**PLAN FOR INSTRUCTION IN THE RESPONSIBLE CONDUCT OF RESEARCH (RCR)**

**Note to T32 TG PIs:** You should include text indicating which of your training faculty are involved in RCR training. These could be, for example, FYG advisors and co mentors. You can get a list of FYG advisors from Dave McDonald (davidmcd@email.unc.edu) in the Office of Graduate Education. If your training grant faculty are not adequately represented in the RCR course, please contact Dave about ways they can participate in the RCR training in the future. This is a requirement for T32 training grants and reviewers will expect to see this.

**Note to graduate students using this boilerplate for F31 applications:** This text can serve as a starting point for trainees who need to describe RCR training for graduate students at UNC. You will need to amend this text to fit onto 1 page and you will also have to describe your specific plans to engage in refresher RCR training either on a continuous basis or at least in a substantive way during year 4 of your PhD as required by <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-10-019.html>. You could suggest that once a month your PI will lead a case study discussion during lab meeting on one of the topics listed in the boilerplate document. You could also propose to attend the 5-day RCR training offered by NC TraCS (described below). There are also ethics lectures series you could propose to attend to get the continued training. You can pick a relevant series from this link: <http://bioethics.unc.edu/lectures-series/> Using this RCR description without modification for a fellowship application will appear generic and could be seen as a liability in your training plan.

**PLAN FOR INSTRUCTION IN THE RESPONSIBLE CONDUCT OF RESEARCH (RCR)**

**First-Year Instruction in RCR**

The RCR training program for first-year students in the BBSP includes: 1) mandatory RCR training, 2) a defined process for graduate students to address RCR issues, 3) continuous evaluation and improvement of our RCR training program, and 4) conferences, seminars and workshops on RCR to provide continuous training opportunities during a graduate student’s career.

*Format*: The RCR sessions are incorporated into the curriculum of a First Year Group (FYG) professional development course that is mandatory for BBSP students. Each class has the following elements:

* Reading: Trainees are asked to do background reading before each RCR session. Materials for reading can include case studies, institutional policies, recent news articles, or other scholarly articles relevant to the topic.
* Instruction & Discussion: Trainees meet in their FYG small groups for an hour and a half lesson and discussion of the topic. These sessions are facilitated by faculty members from BBSP member PhD programs who are involved in the FYG course.

The mandatory RCR training in year 1 takes place in seven 90-minute sessions that are part of the BBSP FYG curriculum; thus, there are 10.5 hours of small group contact time involving students and faculty. Discussion groups consist of no more than 16 students. The FYG leaders plus two of their co-mentors lead the discussion. The faculty send out case studies and a set of discussion questions to the students in their FYG to familiarize them with realistic scenarios that highlight the particular topic they are discussing. They show up to class ready to discuss each particular topic. At least two faculty are present for each RCR session, and they provide real-world examples from their own experiences to amplify the discussion, which are typically engaged and lively. Topics covered in the interactive discussion sessions include:

1. Mentor & Mentee responsibilities
2. Authorship & Plagiarism
3. Peer Review
4. Misconduct & Whistleblowing
5. Conflict of Interest
6. Rigor & Reproducibility
7. Animal & Human Subjects

In order to receive credit for completing RCR training, students must attend 100% of the case-based discussions. Attendance is monitored for both Monday and Wednesday attendees. Meeting these requirements has not proven problematic, since a student with a scheduling conflict can attend another regularly scheduled discussion session or can make up the session the following year.

**Advanced Instruction in RCR**

We previously asked our students to take a course offered by NCTraCS (North Carolina Translational and Clinical Sciences) Institute. This course was five 4-hr sessions in the summer. Although some of the instruction was appropriate for basic scientists, a large portion of the workshop focused on clinical trials and clinical science, which was not relevant to our graduate students. Moreover, the workshop would not allow students to register unless they took all five classes.

Therefore, Dr. Nicholas, in his capacity as Associate Director of Graduate Education, spearheaded the creation of four committees, each in distinct research areas, to develop courses for instruction in RCR for students entering their fifth year in graduate school. The four research areas were:

1. Pathogenesis (microbiology, immunology)
2. Cell Biology (pharmacology, cell biology, physiology, neurobiology, pathology, and toxicology)
3. Quantitative (biophysics, computational biology and genetics, biochemistry, pharmaceutical sciences, chemistry)
4. Genetics/Biology/Molecular Biology (non-computational)

The committee chairs met and agreed to a basic organization for all groups, but with flexibility to design their own curriculum. This led to the establishment of four similar courses, but held at different times (some are in the Fall semester, some in the Spring) and with different faculty. Faculty from these programs now facilitate a 1.5-hour discussion on the following topics:

1. Authorship & Collaborative Research
2. Conflict of Interest/Intellectual Property
3. Animal & Human Subjects
4. Mentor/mentee Relationships
5. Peer Review & Publishing
6. Plagiarism, Image Acquisition & Data Processing

The class format is similar to that described for RCR instruction in FYGs, except the scenarios are different. Moreover, the students are more advanced in their training and have a more nuanced view of RCR and in some cases are personally familiar with the issues being discussed in class.

Attendance at all sessions is required, and students who miss a session must make it up the following year or attend the same RCR topic offered by the other departments. We are currently in discussion with T32 directors who train postdoctoral fellows to have them attend these sessions.