

Department of Earth and Environmental Sciences

Responsible Conduct of Research Plans

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. 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. The plan below represents is the basic university plan. Other requirements* might be required.

All graduate professional, Master's (Plan A and Plan B) and Doctoral Students

1) Year 1

All new graduate and graduate professional students will complete 4 CITI** online modules within the first year of enrollment in their program: *Completion of this requirement will be tracked in SABA****

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

2) Discussion-Based Training****

All graduate and graduate professional students must complete a minimum of 6 hours of discussion-based training prior to receiving their degrees. These hours can be completed at any point in the graduate program, including during the first 2 years (e.g., as part of a course), or as part of the ongoing training requirement (for Doctoral Students). *For Master's Plan A and PhD Students, completion of this requirement will be recorded by the department in GradInfo as "Initial" training. Please see the graduate secretary to complete this requirement.*

Master's Plan A and Doctoral Students *(In addition to 1 and 2 above, Master's Plan A and Doctoral Students will complete the following)*

3) Year 2

Within the first 2 years of enrollment in their program, Master's Plan A and Doctoral Students will complete 3 additional MSU online training modules, to be selected from the following list. *Completion of this requirement will be tracked in SABA. Please see the graduate secretary to complete this requirement.*

- CITI Collaborative Research CITI Conflicts of Interest
- CITI Data Management
- CITI Financial Responsibility
- CITI Mentoring
- CITI Peer Review
- IACUC Tutorial for Animal Care Training (in <http://Train.ORA.msu.edu>)
- Human Research Protection/ IRB Certification (in <http://Train.ORA.msu.edu>)
- Rigor and Reproducibility Course (in production)

Doctoral Students *(In addition to 1, 2 and 3 above, Doctoral Students will complete the following)*

4) Annual Refresher Training

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. Specifics about the number of hours required, the content, and the timing of this training will be defined in the individual department/program or college plan. *Completion of this requirement will be recorded by the department in GradInfo as "Annual" training.*

*Additional requirements as necessary

- 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 may be completed as part of the training requirements below, or in addition to them, depending on the department/program or college plan.

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**Collaborative Institutional Training Initiative at CITIprograms.org.

***Saba Learning management System (LMS) at <https://ora.msu.edu/new-saba-learning-management-system-lms>.

****Discussion Based Training

The 6 hours required for discussion-based training can be obtained by the following

1. The Graduate School RCR Workshop series maybe used to help fulfill both the annual refresher and discussion-based training requirements.
2. Selected courses can be used. Currently these courses are
 - ENE (GLG) 900 (1 hour RCR) Research Strategies and Methods in Environmental Engineering and Science (Spring of every year, total credits: 1)
 - GLG 862 (4 hours RCR) Igneous Petrology (Fall of even years, total credits: 4)
3. Discussions with your advisor, with research group meetings can be used.
4. Department arranged seminars on RCR topics.