

Responsible Conduct of Research (RCR) Plan 2016

Background: Training in the Responsible Conduct of Research is essential in the preparation of future scholars and professionals. An understanding of the issues concerning the conduct of research in an increasingly complex world has become critical in successfully navigating the research landscape. To help prepare Michigan State University graduate students for their future scholarly work, a plan for providing the foundation of responsible conduct has been developed in coordination with the Graduate School, the Vice President for Research and Graduate Studies Office, and college associate deans for graduate education. The plan is predicated on the principles that a basic understanding of issues is necessary through didactic training and a periodic reinforcement of the principles through discussion. It is the belief that this plan will provide a foundation for all graduate students as well as others pursuing a career in research and will offer the basic information to meet most, if not all, federal agency granting requirements.*

*Students who are supported by NSF, NIH, or USDA grants may be required to complete additional specific training; they must meet the timeline and content requirements of training for that grant.

*Students engaged in research involving human subjects or animal use must complete the Michigan State University training modules for those subjects before submitting IRB or IACUC approvals. These modules should be completed in addition to the Department RCR training.

Training Requirements: Responsible Conduct of Research (RCR) is a graduation requirement for all graduate students in the Department of Entomology.

Initial Training: All students are required to complete 4 CITI online training modules within the first year of enrollment in their program:

- Introduction to the Responsible Conduct of Research
- Authorship
- Plagiarism
- Research Misconduct

In addition, all students must complete a minimum of 6 hours of discussion based training before graduation. These hours may be achieved in two ways:

- Participation in discussions of RCR issues at Department Brown Bag lunches offered each semester for a total of at least 3 hours. These discussions will be lead by faculty and will be based on case studies, current news events, or

journal articles pertaining to a variety of RCR topics and issues. Sources of case studies include; *On Being a Scientist: A Guide to Responsible Conduct in Research* published by the National Academies of Science, and MSU RCR shared resources PowerPoints on different topics with case studies. An example of a current topic pertinent to our department is the ethics surrounding the use of the CRISPR/Cas9 system for engineering gene-drive systems for environmental release to control invasive species or arthropod vectored diseases. Readings and other preparatory assignments will be provided in advance of the discussions.

- Participation in discussion sessions of the Responsible Conduct of Research and Scholarship Workshop Series offered through The Graduate School. <https://grad.msu.edu/rcr>

Additional Training for Plan A Masters and Ph.D. Students: Within the first 2 years of enrollment in their program, master's plan A and doctoral students are required to complete 3 additional MSU online training modules, to be selected from the following list:

- CITI Collaborative Research
- CITI Conflicts of Interest
- CITI Data Management
- CITI Financial Responsibility
- CITI Mentoring
- CITI Peer Review

Annual Refresher Training for Ph.D. Students: Starting in year 3, all doctoral students must complete 3 hours of annual refresher training; this can include discussion-based training and online courses beyond the 7 required in basic training. These hours may be achieved in several ways:

- Participation in the department RCR Brown Bag discussions totaling at least 3 hours.
- Taking additional CITI online courses from the list above for 3 hours of additional training.
- Taking additional discussion sessions of the Responsible Conduct of Research and Scholarship Workshop Series offered through The Graduate School. <https://grad.msu.edu/rcr>
- Taking CITI online refresher training from the list below for 3 hours of additional training.
 - Authorship (RCR-Refresher)
 - Collaborative Research (RCR-Refresher)
 - Conflicts of Interest (RCR-Refresher)
 - Data Management (RCR-Refresher)
 - Mentoring (RCR-Refresher)
 - Peer Review (RCR-Refresher)

- Research Misconduct (RCR-Refresher)

Completion of RCR training is a requirement for graduation. The Department will keep records of the successful completion of these training requirements.