**PLAN FOR INSTRUCTION IN THE RESPONSIBLE CONDUCT OF RESEARCH**

All of the **Duke University <INSERT TRAINING PROGRAM>** trainees complete University-wide Responsible Conduct of Research (RCR) training. Duke University is committed to promoting and ensuring RCR across all disciplines, and to providing researchers an environment to conduct preeminent research, maintain the public’s trust, and prepare current and future generations to contribute to research discoveries that will address and advance national and global needs. The University believes that both formal and informal RCR training is an essential component that should be tailored to an individual’s specialty, career stage, and other participant specific needs. Duke’s RCR curriculum for biomedical PhD students was designed to **exceed the NIH recommendations** put forth in NOT-OD-10-019, with 18 contact hours of formal instruction for predoctoral trainees.

Predoctoral and postdoctoral trainees engage in different RCR activities. Predoctoral trainees participate in activities tailored specifically to PhD students either via the School of Medicine (Office of Biomedical Graduate Education) or the Graduate School, depending on the degree-granting program with which the students affiliate. Postdoctoral researchers participate in University-wide RCR trainings developed for faculty and staff by the Office of Scientific Integrity (Advancing Scientific Integrity, Services and Training (ASIST) programming).

**Format:** The RCR curriculum for predoctoral and postdoctoral combines face-to-face lectures, interactive panels, case studies, large and small group discussions, and online modules. The curriculum includes a day-long in-person orientation, 2 semester-long in-person courses, self-paced online modules, and ongoing RCR forum electives that provide specialized, smaller interactive opportunities across research disciplines for advanced graduate students. The semester long courses are divided into two modules. The first module consists of large group lectures on the variety of RCR topics listed below given by both faculty and subject matter expert staff. The lectures are given live to encourage participation and engagement with both the speaker and the content, but they are also recorded to serve as an ongoing resource to students. During the final 4 weeks of the course, students meet in small groups to discuss case studies that reinforce and expand upon the RCR topics listed below. The case studies are chosen and edited by teams of trainees within a small group, with faculty input prior to discussion. Trainees then lead the discussion of their case study with the faculty facilitator. This format requires the synthesis of information by trainees, collaboration with other trainees on topic teams, participation by all trainees in the facilitation of small group discussion, and inclusion of scenarios that reflect the diversity of our trainees, their experiences, and their trajectories. The self-paced online modules are taken from the Research Quality and Reproducibility course hosted by epigeum.

The initial RCR education requirement for postdoctoral trainees when postdoctoral researcher first joins the Duke research community is to complete either one online, self-directed course (RCR 100) course OR one collaborative (RCR 200) course within 90 days of joining. The ongoing RCR education requirement for postdoctoral researchers is one RCR 100 every three years plus RCR 200 course every three years. The rolling requirement for both a 100-level and 200-level RCR course ensures that each postdoctoral researcher is engaging with RCR training both online and in person throughout their time at Duke.

**Subject Matter**: Duke’s RCR curriculum was developed to ensure that all NIH RCR and Rigor and Reproducibility (R&R) core competencies are covered at least once during their training and are presented in a career-stage specific manner. The complete course syllabi for predoctoral trainings are available on the OBGE RCR website; links to training activities for postdoctoral trainees are on the Faculty/Staff RCR tab of the Office of Scientific Integrity website. Briefly, BIOTRAIN courses cover conflicts of interest and commitment; human subject/live animal research policies and safety; mentor/mentee relationships; creating inclusive research environments; collaborative research; peer review; data acquisition and analysis; recordkeeping; data management, confidentiality, and ownership; research misconduct; responsible authorship and publication; and how to function as a scientist that is also a responsible member of society. The syllabi for each course are color coded to indicate if a topic covers RCR and/or R&R. Specific RCR forum electives are different each year but are broadly categorized into academic integrity and misconduct (GS714), diversity and inclusion in a research environment (GS715), mentoring and wellness (GS716), and best practices in responsible scholarship (GS717). Forums serve as a more tailored, discipline-specific training opportunity with a choice from over 40 options each semester.

**Faculty Participation:** All Duke faculty participate in the Faculty/Staff RCR training. Significant faculty participation in delivering RCR content to trainees is achieved by utilizing a rotating pool of faculty at a range of career stages to serve as course directors, discussion leaders, and instructors. Every course has at least one faculty panel discussion to showcase personal experience rather than simply relying on generic case studies. Recent faculty participants from PSTP are **<INSERT FACULTY HERE>.** These discussions have addressed a variety of topics including authorship, collaborative research, and mentor/mentee responsibilities (topics rotate between instructors year to year).

**Duration/Frequency of Instruction**: Duke’s predoctoral curriculum is designed to ensure that RCR instruction occurs throughout the stages of each trainee’s career. BIOTRAIN750 is a day-long in person orientation for incoming first year students that is counted as 4 contact hours. BIOTRAIN751 and BIOTRAIN754, *The Responsible Scientist I and II*, are both semester-long in-person courses offered in the spring of the first/fourth years respectively. These courses meet weekly for 10 weeks and are broken into two modules. The first 6 weeks of the semester consists of large group lectures on the variety of RCR topics listed above given by both faculty and subject matter expert staff. During the final 4 weeks, students meet in small groups to discuss case studies that reinforce and expand upon the RCR topics listed above. These semester long courses are counted as 4 contact hours each. BIOTRAIN753 consists of self-paced interactive online modules completed during years 2 and 3 that is counted as 2 contact hours. Finally, the GS71X series of RCR forum electives are completed in years 5 and beyond and count as 2 contact hours each (completion of 2 forums is required). In total this curriculum provides **18 contact hours** of RCR instruction completed over the course of the graduate career. Similarly, Duke’s postdoctoral RCR curriculum is designed to ensure that RCR instruction occurs regularly throughout the length of the postdoctoral researcher’s time at Duke.

**Compliance and Assessment**: For predoctoral trainees, completion of RCR curriculum is tracked by the registrar and is a requirement for graduation. Students complete course evaluations at the end of all courses to provide feedback and indirect assessment of learning objectives. Comments and suggestions about course format, content, relevance, and presentation are used to improve the course in future years. Direct assessment of concept comprehension in BIOTRAIN753 is measured using online quiz formats that require a minimum score of 80%. The RCR curriculum is overseen and evaluated annually by the RCR Curriculum Manager, Program Assessment Manager, OBGE Director, and Associate Dean for Research Training. For postdoctoral trainees, completion is monitored by the Human Resources department. Postdoctoral researchers will receive automated emails reminders when their RCR course due-dates approach, and may check their RCR education progress at any time through the RCR training tracker app or through the "my Portfolio" or "myTraining" widgets in myRESEARCHhome, an omnibus website maintained by Duke.