The responsible and ethical conduct of research is critical for excellence, as well as public trust, in science and engineering. Consequently, education in RCR is considered essential in the preparation of future scientists and engineers. Below is MSU’s Plan of Implementation of Requirements to Provide Responsible Conduct of Research (RCR) Training for the National Science Foundation, the National Institutes of Health, and the Federal Demonstration Partnership. Additional information can also be found on the MSU VP for Research website: http://www.research.msstate.edu/conduct/.

**NATIONAL SCIENCE FOUNDATION**

A new training requirement in the Responsible Conduct of Research (RCR) from the National Science Foundation (NSF) for funded undergraduates, graduate students, and postdoctoral researchers takes effect January 4, 2010. This new NSF regulation implements provisions of the America COMPETES Act.

The NSF guidelines can be found in detail in the January 2010 NSF Proposal and Award Policies and Procedures Guide, specifically in Part I - Grant Proposal Guide, Chapter II. C.1e and in Part II - Award and Administration Guide, Chapter IV.B.

http://www.nsf.gov/pubs/policydocs/pappguide/nsf10_1/aag_4.jsp#IVB

Section 7009 of the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act (42 U.S.C. 1862o–1) requires that “each institution that applies for financial assistance from the National Science Foundation for science and engineering research or education describe in its grant proposal a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed research project.”

**Certification at the Time of Proposal**

Beginning January 4, 2010, at the time of a NSF proposal submission, the Project Investigator (PI) will be required to complete a certification that states that Mississippi State University has a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research.

**Institutional Responsibilities**

a. An institution must have a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. As noted in GPG Chapter II.C.1e, institutional certification to this effect is required for each proposal.

b. While training plans are not required to be included in proposals submitted to NSF, institutions are advised that they are subject to review, upon request.
c. An institution must designate one or more persons to oversee compliance with the RCR training requirement. At Mississippi State University, the Office of Research and Economic Development will oversee the compliance.

d. The project investigator (PI) is responsible for verifying that undergraduate students, graduate students, and postdoctoral researchers supported by NSF to conduct research have received training in the responsible and ethical conduct of research. The PI reports the compliance to this requirement to the Office of Research and Economic Development.

**MSU’s Plan to Provide Responsible Conduct of Research (RCR) Training**

Mississippi State University is committed to providing undergraduates, graduate students and postdoctoral researchers with training in the responsible and ethical conduct of research. The current plan requires, at a minimum, all undergraduate students, graduate students and postdoctoral scholars (hereinafter referred to as “participant”) employed on a federally-sponsored project requiring a program of study in the responsible conduct of research must engage in a robust program of study designed to contribute to their knowledge and respect of high ethical standards. The training must involve, at a minimum, enrollment in an approved Mississippi State University course work or completion of an approved on-line program in the responsible conduct of research. Mississippi State University offers the following approved courses in Research Ethics as both a 3-hour credit course or as a 1-hour credit course. **Non-credit online certification** includes the CITI Responsible Conduct of Research Online Training. Anyone wishing to enroll in credit courses should contact the MSU Registrar's Office.

- **PHI 3013 - Business Ethics. (3)** Three hours lecture. A philosophical exploration of how to recognize, analyze, and implement ethical decisions within the multivalued contexts of the various fields of business.
- **PHI 4163/6163. Research Ethics. (3)** Three hours lecture. This course examines ethical issues that are generated by the tensional balancing of personal consideration against public good in the practice of scientific research.
- **PHI 8101. Case Studies in Scientific Research Ethics. (1)** One hour on-line instructor led course. Practical application of research ethics using case scenarios to direct discussions on data ownership, plagiarism, authorship, conflict of interest, and other regulatory compliance related issues.
- **PHI 8101. Case Studies in Scientific Research Ethics. (1)** One hour face-to-face seminar. Practical application of research ethics using case scenarios to direct discussions on data ownership, plagiarism, authorship, conflict of interest, and other regulatory compliance related issues. (Same as CVM 8101).
- **CVM 8101. Case Studies in Scientific Research Ethics. (1)** One hour face-to-face seminar. Practical application of research ethics using case scenarios to direct discussions on data ownership, plagiarism, authorship, conflict of interest, and other regulatory compliance related issues. (Same as PHI 8101).
- **CH 4141. Professional Chemistry: Research. (1)** (Prerequisite: CH 3141). One hour face-to-face lecture. Disseminating research results in chemistry. Advanced scientific writing, performing scientific research and professional conduct of scientists.
• **CH 8111. Professional Chemistry.** (1) One hour *face-to-face* lecture. Professionalism in chemistry as it applies to research, with emphasis on the different methods used for disseminating research results.

The above courses are Pass/Fail as determined by the instructor of record.

**Online Training:**

**CITI Responsible Conduct of Research Online Training.**

The online course in Responsible Conduct of Research is delivered by the Collaborative Institutional Training Initiative (CITI) and contains seven modules each with foundation text, imbedded case studies and multiple-choice questions. Eighty percent (80%) of the questions must be answered correctly in order to pass each module.

**PLUS**

**Informal Non-Credit Supplement to RCR and Online Credit Classes:**
Once the participant (student and/or faculty) has received RCR certification or successfully completed/passed the MSU *online* academic course, they must also attend six one-hour *face-to-face* sessions/discussions of ethical issues associated with one of the nine core competencies recognized by the Public Health Service (PHS) Policy on Instruction in the Responsible Conduct of Research. These sessions will be facilitated by ethics professionals at MSU.

1. Protection and Use of Human Subjects in Research (IRB)
2. Conflict of Interest in University Research
3. Data Acquisition, Management, Sharing, and Ownership
4. Animal Care and Use in Research (IACUC)
5. Research Misconduct
6. Publication Practices and Responsible Authorship
7. Mentoring/Trainee Responsibilities
8. Peer Review
9. Collaborative Research

**Informal Non-Credit Supplement to RCR and Online Credit Classes:**
Once the participant (student and/or faculty) has received RCR certification or successfully completed/passed the MSU *online* academic course, they must also attend six one-hour *face-to-face* sessions/discussions of ethical issues associated with one of the nine core competencies recognized by the Public Health Service (PHS) Policy on Instruction in the Responsible Conduct of Research. These sessions will be facilitated by ethics professionals at MSU.

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6. Publication Practices and Responsible Authorship
7. Mentoring/Trainee Responsibilities
8. Peer Review
9. Collaborative Research

Fall 2012 Supplemental Training Sessions

- **Financial Conflict of Interest**
  (New funding mandate by National Institutes of Health)
  Tuesday, September 11, 2012 3:30 - 4:30 p.m.
  Fowlkes Auditorium, Colvard Union

- **Ethics in Public Contracting, Anti-Kickback & Procurement**
  Tuesday, October 16, 2012 3:30 - 4:30 p.m.
  Fowlkes Auditorium, Colvard Union

Spring 2013 Supplemental Training Sessions

- **The Do’s & Don’ts of Keeping an MSU Lab Notebook**
  (Good Lab Practice (GLP), Intellectual Property, Patents, Data Ownership, Confidentiality, etc.)
  Tuesday, February 12, 2013 3:30 - 4:30 p.m.
  Fowlkes Auditorium, Colvard Union

- **Understanding and Managing Cell Culture Contamination**
  Tuesday, February 5, 2013 3:30 - 4:30 p.m.
  Fowlkes Auditorium, Colvard Union

- **Dual Use Dilemma in Biological Research**
  Thursday, February 28, 2013 3:30 - 4:30 p.m.
  Center for Advanced Vehicular Systems (CAVS)

- **Making It Out of Your Lab Intact: Safe & Sound Research**
  Tuesday, March 5, 2013 3:30 - 4:30 p.m.
  Fowlkes Auditorium, Colvard Union

- **Copywrite or CopyWRONG**
  Tuesday, April 9, 2013 3:30 - 4:30 p.m.
  Fowlkes Auditorium, Colvard Union

Notification of the dates, times, and locations will be sent via a mass e-mail two weeks in advance of each session from the Office of the VP for Research and Economic Development.

Noncompliance with this rule or failure of a course or the on-line program more than twice will constitute removal from federal funding that contains a responsible conduct in research requirement. Participants may appeal re-appointment to such federal funding if and only if they pass a course or the on-line program at a future date.
Refresher Training:

The Office of Research and Economic Development at Mississippi State University offers a two-hours Ethical Conduct of Research seminar each fall and spring semester for faculty, staff, and students to discuss selected ethics topics.

Verification of RCR Training

The Project Investigator (PI) is responsible for verifying that undergraduate students, graduate students, and postdoctoral researchers supported by NSF to conduct research have received training in the responsible and ethical conduct of research.

The PI is responsible for providing the verification to ORED as requested per the ORED administrator.

Principal Investigator's Responsibility

PIs must ensure that within the first 12 months of the grant period in which undergraduates, graduate students, and postdoctoral researchers are assigned to the funded NSF project that each individual take the RCR Training and complete the 6 one-hour supplemental seminars and provide the RCR Training Verification document to the Office of Research and Economic Development.

At the time of NSF's Annual Grant Funding Increment:

Upon receipt of NSF's annual grant funding increment, SPA staff will be requesting from PIs any RCR training verification documents that may not have been submitted during the grant period.

NATIONAL INSTITUTES OF HEALTH (NIH)

NIH recently updated their policy on instruction in the responsible conduct of research, conveyed some of the consensus best practices that have evolved in the research training community over the past two decades, and provided access to additional information that may be useful to institutions and individuals in meeting their obligations under NIH policy. Specifically this Notice: 1) develops principles based on 20 years’ experience of providing instruction in responsible conduct of research by the scientific research community; 2) is more specific about who should participate, how often instruction should occur, and the form that instruction should take; 3) addresses issues that have arisen as the practice of biomedical, behavioral and clinical science has evolved; and 4) provides guidance to applicants, peer reviewers and NIH staff in determining how well specific plans for instruction in responsible conduct of research compare with the best practices accumulated over the past two decades by the research training community.

Applicability
This NIH notice applies to all NIH Institutional Research Training Grants, Individual Fellowship Awards, Career Development Awards (Institutional and Individual), Research Education Grants, Dissertation Research Grants, or other grant programs with a training component that requires instruction in responsible conduct of research as noted in the Funding Opportunity Announcement.


NIH requires that all trainees, fellows, participants, and scholars receiving support through any NIH training, Career Development Award (individual or institutional), Research Education Grant, and Dissertation Research Grant must receive instruction in responsible conduct of research. This policy will take effect with all new and renewal applications submitted on or after January 25, 2010, and for all continuation (Type 5) applications with deadlines on or after January 1, 2011. This Notice applies to the following programs: D43, D71, F05, F30, F31, F32, F33, F34, F37, F38, K01, K02, K05, K07, K08, K12, K18, K22, K23, K24, K25, K26, K30, K99/R00, KL1, KL2, R25, R36, T15, T32, T34, T35, T36, T37, T90/R90, TL1, TU2, and U2R. This policy also applies to any other NIH-funded programs supporting research training, career development, or research education that require instruction in responsible conduct of research as stated in the relevant funding opportunity announcements.

Instructional Components
NIH recognizes that instruction in responsible conduct of research occurs formally and informally in educational settings and that informal instruction occurs throughout the research training experience. The credit and non-credit course information provided above is directed at formal instruction in responsible conduct of research. It reflects the accumulated experiences and the best practices of the scientific community over the past two decades. These practices have been incorporated into many of the best regarded programs of instruction in responsible conduct of research.

Rule
At a minimum, all undergraduate students, graduate students and postdoctoral scholars (hereinafter referred to as “participant”) employed on a federally-sponsored project requiring a program of study in the responsible conduct of research must engage in a robust program of study designed to contribute to their knowledge and respect of high ethical standards. The training must involve, at a minimum, enrollment in approved Mississippi State University course work or completion of an approved on-line program in the responsible conduct of research.

Noncompliance with this rule or failure of a course or the on-line program more than twice will constitute removal from federal funding that contains a responsible conduct in research requirement. Participants may appeal re-appointment to such federal funding if and only if they pass a course or the on-line program at a future date.

Fulfillment of Federal Requirement
If the participant does not successfully fulfill the federal requirement through passing either a face-to-face course or the online RCR course, then the PI will notify the ORED administrator
and procedures for removing the participant from the federally funded grant project will commence until such time as a course is successfully completed.

The on-going process of ensuring the integrity of the research record is the responsibility of everyone involved in research and sponsored programs, from the principal investigator, to the department administrators, to the grant technicians and financial managers. There can be no exceptions to upholding values which foster highest integrity in all levels of responsible research.

While every effort has been made to present an accurate description of Federal rules and the practices accepted by the research community for the responsible conduct of research, any statement in this notification that is inconsistent with Federal law or regulation or official policy or guidance is superseded thereby.

FEDERAL DEMONSTRATION PARTNERSHIP

52.203-13 Contractor Code of Business Ethics and Conduct.

https://www.acquisition.gov/Far/05-30/html/52_200_206.html

The Contractor shall include the substance of the clause (3c) in the above URL, including paragraph (d), in subcontracts that have a value in excess of $5,000,000 and a performance period of more than 120 days.

(c) Business ethics awareness and compliance program and internal control system. This paragraph (c) does not apply if the Contractor has represented itself as a small business concern pursuant to the award of this contract or if this contract is for the acquisition of a commercial item as defined at FAR 2.101. The Contractor shall establish the following within 90 days after contract award, unless the Contracting Officer establishes a longer time period:

(1) An ongoing business ethics awareness and compliance program.

(i) This program shall include reasonable steps to communicate periodically and in a practical manner the Contractor’s standards and procedures and other aspects of the Contractor’s business ethics awareness and compliance program and internal control system, by conducting effective training programs and otherwise disseminating information appropriate to an individual’s respective roles and responsibilities.

(ii) The training conducted under this program shall be provided to the Contractor’s principals and employees, and as appropriate, the Contractor’s agents and subcontractors.

(2) An internal control system.

(i) The Contractor’s internal control system shall—

(A) Establish standards and procedures to facilitate timely discovery of improper conduct in connection with Government contracts; and
(B) Ensure corrective measures are promptly instituted and carried out.

(ii) At a minimum, the Contractor’s internal control system shall provide for the following:

(A) Assignment of responsibility at a sufficiently high level and adequate resources to ensure effectiveness of the business ethics awareness and compliance program and internal control system.

(B) Reasonable efforts not to include an individual as a principal, whom due diligence would have exposed as having engaged in conduct that is in conflict with the Contractor’s code of business ethics and conduct.

(C) Periodic reviews of company business practices, procedures, policies, and internal controls for compliance with the Contractor’s code of business ethics and conduct and the special requirements of Government contracting, including—

1. Monitoring and auditing to detect criminal conduct;

2. Periodic evaluation of the effectiveness of the business ethics awareness and compliance program and internal control system, especially if criminal conduct has been detected; and

3. Periodic assessment of the risk of criminal conduct, with appropriate steps to design, implement, or modify the business ethics awareness and compliance program and the internal control system as necessary to reduce the risk of criminal conduct identified through this process.

(D) An internal reporting mechanism, such as a hotline, which allows for anonymity or confidentiality, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

(E) Disciplinary action for improper conduct or for failing to take reasonable steps to prevent or detect improper conduct.

(F) Timely disclosure, in writing, to the agency OIG, with a copy to the Contracting Officer, whenever, in connection with the award, performance, or closeout of any Government contract performed by the Contractor or a subcontract thereunder, the Contractor has credible evidence that a principal, employee, agent, or subcontractor of the Contractor has committed a violation of Federal criminal law involving fraud, conflict of interest, bribery, or gratuity violations found in Title 18 U.S.C. or a violation of the civil False Claims Act (31 U.S.C. 3729-3733).

1. If a violation relates to more than one Government contract, the Contractor may make the disclosure to the agency OIG and Contracting Officer responsible for the largest dollar value contract impacted by the violation.

2. If the violation relates to an order against a Government-wide acquisition contract, a multi-agency contract, a multiple-award schedule contract such as the Federal Supply Schedule, or any other procurement instrument intended for use by multiple agencies, the contractor shall notify
the OIG of the ordering agency and the IG of the agency responsible for the basic contract, and the respective agencies’ contracting officers.

(3) The disclosure requirement for an individual contract continues until at least 3 years after final payment on the contract.

(4) The Government will safeguard such disclosures in accordance with paragraph (b)(3)(ii) of this clause.

(G) Full cooperation with any Government agencies responsible for audits, investigations, or corrective actions.

(d) Subcontracts.

(1) The Contractor shall include the substance of this clause, including this paragraph (d), in subcontracts that have a value in excess of $5,000,000 and a performance period of more than 120 days.

(2) In altering this clause to identify the appropriate parties, all disclosures of violation of the civil False Claims Act or of Federal criminal law shall be directed to the agency Office of the Inspector General, with a copy to the Contracting Officer.