After this session you will be able to:

- Describe academic integrity
- Define scientific misconduct
- Identify institutional resources to support professionalism
- Appreciate the importance of being able to talk about questionable behaviors
Speakers for this session:

**Ann Brown, MD, MHS**
*Vice Dean for Faculty*
*Associate Professor of Medicine*

**Stephen Lisberger, PhD**
George Barth Geller Professor and Chair of the Department of Neurobiology

**Edward G. Buckley, MD**
Chair, Department of Ophthalmology
Vice Dean for Education
Joseph A. C. Wadsworth Clinical Professor of Ophthalmology
Professor of Pediatrics

**Donna Cookmeyer, PhD**
School of Medicine Research Integrity Officer
Chair, Institutional Review Board
Recent meta-analysis on scientific misconduct:

Three principles:

1. Getting it RIGHT is the first priority
   - Getting it into Nature or Cell is less important
2. Honesty
   - Designing experiments
   - Collecting (blinded) and analyzing data, statistics
   - Reporting- data selection, methods, attribution and authorship
3. Respect
   - Colleagues
   - Experimental subjects (animals and people)
Two kinds of improper conduct

Scientific Misconduct (felony)

Questionable Research Practices (misdemeanor)
NIH “High Crimes” of Misconduct

Fabrication = Making up data

Falsification = Changing data or materials to deceive

Plagiarism = Misappropriation of another’s words, results or ideas

Committed recklessly or intentionally.
Fabrication is ... making up data or results and recording or reporting them.

Recording fake data in lab books that are not used for publication or in grants applications is misconduct.
Falsification is ...

manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
Falsification includes ...

1. Changing data
2. Cherry-picking data
3. Using inappropriate statistics
4. Intentionally misleading report of data or methods
Plagiarism is...

1. **Substantial textual copying** of another's work (Use quotation marks when using an exact quote or paraphrase to convey concept)

2. **Misappropriation of intellectual property** includes the unauthorized use of ideas.
Examples of actions that could be misconduct at Duke, but not at NIH

1. Retribution of a whistleblower

2. Sabotage of another’s research

3. Some authorship disputes
Regulatory/Compliance Violations
(not scientific misconduct)

1. Financial malfeasance (criminal)
2. IRB or IACUC violation
3. Conflict of interest violation
Misdemeanors in Research = Questionable Research Practices

1. Improper data collection, analysis and storage [Duke requires 5 year retention]
2. Data ownership disputes; Duke owns your data and an MTA required for data to be transferred.
3. Refusing to provide reagents
4. Premature release of data to media
QRPs: Authorship

• Who should be an author (honorary or omissions) Paul J. Friedman, UCSD, Council of Science Editors, 2004

• What is the order of authorship

• Failure to recognize collaborators

• Mostly cured by good communication before and during the work.
QRPs: publication

1. Redundant/augmenting pubs (10% of pubs; meta-analyses are affected)

2. Not citing original source

3. Citation stuffing

4. Biased literature review

5. Self Plagiarism (Miguel Roig, Office of Research Integrity website)
QRPs: Mentor/Mentee relations- training is largely by an apprenticeship model

1. Inadequate supervision and responsiveness
2. Inadequate communication- expectations, goals
3. Hostile or disrespectful environment
Process of Investigating Misconduct
Duke Faculty Handbook

1. Allegations made to Research Integrity Officer, Donna Cookmeyer; Duke Integrity in Action Line (800-826-8109)
2. Standing committee (Grand Jury)
3. Ad Hoc committee decides
4. Vice Chancellor, Dean Andrews, sanctions
5. ORI (NIH) notified
How to avoid misconduct and QRPs?

1. Just do it right. Set an example.
2. Create a culture of scientific accountability in your lab.
3. Be involved in what is going on. Look at lab notebooks with your stuff. Look at the data in the lab as it comes in.
5. Get help from your elders.
Discussion of Case Studies
(4 Scenarios, ~20 minutes each)

Instructions for each scenario:

1. Discussant will introduce the scenario to the group
2. Each person will be asked to respond to a question using a text-in audience response system
3. Discussant will facilitate group discussion
You are the clerkship director and you observe another faculty member yelling at a female medical student during rounds. You have received numerous complaints from students that this particular attending is intimidating to work with, criticizes students in front of others, and penalizes anyone who shows up late to rounds. You have also noticed that his evaluations of students are often late and seem generic.
How do you think this situation should be handled?
Discussion Questions

• What elements are related to faculty conduct?
• What resources are available at Duke to help the students in this situation?
• Is there discrimination at play here?
• What impact might generational differences have?
Bob is a student trying to replicate experiments performed by a previous student who is no longer at Duke. When he is unable to reproduce the findings, Bob approaches you, his faculty mentor, for advice. You suggest Bob review the former student’s raw data in the notebooks he left behind. Bob scours the lab but is unable to find any evidence of the raw data. The results of this experiment are an integral part of Bob’s hypothesis for his research project. The student who supposedly made the original findings has gone on to fellowship at another institution. His findings have been submitted for publication at a mid-level journal.
As the mentor to both students, what should you do about the missing data?
Discussion Questions

• Why would the missing data concern you?
• Who is responsible for keeping primary data?
• How could this be prevented?
• What should be done about the pending publication?
• Should you contact the institution where you former student is now a fellow?
A publisher contacted Duke to inform us that a recently-submitted book chapter was an almost verbatim copy of a review article written by someone else. The data and tables in the chapter were an exact match to the previously published review article. The chapter was “written” by a fellow working with a senior faculty member. The faculty member said the fellow brought him a draft of the book chapter, which he only edited. He had no idea about the relationship to the review article.
Who is most responsible?
Discussion Questions

• Was this misconduct?
• What role does trust play in this scenario?
• How would you detect this?
• How else might plagiarism happen?
• What can you do to prevent it?
Scenario 4: Unconfirmed Results
Discussant: Steve Lisberger, PhD

Darlene Campion, a PhD candidate in immunology gave her regular presentation of research progress when her PI said that her data looked great and that she should put together an abstract for the spring meeting with herself as first author. After the session Darlene basked in the pleasure of her success. However, nagging doubts about the solidity of her data resurfaced after the next set of experiments. She wanted to do more experiments but the abstract deadline was now only two weeks away and she knew that she would not be able to complete the further experiments before the deadline...
Scenario 4: Unconfirmed Results
Continued...

She went to her PI Gabriella Corral. “Darlene,” she was told, “You need to go out on a limb a little to be recognized. After all, the system runs on getting credit for doing something first and the innovation can provide recognition for years. Let’s put in the abstract and you can keep doing experiments until the meeting. In fact, by then you might have the paper written and submitted. This is a very competitive world, so compete girl, compete!” ...
Scenario 4: Unconfirmed Results
Continued...

Darlene, still dubious, sends in the abstract and redoubles her efforts to provide a solid base of experimental evidence to support the novel hypothesis. Meanwhile, Dr. Corral heard from the Immunology Society that the abstract was selected for a plenary presentation as one of the most significant developments of the year. Elated, she relates the honor to Darlene. Rather than the expected elation, Darlene turns very pale...
**Scenario 4: Unconfirmed Results Continued...**

“As I said before,” she states, “The data don’t seem to be so great to me and I have not been able to substantiate the results.”

“Well, you still have a little time but if you get no further, we will just present the original material in the abstract,” says Dr. Corral.

Darlene hurriedly left the room.
How questionable is the behavior in this scenario?
Discussion Questions

• How is this scenario related to research ethics?
• What are the options for each of the players if the data remain the same?
• What resources are available to the post-doc?
• What would you advise the post-doc to do?
Resources

- SoM Professionalism Initiative (brochures in your packets) and website (on your flash drive)
- Best Practices in Research (cards in your packets)
- Departmental accountability plans
- Integrity Line: 1-800-826-8109