BIOTRAIN 751 "The Responsible Scientist I"

Spring 2025

Day/Time:
Thursday, 10:30-11:30 AM

Location:
Bryan Research Building Room 103

Course Directors:

Erika Crosby, PhD (she/her/hers)
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MSRBI Room 288
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MSRBIII Room 1265

Overview:
This course is developed to engage biomedical PhD trainees in continued responsible conduct of research (RCR) and rigor and reproducibility (R&R) training, an emerging mandate from the National Institution of Health (NIH) and future requirement for National Institute of General Medical Sciences (NIGMS) T32 Pre-Doctoral Training Grants. The course is co-directed by the RCR Curriculum Manager and the Associate Director of Curriculum, Advising, and Experiential Learning in the Office of Biomedical Graduate Education (OBGE) in the Duke School of Medicine (SoM) and is team-taught by faculty members from each SoM PhD training program. The content is delivered as a combination of lectures, small group discussions, and online based learning modules. This course is part of a curriculum that covers much more than research ethics. The topics included in this curriculum as mandated by the NIH include:

1. Conflict of interest – personal, professional, and financial
2. Policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices
3. Mentor/mentee responsibilities and relationships
4. Collaborative research including collaborations with industry
5. Peer review
6. Data acquisition and laboratory tools; management, sharing, and ownership
7. Research misconduct and policies for handling misconduct
8. Responsible authorship and publication
9. The scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research
10. Rigor of the prior research; scientific premise
11. Scientific rigor in experimental design
12. Biological variables
13. Authentication

Course Requirements and Expectations:
This course will have ten (10) required assignments. There will be five (5) lectures that will be given live and recorded. You must either attend in person and sign in, or you must watch the recording in its entirety and complete the online, one-question quiz attesting to this fact. You will be working in teams of 2-4 people to create a case study and discussion questions. This draft should be completed using the "Collaborations" feature on the course Canvas site. Submission of this case study is an assignment that is required for course credit. Finally, there will be four (4) small group discussions that will occur in person. You must attend, sign in, and participate in these discussions. There will be a **one (1) missed class** grace policy. If you miss two (2) classes, you will be required to complete an additional RCR forum to receive credit for BIOTRAIN 751. If you miss three (3) or more classes, you will be **required to retake the course next Spring**. As a reminder, this course is a REQUIREMENT for graduation.

Canvas Site:
All course materials and video recordings will be available on the course Canvas site. Lectures will be offered live at the scheduled class time, and attendance will be taken. If you attend in person and sign in, your attendance will automatically be logged on the Canvas site. Attendance at the live lecture is not required as all lectures will be recorded and posted on the Canvas site within 24 hours. If you do not attend live, you will be required to view the lecture online and attest via a one-question quiz that you have watched the lecture in its entirety. The attestation will not be available until the video has been viewed. All attestation quizzes must be completed by April 10th.

Communication Plan:
Drs. Crosby and Telzrow will communicate through the Canvas email platform. If you have a question about the schedule or your assignments, you should check the Canvas site first. You may always email Drs. Crosby and Telzrow directly and can expect a response within 48 hours.

Objectives and Student Learning Outcomes (SLOs):
By the end of the course, participants will be able to demonstrate the following learning outcomes:

- *Objective 1: Gain knowledge about the responsible conduct of research (RCR)*
    - *SLO i:* Describe rules and policies for ethical research practices
- *Objective 2: Be exposed to ethical decision making (EDM) in RCR*
    - *SLO ii:* Identify an ethical question (ethical sensibility: is there an ethical dilemma?)
    - *SLO iii:* Know procedures for reporting and investigating research misconduct
- *Objective 3: Exhibit moral courage*
    - *SLO iv:* Understand that knowing what to do does not equal moral courage
- *Objective 4: Demonstrate Integrity*
    - *SLO v:* Know the importance of character and being honest and fair

Attendance Policy Related to COVID Symptoms, Exposure, or Infection:
Student health, safety, and well-being are the university's top priorities. To help ensure your well-being and the well-being of those around you, please do not come to class if you have tested positive for COVID-19 or have possible symptoms and have not yet been tested. If any of these situations apply to you, you must follow university guidance related to the ongoing COVID-19 pandemic and current health and safety protocols. If you are experiencing any COVID-19 symptoms, contact student health (dshcheckin@duke.edu, 919.681.9355). Learn more about current university policy related to COVID-19 at https://coronavirus.duke.edu/.

To keep the university community as safe and healthy as possible, you will be expected to follow these guidelines. Please reach out to Drs. Crosby and Telzrow and OBGE (OBGE@duke.edu) as soon as possible if you need to quarantine or isolate so that we can discuss arrangements for your continued participation in class.

Disability Statement:
Students with disabilities who believe that they may need accommodations in the class are encouraged to contact the Office of Services for Students with Disabilities at 684.5917 or disabilities@aas.duke.edu as soon as possible to better ensure that such accommodations are implemented in a timely fashion.

Tentative Schedule:
See below for a schedule and a list of the assessments that will be used for grading purposes. Changes to the schedule are at the discretion of the course directors and will be communicated in a timely fashion.

Date	Topics/ Units	Lecturer	Assessment
Jan 16	Introduction to the course and Duke research misconduct resources	**Erika Crosby, PhD** Assistant Professor of Surgery/MGM/IIB OBGE RCR/R&R Curriculum Manager **Calla Telzrow, PhD** Associate Director of Curriculum, Advising, and Experiential Learning	Sign the sheet in person **OR** watch recording and complete quiz on Canvas
Jan 23	Mentoring	**Courtnea Rainey, PhD** Assistant Dean for Assessment & Evaluation The Graduate School, Duke University	Sign the sheet in person **OR** watch recording and complete quiz on Canvas
Jan 30	Statistical considerations for experimental design and variables	**Yue Jiang, PhD** Assistant Professor of the Practice of Statistical Science	Sign the sheet in person **OR** watch recording and complete quiz on Canvas
Feb 6	Scientific publishing: Economics of the industry and alternative publication options	**Haley Walton** Senior Assistant Librarian Librarian for Education and Open Scholarship	Sign the sheet in person **OR** watch recording and complete quiz on Canvas
Feb 13	Science communication 101	**Robin A. Smith, PhD** Senior Science Writer Duke Communications and Marketing	Sign the sheet in person **OR** watch recording and complete quiz on Canvas
Feb 20	Case study discussion	**Small groups meet** – discussion led by teaching assistants (TAs)	Sign in
Feb 27	Confirm topic team assignments and work on case study	**No in-person class meeting** – topic teams will find/write/edit/compile their case study and discussion questions on Canvas	Check Canvas for assignment
Mar 6	Draft case study DUE	**No in-person class meeting** – facilitators will post comments and edits on Canvas	Work on draft in "Collaboration" tab in Canvas
Mar 13	Case study review and feedback	**No in-person class meeting** – topic teams will respond to comments and edits and produce final case study	
Mar 20	Final case study DUE	**No in-person class meeting** – facilitators will proofread and compile final versions for distribution to topic teams	
Mar 27	Case study discussion Topic teams 1-2	**Small groups meet**	Sign in
Apr 3	Case study discussion Topic teams 3-4	**Small groups meet**	Sign in
Apr 10	Case study discussion Topic teams 5-6	**Small groups meet**	Sign in

RCR topics shown in red; R&R topics shown in blue; topics that integrate both elements shown in green.

Small group facilitators (instructors and TAs) and rooms are shown below:

	Small group 1	Small group 2	Small group 3	Small group 4	Small group 5	Small group 6	Small group 7	Small group 8
Instructor(s)	Asiya Gusa	Carolyn Coyne & Rohit Singh	Ryan Baugh & Josh Snyder	Allison Ashley-Koch	Mustafa Khasraw & Mari Shinohara	Kathy Ayasoufi	Marina Tuyishime & Corinne Linardic	Meta Kuehn, Steve Harward, & Erika Crosby
TA	Siobhan Duffy	Samed Delic	Emily Green	Marco T. P. Gontijo	Courtney Manning	Carlo Vignali	Guinevere Connelly	Jameson Blount
Room	Trent 3025	Jones 415	Trent 4030	MSRBIII 1125	Trent 3019	Trent 4067	Nanaline 247	Trent 3075

You will randomly be assigned to a small group in Canvas. Please check your assignment there. Participation in small group discussions via Zoom may be allowed under specific, pre-approved circumstances. Reasons may include travel for conferences, remote learning, or completing your degree at another institution. If you require access to Zoom for any of the small group meeting dates, please reach out to Drs. Crosby and Telzrow as soon as possible because only one of our small groups will have a hybrid meeting component and switching small groups once topics have been assigned is not trivial.

Small Group Discussion Guidelines:

Civility is an essential ingredient for academic discourse. Differences in beliefs, opinions, and approaches are to be expected. Active interaction with peers and your instructor is essential to success in this course, so please adhere to these guidelines:

- Respect that others' opinions and beliefs may differ from your own. If you disagree, you may critique the idea, but not the person.
- Listen carefully, be courteous, and don't interrupt.
- Support your statements with evidence and a rationale.
- Try to moderate how you contribute to the discussion – if you have a lot to say, try to avoid dominating the conversation; if you are reluctant to speak up, try to find an opportunity to share your perspective.

Please bring any communications you believe to be in violation of this class policy to the attention of Drs. Crosby and Telzrow immediately.

Academic Integrity:

Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Citizens of this community commit to reflect upon and uphold these principles in all academic and non-academic endeavors, and to protect and promote a culture of integrity. To uphold the Duke Community Standard:

- The student will not lie, cheat, or steal in their academic endeavors;
- The student will conduct themself honorably in all their endeavors; and
- The student will act if the Standard is compromised.

Students should also read the Duke policy on Academic Dishonesty at the following link: https://studentaffairs.duke.edu/conduct/z-policies/academic-dishonesty. Regardless of course delivery format, it is the responsibility of all students to understand and follow all Duke policies, including academic integrity (e.g., completing one's own work, following proper citation of sources, adhering to guidance around group work projects, and more). Ignoring these requirements is a violation of the Duke Community Standard. Any questions and/or concerns regarding academic integrity can be directed to the Office of Student Conduct and Community Standards at conduct@duke.edu.