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Objective

To ensure that investigators who receive funding from National Science Foundation (NSF), National Institutes of Health (NIH) and the United States Department of Agriculture (USDA) receive formal instruction in the responsible conduct of research in compliance with agency policies.

General Description

RCR training is available to everyone at UTC, and the UTC research community is encouraged to complete the training. However, RCR training is mandatory for personnel receiving support from the National Science Foundation (NSF), National Institutes of Health (NIH), and the United States Department of Agriculture (USDA) as outlined below.

NSF

NSF requires that at the time of proposal submission to NSF, a proposing institution’s authorized representative certify that the institution has a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. While RCR institutional plans are not required to be included in proposals submitted to NSF, the institution is required to have a plan in place. NSF may request a copy of the plan at any time. This policy applies to all proposals submitted on or after January 4, 2010.

There is no action required by the PI at the time of proposal.

NIH

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 training in RCR. This policy is effective with all new and renewal applications submitted on or after January 23, 2010, and for all continuation (Type 5) applications with deadlines on or after January 11, 2011.

An RCR plan will need to be included within the proposal and in some cases the solicitation may request that a copy of the RCR Institutional Plan be submitted with the proposal. In order to meet each program’s requirement, follow the directions on the specific solicitation.

USDA

USDA NIFA requires that program directors, faculty, undergraduate students, graduate students, postdoctoral researchers, and any staff participating in the research project receive appropriate training and oversight in the responsible and ethical conduct of research and that documentation of such training will be maintained. Grantees are advised that the documentation of the training is subject to NIFA review upon request. This policy is effective for awards subject to the February 2013 (and subsequent) Research Terms and Conditions.

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There is no action required by the PI at the time of proposal.

Available RCR Training Programs

UTC encourages Principal Investigators to require that graduate students, undergraduate students, and postdoctoral researchers obtain their RCR training soon after being hired on the sponsored project. Continual RCR training should occur through course instruction and faculty/student discussion. Some training opportunities are listed below.

Online Training

UTC has partnered with the Collaborative Institutional Training Initiative (CITI) program to provide UTC affiliated researchers the opportunity to participate in online research ethics education.

The following modules are available:

- Biomedical RCR
- Social and Behavioral RCR
- Physical Science RCR
- Humanities RCR
- RCR for Engineers
- RCR for Administrators
- Research, Ethics, and Society (RCR-Interdisciplinary)
- Working with the Institutional Review Board
- Working with the Institutional Animal Care and Use Committee

This training may be accessed at www.citiprogram.org.

First-time users will need to create an account and affiliate themselves with UTC in order to access the courses.

*CITI RCR Training is **MANDATORY** for all NSF, NIH, and USDA supported researchers as part of their RCR plan.*

Face-to-Face Instructional Courses

In addition to the CITI online RCR course, trainees will have an opportunity to receive face-to-face instruction in RCR through campus workshops and one-on-one interaction with the Office of Research Integrity (ORI). Researchers are encouraged to speak with the ORI if interested in face-to-face instructional courses.

Procedures

In order to ensure compliance with the RCR requirements, researchers are required to submit a RCR plan at the time of award notification to the ORI.

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RCR Plan requirements for NSF and USDA NIFA

The plan should include, at a minimum:

- the start date of the student research activities
- The training plan, including the titles of the CITI training modules that the students will take, frequency and duration of face-to-face faculty/student instruction (minimum 3 hours), and the subject matter presented in any face-to-face instruction
- A notice that students will be expected to read UTC's Policy on Misconduct in Research in Service-BT0010
- The names of students involved in research activities.

Proof of training completion (CITI Completion Certificates and/or RCR Completion Form) must be submitted to the ORI prior to student work start date.

RCR Plan requirements for NIH

The plan should include, at a minimum:

- **Format:** Substantial face-to-face discussions among the participating trainees/fellows/scholars/participants; a combination of didactic and small-group discussions (e.g. case studies); and participation of research training faculty members in instruction in responsible conduct of research are highly encouraged. ***While on-line courses can be a valuable supplement to instruction in responsible conduct of research, online instruction is not considered adequate as the sole means of instruction. A plan that employs only online coursework for instruction in responsible conduct of research will not be considered acceptable, except in special instances of short-term training programs (see below), or unusual and well-justified circumstances.***
- **Subject Matter:** While there are no specific curricular requirements for instruction in responsible conduct of research, the following topics have been incorporated into most acceptable plans for such instruction:
 - a. conflict of interest – personal, professional, and financial
 - b. policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices
 - c. mentor/mentee responsibilities and relationships
 - d. collaborative research including collaborations with industry
 - e. peer review
 - f. data acquisition and laboratory tools; management, sharing and ownership
 - g. research misconduct and policies for handling misconduct
 - h. responsible authorship and publication

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- i. the scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research

While courses related to professional ethics, ethical issues in clinical research, or research involving vertebrate animals may form a part of instruction in responsible conduct of research, they generally are not sufficient to cover all of the above topics.

- **Faculty Participation:** Training faculty and sponsors/mentors are highly encouraged to contribute both to formal and informal instruction in responsible conduct of research. Informal instruction occurs in the course of laboratory interactions and in other informal situations throughout the year. Training faculty may contribute to formal instruction in responsible conduct of research as discussion leaders, speakers, lecturers, and/or course directors. Rotation of training faculty as course directors, instructors, and/or discussion leaders may be a useful way to achieve the ideal of full faculty participation in formal responsible conduct of research courses over a period of time.
- **Duration of Instruction:** Instruction should involve substantive contact hours between the trainees/fellows/scholars/participants and the participating faculty. ***Acceptable programs generally involve at least eight contact hours.*** A semester-long series of seminars/programs may be more effective than a single seminar or one-day workshop because it is expected that topics will then be considered in sufficient depth, learning will be better consolidated, and the subject matter will be synthesized within a broader conceptual framework.
- **Frequency of Instruction:** Reflection on responsible conduct of research should recur throughout a scientist's career: at the undergraduate, post-baccalaureate, predoctoral, postdoctoral, and faculty levels. Institutional training programs and individual fellows/scholars are strongly encouraged to consider how to optimize instruction in responsible conduct of research for the particular career stage(s) of the individual(s) involved. Instruction must be undertaken at least once during each career stage, and at a frequency of no less than once every four years. It is highly encouraged that initial instruction during predoctoral training occurs as early as possible in graduate school. Individuals at the early career investigator level (including mentored K awardees and K12 scholars) must receive instruction in responsible conduct of research at least once during this career stage. Senior fellows and career award recipients (including F33, K02, K05, and K24 awardees) may fulfill the requirement for instruction in responsible conduct of research by participating as lecturers and discussion leaders. To meet the above requirements, instruction in responsible conduct of research may take place, in appropriate circumstances, in a year when the trainee, fellow or career award recipient is not actually supported by an NIH grant.

Proof of training completion (CITI Completion Certificates and/or RCR Completion Form) must be submitted to the ORI prior to the start of research.

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Links

<http://www.niaid.nih.gov/researchfunding/sop/pages/resconductresearch.aspx>

<http://www.nsf.gov/bfa/dias/policy/rcr.jsp>

<http://www.unh.edu/research/usda-nifa-rcr-training-requirement>