

Responsible 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 also 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 Shonna Humphrey (shumphre@bates.edu), Director of Sponsored Programs and Research Compliance (SPARC), or to Áslaug Ásgeirsdóttir (aasgeirs@bates.edu), the current Research Integrity Officer.

Responsible Conduct of Research

Faculty, students and key personnel working on federally-sponsored projects should be familiar with current guidelines for responsible conduct of research (RCR). These guidelines may apply to specific types of compliance issues, for example, animal care and use, or to more general questions, like mentoring and authorship. Students are required to receive training. Three types of training are available:

1. Bates-sponsored programs in RCR offered each semester or in the summer. The Office of Sponsored Programs and Research Compliance makes available individualized training sessions to lab groups, thesis students, or research-based courses upon request. Further, RCR training is included in summer programming for student researchers employed by the college in summer apprenticeships and student fellowships. Questions about RCR training can be directed to Shonna Humphrey.
2. Faculty frequently provide information and mentorship to students working in their labs on topics relating to RCR. 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 Conduct of Research.
3. The College maintains a subscription to online trainings offered by CITI (<https://www.citiprogram.org/>).

Faculty members conducting research are responsible for tailoring RCR training plans, using the resources described above, to the specific requirements of their research projects and ensuring that students and key personnel meet all applicable requirements.

Responsible Conduct of Research Components

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.

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

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, Professors Todd Kahan (tkahan@bates.edu) and Loring “Danny” Danforth (ldanfort@bates.edu).
- 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; Chair, Professor Ryan Bavis, rbavis@bates.edu) for review. When appropriate, faculty, students and personnel may be required to complete the animal care and use module of CITI RCR training.
- 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/dof/faculty-scholarship/faculty-grant-information-2/institutional-biosafety-committee/>. Current co-chairs are Jessica Smith, Director of Environmental Health & Safety (jsmith7@bates.edu) and Prof. Jason Castro (jcastro@bates.edu).

Conflict of Interest

All personnel responsible for the design, performance, and reporting of research are required to report potential conflicts of interest, including financial, personal, or professional conflicts that might affect their research. Financial conflict of interest (FCOI) training and FCOI forms are required at the time of a

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federal grant submission, and forms are updated on an annual basis thereafter. Forms and information are available at <http://www.bates.edu/grants/conflict-of-interest-policy/>. Áslaug Ásgeirsdóttir (aasgeirs@bates.edu) serves as the college's FCOI Officer.

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.

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 projects, and for many federal awards, data management plans are required. 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.

NIH Recommendations

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

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 undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. As noted in Chapter II.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 Director of Sponsored Programs and Research Compliance, or the NSF. The Office of Sponsored Programs and Research Compliance 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 Director of Sponsored Programs and Research Compliance, 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

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training plan, then PIs may be requested to furnish records confirming student participation in such training.