

Responsible and Ethical Conduct of Research at Bates

Institutional Plan with Guidelines and Resources for Principal Investigators

Responsible conduct of research is the practice of scientific investigation with integrity. It involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research. ~ NIH, Office of Research Integrity

Bates College recognizes the curricular importance of faculty and student research and supports such endeavors with a variety of internal and external grant programs. The college is committed to the responsible and ethical conduct of research, and has appointed a Research Integrity Officer (RIO) to help ensure compliance with federal regulations. Questions about compliance, from data management to export control, can be directed to the Office of Research and Sponsored Programs (ORSP) (orsp@bates.edu) or the Research Integrity Officer (researchintegrity@bates.edu).

Responsible and Ethical Conduct of Research Training Requirements

Faculty, students and key personnel working on federally-sponsored projects should be familiar with current guidelines for responsible and ethical conduct of research (RECR). These guidelines may apply to specific types of compliance issues, including, for example, animal care and use, or to more general questions, like mentoring and authorship.

NSF: All Principal investigators (PIs), key/senior personnel, undergraduate students, graduate students, and postdoctoral researchers who are supported by the National Science Foundation to conduct research must complete RECR training.

NIH: All personnel supported by funding from the National Institutes of Health awards for which RECR training is required (including training awards and others as specified by the solicitation) must undertake instruction in RECR at least once during each career stage and no less than once every four years. This training must include substantive face-to-face interaction among participants and faculty.

Training is provided via two mechanisms:

1. The College maintains a subscription to online training offered by CITI (<https://www.citiprogram.org/>). The CITI program directs Bates researchers to RECR, Research Security, IACUC, IRB, and IBC training modules as needed based on the specific needs of the individual's career stage and project(s).
2. Faculty frequently provide information and mentorship to students working in their labs on topics relating to RECR. Faculty are encouraged to make note, in laboratory records or other well-maintained files, of occasions on which they have instructed individual students or laboratory groups in topics relating to the Responsible and Ethical Conduct of Research.

Faculty are responsible for providing documentation of RECR training for each student and others they supervise to ORSP via submission of a completed Bates RECR Training [Checklist](#).

Faculty members conducting research are responsible for tailoring RECR training plans to the specific requirements of their research projects and ensuring that students and key personnel meet all applicable requirements. Faculty wishing to meet RECR training requirements (for themselves and/or their

trainees) by a method other than the two listed above should contact ORSP before undertaking the training to make sure the training will meet the requirements.

Responsible and Ethical Conduct of Research Training Components

Training in the responsible and ethical conduct of research includes several components:

Research Misconduct

The college has policies and procedures for addressing research misconduct. They are outlined in both the faculty handbook and in the student research handbook. Engaging in research misconduct can result in serious consequences for both faculty and students. Misconduct is defined as:

- Fabrication of data,
- Falsification of data, or
- Plagiarism

Research Security

Transparency and accountability of scientific research are crucial for maintaining public trust in the scientific research establishment. Personnel supported by federal awards have a responsibility to maintain awareness of the risks to the security of U.S. research posed by conflicts of commitment and malign foreign interference and misappropriation.

Export Control

Federal export control regulations restrict the transfer of goods, technology, software, services, and funds outside the U.S. and to foreign nationals. While most routine educational and research activities at Bates are generally exempt from export controls, some activities may be subject to export control restrictions. All researchers should be aware of Bates' policies and relevant export control disclosure and reporting requirements.

Conflict of Interest and Commitment

All personnel responsible for the design, performance, and reporting of research under the terms of a federal grant or contract (i.e. each "investigator") are required to report potential conflicts of interest, including financial, personal, or professional conflicts that might affect their research.

Individuals listed as PI and/or key/senior personnel on proposals to a component of the U.S. Public Health Service (PHS), including the National Institutes of Health must complete FCOI training in CITI prior to submission of their FCOI disclosure form. Forms and information are available at <https://www.bates.edu/dof/grant-management/financial-information/financial-disclosure-policy/>.

Individuals listed as PI or key/senior personnel on a proposal to the National Institutes of Health must complete training in the disclosure requirements prior to submission of their "Other Support" document. Disclosure forms and information are available at <https://www.bates.edu/grants/policy-on-research-security-and-disclosure-of-other-support/>

Data Acquisition, Management, and Ownership

Researchers are responsible for the integrity of their data, including acquiring, managing, and storing information. Lab notebooks and observations are considered part of the research record. A long term data management plan is recommended for all research projects and required for all externally-supported research projects. (See Bates Research Data Management [Policy](#)) or many federal awards, data management plans are required to be submitted as part of the application. In collaborative projects, ownership of data should be determined well before the project begins.

Authorship and Publication

Although authorship conventions vary by discipline, in most cases, the “first” author of an article, chapter or book is the individual who has made the largest contribution to the writing, analyses and other work involved in the publication.

Mentor/Mentee Responsibilities and Relationships

Adequate and supportive mentoring is a critical aspect of building a scientific community. Appropriate relationships, adequate training and preparation for mentees, and reasonable work requirements are all aspects of the mentor/mentee relationship.

Peer Review

Peer review should be expert, timely and constructive. Agreeing to serve as a reviewer indicates that there are no conflicts of interest that might impact the review, and that the reviewer has adequate expertise to serve in that capacity. Manuscripts, grant proposals, books and other materials are considered confidential while under review.

Safe research environments - required for NIH, recommended for all

Bates College values the diversity of persons, perspectives, and convictions and strives to maintain non-discriminatory and harassment-free educational, living, and working environments for all members of the Bates community, including students, faculty, administrators, staff, contractors, and visitors. The college maintains policies that promote a community characterized by trust, mutual respect, and responsibility where all can feel secure and free from bias and discrimination. All members of the community are expected to adhere to the requirements of the law, Bates' [Equal Opportunity, Non-Discrimination, and Anti-Harassment Policy](#), the Safe and Inclusive Working Environments for Off-Campus or Off-Site Research [Policy](#), and the standards of the college community.

Ethical responsibilities of scientists - required for NIH, recommended for all

Investigators who are supported by federal funding are entrusted with tax payer dollars and have a responsibility to conduct their research in a manner that considers the society-wide ethical implications. Investigators should consider the role of a scientist as a responsible member of society, contemporary ethical issues in biomedical research, if applicable, and the environmental and societal impacts of their scientific research.

Studies involving vertebrate animals, human participants or biosafety hazards are subject to review and approval by committees.

- Faculty, staff or personnel working with human participants are required to complete CITI training in human subjects. Training takes between 1-2 hours. Under current Bates IRB policy, this is a one-time only requirement, but must be completed prior to the submission of any applications to the IRB.
- Non-exempt research proposals involving human participants should be submitted to the Bates College Institutional Review Board for review. Questions about the IRB can be directed to the co-chairs. Please visit the IRB website for contact information:
<https://www.bates.edu/institutional-review-board/>
- Faculty, staff or personnel proposing research on vertebrate animals are required to submit their proposals to the Bates College [Institutional Animal Care and Use Committee](#) (IACUC) for review. When appropriate, faculty, students and personnel may be required to attend an Animal Care Module training session presented by the Vivarium Coordinator and to complete animal care and use modules of CITI RCR training. Training requirements are detailed in Bates' OLAW Assurance and coordinated by the Vivarium Coordinator.
- Faculty, staff and personnel proposing research involving Level II biosafety hazards or recombinant DNA should submit their research to the Institutional Biosafety Committee for review. Information about the IBC is at <https://www.bates.edu/biosafety/>.

NIH Recommendations

The NIH recommendations for RCR are included below. (Source: NOT-OD-10-019 and NOT-OD-22-055)

Definition

Responsible conduct of research is defined as the practice of scientific investigation with integrity. It involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research.

Basic Principles

The following principles are based on several key concepts about responsible conduct of research and best practices that have evolved over the past two decades' experiences:

1. Responsible conduct of research is an essential component of research training. Therefore, instruction in responsible conduct of research is an integral part of all research training programs, and its evaluation will impact funding decisions.
2. Active involvement in the issues of responsible conduct of research should occur throughout a scientist's career. Instruction in responsible conduct of research should therefore be appropriate to the career stage of the individuals receiving training.
3. Individuals supported by individual funding opportunities such as fellowships and career development awards are encouraged to assume individual and personal responsibility for their instruction in responsible conduct of research.
4. Research faculty of the institution should participate in instruction in responsible conduct of research in ways that allow them to serve as effective role models for their trainees, fellows, and scholars.
5. Instruction should include face-to-face discussions by course participants and faculty; i.e., on-line instruction may be a component of instruction in responsible conduct of research but is not sufficient to meet the NIH requirement for such instruction, except in special or unusual circumstances.
6. Instruction in responsible conduct of research must be carefully evaluated in all NIH grant applications for which it is a required component.

NSF Requirements (Proposal and Award Policies and Procedures Guide IX.B.2.)

- a) An institution must have a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to faculty, senior personnel, undergraduate students, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. As noted in ChapterII.C.1.d, an institutional certification to this effect is required for each proposal.
- b) NSF's RCR requirement applies to the breadth of research disciplines that the Foundation funds. The training provided should be effective and must be appropriately tailored to the specific needs and circumstances at each institution. Accordingly, it is the responsibility of each institution to determine the content, focus and the delivery method for the RCR training. 52 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.
- d) Institutions are 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.

This document comprises Bates College's institutional RCR training plan, and provides information on the institutional resources necessary for PIs to formulate project-specific training plans tailored to the nature of their research. It is recommended that PIs maintain for future reference a written RCR training plan for their projects that covers each of the above components insofar as they are relevant to the project. Such plans shall be furnished upon request to the RIO, the Office of Research and Sponsored Programs, or the NSF. The Office of Research and Sponsored Programs is responsible for overseeing compliance with the RCR training requirement. Verification of RCR training given to students and postdoctoral researchers shall be the responsibility of the Office of Research Sponsored Programs, through cross-comparison of payroll records and annual progress reports with CITI Program logs and attendance records for in-person trainings. If, due to ethical considerations specific to a particular research project, small-group training by a PI forms part of an RCR training plan, then PIs may be requested to furnish records confirming student participation in such training.