California State University, San Bernardino (CSUSB) Responsible Conduct of Research (RCR) Training Plan

Office of Academic Research
Office of Research and Sponsored Programs
Office of Research Compliance
Office of Sponsored Programs Administration

Background and Rationale: Training in responsible and ethical research practices is an integral part of preparing academic professionals to conduct research. The National Science Foundation (NSF), the National Institutes of Health (NIH) and United States Department of Agriculture/National Institute of Food and Agriculture (USDA NIFA) currently have specific requirements for training in the Responsible Conduct of Research (RCR).

CSUSB supports training to ensure the highest ethical and professional standards for conducting research. Responsible Conduct of Research (RCR) training is intended to promote awareness of principles and practices that facilitate ethical and responsible research across all areas of research and scholarship. The Associate Provost for Research (AVP) and the Research Compliance Officer (RCO), in concert with faculty and staff, developed the RCR training plan. The AVP and RCO maintain oversight of this plan. The plan's flexibility permits training to be appropriate for the discipline and career stage, while ensuring compliance with funding agency guidelines. CSUSB's Policy on Responsible Conduct of Research can be found here.

Training Audience: Principal Investigators (PIs), Co-Principal Investigators/Co-Investigators (Co-PIs/Co-Is), senior personnel, undergraduate and graduate students, post-doctoral fellows and researchers, and staff) engaged in research are required to complete RCR training. Each funding agency requires specific RCR training. Any researcher involved in an NSF and USDA/ NIFA funded project must complete the online CITI training course entitled, "Responsible Conduct of Research" module. NIH requires additional face-to-face training as described below.

Training Plan: This working document describes the plan developed by CSUSB's Office of Academic Research, Office of Research & Sponsored Programs, and the Office of Research Compliance to provide training in RCR. PIs, Co-PIs, Senior Personnel, post-doctoral researchers, undergraduate & graduate students, and staff engaged in research are required to complete the appropriate RCR training.

General Training Objectives: The terminal objective is to enhance scientific integrity by training the learner in the accepted standards and norms of science. The enabling objectives of RCR training are as follows:

a. Increase awareness of ethical dimensions of research/scholarship;
b. Develop and refine the skills needed to question, analyze, and resolve ethical dilemmas.
c. Learn relevant legal, institutional, and professional standards;
d. Know where to access various campus, national and internet resources that address ethical and responsible research practices; and,
e. Facilitate discourse with peers and with faculty about ethical dimensions of research within their discipline.
f. Create safe research working environments.

Training Content: RCR training generally includes coverage of the following topics. The list is not meant to be exhaustive nor comprehensive. CSUSB's plan for training in RCR includes most, if not all, of the topics as noted below; however, content may vary depending on the needs of the trainee and relevance to the academic discipline or project.

a. Research Misconduct (Fabrication, Falsification, Plagiarism)
b. Research Subject Protection (human and animal subjects)
c. Conflict of Interest
d. Collaboration Data Management Mentoring
e. Peer Review
f. Authorship
g. Publication
h. Biosafety/security
i. Whistleblower Protections
j. Safe Research Environments

Optional modules offered in the CITI online RCR program include:

- Environmental and Social Dimensions of Engineering Research
- Export Controls and National Security
- Research, Ethics, and Society

RCR Training Frequency: CITI RCR completion reports, or certificates *must be kept current and completed every 4 years or based on funding agency requirements*. Completion records and certificates should be submitted to the project's faculty PI who will be responsible for maintaining records of all investigators (PIs, Co-PIs, Senior Personnel, undergraduate, and graduate students, and post-doctoral researchers). Completion records and certificates must be maintained for record and audit purpose..

Federal Funding Agency RCR Requirements:

NSF: Effective July 31, 2023, proposals submitted to NSF must include certification that the applicant has a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, postdoctoral researchers, faculty, and other senior personnel who will be supported by NSF to conduct research. Please note NSF policy refers to RCR training as RECR (Responsible and Ethical Conduct of Research) training requirements effective July 31, 2023 noted in Section 7009 of the American Competes Act (42 USC 18620-1), can be found here.

NIH: Effective January 25, 2010, 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. On February 15, 2022, NIH released additional RCR training requirements that can be found at NOT-OD-22-055. For more information, please also visit https://oir.nih.gov/sourcebook/ethical-conduct/responsible-conduct-research-training.

USDA-NIFA: Effective April 2013, USDA NIFA released their revised research terms and conditions/agency terms and conditions. These terms and conditions introduced a new requirement for responsible conduct of research (RCR) on USDA NIFA awards. "… grantee assures 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." USDA-NIFA policy notice for RCR training requirements effective February 2013 can be found here.

Collaborative Institutional Training Initiative: Completion of the CITI Online training program will meet the minimum training requirement for all the training audience. Faculty, project staff, undergraduate, graduate, doctoral, and post-doctoral researchers who receive NSF support are required to complete RCR training. Those funded through designated NIH support are required to complete RCR training that includes at **least eight (8) hours of "contact time**" as part of ongoing training required by NIH regulations. The "contact time" training can be obtained in a variety of ways. The Office of Research and Research Programs and the Office of Research Compliance can assist in identifying resources such as, lectures, case study discussions appropriate for RCR training. Likewise, training may be offered within a specific center, laboratory, department, and college. Opportunities for RCR training may be available through existing courses and within the research setting.

RCR training opportunities:

1. University
    a. The Office of Research, Office of Research and Sponsored Programs, and the Office of Research Compliance will assist in identifying resources that are available for RCR training.
    b. Training in human subjects research protections will be provided by the Institutional Review Board through the CITI Program.
    c. Training in animal subjects research and animal welfare protections will be provided by the CITI Program. Additional training will be provided by vivarium staff.
    d. Training in biological related research activities and safety will be provided by the Office of Environmental Health and Safety.
    e. Training in radiological related research activities and safety will be provided by the Office of Environmental Health and Safety.

Instructions for registering and completing the RCR Training can be found here.

2. Department/College
    a. Courses offered by the department that include coverage of topics associated with RCR may be used. Other methods for obtaining RCR training include:
        i. Departmental meetings
        ii. Laboratory or center journal club and research meetings
        iii. Seminar series and discussion groups
        iv. Professional association communications
        v. If any of these methods are used to satisfy the training requirements, appropriate documentation and record keeping of such activities must be maintained by the PI and available on request.

3. Supplementary Education

    a. Supplementary education may be offered by the faculty member. For guidance on developing RCR education, please visit the following websites:

        i. Office of Research Integrity
        ii. Research Ethics.Org
        iii. Online Ethics Center for Engineering & Science

Responsibilities

1. Faculty/Principal Investigator

    Responsibilities of the Principal Investigators (PIs) include the following:

    a. Document and certify on a per grant award basis the PI, Co-PI(s), senior personnel, undergraduate & graduate students, and post-doctoral researchers have registered and completed the required RCR training within 60 days of the project's start date and for ensuring all training is completed prior to the project's completion.

    b. For the duration of the project and on an annual basis the PI is responsible for ensuring any additions of Co-PIs, senior personnel, undergraduate & graduate students, and post-docs have registered and completed RCR training and maintain records of the RCR completion reports. The record will be kept with the grant award file for the project.

    c. Working with Senior Research Compliance Officer to identify trainees required to complete RCR training associated with funding requirements.

    d. Verifying that trainees have completed baseline RCR training requirements as described in this plan.

    e. Documenting additional RCR training received when such additional training is required and providing documentation to the Office of Research and Sponsored Projects upon request.

2. RCR Trainees (PI, Co-PI, Senior Personnel, Undergraduate/Graduate Students)

    a. Accessing and completing the RCR training.

    b. Maintaining a copy of the completed RCR training certificate and/or completion report for their records.

    c. Providing a copy of RCR training certificate and/or completion report to the Principal Investigator for documentation purposes.

3. Office of Academic Research

    a. The Associate Provost for Research and the Research Compliance Officer will identify resources necessary to provide training in responsible and ethical research practices and maintain the RCR training plan.

4. Office of Research and Sponsored Programs (ORSP)

    a. The Office of Research and Sponsored Programs will notify the faculty investigator of RCR plan requirements at the proposal stage.

5. Office of Sponsored Programs Administration (OSPA)

    a. The Office of Sponsored Programs Administration will notify the PIs at orientation of RCR plan requirements.

6. Office of Research Compliance (ORC)

    a. The Research Compliance Officer notifies PIs and other members of the research team of noncompliance.

7. Faculty Research Committee (FRC)

    a. The Faculty Research Committee will be informed of training requirements, associated institutional responsibilities, and may be asked to provide input to guide decisions related to research compliance and the RCR training plan.

8. Department/College

    a. The department/college will work with faculty to identify and/or create programs and discipline-specific research ethics resources/materials that meet the needs of their trainees as necessary.

RCR Plan Assessment

The primary objective is to enhance scientific integrity by training scholars in the accepted standards and norms of science. RCR training is intended to promote awareness and understanding of conventions within and across disciplines. The RCR training plan will be assessed periodically by the Office of Research and Sponsored Programs and Office of Research Compliance.

RCR (Formal) Course Training Classes

NIH RCR formal training must include the following:

Format of Instruction: Discussion-based instruction in the responsible conduct of research is expected to remain a key feature of RCR training and to include substantive face-to-face interaction among participants and faculty. NIH grant awardees receiving are required to complete RCR training that includes at **least eight (8) hours of "contact time**" as part of ongoing training required by NIH regulations. However, recognizing that advances in video conferencing now allow for effective "face-to-face" discussions to occur electronically, institutions may wish to consider incorporating video conferencing options into their RCR instruction, provided that those options are utilized in a way that fosters discussion, active learning, engagement, and interaction among the participants. At the same time, video conferencing should not be the sole means for meeting the requirement for RCR instruction, and a plan that employs only video conferencing will not be considered acceptable, except in the circumstances described in NOT-OD-10-019, such as short-term research training and research education programs. Updating NIH RCR training requirements can be found at NOT-OD-22-055.

Frequency and Timing: Existing policy and guidance call for RCR instruction to be undertaken at least once during each career stage, and at a frequency of no less than once every four years. As institutions consider how to optimize the timing and delivery of instruction in the responsible conduct of research, they are encouraged to bear in mind the value of ongoing and discipline-specific training as individuals progress in their research careers. For example, while broad-based instruction in the responsible conduct of research is often appropriate early in graduate school; a more tailored, discipline-specific approach may better fit the needs of advanced graduate students and those who have transitioned to postdoctoral status. If advanced students and post-doctorates have been exposed to the full range of

topics traditionally included in RCR instruction early in their scientific training, it may make sense for their ongoing and/or subsequent RCR training to focus on subjects most relevant to their fields, and institutions may wish to consider this approach, where applicable.

Subject Matter: Developments in the conduct of research and a growing understanding of the impact of the broader research environment have led to a recognition that additional topics merit inclusion in discussions of the responsible conduct of research. For context, those additional subjects appear in bold among the list of topics traditionally included in most acceptable plans for RCR instruction, cited in NOT-OD-10-019, and appearing below:

a. conflict of interest – personal, professional, and financial – and conflict of commitment, in allocating time, effort, or other research resources.
b. policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices.
c. mentor/mentee responsibilities and relationships.
d. safe research environments (e.g., those that promote inclusion and are free of sexual, racial, ethnic, disability and other forms of discriminatory harassment)
e. collaborative research, including collaborations with industry and investigators and institutions in other countries.
f. peer review, including the responsibility for maintaining confidentiality and security in peer review.
g. data acquisition and analysis; laboratory tools (e.g., tools for analyzing data and creating or working with digital images); recordkeeping practices, including methods such as electronic laboratory notebooks.
h. secure and ethical data use; data confidentiality, management, sharing, and ownership.
i. research misconduct and policies for handling misconduct.
j. responsible authorship and publication.
k. the scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research.

NSF Responsible and Ethical Conduct of Research (RECR) must include the following:

a. Authorship
b. Collaborative Research
c. Conflicts of Interest
d. Data Management
e. Mentoring
f. Peer Review
g. Plagiarism
h. Research Involving Human Subjects
i. Research Misconduct
j. Using Animal Subjects in Research
k. Safe Research Environments

(Note: In July 2023, the CITI RCR Online Training program will also cover safe research environments (item k.)}