Deborah Carr	
Week 10 (12/10)	Research misconduct	Miguel Jimenez	Final essay  <b>*Meet at Morse Auditorium for this class (602 Commonwealth Ave., Boston MA 02215)</b>

## **Session summaries:**

*Contributing to inclusive research environments:* Participants will be able to describe key concepts in diversity, equity, and inclusion and their relationship to the research enterprise. They will also discuss how all members of the research community can contribute to inclusive research environments, and current ways federal funders ask principal investigators to describe their practices in grant proposals (e.g. Department of Energy PIER plans). They will also co-develop guidelines for inclusive discussions within our course.

*The critical role mentoring relationships play in research settings:* Participants will learn how to establish positive mentoring relationships from the perspective of a mentee versus a mentor, strategies to mentor up, and practices to align expectations and communicate effectively within mentoring dyads.

*Peer review:* Participants will be able to describe the components of the peer review process for grants and manuscripts, the pros and cons of these approaches, and ways to ensure the process is objective and fair to researchers. They will also explore the concept of implicit bias and how to mitigate bias in peer review.

*Authorship:* Participants will understand the Boston University guidelines for authorship and how authorship roles are assigned in their discipline. They will also discuss the responsibilities associated with authorship.

*Data and sample management:* Participants will discuss best practices for managing data and samples within research environments and become aware of University and federal funder policies related to data management.

*Experimental design:* Participants will be able to describe the practices within their discipline associated with appropriate experimental design and the safeguards in place to identify mistakes or opportunities to optimize protocols.

*Rigor and reproducibility:* Participants will become aware of the challenges associated with reproducing experimental results and identify practices associated with enhancing rigor in their discipline.

*Conflict of interest and foreign influence:* Participants will be able to describe the criteria for conflicts of interest and how to report and mitigate them when they arise. They will also understand the importance of protecting our research enterprise against foreign influence and how to appropriately report collaborations with and financial support from foreign agencies or organizations.

*Research misconduct:* Participants will be able to describe the differences between scientific errors and research misconduct, University policies related to misconduct and our responsibilities for investigating and reporting misconduct, and how to manage difficult conversations within power dynamics.

*Communicating science for societal impact:* Participants will learn strategies to communicate their scientific research to broader audiences and reflect on their key takeaways and outcomes of the course.

**Attendance policy:** Students are required to participate in all ten sessions of this course to receive credit (and if relevant, comply with funding agency regulations). If a student must miss a session due to an unavoidable conflict or illness, a short think piece essay can be written to make-up the missed session. Sarah Hokanson ([sch1@bu.edu](mailto:sch1@bu.edu)) will approve and manage these requests in consultation with the course instructors. Please contact Emma Zheng and the session instructors as soon as possible if you will be missing a session.

**Students who miss more than two weeks of sessions will not pass the course and will be required to re-take the course for credit. An "incomplete" will be in place until you complete the sessions you missed.** Students who do not submit a final essay will also be required to complete this assignment before they can be assigned course completion.

**Sign-in policy:** Please sign in physically with Emma Zheng within the first 10 minutes of every session to receive credit for the session.

**Laptop policy:** This course uses lectures, case studies, and group discussions to engage participants about some of the most important, but also nuanced and difficult, responsible practice topics facing professional researchers. Therefore, course participants are expected to be fully engaged in all class lectures and discussions, and the instructors ask you to refrain personal or research-related work during class time.

**Final Assignment Short Essay:** Each student is required to complete a final writing assignment. For this short essay, please choose a session topic and connect it to a real-life situation or case through your own research. (For example, essays on scientific misconduct could refer to a case example like this one: <https://www.vox.com/science-and-health/2018/9/19/17879102/brian-wansink-cornell-food-brand-lab-retractions-ama>)

The first 1-2 paragraphs of the short essay should summarize the key issues in the case. For the rest of the essay, analyze your case study using the topics and takeaways you learned from the course. For example, describe possible reasons why the events in the case happened the way they did, what could have been done differently, and resources at BU available for similar situations. You may also describe how your own practices are informed by what you learned related to this topic and/or case.

**Short Essay Format Requirements:**

- 2 pages; double spaced; one-inch margins; 12-point font
- Word document saved as "LastName.FirstName.RCEssay2024"
- Original work; citations should be consistent but do not need to be in a specific format
- Upload to the Qualtrics portal link (Sarah will email everyone) before the start of the last class

**Statement on Accommodation:** Graduate students who require a physical, medical, or learning accommodation may contact Disability and Access Services (<https://www.bu.edu/disability/>). Postdocs who require a physical, medical, or learning accommodation may contact the Equal Opportunity Office (<https://www.bu.edu/eoo/reasonable-accommodations/>). Also, if relevant, students may arrange to turn in course deliverables at a time that does not conflict with their religious observances.

**Statement on diversity, equity, and inclusion:** We are diverse in many ways, and this diversity is fundamental to building and maintaining an equitable and inclusive campus community. Diversity can refer to multiple ways that we identify ourselves, including social identities such as but not limited to race, color, national origin, language, sex, disability, age, sexual orientation, gender identity, religion, or veteran status. Each of these diverse identities, along with many others not mentioned here, shape the perspectives our students, faculty, and staff bring to our campus. As instructors we work to promote diversity, equity and inclusion not only because diversity fuels excellence and innovation, but because it is a core value at Boston University and embedded into our institutional strategic plan. As instructors we acknowledge our imperfections while we also fully commit to the work, inside and outside of our classrooms, of building and sustaining a campus community that embraces these core values.

Each of us is responsible for creating a safer, more inclusive environment.

Unfortunately, incidents of bias or discrimination do occur, whether intentional or unintentional. They contribute to creating an unwelcoming environment for individuals and groups at the University. Therefore, the University encourages anyone who experiences or observes unfair or hostile treatment based on identity to share their experiences, within the moment of the incident or after the incident has passed. Anyone can share these experiences using the following resources:

- Equal Opportunities Office:  
[https://cm.maxient.com/reportingform.php?BostonUniv&layout\\_id=2](https://cm.maxient.com/reportingform.php?BostonUniv&layout_id=2)
- EthicsPoint (anonymous) online reporting:  
<https://secure.ethicspoint.com/domain/media/en/gui/8779/index.html>

EthicsPoint can also be used to anonymously report areas of concern related to the topics within this course.

The topics that we are covering in this class are often difficult, not just intellectually but potentially emotionally. While we expect there to be rigorous discussion and even disagreement during our class discussions, we ask that you engage in discussion with care and empathy for the other members in the classroom.