The University of Tennessee Institute of Agriculture
Responsible Conduct of Research (RCR) Institutional Plan
November 20, 2017

Background

Public confidence in the integrity of the research and scholarship conducted at The University of Tennessee is critical to fulfillment of the University's objectives as a public institution of higher education and is a critical responsibility of individual educators and scholars. As a "Campus" of the UT system, the **University of Tennessee, Institute of Agriculture** (UTIA) takes seriously its obligation to support and implement best practices in promoting research excellence and integrity. It is important that UTIA faculty, staff, and students understand the many aspects associated with the responsible conduct of research to avoid departures from accepted ethical practices which may constitute research misconduct.

Most federal agencies have instituted policies requiring research institutions designate an official, usually called the Research Integrity Officer (RIO), who is available to discuss situations involving suspected misconduct. For UTIA these individuals are:
- Dean, UT College of Veterinary Medicine (UTCVM), serving UTCASNR, UTAgResearch, and UTExtension
- Dean, UTAgResearch, serving UTCVM

The National Institutes of Health, often considered a "gold standard", goes further to define Responsible Conduct of Research (**RCR**) as the practice of scientific investigation with integrity and involving the awareness and application of established norms and ethical principles in the performance of all activities related to scientific research (https://grants.nih.gov/grants/guide/notice-files/NOT-OD-10-019.html). RCR is increasingly viewed as an essential component of training, regardless of a researcher's source of funding. RCR training courses are available to everyone at UTIA and the UTIA community is encouraged to participate in training. Specifics of the training requirement vary among Federal agencies and award types. However, RCR training is **mandatory for certain categories of researchers** when required by particular external funders, including:
- United States Department of Agriculture National Institute of Food and Agriculture (USDA NIFA)
- National Institutes of Health (NIH)
- National Science Foundation (NSF)

Other sponsors do not typically require researchers to complete RCR training at this time, however, it is recommended that researchers contact the UTIA Office of Sponsored Programs (OSP) to determine potential requirements as they may be subject to change.

The **UTIA Compliance Officer (CO)** provides guidance and support for the implementation of training for RCR. Responsible and ethical conduct of research is critical for excellence, as well as public trust, and this RCR Institutional Plan has been developed to provide appropriate training and oversight in the responsible and ethical conduct of research. Observance of these guidelines will help UTIA faculty and staff avoid departures from accepted ethical research practice and prevent those most serious deviations that constitute research misconduct.

Questions

If you have any RCR questions regarding Federal requirements or need assistance with accessing training activities, please contact:

Jane Burns
UTIA CO
janeburns@utk.edu
865-974-7375

Federal Requirements

USDA NIFA's RCR Training Requirements

As required by 2 CFR Part 422, Sections 2, 3, and 8, Institutions that conduct USDA NIFA funded extramural projects are required to foster an atmosphere conducive to research integrity, bear primary responsibility for prevention and detection of research misconduct, and communicate and train their faculty and staff regarding policies and procedures

- Institutions are responsible for developing their own training system which is subject to NIFA review upon request
- The Principal Investigator (**PI**) will ensure all participants on NIFA-funded projects are appropriately trained in RCR
- General content of RCR training will at a minimum, emphasize three key areas: authorship and plagiarism; data and research integration; and reporting misconduct.

USDA NIFA **requires** that all program directors, faculty, undergraduate students, graduate students, postdoctoral researchers, and any staff participating in USDA-funded extramural research projects receive appropriate training and oversight in the responsible and ethical conduct of research and that documentation of such training will be maintained. Documentation of training is subject to NIFA review, upon request.

USDA NIFA's RCR training Capacity Fund requirements also apply to: Hatch Regular, Hatch Multistate, McIntire-Stennis, and Animal Health and Disease Research Awards (https://nifa.usda.gov/program/capacity-grants).

For information specific to requirements, USDA NIFA provides guidance under program specific resources (https://nifa.usda.gov/program/hatch-act-1887). USDA NIFA also provides specific information regarding responsible and ethical conduct of research (https://nifa.usda.gov/responsible-and-ethical-conduct-research).

At this time, RCR training is not required on Smith-Lever extension funds, however, those extension faculty and staff associated with USDA NIFA research projects will be required to receive appropriate RCR training.

UTIA's USDA NIFA RCR Requirements: In response to NIFA's requirements, UTIA **requires all program directors, faculty, undergraduate students, graduate students, postdoctoral researchers and appropriate research staff** who are participating in a NIFA funded research projects to complete **either one of the following two options** of educational training **one time**:

Option 1:   Successful completion of the UTIA online RCR training course hosted by the Collaborative Institutional Training Initiative (CITI).

OR

Option 2:   Successful completion of an approved graduate one credit (or greater) Research Ethics course or UTIA approved RCR Workshop.

Option 1: Online RCR Training

UTIA Faculty, staff and students selecting the CITI online program to meet RCR requirements must complete and pass the modules covering the following core areas in the UTIA RCR curriculum:
   1. Authorship
   2. Data Management
   3. Plagiarism
   4. Research Misconduct

Option 2: RCR Credit Course or UTIA Approved RCR Workshop

The following courses meet RCR requirements for UTIA faculty, staff, and students for purposes of meeting Federal sponsor requirements:
   - ANSC 525 / CEM 525 / PLSC 525 / – Research Ethics for the Life Sciences
   - RCR Workshops
         Upcoming and past workshops are at Quick links on the OSP home page (http://agriculture.tennessee.edu/sponsoredprograms/default.asp)
   - To determine if other specific courses or workshops meet UTIA's RCR requirements, please contact the CO
   - The UTIA RCR training record form (attached) should be used to certify completion of an approved workshop or credit course

Additionally, it should be noted that several departments within the College of Agricultural Sciences and Natural Resources (CASNR) and the College of Veterinary Medicine (CVM) have **mandatory** RCR requirements for graduate students. Please refer to the University of Tennessee Graduate catalog for further information (http://catalog.utk.edu/preview_program.php?catoid=21&poid=8911&hl=ethics&returnto=search).

NSF's RCR Training Requirements

In accordance with the COMPETES Act, 42 U.S.C. 1862o-1, at the time of proposal submission, NSF requires a proposing institution's Authorized Organizational Representative (e.g. UTIA OSP) to certify that the institution has 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 conduct research supported by NSF funds to conduct research.

While RCR training plans are not required to be included in proposals submitted to NSF, institutions are advised that they are subject to review by NSF upon request.

UTIA's NSF RCR Requirements: In response to NSF's requirements, UTIA **requires all undergraduate students, graduate students, and postdoctoral researchers** who will be financially supported by the National Science Foundation (NSF) receive training in the RCR.

Unlike USDA, NSF has not specified the content for training and expects each institution to determine the appropriate RCR curriculum. Therefore, UTIA has determined that NSF RCR requirements can be met by following the same training guidelines as outlined for USDA NIFA, which are outlined above.

Option 1:   Successful completion of the UTIA online RCR training course hosted by the CITI

OR

Option 2:   Successful completion of an approved graduate one credit (or greater) Research Ethics course or UTIA approved RCR Workshop

All institutions submitting applications must certify at the time of application submission that plans are in place to provide appropriate training and oversight of the RCR training. Certification of compliance with the NSF requirements is given by CO.

NIH RCR Training Requirements

The NIH requires that all trainees, fellows, participants, and scholars receiving support through any NIH training, career development award (individual or institutional), research education grant, or dissertation research grant **must receive** RCR training, **including face-to-face instruction**. This requirement also applies to all faculty, including new faculty, mid-career faculty and senior faculty, and staff receiving funding from these sources.

This policy applies to most D, F, K, and T series programs (currently applies to 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 RCR as stated in the relevant funding opportunity announcement (FOA).

NIH recognizes that instruction in RCR occurs formally and informally in educational settings and that informal instruction occurs throughout the research training experience.
- Instructional plans to meet the RCR requirements must be specified in the principal investigator's proposal application. Applications lacking such a plan will be returned without review
- A plan that employs only online coursework for instruction in RCR will not be considered acceptable, except in special instances of short-term training programs, or unusual and well-justified circumstances
- Instruction must be undertaken at least once during each career stage, and at a frequency of no less than **once every four years**.

While NIH does not have specific curricular requirements for instruction in RCR, acceptable training plans generally include a **minimum of eight contact hours of face-to-face instruction over the following relevant subjects**:
- Conflict of interest – personal, professional, and financial
- Policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices
- Mentor/mentee responsibilities and relationships
- Collaborative research including collaborations with industry
- Peer review
- Data acquisition and laboratory tools: management, sharing and ownership
- Research misconduct and policies for handling misconduct
- Responsible authorship and publication
- The scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research

Unlike USDA NIFA and NSF, NIH states that on-line (e.g. CITI) RCR training is not considered adequate as the sole means of instruction and requires substantial face-to-face discussions among the participating trainees/fellows/scholars/participants.

UTIA's NIH RCR Requirements: In response to NIH's requirements, UTIA **requires 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 meeting NIH requirements in RCR. UTIA requires satisfactory completion of at least 8 contact hours which can be achieved through a combination of UTIA approved RCR workshops, graduate credit courses, and/or additional informal instruction methods.

- ANSC 525 / CEM 525 / PLSC 525 / – Research Ethics for the Life Sciences
- RCR Workshops
  Upcoming and past workshops are at Quick links on the OSP home page (http://agriculture.tennessee.edu/sponsoredprograms/default.asp)
- Informal instruction may include a variety of activities/subjects determined by the PI to be effective at fulfilling appropriate RCR training core requirements (as described above).
  Documentation of this type of instruction must be certified and maintained by the PI using the UTIA RCR Training Record and provided to UTIA OSP and NIH upon request

Individuals are encouraged to take the on-line CITI training as well, recognizing it will not be sufficient by itself to meet NIH RCR requirements.

Please contact OSP if you have questions regarding the specific solicitation and/or what specific courses, workshops or informal instruction meet UTIA's NIH RCR requirements.

Monitoring RCR Compliance

The Director and Assistant Directors of OSP are the Authorized Organizational Representatives (AORs) for certifying that the Institutional RCR Training Plan is in place at the time of a proposal submission.

The CO will be responsible for monitoring compliance of required RCR training, as follows:

1) The OSP, as the contract/award receiving office, will identify and document the RCR requirement as applicable on the internal award paperwork and the electronic research administration system.

2) The CO will submit email notification to the project's PI, the Department Head, and the Department Business Manager about the RCR requirement.

3) The CO will maintain receipt of the documents and cross reference the individuals that have met the RCR requirement with individuals identified as being employed on the sponsored project that requires RCR training.

4) The CO will be responsible for following up with PI, Business Manager, and Department Heads if full compliance with the RCR training has not occurred.

The faculty member and/or PI will be responsible for monitoring compliance of required RCR training as follows:

1) Each faculty member and/or PI will be responsible for ensuring that all personnel funded by their project(s) and required to complete RCR training do so in a timely manner consistent with appropriate funding source requirements.
   - Including themselves if they have not taken RCR training

2) Each faculty member and/or PI will be responsible for maintaining verification of laboratory personnel in coordination with UTIA requirements.

Occurrence and Frequency of RCR Training

UTIA views RCR training as valuable to anyone involved in research activities and strongly encourages participation in CITI or other relevant training opportunities regardless of external sponsorship. UTIA expects PIs to take full responsibility for ensuring that all individuals (graduate students, undergraduate students, research associates, visiting scholars, etc.) obtain required RCR training prior to engaging in work on a sponsored project or immediately after (within 30 days), following notification by the CO.

- Exceptions to this time frame may be approved on a case-by-case basis by the CO
- In the event such training is required by external funders, the PI should work with the UTIA CO to ensure training occurs in accordance with the sponsoring agency

At this time, UTIA has determined that RCR training to satisfy USDA and NSF requirements only needs to be completed one time and does not have an expiration date. An important exception is that **NIH requires RCR training every 4 years**.

Online RCR Training Program

UTIA has partnered with the CITI program to allow UTIA affiliated researchers the opportunity to participate in online RCR education.

You will need to create a CITI account before you can access the training. Go to https://www.citiprogram.org/ to take the appropriate training. You will need to associate with the University of Tennessee, Institute of Agriculture and select the UTIA RCR course. See registration instructions at:
http://taes.utk.edu/upload/AgRsch/SponsoredPrograms/RegisteringwithCITI-UTIA.pdf

Estimated time to complete the required UTIA course is 1 to 1 ½ hours. You are not required to complete the entire RCR course in one session as CITI tracks progress so that you may log in and out at your own pace. It is not recommended that you attempt to complete all modules in one session. Multiple login sessions of about 60-90 minutes each is the most effective way to use the on-line course site.

You must score 80% or greater to receive certification of training. If your score is less than 80%, you will be allowed to retake the quiz at the end of each module. Course results and certification of completion will automatically be forwarded to the UTIA CO if you have logged on through the UTIA link. Please be sure to save a copy of the RCR certification for your records.

Alternatively, UTIA may accept certificates of completion if an individual has completed RCR training while at a different institution or UT campus after a review of the other institution's RCR program has been completed and found to be equivalent to the UTIA training. Unless CITI training was affiliated with a UT campus, the individual must provide UTIA with an official certificate of completion.

If additional or different training is taken, or if a different campus was selected, submit the *UTIA Responsible Conduct of Research (RCR) Training Record*, signed by the trainee and the PI, to janeburns@utk.edu or:

Jane Burns, UTIA CO
2621 Morgan Circle Drive
225 Morgan Hall
Knoxville, TN 37996

RCR Program Assessment

UTIA recognizes that training in RCR is most effective in the context of the day-to-day activities of the trainees. Principal Investigators and faculty members are expected to make RCR part of their discussions with postdoctoral researchers, graduate students, and undergraduate students, which will foster interaction among faculty and students.

Interested individuals may want to create Individual Development Plans (IDPs) which are tools to help graduate students and postdoctoral researchers set career goals and establish action plans to meet their goals. Principal investigators and faculty members can use IDPs to help them mentor and meet their RCR responsibilities. More information about IDPs can be found at PEER (http://peer.utk.edu/future-students/individual-development-plans-idps/) and myIDP (http://myidp.sciencecareers.org/).

This RCR Institutional Plan is intended to provide flexibility in content and delivery and to address the varying needs of different disciplines and faculty/staff/student career stages. This plan is a living document and as such the Institutional RCR Plan will be regularly assessed and monitored as educational outcomes are evaluated and best practices are increasingly developed to advance RCR education at UTIA.

Helpful links

The University of Tennessee Policy on Misconduct in Research and Service
https://universitytennessee.policytech.com/docview/?docid=175&public=true

The University of Tennessee Knoxville Office of Research and Engagement RCR website http://research.utk.edu/responsible-conduct-of-research/

Office of Science and Technology Policy https://www.whitehouse.gov/ostp

U.S. Department of Agriculture National Institute of Food and Agriculture Responsible and Ethical Conduct of Research https://nifa.usda.gov/responsible-and-ethical-conduct-research

National Science Foundation RCR https://www.nsf.gov/bfa/dias/policy/rcr.jsp

U.S. Department of Health and Human Services Office of Research Integrity (ORI) https://ori.hhs.gov/

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Tools and Learning Opportunities

ORI - "The Lab: Avoiding Research Misconduct"

ORI - Responsible Authorship Quick Guide

Columbia University - Understanding Research Misconduct

UTIA Workshops and Compliance Lunches

UTIA Responsible Conduct of Research (RCR) Training Record (other than CITI)

Trainee Name:_____   Title: _____

Department: _____   Supervisor: _____

Evisions #(s) or Account(s) employee paid from or will work on: _____

_____

_____

Type of Training*, Trainer, Duration	Date
_____		☐ Face-to-face ☐ Online
_____		☐ Face-to-face ☐ Online
_____		☐ Face-to-face ☐ Online
_____		☐ Face-to-face ☐ Online
_____		☐ Face-to-face ☐ Online
_____		☐ Face-to-face ☐ Online
Mentoring activities: List RCR topics covered_____	☐ Face-to-face

_____

_____

* UT research ethics graduate course (e.g. Research Ethics for the Life Sciences), RCR workshops or other training covering topics such as ethics, research misconduct, conflicts of interest, research involving humans or animals, etc.

If training other than CITI RCR modules or Research Ethics for Life Sciences graduate course is meeting <u>mandatory</u> RCR training requirement, please provide an explanation below:

_____

_____

_____

_____

The above-listed employee has performed the above RCR training. In my professional opinion, the training meets needs for the employee to understand requirements for responsible conduct of research, given his or her job responsibilities.

_____   _____
Signature of Principal Investigator/   Signature of Trainee
/Faculty Member/Supervisor

_____   _____
Date   Date

Please submit form to Jane Burns, UTIA Compliance Officer at JaneBurns@utk.edu .
Call Jane at 865-974-7375 with any questions.