

Responsible Conduct of Research (RCR)

I. Background

The responsible and ethical conduct of research (RCR) is critical for excellence, as well as public trust, in science, technology and mathematics. Consequently, education in RCR is considered essential in the preparation of future scientists, technologists and mathematicians. Section 7009 of the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act (42 U.S.C. 1862o–1 requires that “each institution that applies for financial assistance from the National Science Foundation (NSF) for science and engineering research or education describe in its grant proposal a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed research project.”

In consultation with the West Virginia State University Faculty Senate and the Academic Affairs Research Council, the Vice President for Research and Public Service will develop a comprehensive, topical plan of instruction on RCR for the University and will review this plan on an annual basis to ensure completeness, relevance and currency. Every trainee supported by a federal grant must receive instruction in the responsible conduct of research. All grant applications must prepare a plan to provide such instruction. The plan must address the five components listed below. Renewal grant applications must, in addition, describe changes in formal instruction over the past project period and plans for the future that address any weaknesses in the current instructional plan. All training faculty who served as course directors, speakers, lecturers, and/or discussion leaders during the past project period must be named in the application. Applications lacking a plan for instruction in responsible conduct of research will be considered incomplete and may be delayed in the review process.

1. *Format.* Substantial face-to-face discussions among the participating trainees; a combination of didactic and small-group discussions (e.g. case studies); and participation of research training faculty members in instruction of responsible conduct of research are highly encouraged. While on-line courses are a valuable supplement to instruction in responsible conduct of research, online instruction is not considered adequate as the sole means of instruction. A plan that employs only online coursework for instruction in responsible conduct of research will not be considered acceptable, except in special instances of short-term training programs (see below), or unusual and well-justified circumstances. To the degree online training is determined to be part of the University RCR Instructional Plan, West Virginia State University through the Office of Research and Public Service will provide online training and instruction in RCR to all grant applicants as appropriate.

2. *Subject Matter.* While there are no specific curricular requirements for instruction in responsible conduct of research, the following topics have been incorporated into most acceptable plans for such instruction:

- a. Conflict of Interest – personal, professional, and financial [See Guidelines and Procedures on Financial Conflict of Interest (FCOI)];
 - b. Research misconduct and policies for handling misconduct;
 - c. Policies regarding human subjects, live vertebrate animal subjects in research and use, and safe laboratory practices;
 - d. Mentor/trainee responsibilities and relationships;
 - e. Bio-safety and/or hazardous materials;
 - f. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) Public Law 104-191;
 - g. Collaborative research, including collaborations with industry;
 - h. Peer review;
 - i. Data acquisition and laboratory tools as well as management, sharing and ownership;
 - 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;
- and,
- l. Other courses as required.

While courses related to professional ethics, ethical issues in clinical research, or research involving vertebrate animals may form a part of instruction in responsible conduct of research, they generally are not sufficient to cover all aspects of responsible research conduct.

3. Faculty Participation. Training faculty and sponsors/mentors are highly encouraged to contribute both to formal and informal instruction in responsible conduct of research. Informal instruction occurs in the course of laboratory interactions and in other informal situations throughout the year. Training faculty may contribute to formal instruction in responsible conduct of research as discussion leaders, speakers, lecturers, and/or course directors. Rotation of training faculty as course directors, instructors, and/or discussion leaders may be a useful way to achieve the ideal of full faculty participation in formal responsible conduct of research courses over a period of time. Federal requirements for faculty participation in this training are found in the National Institutes of Health (NIH) **Grants Policy Statement Part II: Terms and Conditions of NIH Grant Awards - Subpart A. Ethical and Safe Conduct in Science and Organizational Operations.**

4. Duration of Instruction. Instruction should involve substantive contact hours between the trainees and the participating faculty. Acceptable programs generally involve at least eight contact hours. A semester-long series of seminars/programs may be more effective than a single seminar or one-day workshop because it is expected that topics

will then be considered in sufficient depth, learning will be better consolidated, and the subject matter will be synthesized within a broader conceptual framework.

5. Frequency of Instruction. Reflection on responsible conduct of research should recur throughout a scientist's career: at the undergraduate, post-baccalaureate, pre-doctoral, postdoctoral, and faculty levels. Institutional training programs are strongly encouraged to consider how to optimize instruction in responsible conduct of research for the particular career stage(s) of the individual(s) involved. Instruction must be undertaken at least once during each career stage, and at a frequency of no less than once every four years. It is highly encouraged that initial instruction during pre-doctoral training occurs as early as possible in graduate school. Individuals at the early career investigator level must receive instruction in responsible conduct of research at least once during this career stage. To meet the above requirements, instruction in responsible conduct of research may take place, in appropriate circumstances, in a year when the trainee is not actually supported by a NIH grant. This instruction must be documented in the submitted plan.

Information on the nature of the instruction in the responsible conduct of science and the extent of trainee and faculty participation also must be provided in the progress report submitted as a prerequisite to receiving non-competing continuation support.

II. Institutional Responsibilities

- 1.** The University must have a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to all Principal Investigators and all collaborators, including all faculty, staff, undergraduates, graduate students, and postdoctoral researchers, who will be supported by the National Science Foundation (NSF) to conduct research. As noted in NSF's **Proposal & Award Policies & Procedures Guide (PAPPG)**, Chapter II.C.1.e. (**Proposal Certifications**), institutional certification to this effect is required for each proposal.
- 2.** While training plans are not required to be included in proposals submitted to NSF, the University understands that it is subject to review, upon request.
- 3.** The Vice President for Research and Public Service will designate one or more persons to oversee compliance with the RCR training requirement.
- 4.** The University is responsible for verifying that all Principal Investigators and all collaborators, including all faculty, staff, undergraduates, graduate students, and postdoctoral researchers supported by NSF to conduct research, have received training in the responsible and ethical conduct of research.