



# Research Quality and Reproducibility



## Help researchers develop good research habits, and produce better outcomes

*Research Quality and Reproducibility* is an online course that enables institutions to offer robust training across five key areas of effective and high-quality scientific research: developing research strategies, planning research, experimentation and analysis, communication of research, and knowledge transfer.

### About this course

- Focuses on the knowledge and skills required to plan and execute well managed, reproducible research - competencies which are often not formally taught in postgraduate research programs
- Provides formal training for researchers in the early stages of their careers, with the primary goal of instilling good research practices and thereby increasing the quality of the research being performed and published
- The training is equally applicable to more seasoned researchers who seek additional formal training in critical areas of the research process

### *Research Quality and Reproducibility* is available on Epigeum's new platform:

- Modern and fresh design
- Mobile responsive functionality
- Specific user dashboards and profile screens



13 modules  
over 6 courses



Course time  
60 minutes  
per module

### Lead advisors



#### Dr Richard Coico

Professor of Cell Biology and Medicine, and Vice Dean for Scientific Affairs at SUNY Downstate Medical Center. Dr Coico

earned his PhD in Immunology from New York University



#### Dr Rebecca Davies

Associate Professor at the College of Veterinary Medicine and Director of Quality Central at the University of

Minnesota. Dr Davies earned her PhD in Comparative Animal Physiology from the University of Minnesota

## Benefits

- Offers robust training in the key areas that support high-quality, reproducible scientific research
- Helps researchers to develop, fortify, and maintain a sound foundation that supports their goal to conduct rigorous and reproducible research
- Presents research best practices related to the management, execution and documentation of research to ensure an accurate, complete, transparent and secure research record
- Supports researchers in developing the skills required to produce impactful work that others can reproduce and extend

## Learning outcomes

On completion of the course, participants will be able to:

- Recognise good research practices that support high-quality research
- Discuss the importance of research rigor, quality, and transparency
- Identify and reduce risks to research quality and reproducibility
- Develop, plan and execute well managed and reproducible scientific research
- Effectively communicate the results of a research project
- Recognize the importance of mentoring in promoting strong research practices



**Nearly all research data are important, and should be presented for review in order to move the collective effort forward. However, if the quality of the data is poor and unrecognized, progress will be impeded- sometimes for years to come. Therefore, scientists conducting (and reviewing) research must be fully equipped with the appropriate tools, training and expertise to ensure and evaluate data quality in order to confidently advance or strategically retreat in response to research outcomes.**



**Dr. Rebecca Davies**  
Lead Advisor

## Curriculum:

1. Research quality and reproducibility
2. Understanding your research area
3. Developing your research ideas
4. Designing your research study
5. Engaging internal and external stakeholders
6. Intellectual property considerations
7. Execution, management, and documentation of experiments
8. Data management
9. Data analysis and interpretation
10. Authoring and publication
11. Data and resource sharing
12. Wider communication of research
13. Mentoring for research quality and reproducibility

## Developed in collaboration with:

- Boston University
- Duke University
- Ohio State University
- University of Minnesota
- University of Southern Maine