

Responsible and Ethical Conduct of Research (RECR) Professional Development and Education Plan (PDEP)

Office of Research & Sponsored Programs

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The Office of Research and Sponsored Programs (ORSP) at the University of Northern Colorado (UNC) is committed to promoting responsible and ethical conduct of research/scholarship across all disciplines. The university is dedicated to maintaining the highest standards of integrity, transparency, and ethical behavior throughout the research process. We are committed to protecting the rights and welfare of research participants, ensuring the accuracy and reliability of research outcomes, and upholding the reputation of our organization.

The responsible and ethical conduct of research (RECR) is critical for excellence and to build public trust regardless of discipline; to ensure the effective and efficient use of public resources; and ensure that all living beings—human and animal—involved in the research enterprise are treated fairly with respect and dignity. This includes the responsibility to

- generate and disseminate knowledge with rigor and integrity.
- conduct peer review with the highest ethical standards.
- protect proprietary information and intellectual property from inappropriate disclosure.
- treat colleagues and students fairly with respect and dignity.

We are committed to ensuring that all UNC researchers understand and adhere to the principles of RECR.

All members of the university community share the responsibility for promoting the responsible and ethical conduct of research. UNC intends that faculty members, staff and students involved in university-sanctioned research regardless of sponsor receive appropriate professional development and education in RECR. This PDEP has been established to ensure that UNC fulfills all RECR professional development mandates governing federally funded research and applies to all research, scholarship, and creative works regardless of sponsor.

Because RECR will vary among disciplines and career levels, UNC's RECR PDEP provides flexibility for faculty members in the design of activities. It allows for the professional development to focus on activities that are most appropriate for the role of all personnel involved in the research enterprise, including principal investigators, other senior research personnel, post-doctoral fellows, graduate students, undergraduate students, and volunteers. The generally accepted topics of RECR include:

Animal Welfare	Conflict of Interest	Collaborative Research
Data Management	Human Subjects in Research	Responsible Authorship
Peer Review	Research Misconduct	Mentorship/Mentor

RECR Professional Development

A variety of options exist for meeting RECR requirements. RECR development activities may include completion of online programs, small group or individual sessions with a faculty member, group discussions of case studies or other texts, ongoing mentoring of students, participation in seminars, and completion of research ethics courses.

Regardless of other RECR professional development, prior to beginning work on a project involving human or animal subjects, faculty, students, and staff must complete the Human Research or Lab Animal Welfare CITI course. All studies with human subjects must receive IRB approval

[\[http://www.unco.edu/osp/ethics/irb/index.html\]](http://www.unco.edu/osp/ethics/irb/index.html) and all studies utilizing animals must receive IACUC approval

[\[http://www.unco.edu/research/iacuc/index.html\]](http://www.unco.edu/research/iacuc/index.html) prior to commencing studies/collecting data.

RECR PDE Requirements on Federally Funded Research Projects

It is expected that all faculty members, staff, undergraduate students, graduate students, and postdoctoral researchers will complete RECR professional development and education relevant to their research, scholarship, and creative works including but not limited to opportunities provided through CITI, regardless of sponsor. However, federal agencies have defined requirements that must be met in order to accept funding from these sponsors. *These requirements must be met prior to accepting funding and preferably at the time of submission.*

Mentoring and Mentorship

All faculty members mentoring undergraduate students, graduate students, or postdoctoral fellows, regardless of sponsor are expected to complete mentor/mentorship development. This is required for faculty members supporting trainees on federal funds. Faculty members should complete the modules offered by [National Research Mentoring Network](#) (NRMN). This is a free resource. Faculty members should set up an account at [MyNRMN \(nrmnet.net\)](#) to access resources.

National Science Foundation (updated July 2023):

As set forth in Section 7009 of the COMPETES Act (42 USC 1862o-1, all **faculty members, and other senior personnel, undergraduate students, graduate students, and postdoctoral researchers** (including those of any sub-awardee) who receive support to conduct research through an NSF grant must complete CITI RECR training prior to beginning their work on the project. Continued face-to-face instruction and mentoring throughout the project is expected. A plan for meeting these requirements must be included in the grant proposal.

All faculty members and other senior personnel must also complete mentor and mentorship professional development. In addition, while mentorship plans are not required to be included in the proposal, these should be completed and on file for review by NSF, upon request.

See the RECR professional development resources section later in this document for more information.

The NSF requirements for RECR training may be found in the [Grant Proposal Guide \(PAPPG\)](#) and in the “Manage your Award” [website](#).

National Institutes of Health:

NIH requirements for RECR training and applying for an NIH training grant are found [here](#).

Requirements for K series awards are summarized [here](#).

The NIH RECR training requirement applies only to the following training and career development, research education, or dissertation research award types: 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, U2R, and any other NIH-funded programs supporting research training, career development or research education that specify instruction in RECR in relevant funding opportunity announcements. [For a description of the NIH award types, go to: http://grants.nih.gov/grants/funding/funding_program.htm]

All **trainees, fellows, participants and scholars** (including those of any sub-awardee) receiving support through one of the programs listed above must receive instruction in RECR. A CITI RECR course may be a component of professional learning; however, this alone does not satisfy the NIH requirement. The professional development must also include substantive contact hours between the trainees/fellows/scholars and the participating faculty members – generally a minimum of eight contact hours – and should include additional mentoring on RECR topics throughout the project. Instruction must be undertaken at least once during each career stage, and at a frequency of not less than once every four years. Instruction during predoctoral education should occur as early as possible in graduate school.

Each principal investigator is responsible for developing and implementing an appropriate professional development/ mentoring plan and for providing the Office of Research and Sponsored Programs with adequate documentation to demonstrate that the professional development occurred. See the RECR Professional Development Resources section later in this document for materials that may assist in the development of appropriate and adequate plans. The plan for RECR professional development must be described in the NIH proposal and will be considered in its review. A proposal lacking an RECR professional development plan will be considered incomplete by NIH.

While NIH does not document specific curricular requirements for instruction in RECR, 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
- i. the scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research

Department of Agriculture Requirements

All **faculty members, undergraduate students, graduate students, postdoctoral researchers, and staff** (including those of any sub-awardee) participating in a research project funded by USDA National Institute of Food and Agriculture (NIFA) must complete the CITI RECR professional development prior to beginning their work on the project. *Additional face-to-face professional development/mentoring throughout the project is strongly encouraged.*

The USDA NIFA requirements for RECR professional development may be found [here](#)

Responsibilities Related to RECR Professional Development and Education (PDE)

- Associate Vice President for Research and Sponsored Programs is responsible for:
 - Providing institutional leadership in developing opportunities for UNC faculty members, students and staff to receive adequate and appropriate RECR PDE.
 - With the Director of Sponsored Programs and the Director of Research Compliance, overseeing compliance with RECR PDE requirements on federally funded grants, ensuring that the university's RECR PEDP meets the standards required by funding agencies,
 - Notifying the UNC community of RECR PDE requirements and providing funding agencies with RECR PEDP upon request.
- Principal Investigators are responsible for:
 - Maintaining a thorough understanding of the RECR topic areas applicable to their disciplines.
 - Complying with the requirements of the university's RECR RDEP.
 - At the start of an award, and at any time new researchers join the project, informing the ORSP of all individuals who, according to the federal requirements, must receive RECR PDE.
 - Assisting project personnel in determining their RECR PDE needs and monitoring their completion of required activities.

- At the end of each fiscal year in which an award is active, reporting to the ORSP on RECR professional development activity completed during that year. Reports are to include descriptions of the activities that occurred and documentation of any RECR professional development that was completed by project personnel during the year.
- The Office of Research and Sponsored Programs (ORSP) is responsible for:
 - The pre-award Sponsored Project Officer (SPO) is responsible for informing the UNC community of RECR PDE requirements.
 - The post-award SPO, in collaboration with the pre-award SPO, is responsible for maintaining documentation of RECR PDE with official award files.
 - The Director of Research Compliance is responsible for
 - maintaining a master list of researchers and their RECR PDE status.
 - notifying PIs when RECR professional development activity reports are due.
 - Maintaining the CITI subscription of RECR courses.

RECR PDE Resources

Collaborative Institutional Training Initiative (CITI) RECR Training Courses

The web-based CITI Responsible Conduct of Research courses are available to all UNC faculty members, students, and staff members. Individuals should select the RECR learner group most appropriate to their discipline and must successfully complete all modules in that course to meet the RECR professional development requirements. Please contact ORSP if you have questions regarding which modules must be completed. Estimated time to complete a course is 1.5 to 3 hours. Instructions for registering and using the CITI system: <http://www.unco.edu/osp/ethics/citi.html>.

Additional Resources

These resources may assist faculty members, students, and staff members in the development of individual or group RECR professional learning activities.

- Researchers and trainees may choose to enroll in formal RECR courses or seminars at UNC or other institutions to help fulfill the NIH requirement. Contact Jeri-Anne Lyons, Associate Vice President for Research with questions.
- [Resources for Research Ethics Education](#)
- [AAAS Integrity in Scientific Research video series](#)
- Resources from the Department of Health and Human Services, Office of Research Integrity:
 - [ORI Introduction to the Responsible Conduct of Research](#)
 - [RECR Casebook: Stories about Researchers Worth Discussing](#)
 - [General Resources](#)
 - [Human Subjects Research Resources](#)
- National Academies of Sciences, Engineering, and Medicine
 - [Fostering Integrity In Research](#)
 - [Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine](#)
 - [Reproducibility and Replicability in Science](#)

- Publications/Authorship Resources
<http://ori.hhs.gov/publicationsauthorship>
- Research Misconduct Resources
<http://ori.hhs.gov/research-misconduct-0>
- Animal Welfare Resources
<http://ori.hhs.gov/animal-resources>
- Mentorship Resources
<http://ori.hhs.gov/mentorship-0>
- Data Management Resources
<http://ori.hhs.gov/data-management-0>
- Collaborative Science Resources
<http://ori.hhs.gov/data-management-0>
- Conflicts of Interest and Commitment Resources
<http://ori.hhs.gov/data-management-0>
- Peer Review Resources
<http://ori.hhs.gov/peer-review-0>
- Peer Review Quick Guide
http://ori.hhs.gov/education/products/niu_peerreview/index.htm
- Web-based Program of Instruction in the Ethical and Responsible Conduct of Research and Scholarly Activity (University of New Hampshire)
<https://rit.sr.unh.edu/training/RECR.shtml>
- RECR Teaching Tools (Penn State)
<http://www.research.psu.edu/training/sari/teaching-support>

This plan may be amended as additional practices are developed to advance education and professional learning in the Responsible Conduct of Research at UNC. Revisions may also be necessary to address additional or modified funding agencies requirements.